

Comprehensive Musicianship, A Practical Resource

Randall Harlow; Heather Peyton; Jonathan Schwabe; and Daniel Swilley

Iowa State University Digital Press



Comprehensive Musicianship, A Practical Resource by Randall Harlow; Heather Peyton; Jonathan Schwabe; and Daniel Swilley is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/), except where otherwise noted.

You are free to copy, share, adapt, remix, transform, and build upon the material, so long as you follow the terms of the license.

*This is a publication of the
Iowa State University Digital Press
701 Morrill Rd, Ames, IA 50011
<https://www.iastatedigitalpress.com>
digipress@iastate.edu*

*This publication was funded by
The Iowa Regents OER Grant Program
A cross-institutional grant supported by
the Governor's Emergency Education Relief (GEER) fund.*

CONTENTS

About the Contributors	x
Introduction	1
Why Study Music Theory	3

Chapter 1: Basics of Rhythm and Meter

1.1 Basics of Rhythm: Tutorial	5
1.1 Basics of Rhythm: Theory exercises	10
1.1 Basics of Rhythm: Sight Singing exercises	11
1.1 Basics of Rhythm: Aural Training exercises	12
1.2 Basics of Meter: Tutorial	13
1.2 Basics of Meter: Theory exercises	19
1.2 Basics of Meter: Sight Singing exercises	20
1.2 Basics of Meter: Aural Training exercises	21
1.3 Basics of Beaming: Tutorial	22
1.3 Basics of Beaming: Theory exercises	25
1.3 Basics of Beaming: Sight Singing exercises	26
1.3 Basics of Beaming: Aural Training exercises	27

Chapter 2: Basics of Pitch

2.1 Pitch, Clefs, and Intervals: Tutorial	29
2.1 Pitch, Clefs, and Intervals: Theory exercises	40
2.1 Pitch, Clefs, and Intervals: Sight Singing exercises	41

2.1 Pitch, Clefs, and Intervals: Aural Training exercises	42
-----------------------------------------------------------	----

Chapter 3: Scales and Modes

3.1 Intro to Scales and the Chromatic Scale: Tutorial	44
3.1 Intro to Scales and the Chromatic Scale: Theory exercises	47
3.2 Major Scales: Tutorial	48
3.2 Major Scales: Theory exercises	54
3.2 Major Scales: Sight Singing exercises	55
3.2 Major Scales: Aural Training exercises	56
3.3 Minor Scales: Tutorial	58
3.3 Minor Scales: Theory exercises	65
3.3 Minor Scales: Sight Singing exercises	66
3.3 Minor Scales: Aural Training exercises	67
3.4 Modal Scales: Tutorial	69
3.4 Modal Scales: Theory exercises	74
3.4 Modal Scales: Sight Singing exercises	75
3.4 Modal Scales: Aural Training exercises	76

Chapter 4: Intervals

4.1 Intervals: Tutorial	79
4.1 Intervals: Theory exercises	87
4.1 Intervals: Sight Singing exercises	88
4.1 Intervals: Aural Training exercises	89

Chapter 5: Introduction to Chords

5.1 Triads and Inversions: Tutorial	92
5.1 Triads and Inversions: Theory exercises	98
5.1 Triads and Inversions: Sight Singing exercises	99
5.1 Triads and Inversions: Aural Training exercises	100
5.2 Seventh Chords and Inversions: Tutorial	101
5.2 Seventh Chords and Inversions: Theory exercises	108
5.2 Seventh Chords and Inversions: Sight Singing exercises	109
5.2 Seventh Chords and Inversions: Aural Training exercises	110
5.3 Lead Sheet Notation: Tutorial	111
5.3 Lead Sheet Notation: Theory exercises	115
5.3 Lead Sheet Notation: Sight Singing exercises	116
5.3 Lead Sheet Notation: Aural Training exercises	117
5.4 Figured Bass Notation: Tutorial	118
5.4 Figured Bass Notation: Theory exercises	128
5.4 Figured Bass Notation: Sight Singing exercises	129
5.4 Figured Bass Notation: Aural Training exercises	130
5.5 Roman Numerals and Diatonic Harmony: Tutorial	131
5.5 Roman Numerals and Diatonic Harmony: Theory exercises	139
5.5 Roman Numerals and Diatonic Harmony: Sight Singing exercises	140
5.5 Roman Numerals and Diatonic Harmony: Aural Training exercises	142

Chapter 6: Functional Harmony

6.1 Functional Harmony: Tutorial	146
6.1 Functional Harmony: Theory exercises	155
6.1 Functional Harmony: Sight Singing exercises	156
6.1 Functional Harmony: Aural Training exercises	157
6.2 Cadences: Tutorial	159

6.2 Cadences: Theory exercises	167
6.2 Cadences: Sight Singing exercises	168
6.2 Cadences: Aural Training exercises	169
6.3 Harmonic Rhythm: Tutorial	170
6.3 Harmonic Rhythm: Theory exercises	175
6.3 Harmonic Rhythm: Sight Singing exercises	176
6.3 Harmonic Rhythm: Aural Training exercises	177

Chapter 7: Melody

7.1 Melodic Material: Range, Interval Structure, Gesture: Sight Singing exercises: Aural Training exercises: Tutorial	179
7.1 Melodic Material: Range, Interval Structure, Gesture: Theory exercises	183
7.1 Melodic Material: Range, Interval Structure, Gesture: Sight Singing exercises	185
7.1 Melodic Material: Range, Interval Structure, Gesture: Aural Training exercises	186
7.2 Melodic Material: Create/Vary/Repeat and Sequences: Tutorial	188
7.2 Melodic Material: Create/Vary/Repeat and Sequences: Theory exercises	194
7.2 Melodic Material: Create/Vary/Repeat and Sequences: Sight Singing exercises	195
7.2 Melodic Material: Create/Vary/Repeat and Sequences: Aural Training exercises	196
7.3 Embellishing Tones: Tutorial	198
7.3 Embellishing Tones: Theory exercises	207
7.3 Embellishing Tones: Sight Singing exercises	208
7.3 Embellishing Tones: Aural Training exercises	209

Chapter 8: Melodic Form

8.1 Musical Phrases and Sentences: Tutorial	211
8.1 Musical Phrase: Theory exercises	214
8.1 Musical Phrase: Sight Singing exercises	215

8.1 Musical Phrase: Aural Training exercises	216
8.2 Sentences and Periods: Tutorial	217
8.2 Sentences and Periods: Theory exercises	222
8.2 Sentences and Periods: Sight Singing exercises	223
8.2 Sentences and Periods: Aural Training exercises	224
8.3 Phrase Groups and Double Periods: Tutorial	225
8.3 Phrase Groups and Double Periods: Theory exercises	228
8.3 Phrase Groups and Double Periods: Sight Singing exercises	230
8.3 Phrase Groups and Double Periods: Aural Training exercises	231
8.4 Phrase Elisions and Cadential Extensions: Tutorial	232
8.4 Phrase Elisions and Cadential Extensions: Theory exercises	235
8.4 Phrase Elisions and Cadential Extensions: Sight Singing exercises	236
8.4 Phrase Elisions and Cadential Extensions: Aural Training exercises	237

Chapter 9: Introduction to Counterpoint

9.1 First Species Counterpoint: Tutorial	239
9.1 First Species Counterpoint: Theory exercises	242
9.1 First Species Counterpoint: Sight Singing exercises	243
9.1 First Species Counterpoint: Aural Training exercises	244
9.2 Second Species Counterpoint: Tutorial	245
9.2 Second Species Counterpoint: Theory exercises	246
9.2 Second Species Counterpoint: Sight Singing exercises	247
9.2 Second Species Counterpoint: Aural Training exercises	248
9.3 Third Species Counterpoint: Tutorial	249
9.3 Third Species Counterpoint: Theory exercises	250
9.3 Third Species Counterpoint: Sight Singing exercises	251
9.3 Third Species Counterpoint: Aural Training exercises	252

Chapter 10: Voice Leading in Harmonic Progressions

10.1 Chord Voicing and Part Writing, General Principles: Tutorial	254
10.1 Chord Voicing and Part Writing, General Principles: Theory exercises	264
10.1 Chord Voicing and Part Writing, General Principles: Sight Singing exercises	268
10.1 Chord Voicing and Part Writing, General Principles: Aural Training exercises	269
10.2 Part Writing, Root Position Triads and Suspensions: Tutorial	270
10.2 Part Writing, Root Position Triads and Suspensions: Theory exercises	275
10.2 Part Writing, Root Position Triads and Suspensions: Sight Singing exercises	287
10.2 Part Writing, Root Position Triads and Suspensions: Aural Training exercises	288
10.3 Part Writing, First Inversion Triads and Suspensions: Tutorial	290
10.3 Part Writing, First Inversion Triads and Suspensions: Theory exercises	295
10.3 Part Writing, First Inversion Triads and Suspensions: Sight Singing exercises	303
10.3 Part Writing, First Inversion Triads and Suspensions: Aural Training exercises	304
10.4 Part Writing, Second Inversion Triads: Tutorial	306
10.4 Part Writing, Second Inversion Triads: Theory exercises	313
10.4 Part Writing, Second Inversion Triads: Sight Singing exercises	320
10.4 Part Writing, Second Inversion Triads: Aural Training exercises	321
10.5 Part Writing, Seventh Chords: Tutorial	323
10.5 Part Writing, Seventh Chords: Theory exercises	333
10.5 Part Writing, Seventh Chords: Sight Singing exercises	339
10.5 Part Writing, Seventh Chords: Aural Training exercises	340
10.6 Part Writing, Non-Chord Tones: Tutorial	342
10.6 Part Writing, Non-Chord Tones: Theory exercises	346
10.6 Part Writing, Non-Chord Tones: Sight Singing exercises	351
10.6 Part Writing, Non-Chord Tones: Aural Training exercises	352

Chapter 11: Harmonizing a Melody

11.1 Introduction to Harmonizing a Melody: Tutorial	355
-----------------------------------------------------	-----

11.1 Introduction to Harmonizing a Melody: Theory exercises	360
11.1 Introduction to Harmonizing a Melody: Sight Singing exercises	365
11.1 Introduction to Harmonizing a Melody: Aural Training exercises	366
11.2 Harmonizing a Melody with Root Position Triads: Tutorial	367
11.2 Harmonizing a Melody with Root Position Triads: Theory exercises	369
11.2 Harmonizing a Melody with Root Position Triads: Sight Singing exercises	377
11.2 Harmonizing a Melody with Root Position Triads: Aural Training exercises	378
11.3 Harmonizing a Melody With Triads in Inversion: Tutorial	379
11.3 Harmonizing a Melody With Triads in Inversion: Theory exercises	382
11.3 Harmonizing a Melody With Triads in Inversion: Sight Singing exercises	392
11.3 Harmonizing a Melody With Triads in Inversion: Aural Training exercises	393
11.4 Harmonizing a Melody With Seventh Chords: Tutorial	395
11.4 Harmonizing a Melody With Seventh Chords: Theory exercises	398
11.4 Harmonizing a Melody With Seventh Chords: Sight Singing exercises	407
11.4 Harmonizing a Melody With Seventh Chords: Aural Training exercises	408
11.5 Harmonizing a Melody With Non Chord Tones: Tutorial	409
11.5 Harmonizing a Melody With Non Chord Tones: Theory exercises	412
11.5 Harmonizing a Melody With Non Chord Tones: Sight Singing exercises	417
11.5 Harmonizing a Melody With Non Chord Tones: Aural Training exercises	418

Music Theory Workbook

Sight Singing and Aural Training Supplement

About the Contributors

Randall Harlow is Associate Professor of Organ and Music Theory at the University of Northern Iowa. He teaches courses throughout the core undergraduate music theory and musicianship curriculum, graduate music theory seminars, and an interdisciplinary honors music course. He is an active performer who specializes in contemporary repertoire and innovative approaches to organ performance. His research focuses on deep Gesture as the catalyst for the dynamic networking of cognitive and social dimensions fundamental to music making, listening and discourse, while a related strand of his work pursues theoretical and artistic research into the ecology of technologically-augmented “hyper-acoustic” musicking. His work is published in the journals *MUSICultures*, *Keyboard Perspectives*, and proceedings of the international conference New Interfaces for Musical Expression (NIME). He has presented at conferences at Cornell, Harvard, and Oxford Universities, the International Conference on Music Perception and Cognition (ICMPC), Performance Studies Network (PSN), the joint AMS/SEM/SMT National Conference, Porto International Conference on Musical Gesture in Portugal, Göteborg International Organ Academy in Sweden (GOArt), the Westfield Center, and Eastman Rochester Organ Initiative Festival (EROI), and is a frequent speaker at the Orgelpark in Amsterdam.

Heather Peyton is Associate Professor of Oboe and Music Theory at the University of Northern Iowa where she teaching classes in the core undergraduate theory sequence. Dr. Peyton is the recipient of numerous national and international awards, including winning honorable mention as a finalist in the prestigious Gillet-Fox International Oboe Competition. She has appeared as a soloist with orchestras and contemporary music ensembles throughout the United States, Canada, Europe, and Asia, and has performed as a member or guest with groups like the Orquestra Sinfônica da Universidade de Caxias do Sul, the Lansing Symphony Orchestra, Michigan Opera Theatre Orchestra, Chautauqua Symphony Orchestra, National Repertory Orchestra, Ensemble Pentaèdre, and the Société de Musique Contemporaine du Québec. Dr. Peyton is a past President of the National Association of College Wind and Percussion instructors. One area of her research focuses on pedagogy, student success, and retention. Dr. Peyton helped found and serves as a coordinator for the School of Music’s Peer Mentoring Program, which connects all students in the theory core sequence with peer mentors in order to foster student success. She also collaborated to create a theory articulation agreement with Iowa Regents institutions to better prepare students for music theory

requirements, and is currently expanding those efforts to include Iowa Community Colleges. Dr. Peyton is passionate about connecting music theory to student's daily lives.

Jonathan Clarke Schwabe is Professor of Theory and Composition at the University of Northern Iowa. His work for youth orchestra *As I Remember* was performed at the Kennedy Center in the summer of 1999 and received numerous subsequent performances in the US and Europe. Two chamber operas *The Hard Years* (libretto by Beth Webb Hart), and *The Sojourner* (based on the story by Carson McCullers) were presented at the Maude Powell Music Festival. Other collaborations include the score for the musical comedy *The Bake Shop Ghost* with author Jacqueline Ogburn and *Peter Pan* with choreographer Gloria Touhy (Indiana Ballet Theatre). In 2010 he was commissioned to write a new work to commemorate a historic visit by His Holiness, the Fourteenth Dalai Lama to UNI. In 2012 his work *A Toi Cometé Vagabonde* was premiered at the World Saxophone Congress in Aberdeen, Scotland. His principal teachers are Samuel Adler, John Anthony Lennon and Dick Goodwin. His music is published by Musikverlag Bruno Uetz, Veritas Musica Publishing, Winzer Press and Alafia Press.

Daniel Swilley is Assistant Professor of Music specializing in Composition, Theory, and Music Technology at the University of Northern Iowa. His music and research have been presented at festivals and conferences such as June in Buffalo, SEAMUS, Toronto Electroacoustic Symposium, Understanding Visual Music Symposium, NoiseFloor, New York City Electroacoustic Music Festival, Electronic Music Midwest, Studio 300, Audiograft, Electroacoustic Juke Joint, College Music Society, as well as Society of Composer's Inc. Swilley holds degrees in composition from University of Illinois Urbana-Champaign (DMA), Georgia State University (MM), and Valdosta State University (BM). His primary composition teachers have included Heinrich Taube, Sever Tipei, Robert Scott Thompson, and Scott Wyatt.

Introduction

Comprehensive Musicianship, A Practical Resource

This Open Educational Resource (OER) presents an integrated suite of learning tutorials and exercises developed for the core music theory and musicianship curriculum at the University of Northern Iowa School of Music, but could be freely adapted for similar curricula at other schools and departments of music.

This work aims to provide a more comprehensive symbiosis of musicianship and music theory learning than can be found in existing textbooks, featuring a progressive series of music theory tutorials and exercises concurrent with interactive listening and vocal exercises in order to integrate musical knowledge with foundational musical skills at every step of the way. Additionally, this OER affords the flexibility to shape core musicianship and music theory learning to meet the needs of changing School of Music demographics well into the future, a resource for innovative and inclusive music programs accessible to all.

The text is divided into three main parts:

Main text

The bulk of the text is organized into a series of chapters and subchapters. Each main chapter focuses on a primary topic, such as Rhythm, Melodic Form, and Part Writing. Within each main chapter you will find subchapters on more focused topics.

Each subtopic is address through a series of four subchapters:

1. **Prose Tutorial** explaining the new topic concepts, illustrated by visual and/or aural examples.
2. **Theory Exercise** to build comprehension of new concepts
3. **Sight Singing** exercise to foster embodied engagement with the new concepts
4. **Aural Training** exercise to synthesize understanding of the concept by simultaneously engaging propositional knowledge with embodied action

Music Theory Workbook

The workbook features a compendium of additional theory exercises pertaining to each chapter and subtopic. These exercises may be used for additional music theory practice and/or assigned as homework by the instructor.

Sight Singing and Aural Training Supplement

This supplement features a graded series of sight singing and aural training examples aligned with the chapters and subtopics of the main text. These supplemental materials may be used for additional sight singing and aural training practice and/or assigned as homework by the instructor.

Why Study Music Theory

Many students don't know how to apply music theory to their lives. Studying music theory can help you answer questions like:

- What are you supposed to be doing when you look at a piece of music?
- What are you supposed to be doing when you listen to a piece of music?
- How do you prepare a piece a music so that it's truly engaging and satisfying in the practice room and in performance?
- How do you find and tell the story of a piece?

Finding the story in music

Music has a powerful ability to invoke emotions and to tell a story. Think of the dynamism that music can add to a movie. A movie without music dulls our emotional connection to the story. If we only had one emotion, we'd only need one chord to express it. Having a toolbox full of different choices for musical elements like chords, scales, rhythms, and melodies give us the capacity to tell an infinite number of stories. Music sets up expectations, and those expectations are either realized or unfulfilled. Music theory helps us look deeper into a piece to understand and name those expectations. It allows us to follow the story of a note, melody, or progression as it unfolds.

Finding your voice through music theory

Through studying theory, you get to see that you own thoughts on music matter. When you are fluid in the language of music, you make conscious and thoughtful decisions on how and why to shape each phrase. Your experience of practicing and performing changes as it makes you more confident in your knowledge as a performer and teacher. Music theory gives you the tools to make every performance a living analysis by connecting the music on the page with the experience the audience has when listening. Your voice matters, and music theory can help you confidently bring your own interpretation of music to life.

Chapter 1: Basics of Rhythm and Meter

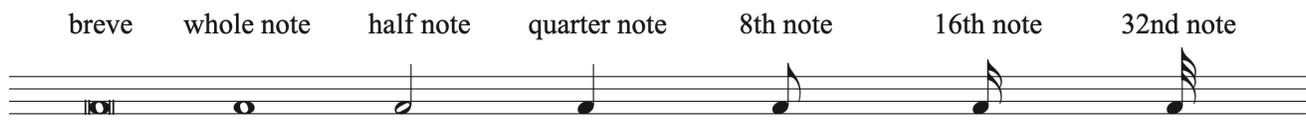
1.1 Basics of Rhythm: Tutorial

Rhythm

Rhythm in music consists of patterns of long and short durations of pitches and silences. These patterns are heard in relation to the meter of the music. Rhythm and meter are two different, but interconnected aspects of music. The relationship between rhythm and meter will become clear through exploring rhythm, meter, and beaming in Unit 1.

Rhythmic Symbols

The symbols of rhythmic notation are notes and rests. The example below shows the most commonly used notes in music, though larger and smaller note values exist.



The parts of a note can include noteheads, stems, flags, and beams. Notice how those are notated on a staff.



Noteheads can be open or filled in depending on the type of note used. Noteheads that are filled in have a stem. Stems are drawn an octave in length on the staff, and can be drawn up or down. They are drawn up and on the right side of a note if the note sits below the middle line on the staff. They are drawn down and on the left side of a note if the note sits above the middle line on the staff. Notes that sit on the middle line of the staff can have stems drawn in either direction.



Flags are used on eighth notes as well as those with shorter rhythmic values. Flags are drawn to the right of the note and curve towards the note head. Eighth notes have one flag while notes like sixteenth notes and thirty-second notes have multiple flags.



Beams can be used to join two or more notes with flags together. Notes are beamed together when needed according to the meter, which will be explored in the chapter on beaming.



While notes are the pitched symbols in rhythmic notation, rests are the symbols used to indicated durations of silence. Each note has a corresponding rest of equal length.

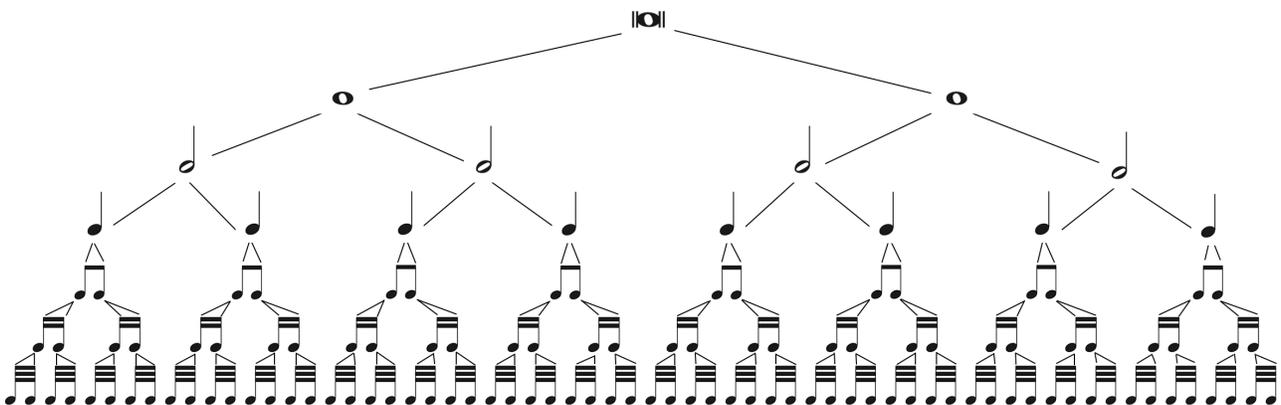
breve rest	whole rest	half rest	quarter rest	8th rest	16th rest	32nd rest
breve	whole note	half note	quarter note	8th note	16th note	32nd note

Notice that each note and rest is drawn on a specific place on the staff. Whole rests hang down from line 4 to occupy half of space 3. Half rests sit above line 3 and occupy half of space 3. Quarter rests are drawn from space 1 to 4. Eighth notes sit between line 2 and space 3, and

sixteenth notes sit on line 1 and extend to space 3. Having a distinct difference in spacing of rests on the staff makes it easier to recognize and read them quickly.

Proportional Notation

Rhythmic values are not fixed units of time. Rhythmic symbols are proportional, meaning that if one rhythm changes value, all of the others also change at the same rate. The relationship between note values does not change. Look at the chart below to see the proportional relationship between note values. Each rhythmic symbol on the chart divides into 2 equal note values of a smaller duration. So, each symbol is twice the duration of the next shorter symbol on the chart and half the duration of the next longer symbol on the chart. For example, a half note divides into 2 quarter notes, and a quarter note divides into 2 eighth notes. That means that there are 4 eighth notes in a half note.



The note that equals one beat in music is defined by the meter of the music. Let's say that the quarter note equals 1 beat in a given meter. That would mean a half note would equal 2 beats. However, if a piece is written in a meter where the half note equals 1 beat, then the quarter note would be worth half of a beat. So, while the change in meter changed which note on the chart would equal 1 beat, the value relationship between the notes remained the same. A half note is always twice the value of a quarter note.

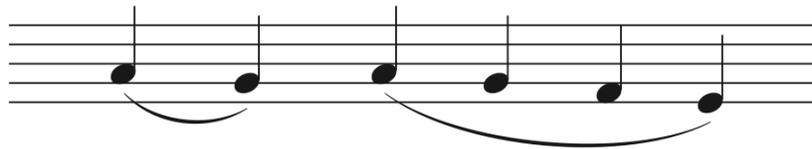
Ties

A tie is used to add notes together to form a longer rhythmic value. It is a curved line that connects two note heads of the same pitch, creating a new duration that is equal to their sum. To tie more than one note together, separate ties must be used to connect each notehead to

the one that follows. Ties can only be used on notes, not on rests. In the example below, two quarter notes tied together, which equals one half note. Four quarter notes tied together equals one whole note.

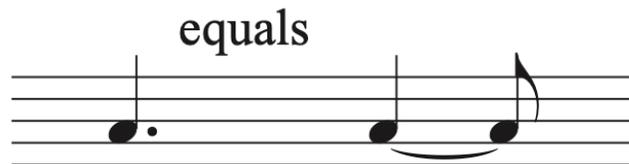


In contrast to a tie, a slur will connect two or more notes of different pitches together, and is an articulation mark that means to play the notes without articulating any notes contained under the slur mark. A slur does not impact the rhythm of a note, and should not be mistaken for a tie.



Dots

A dot, also known as an augmentation dot, is a symbol added to a note or rest that increases the value of the note or rest by half of its original value. For example, adding a dot to a quarter note would make it equal to a quarter note plus an eighth note in length.



Dots are always drawn directly to the right of a note or rest. If a note is on a space, the dot is drawn in the same space. If a note is on a line, the dot is drawn on the space above that line. Dots on rests are always drawn on the 3rd space on the staff.



Notes and rests can have more than one dot added to them. For multiple dots, the first dot always increases the note by half of its original value, like a regular dot. Any dot following that will increase the value of the note by half of the value of the dot before it. For example, in a double dotted quarter note, the first dot increases the value of the quarter note by an eighth note, which is half its value. The second dot increases the value of the note by half of the first dot, which means half of an eighth note, which would be a sixteenth note.



Bringing Theory to Life

Composers can use rhythm to create interest; define and vary texture; create motives that are repeated, varied and developed; reinforce or obscure the meter; set up metric shifts and transitions; mark phrases and cadences; define the rate of chord changes; compose in certain styles like specific types of dances or genres; and much more! Different rhythmic patterns can create different levels of energy in the music. Slower patterns can slow momentum, while faster rhythms can create motion and energy. Understanding the foundational elements of rhythm is just the first step in exploring how rhythm is used in combination with other elements in music in order to bring the music to life. Look at the music you are currently working on, or would like to explore, and think about how the rhythms used are helping to shape the story of the piece.

1.1 Basics of Rhythm: Theory exercises

See Workbook Chapter 1.1

1.1 Basics of Rhythm: Aural Training exercises

Listen to each rhythmic example and follow the steps below:

Step 1) Clap the pulse (tactus) as you listen to the rhythm of each exercise (keep it steady!). Listen several times until you have the rhythm memorized. The rhythm is repeated four times on each recording.

Step 2) Clap the pulse and “ta” the rhythm back on proper syllables, keeping in mind which syllables to use for simple verses compound meters. Repeat each exercise until you can ta the rhythm smoothly and steadily without changing the pulse.

Step 3) Reverse it: ta the steady pulse and clap the rhythms back.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=106#audio-106-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=106#audio-106-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=106#audio-106-3>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=106#audio-106-4>

1.2 Basics of Meter: Tutorial

Meter

Can you tap along to a beat when listening to music? Most music has a pulse, which is a regularly recurring feeling of stress. Meter organizes these pulses into a recurring pattern of strong and weak beats. Each bar will have the same number of beats, unless otherwise indicated with a meter change.

Rhythms in music are the patterns of rhythmic values that exist within the meter. Meter and rhythm do not measure time, like the seconds of a clock, they measure the way notes relate to one another in terms of length.

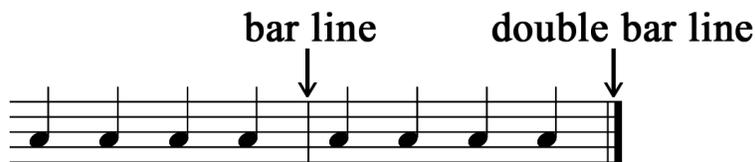
Naming Meters and Using Bar Lines

Meters have a two-part name that includes the type of beat division followed by the number of beat groupings.

If a meter has a main beat that divides into 2 equal divisions, we call it a **simple meter**. For example, if the quarter note was equal to 1 beat, that beat would divide into 2 eighth notes and would be a simple meter.

If a meter has a main beat that divides into 3 equal divisions, we call it a **compound meter**. If a meter had a dotted quarter note as the beat, it would divide into 3 eighth notes and would be a compound meter.

Meters are most often grouped by pulses into 2 beats, 3 beats, or 4 beats. If a meter has 2 beats per bar, we call it a **duple meter**. If it has 3 beats per bar we call it a **triple meter**, and if it has 4 beats per bar, we call it a **quadruple meter**. Beat groupings in music are shown using bar lines, which separate music into bars, also called measures. Bar lines extend from line 1 to line 5 of the staff, and a double bar line signifies the end of a piece.



When naming a meter with its two-part name, we say it is either simple or compound, and either a duple, triple, and quadruple meter. Knowing if a meter is duple, triple, or compound tells us how to conduct it, and how it sounds. Examples of meters can include simple duple, compound duple, simple triple, compound triple, simple quadruple, and compound quadruple.

Meter Signatures

While terms like simple duple are more general terms that can refer to multiple meters, a meter signature, also known as time signature, tell us what specific meter is being used. A meter signature is found right after both the clef and key signature at the start of a piece of music. It consists of two notes stacked on top of each other on the staff. While a meter signature bears some resemblance to a fraction, there is no line drawn between the two numbers in a meter signature. To understand what the two numbers in a meter signature mean, we have to determine whether the meter is a simple meter or a compound meter.

Simple Meters

A simple meter has a main beat that divides into two equal divisions. In a simple meter, the top number in the meter signature tells us how many beats are in the bar. A duple meter will have 2 as the top number and will have 2 beats per bar. A triple meter will have 3 as the top number and 3 beats per bar. A quadruple meter will have 4 as the top number and 4 beats per bar.

The bottom number of the time signature tells us what type of note equals 1 beat. If the bottom number is a 4, the quarter note equals 1 beat. If the bottom number is a 2, the half note equals 1 beat. If the bottom number is an 8, the eighth note equals 1 beat. If the bottom number is a 16, the sixteenth note equals 1 beat. The chart below shows different types of simple meters and their key signatures.

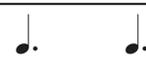
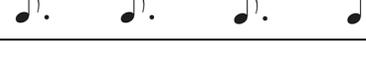
Meter signature	# beats per bar	Type of note = 1 beat	classification	1 full bar
$\frac{2}{4}$	2	quarter note	simple duple	$\frac{2}{4}$ 
$\frac{2}{2}$	2	half note	simple duple	$\frac{2}{2}$ 
$\frac{3}{4}$	3	quarter note	simple triple	$\frac{3}{4}$ 
$\frac{3}{16}$	3	sixteenth note	simple triple	$\frac{3}{16}$ 
$\frac{4}{4}$	4	quarter note	simple quadruple	$\frac{4}{4}$ 
$\frac{4}{8}$	4	eighth note	simple quadruple	$\frac{4}{8}$ 

Most often, simple meters will have top numbers with 2, 3, or 4, which can help to quickly identify them.

Compound Meters

A compound meter has a main beat that divides into 3 equal divisions. Meter signature numbers work differently for compound meters than for simple meters. In a compound meter, the top number is the number of divisions of the beat that are in 1 bar. In order to find the number of beats per bar, you divide that top number by 3 because each beat is divided into 3 notes. If the top number is a 6, you divide 6 by 3 and get 2. So, a 6 as the top number is a duple meter with 2 beats per bar. If the top number is a 9, it is a triple meter with 3 beats per bar. If the top number is a 12, it is a quadruple meter with 4 beats per bar.

The bottom number of a compound meter signature in also differs from simple meter. The bottom number in a compound meter signature tells you what type of note equals 1 beat division. In order to find the note that equals 1 beat, you have to remember that you have 3 beat divisions per beat, and add 3 of the type of note indicated together. So, if the bottom number is an 8, you add 3 eighth notes together to find that the beat is equal to 1 dotted quarter note. If the bottom number is a 4, you add 3 quarter notes to get a beat of a dotted half note. If the bottom number is 16, you add 3 sixteenth notes to get a dotted eighth note as the beat. The chart below shows different types of compound meters and their key signatures.

Meter signature	# beats per bar	Type of note = 1 beat	classification	1 full bar
6 8	2	dotted quarter note	compound duple	6 8 
6 4	2	dotted half note	compound duple	6 4 
9 8	3	dotted quarter note	compound triple	9 8 
9 16	3	dotted eighth note	compound triple	9 16 
12 4	4	dotted quarter note	compound quadruple	12 4 
12 16	4	dotted half note	compound quadruple	12 16 

Identifying Meter Signatures

While both simple and compound meters can use the same numbers for the bottom number in the meter signature, the top number can help you quickly identify if a meter is simple or compound. Most often, simple meters will use 2, 3, or 4 as the top numbers. Compound meters most often use 6, 9, or 12 as the top numbers. Looking at the way the rhythms are beamed in the bar can also help you identify which meter is being used, and will be explored further in the chapter on beaming.

Accent Scheme in Meter

As we know from our definition of meter, meter organizes the regularly recurring pulses in music into a recurring pattern of strong and weak beats. One measure or bar in music equals one complete cycle through the pattern of beats. Music that has 2 pulses is called duple meter. In duple meter, the downbeat, or first beat of the bar is the strongest, and the second beat is weaker. In a quadruple meter, there are 4 beats in the bar. The downbeat is the strongest beat, followed by a weak second beat, the third beat is strong (but not the strongest), and the fourth beat is weakest. Notice that all four beats have a different accent strength. In triple meter, there are 3 beats. The downbeat is the strongest, beat 2 is weak, and beat 3 is the weakest beat. Understanding accent scheme can help us to hear whether a piece is in duple, triple, or quadruple meter. Other factors combined with meter, like phrasing and harmony, can also help us distinguish between meters. Listen to the following examples to hear the meter.

simple quadruple or simple duple

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=73#oembed-1>

simple triple

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=73#oembed-2>

compound duple or compound quadruple

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=73#oembed-3>

simple quadruple or simple duple

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=73#oembed-4>

simple triple

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=73#oembed-5>

compound triple

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=73#oembed-6>

Bringing Theory to Life

To dive more into how meter plays an integral part in music, look at the music you are currently working on, or would like to learn more about, and think about the following questions:

- Can you hear the accent scheme for the meter signature?
- Why do you think the composer chose that specific meter? What kind of feelings does that meter signature invoke that might change if a different meter signature were used?
- Look at other pieces in the same meter. What elements highlighted by the meter are similar and different to your original piece? Do they have a similar feel?
- Is the piece written for a certain purpose that traditionally uses a specific type of meter (like a dance)?
- What would be different and how would the music sound and look different if they had chosen to use a different beat level or a different number of beats (like in 2 beats instead of 4 beats)?
- What would be different, and how would the music sound and look different if the composer had chosen to use a different subdivision (like compound meter instead of simple meter)?

1.2 Basics of Meter: Theory exercises

See Workbook Chapter 1.2

1.2 Basics of Meter: Sight Singing exercises

Practice each two-measure exercise:

Step 1) Conduct the pulse through both measures from beginning to end.

Step 2) Conduct and ta straight sixteenth notes from beginning to end (e.g. “1-ta-te-ta, 2-ta-te-ta” for 2/4 time or “1-ta-la-ta-li-ta, 2-ta-la-ta-li-ta” for 6/8).

Step 3) Conduct a full measure to set your tempo and ta the rhythm as notated while conducting.



1.2 Basics of Meter: Aural Training exercises

Listen to each two-measure exercise, either in simply-quadruple or simple-compound time

Step 1) Conduct the pulse through both measures from beginning to end.

Step 2) Conduct and ta straight sixteenth notes from beginning to end (e.g. “1-ta-te-ta, 2-ta-te-ta, 3...” for 4/4 time or “1-ta-la-ta-li-ta, 2-ta-la-ta-li-ta, 3...” for 12/8), listening to where the rhythm lies within each beat.

Step 3) Once you’ve memorized each rhythm, conduct a full measure to set your tempo and ta it back while conducting.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=113#audio-113-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=113#audio-113-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=113#audio-113-3>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=113#audio-113-4>

1.3 Basics of Beaming: Tutorial

Beaming

Rhythms in music are beamed according to the meter. Notes that are part of each beat are organized so that they are together. Beaming the notes that make up one beat serves as a visual guide in the music. Correct beaming makes it easy to see how many beats are in the bar, makes it easier to identify a meter, and makes it easier to read music quickly. Beaming music incorrectly makes rhythms hard to understand and read.

How to Beam Rhythms According to the Meter

Changing the beaming of rhythms doesn't change the duration of the rhythms, but changes how they are organized within each beat. Look at the incorrectly beamed example below.



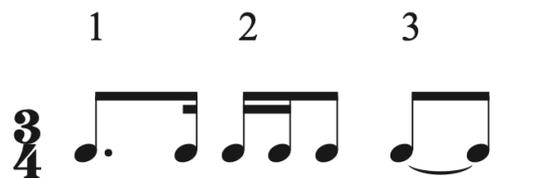
Start by labeling the number of beats in the bar so that the rhythms can be organized to fit into each beat.



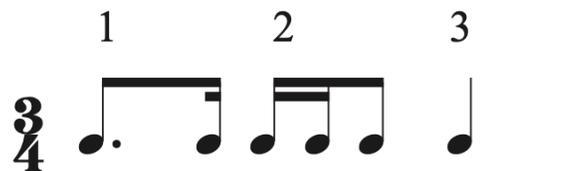
Beat 1 starts with a dotted eighth note, which is not long enough to fill beat 1, so we need identify what note is needed in order to complete the beat. A sixteenth note added to that dotted eighth note would complete the beat, so we separate the two sixteenth notes that follow the dotted eighth and beam the first sixteenth note to the dotted eighth note to complete beat 1. This leaves a sixteenth note left over that we can start with to build beat 2.



We now have a sixteenth note on beat 2, which is too small to fill beat 2. We need to look at the rhythms that come next and add on to beat 2 until we fill beat 2. The first sixteenth note plus the sixteenth note and eighth note that follow would complete the beat, so we beam them all together to form beat 2.

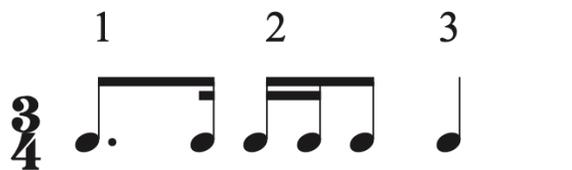


We are left with 2 eighth notes tied together as our last rhythm. Two eighth notes will be enough to fill beat 3, but instead of writing them as 2 separate eighth notes, we can write a quarter note to make that easier to read.



Let's compare the original example with the correctly beamed version. The correctly beamed version is clearly easier to read because all 3 beats are easy to identify quickly, and because beaming it correctly uses expected, standard rhythmic patterns.





Bringing Theory to Life

Take a look at the beaming used in the music you are currently playing, or want to learn more about. Does it reflect the meter in a way that is easy to read, or is something beamed ineffectively? Select a tricky passage from your music and re-beam it to make it not reflect the meter. Did that increase the level of difficulty of the music? Making something harder is a great practice technique when learning a tricky passage in music. Once you practice it in the harder version, going back to playing it as written will make the passage seem easy!

1.3 Basics of Beaming: Theory exercises

See Workbook Chapter 1.3

1.3 Basics of Beaming: Sight Singing exercises

Step 1) Correct the beaming in the following 4/4 and 6/8 measures.

Step 2) After fixing the beaming, ta these measures while conducting, following the three steps from Sight Singing exercise 1.2.3



1.3 Basics of Beaming: Aural Training exercises

Listen to each two-measure exercise (each is one measure repeated). Each can be notated in either 3/4 or 6/8 time

Step 1) Conduct the pulse through from beginning to end, first in 3/4, then in 6/8.

Step 2) Conduct and ta straight sixteenth notes from beginning to end (e.g. “1-ta-te-ta, 2-ta-te-ta” for 3/4 time or “1-ta-la-ta-li-ta, 2-ta-la-ta-li-ta” for 6/8), listening to where the rhythm lies within each beat of 3/4 or 6/8.

Step 3) Once you’ve memorized each rhythm, notate each with proper beaming in 3/4, then in 6/8.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=129#audio-129-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=129#audio-129-2>

The image shows two musical staves. The first staff is labeled 'Rhythm 1' and contains two time signatures: 3/4 and 6/8. The second staff is labeled 'Rhythm 2' and also contains two time signatures: 3/4 and 6/8. Each time signature is followed by a vertical bar line and a large number '8', likely representing a note value or a specific rhythmic pattern.

Chapter 2: Basics of Pitch

2.1 Pitch, Clefs, and Intervals: Tutorial

Pitch

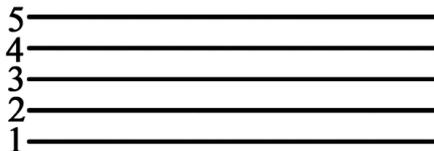
Pitch Definition and the Musical Alphabet

Pitch is the highness or lowness of a sound. Just like we have a language alphabet, we also have a musical alphabet. We use A-B-C-D-E-F-G to name pitches. We repeat these pitches up and down in a loop as we get higher or lower on a staff: A-B-C-D-E-F-G-A-B-C-D-E-F-G-A.

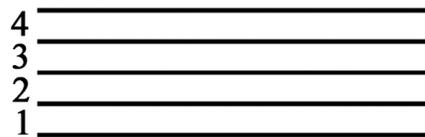
Staff

A staff is made up of 5 lines and 4 spaces. We count lines and spaces from the bottom up when naming the specific line or space a note is on.

Lines



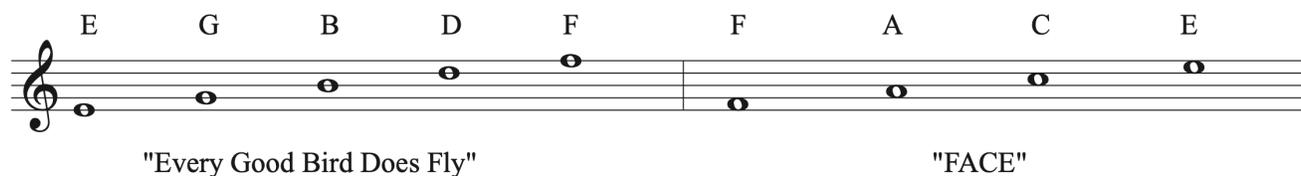
Spaces



Clefs

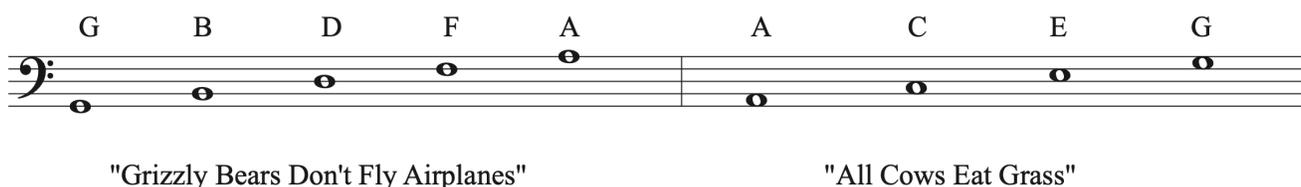
Clefs are symbols used at the beginning of a staff that specify what notes fall on each line and space. The four clefs commonly used are treble clef, bass clef, alto clef and tenor clef.

The **treble clef** is also called the G clef. The treble clef symbol evolved from writing the letter G in script on a staff. It is drawn so that it curves around the second line on the staff, symbolizing that the second line is the pitch G. From that reference pitch, we can count up and down each line and space on the staff using the musical alphabet in order to find the rest of the pitches used in treble clef. To help memorize the notes in treble clef, it's helpful to separate notes into those found on lines, and those found on spaces when using mnemonic devices to memorize pitches.



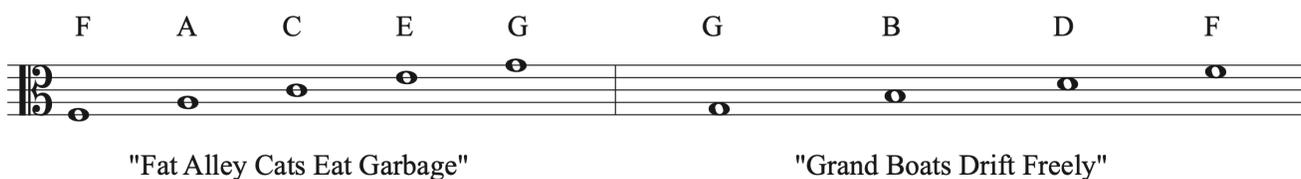
The treble clef is used for high-pitched instruments like the flute, oboe, clarinet, violin, and soprano and alto voices.

The **bass clef** evolved from writing the letter F in script on a staff. It is drawn so that the dots surround the fourth line on the staff, symbolizing that the fourth line is the pitch F. For this reason, the bass clef is also known as the F clef. As with the treble clef, we can use the reference pitch F to find all other pitches on the staff in bass clef.



The bass clef is used for lower-pitched instruments like the trombone, bassoon, cello, and tenor and bass voices.

The **alto clef**, also called the C clef, evolved from drawing a C on the staff around line 3. The symbol we use today looks like two backwards Cs that meet on the third line, symbolizing that the third line on the staff is the pitch C. You can memorize the lines and spaces on the alto clef staff, and can also think of reading the notes in treble clef and transposing each note down a step. The alto clef is primarily used for the viola.



Like the alto clef, the **tenor clef** is also a C clef, but the C is drawn on the staff on the fourth line. Today, we use the same symbol for alto clef and tenor clef, but the placement of the clef changes. While the alto clef is placed on the third line, the tenor clef on the fourth line. In tenor clef, the fourth line on the staff is the pitch C. You can memorize the lines and spaces on the

tenor clef staff, and can also read the notes as if they were in treble clef and transpose each note up a step. The tenor clef is used for bassoon, cello and trombone with the pitches are too high to easily read in bass clef.

D F A C E E G B D

"Dodges, Fords, and Chevys Everywhere" "Elvis's Guitar Broke Down"

This is what middle C looks like in each clef:

Ledger Lines

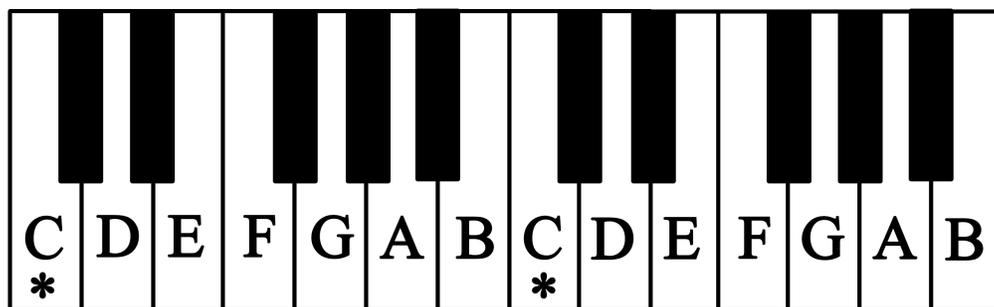
Ledger lines are small lines used to extend the length of the staff vertically so that notes higher and lower than the staff can be used. Using a ledger line allows you to continue to count lines and spaces in order to use the musical alphabet. Ledger lines can be used in any clef, but are only used when needed.

not needed not needed

G A B C D D C B A G not needed not needed

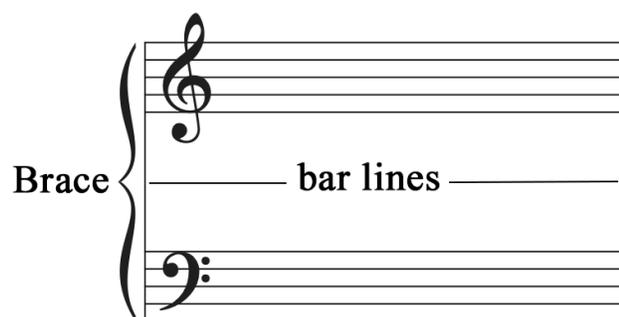
The Keyboard

A keyboard is made up of a repeating set of white and black keys. The white keys correspond to the notes of the musical alphabet. The black keys are separated into groups of two black keys and groups of three black keys. Notice that C is always the white key directly to the left of the group of 2 black keys.

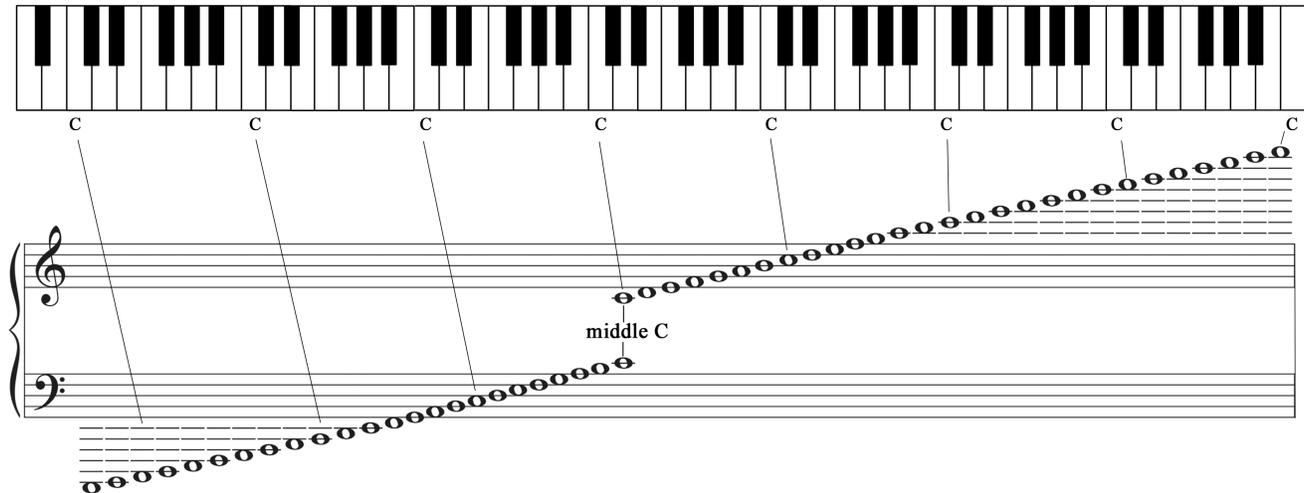


The Grand Staff and the Keyboard

A grand staff combines the treble and bass clefs. It is drawn with a treble clef staff on top and a bass clef staff below. The staves are joined by bar lines that goes through both staves as well as a brace.

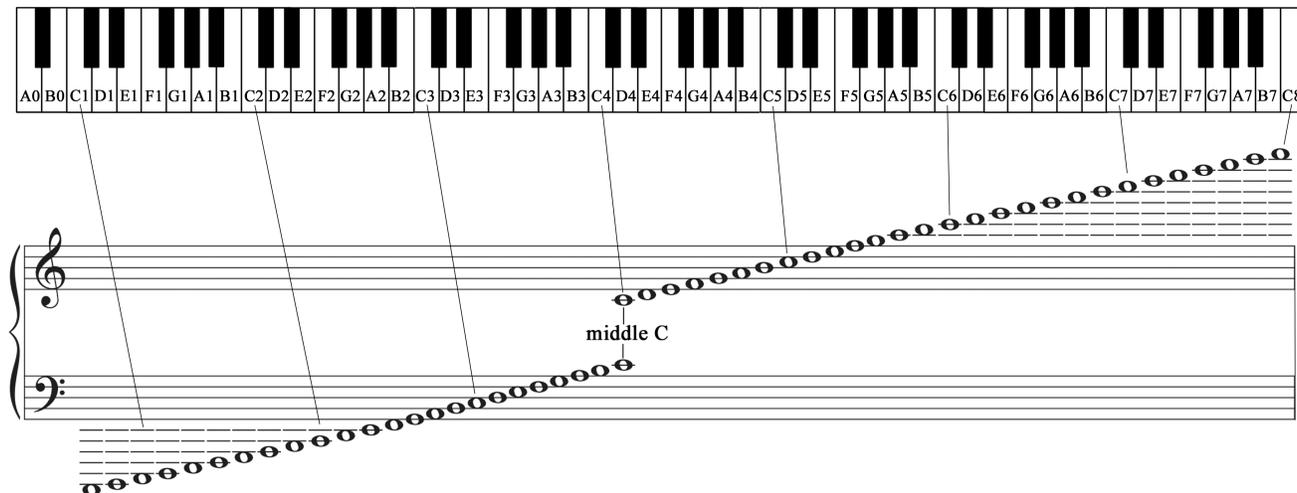


Music for piano typically uses the grand staff. All of the pitches on the keyboard have a corresponding note on the grand staff. Middle C joins the treble clef and bass clef staves using a ledger line.



Octaves and Octave Designation Numbers

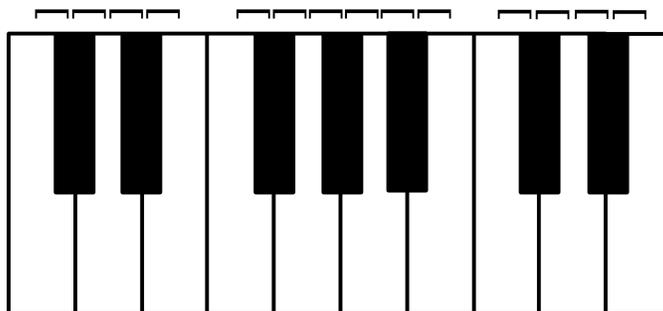
When counting up or down the musical alphabet, the point at which you repeat a pitch name it called an octave. The term octave comes from the Greek work okta, meaning 8. Octaves are notes that share the same letter name and are 8 letter names apart. We describe any note that is identified by its letter name but not by a specific position in a particular octave as part of a pitch class. For example, any E, regardless of where it occurs on a staff, is part of the pitch class E. When talking about music, we often need to refer to a specific note in a specific octave. We use octave designation numbers in order to name specific pitches on the keyboard and staff. There are eight Cs on a keyboard, each labeled with a number from 1 to 8. Each pitch within the same octave is labeled with the same number. The chart below shows the octave designations for each specific pitch on the keyboard and grand staff.



Half Steps

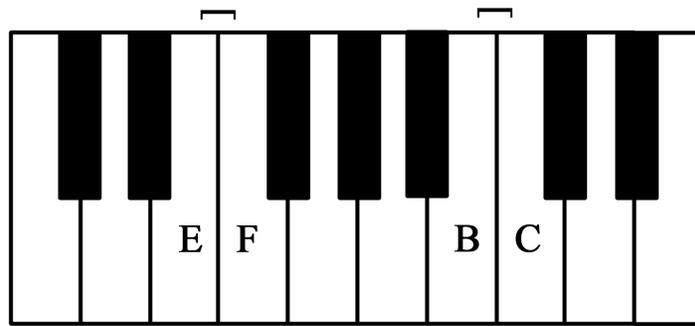
An interval in music measures the distance between two pitches. A half step, also called a semitone, is the distance between any pitch and the next closest pitch in either direction. On the keyboard, half steps most often occur between white keys and black keys.

half steps between white and black keys



There are two instances on the keyboard where there is no black key between two white keys. In this case, the space between the two white keys is a half step. That means B to C and E to F are half steps.

half steps between white keys

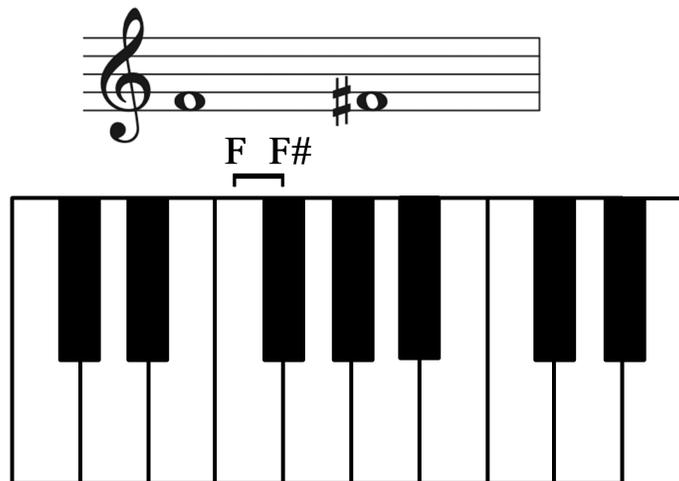


In order to name the black keys on the keyboard, we need to understand accidentals in music.

Accidentals

Accidentals in music are symbols that raise or lower a note in the musical alphabet while keeping the basic letter name of the note the same. Accidentals are written directly to the left of a note on the same line or space that the note is on.

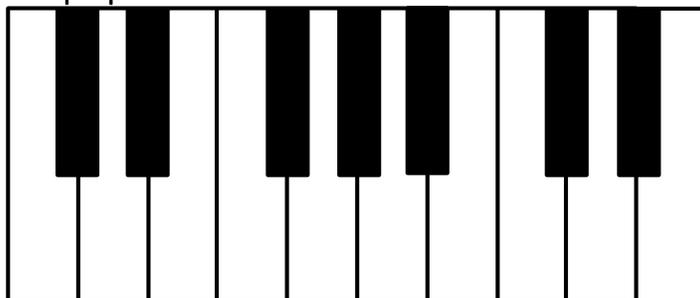
Sharps raise a note by a half step.



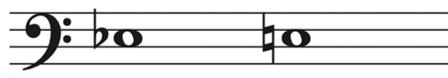
Flats lower a note by a half step.



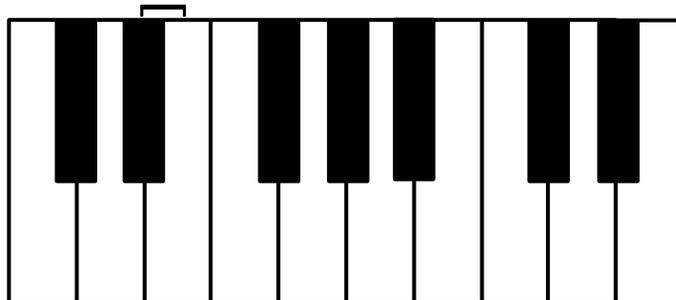
Db D



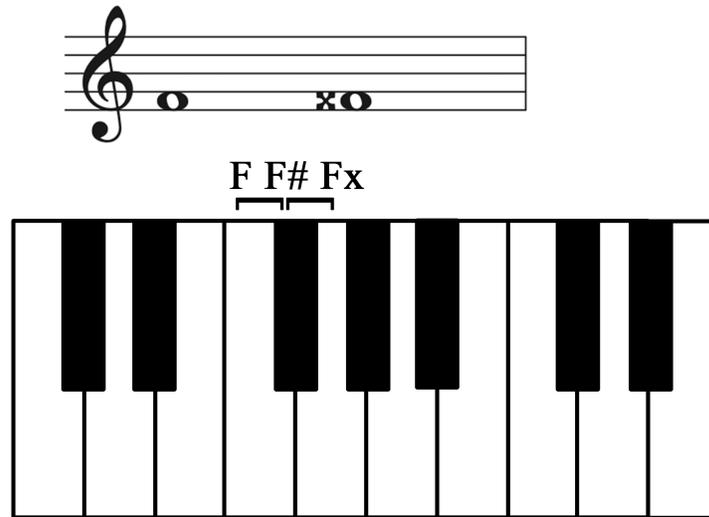
Natural signs cancel out a previous accidental.



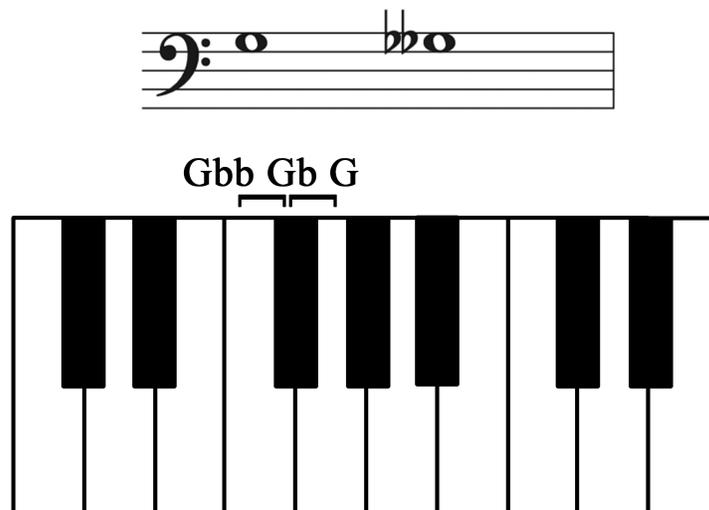
Eb E natural



Double sharps raise a note by two half steps.



Double flats lower a note by two half steps.

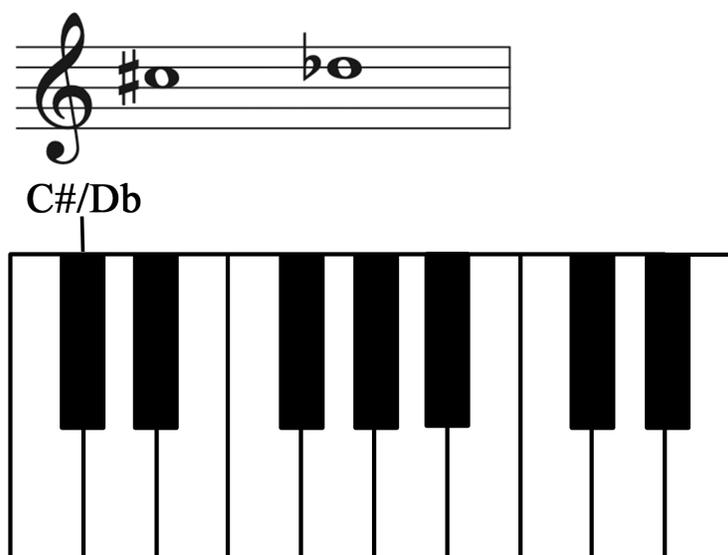


Once introduced into a measure, accidentals will carry through the whole measure unless cancelled with another accidental. However, accidentals do not carry through octaves, so need to be added to notes that are an octave higher or lower than a previous accidental.

Enharmonic pitches

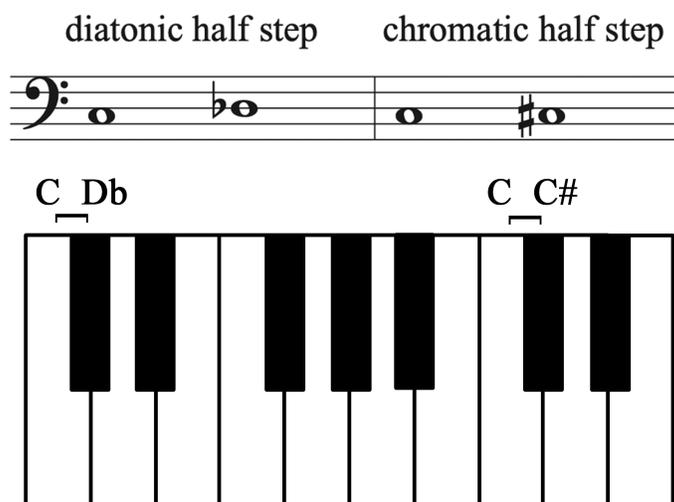
Enharmonic pitches are notes that sound the same, but are spelled differently. On the

keyboard, the black keys in between each white key can be named in two ways. For example, the black key between C and D could be called C# or Db. C# and Db are enharmonically equivalent. They sound the same, but are written differently on the staff.



Naming Half Steps and Whole Steps

When naming half steps in music, we can use a diatonic spelling or a chromatic spelling. Notes that are a half step apart and use different letter name are called diatonic half steps. Notes that are a half step apart and use the same letter name are called chromatic half steps.



Whole steps are equal to two half steps and are written using letter names that are one letter apart. Most often, a whole step is the distance from white key to white key on the piano or from

black key to black key on the piano. The exceptions occur when there is no black key between two white keys. In that case, you count the motion from white key to white key as one half step and then count another half step in order to find a whole step.

The image shows a musical staff with four measures of music. Above the staff, the intervals are labeled: 'whole step', 'not a whole step', 'whole step', and 'note a whole step'. The notes are: F# to G# (whole step), F# to Ab (not a whole step), B to C# (whole step), and B to Db (note a whole step). Below the staff is a piano keyboard diagram with four groups of keys. The first group shows F# and G# with a bracket above them. The second group shows B and C# with a bracket above them. The third group shows B and C# with a bracket above them. The fourth group shows B and C# with a bracket above them.

In the example above, F# to G# is a whole step, but F# to Ab is not a whole step, even though the notes are enharmonically equivalent. That is because we spell whole steps with letter names that are a step apart. F to G is a step, but F to A is a 3rd. The same is true for the second example. B to C# is a whole step with letter names a second apart. B to Db is a third, not a whole step.

Bringing Theory to Life

How fluent are you in each clef and at finding pitches on the keyboard? Think about the benefits of becoming fluent. What kinds of things would you be able to do that are currently out of your reach? How would you be able to interact better with other musicians who play different instruments? How would being able to easily read a score change your experience and access to new repertoire? How would fluency in all things relating to pitch help you collaborate better? You can become more fluid at clef reading and can improve keyboard skills by using apps like *Staff Wars*, which allow you to have fun while also honing your skills and improving your speed.

2.1 Pitch, Clefs, and Intervals: Theory exercises

See Workbook Chapter 2.1

2.1 Pitch, Clefs, and Intervals: Sight Singing exercises

Step 1) Choose a starting pitch and sing a half-step up and back down, then sing a whole-step up and back down. Be sure to check your notes on a piano each time after you sing them.

Step 2) For each of the given three-note step up/down melodic patterns, use a piano or other instrument to provide a starting pitch, then sing each three-note pattern, keeping in mind whether the interval is a whole step or half step, depending on the clef and key signature.

The image displays two staves of musical notation for sight singing exercises. The top staff is in treble clef with a key signature of one flat (B-flat) and a 3/4 time signature. It contains three measures of music, each with a different key signature: the first measure is in B-flat major, the second in B-flat minor, and the third in B major. The bottom staff is in bass clef with a key signature of two sharps (D major) and a 3/4 time signature. It also contains three measures of music with different key signatures: the first measure is in D major, the second in D minor, and the third in D-flat major. Each measure consists of a sequence of eighth notes, typically forming a three-note melodic pattern.

2.1 Pitch, Clefs, and Intervals: Aural Training exercises

Step 1) Listen to the string of ten half-step and whole-step and up or down three-note patterns, each is played twice. Sing along with each the second time it is played (pause the recording before proceeding to the next one).

Step 2) For all ten three-note patterns, mark whether it consists of an ascending or descending whole- or half-step.

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=138#audio-138-1>

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Chapter 3: Scales and Modes

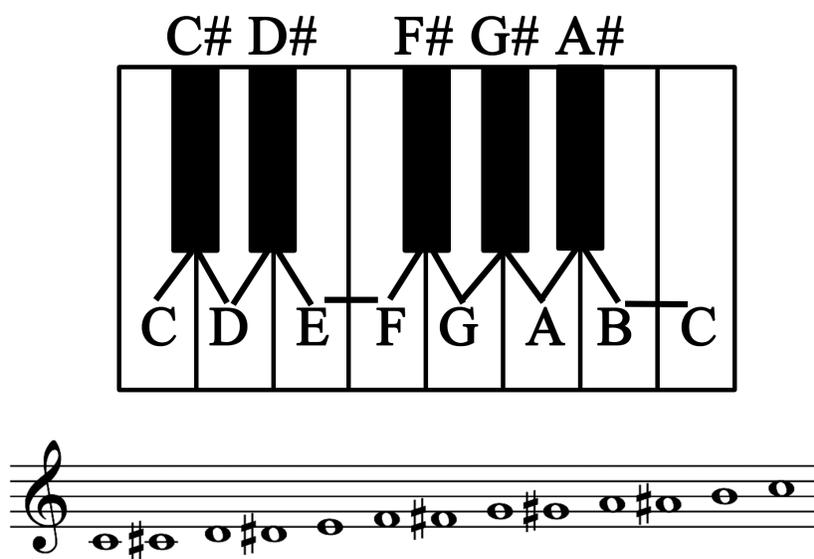
3.1 Intro to Scales and the Chromatic Scale: Tutorial

Scales

Scales are an arrangement, in ascending or descending order, of the pitch material upon which a composition is based. Scales are the basic building blocks of music. Each type of scale has a specific patterns of steps. We will be exploring the chromatic scale, major and minor scales, and modal scales in this unit.

Chromatic Scales

The chromatic scale is made up of half steps. It contains all twelve pitches of the octave. The name chromatic comes from the Greek word “chroma”, meaning scale of many colors. Before equal tuning, enharmonic notes did not exist. As a result, each note had a different pitch and timbre, so when played all in a row in a chromatic scale you could hear the different colors of each pitch. See the example of a chromatic note starting on C4 below.



Chromatic Scales in Music

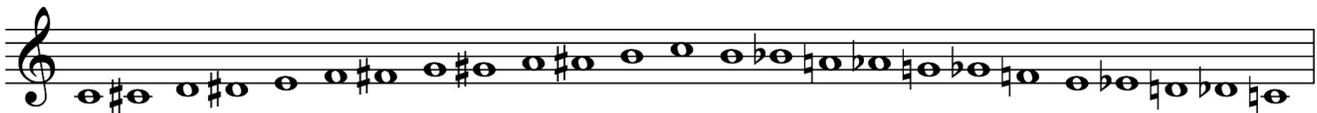
Chromatic scales are used in a variety of ways in music. They add elements of interest, color, and emotion to a melody and harmony as non-chord tones without changing the key. They create and heighten tension and motion as they drive toward the final note of the scale and are often used to drive towards a cadence. They can help transition to a new tonality, key, or section in music by introducing notes outside of the key. They can be used to create a specific character in the music. They can also be used to display virtuosity as a performer, especially during a cadenza.

- [Chopin's Op.25 No.6 \(Thirds\) Etude](#)
 - Adds elements of interests, color and emotion to both melody and accompaniment
 - Used to drive toward final note of the scale
- [Mozart, Fantasia in D minor \(at 3:20\)](#)
 - Display of virtuosity during cadenza
 - Used to transition to a new section
- [Flight of the Bumblebee \(arr. Rachmaninoff\)](#)
 - Creates a specific character: a busy bee
 - Displays virtuosity

Chromatic scale notation

A chromatic scale is written using half steps. Traditionally, sharps are used as accidentals on the way up, and flats are used on the way down. However, chromatic scales that start on a flat note, like B \flat , use flats both ascending and descending. Make sure to apply natural signs in order to cancel out any accidentals that came before as needed. Also remember the half step that naturally occurs between E and F and between B and C.

Chromatic scale on C:



Chromatic scale on B \flat :

3.1 Intro to Scales and the Chromatic Scale: Theory exercises

See Workbook Chapter 3.1

3.2 Major Scales: Tutorial

Major Scales and Keys

Scale definition

Scales are an arrangement, in ascending or descending order, of the pitch material upon which a composition is based. Scales are the basic building blocks of music. Each type of scale has a specific patterns of steps.

Scales in Music

Why do we have so many major and minor keys? What makes a composer choose one scale or key over the other?

The choice of key or scale can be a practical decision. Composers often consider range of the instrument or range of the singer and choose a key that lets an instrument and singer perform comfortably and easily. Instruments have different qualities of sound in different registers that can be highlighted by choosing a specific key or scale. Composers often choose a key that lets choruses resonate or soloists sparkle. Instrumental design in different time periods is also a factor. Early instruments didn't have keys or valves and could only play comfortably in a limited number of keys.

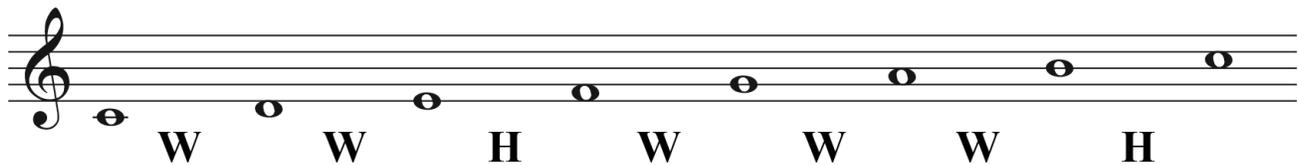
Sometimes the key or scale used is chosen to fit in with a system that is already in place. For example, J.S. Bach's *Well Tempered Clavier* has 48 preludes and fugues with a major and minor set for each key. Other composers like Chopin and Shostakovich followed the same kind of structure. Many etude books for instruments are designed to cover all keys in a systematic progression.

Another reason composers might choose one key over another are the emotions and affects associated with different keys. Before equal tuning was adopted in the 20th C, certain keys were associated with specific emotions and qualities. Keys sounded different because of the timbre and pitch of certain half steps. Composers knew this and so did audiences. They expected certain emotions from each key. Use this link to learn more about key associations:

<https://wmich.edu/mus-theo/courses/keys.html>. While we don't experience changes of timbre and tuning the same way today due to equal tuning, composers still choose keys for their relative bright or dark qualities.

Major Scales

The major scale consists of this pattern of whole and half steps: W W H W W W H.



You can draw any major scale by following that step pattern from any starting pitch. However, it is much faster to draw a scale from a key signature. Knowing that C major has no sharps or flats in the key signature allows you to quickly draw the notes of the scale without having to take the time to determine the whole and half step pattern between notes. In order to use key signatures to identify and write scales and keys, it's important to know the order of sharps and flats on the staff in each clef as well as the Circle of 5ths relationship between keys.

Order of Sharps and Flats on the Staff

Sharps or flats are placed at the beginning of each staff to show what notes are consistently raised or lowered in the key. The order of sharps and flats and their placement on the staff in each clef are precise. The order of sharps, F C G D A E B, is the same as the order of flats in reverse: B E A D G C F.

Order of Sharps

“Fat Cats Go Down Alleys (to) Eat Birds”



Order of Flats

“Before Eating a Donut Get Coffee First”

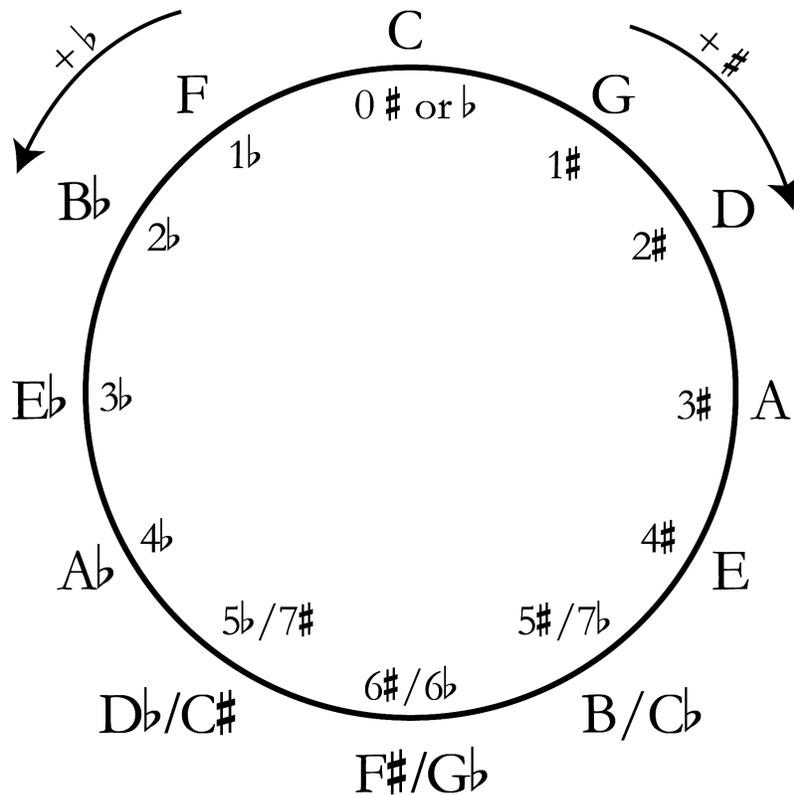
The order of sharps and flats on the staff is the same in all clefs, but the placements of sharps and flats on the staff is specific to each clef. Memorize their placement on the staves.

Treble Clef		
Bass Clef		
Alto Clef		
Tenor Clef		

The Circle of 5ths

The Circle of 5ths is a diagram that shows key signatures in order of their sharps and flat as well as their relationships to each other. There are 15 major keys. The circle begins with C major at the top center because C major has no sharps or flats in its key signature. If we read clockwise around the circle, each new key adds an accidental and is a fifth away from the

previous key. If we read counterclockwise around the circle, each new key adds an accidental that is a fourth away from the previous key. Notice that there are three instances of enharmonic keys that overlap on the circle: B major and C \flat major, F \sharp major and G \flat major, and C \sharp major and D \flat major.



Credit: [OPEN MUSIC THEORY](#) by Chelsey Hamm and Bryn Hughes is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](#)

Key Signature Tips and Tricks

Common mistakes made when naming keys include leaving off “flat” or “sharp” after keys that need the accidental as part of their name, and naming keys enharmonically. If a key is not found on the chart, we do not use it in music. For example, there is no A \sharp major.

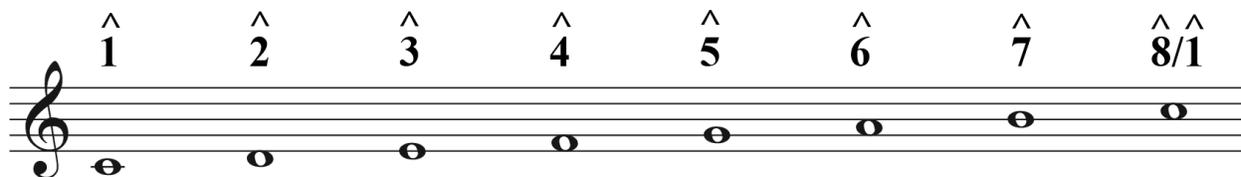
When naming sharp keys, the last sharp in the key signature is a half step below the name of the key. For example, in G major, a half step below G is F \sharp , so F \sharp is the last sharp in the key. That tells you that G major only has 1 sharp because F \sharp is the first sharp in any key. You can also use this trick when identifying a given key signature on a staff by looking at the last sharp listed and going up a half step to name the key.

When naming flat keys, the second to last flat is the name of the key. For example, to find the key signature for Db major, list the order of flats until you have 1 more flat than the name of the key: B E A D G. This tells you Db major has 5 flats. You can also use this trick when identifying a given key signature on a staff by looking at the second to last flat to name the key (remember that F Major only has 1 flat, so this trick does not work for F major).

It is also helpful to memorize that they keys that begin with “C” have either zero or all 7 flats or sharps: C major has zero, C# major has 7 sharps, and Cb major has 7 flats.

Scale Degree Names

Major scales are not just a collection of notes using the same pattern that start on a certain note. Each scale degree in a key has a degree of tension that needs to be resolved. A chord built on a specific scale degree have a functional relationship with those chords around it within the key. The major scale below has been written with scale degrees over each note. In any key, scale degrees show us the order of notes in the key. Scale degrees use carets above the numbers to distinguish them from other symbols. Note that you can use either scale degree 8 or scale degree 1 for the repeated octave note at the top of the scale.



Each scale degree in a key has a name that indicates its function in the key.

Scale Degree	Name	Name comes from
1	tonic	“home base,” most stable pitch, beginning and end point
2	supertonic	Pitch right above tonic (super means above)
3	mediant	Pitch halfway between tonic and dominant (mediant means middle)
4	subdominant	Pitch right below the dominant (sub means below)
5	dominant	Dominant to tonic motion is one of the most important types of motion in tonal music. We can see one instance of that in the Circle of 5th motion through keys in music.
6	submediant	Sub in this case means opposite the mediant. The mediant is a 3rd above tonic and the submediant is a 3rd below the tonic.
7	leading tone	The leading tone is a tendency tone with a strong drive to lead and resolve to 1.

Bringing Theory to Life

When looking at your music this week, think about the following questions: Can you identify scales or scale fragments in your music? How are they used? Do they help to outline the key? Do they help transition away to a new key? What key is your music in? Does it stay in one key for the whole piece? Why do you think the composer chose that key (Practicality, Character/Emotional association)? How often are tonic and dominant used in the music? Can you hear how the leading tone in a key has a strong tendency to resolve to tonic when it's in the melody and in the harmony?

3.2 Major Scales: Theory exercises

See Workbook Chapter 3.2

3.2 Major Scales: Sight Singing exercises

Practice each of the following major key, one-measure exercises

Step 1) Identify whether the first note is scale degree 1, 3 or 5, depending on the given key signature.

Step 2) Provide yourself a tonic pitch, sing up and down the scale (i.e. 1-2-3-4-5-6-7-1-7-6-5-4-3-2-1), then find your starting pitch if it is not scale degree 1.

Step 3) Sing the exercise on numbers.

Step 4) Repeat the exercise several times from different starting tonic pitches.



3.2 Major Scales: Aural Training exercises

Listen to each of the following major key exercises

Step 1) Identify the tonic and whether the first note is scale degree 1, 3 or 5.

Step 2) Provide yourself a tonic pitch, sing straight up and down the scale (i.e. 1-2-3-4-5-6-7-1-7-6-5-4-3-2-1), then find the starting pitch of the exercise if it is not scale degree 1.

Step 3) Sing the each exercise back on numbers.

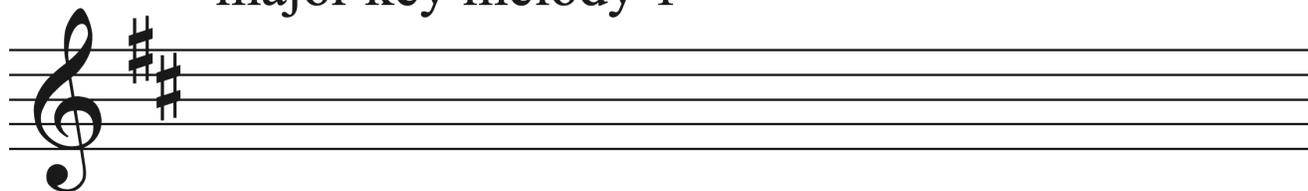
Step 4) Notate each exercise below using straight eighth notes (no time signature), using D as the tonic pitch.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=156#audio-156-1>

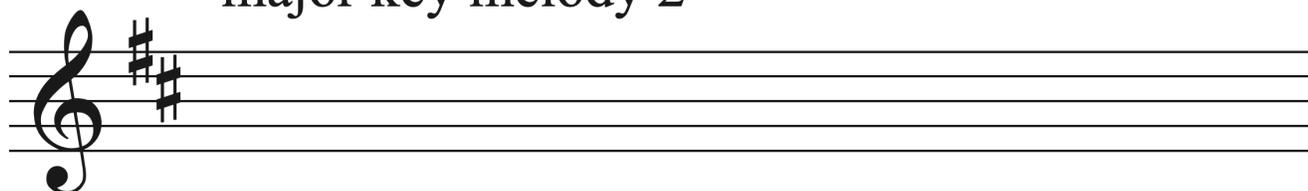
One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=156#audio-156-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=156#audio-156-3>

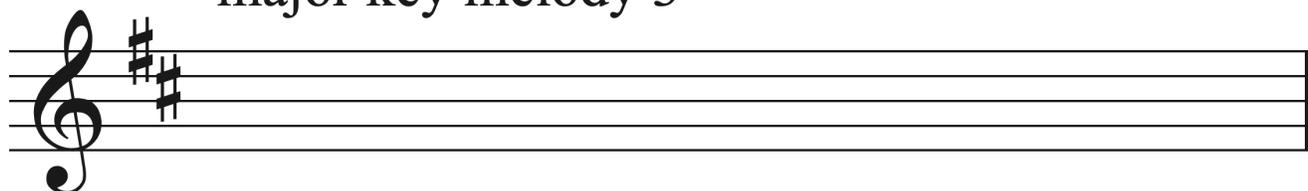
major key melody 1



major key melody 2



major key melody 3



3.3 Minor Scales: Tutorial

Minor Scales and Key

Relationships between Major and Minor keys

Just like we have 15 major keys in music, we also have 15 minor keys in music. Minor keys are related to major keys in one of two ways. They can have either a parallel relationship or a relative relationship.

Keys that are **parallel** share the same tonic, but have different key signatures. C major and C minor are parallel keys. C major has no sharps or flats while C minor has 3 flats.

To find the key signatures for parallel keys when going from major to minor, take away 3 accidentals from the key signature if using sharps, or add 3 accidentals to the key signature if using flats. If starting in C major, with no sharps or flats, if you decrease the key signature by 3 accidentals you are adding 3 flats to find the key signature to get C minor. If you were in A major, with 3 sharps, you'd take away all 3 sharps and find that A minor has zero sharps or flats.

To find the key signature for parallel keys when going from minor to major, add 3 accidentals if using sharps, and take away 3 accidentals if using flats. For example, to find the parallel major key of E minor, which has 1 sharp, you'd add 3 more sharp for a total of 4 sharps in the key of E major. To find the parallel key of Ab minor, which has 7 flats, you'd take 3 away for a total of 4 flats in the key of Ab major.

Keep in mind that not all major keys have parallel minor keys. For example, while we have Db major, we do not have Db minor as a key. Here's a list of keys that do not have a parallel relationship.

- Db major but no Db minor
- no D# major but D# minor
- Gb major but no Gb minor
- no G# major but G# minor
- no A# major but A# minor
- Cb major but no Cb minor

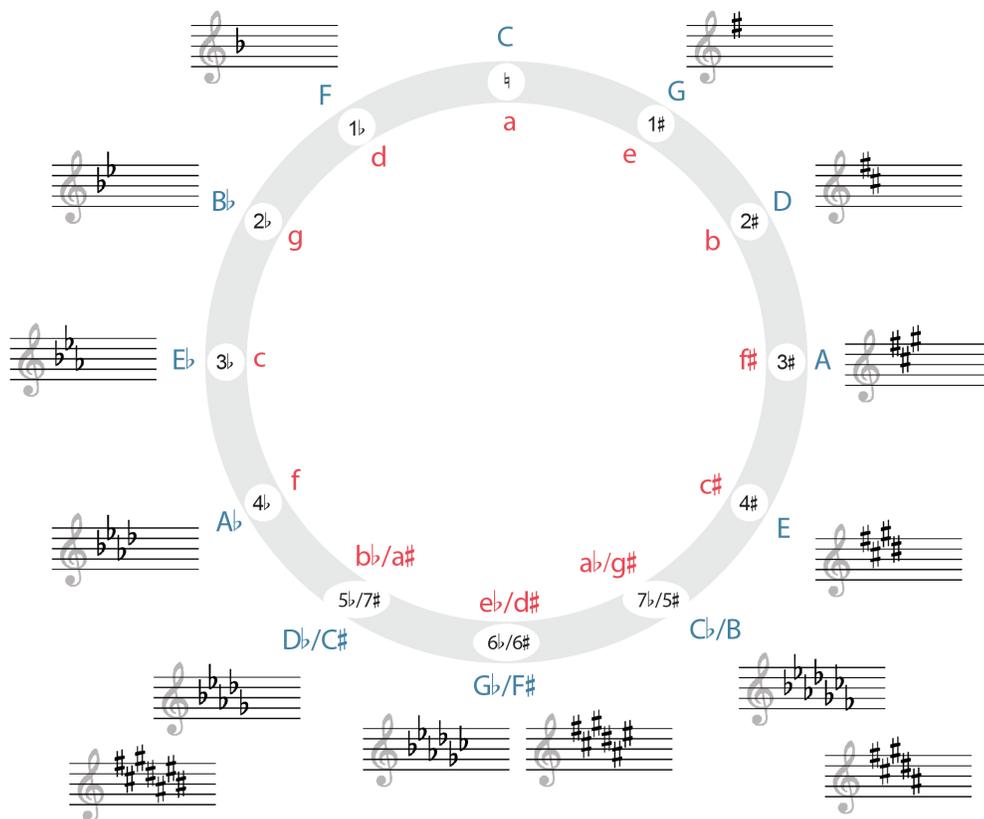
Keys that are **relative** share the same key signature but have different tonics. C major and A minor are relative keys. Both share the same key signature, but start on different notes. All major keys have a relative minor key.

To find a relative minor key when starting with a major key, count down 3 half steps from tonic to find the name of the key. For example, if in D major, 3 half steps below D would be B, which means D major and B minor are relative keys that share a key signature.

To find a relative major key when starting with a minor key, count up 3 half steps from tonic to find the name of the key. For example, if in G minor, 3 half steps up would be Bb, which means G minor and Bb major are relative keys with the same key signature.

The Circle of 5ths

The minor keys in music can be added to the circle of 5ths along with the major keys to give a visual picture of all major and minor key signatures and their relationships. Because the Circle of 5ths is organized by key signatures, major and relative minor keys are grouped together around the circle. Remember, to find a relative minor key from a major key, you count down 3 half steps from tonic. The circle starts with C major and A minor in the top center because they have no sharps or flats. It then moves clockwise around the circle in 5ths, adding a sharp with each new key. It also moves counterclockwise by 4ths, adding a new flat with each new key. There are 3 enharmonic keys for minor, just like there are for major.



Credit: [OPEN MUSIC THEORY](#) by Chelsey Hamm and Bryn Hughes is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](#)

Minor Scales

In a major key, a major scale is built from its key signature. In minor keys, there are three versions of the minor scale that can be used: the natural minor scale, the harmonic minor scale, and the melodic minor scale. While 3 forms of the minor scale exist in each key, it's important to remember that they are all used in the same minor key and will share the same key signature.

Natural minor

The natural minor scale is built from the notes in the key signature without any alterations and uses the same notes when ascending and descending. It uses a step pattern of W H W W H W W. You can also think of a natural minor scale like a major scale with lowered scale degrees 3, 6, and 7. However, it's much faster to memorize minor key signatures when building scales instead of counting steps between notes. In the example below, the key of C minor has 3 flats, so a natural minor scale starting on C will have Bb, Eb, and Ab.

Major

Natural minor

Harmonic minor

The Harmonic minor scale is like natural minor with a raised 7th scale degree both ascending and descending. We raise scale degree 7 in order to create a leading tone. A leading tone is needed in both a major and minor key in order to lead to tonic. In order to create the needed harmony, the harmonic minor scale is used. We'll discuss raising the leading tone to create necessary harmonies in more detail when building chords in music.

natural minor

harmonic minor

Melodic minor

The melodic minor scale evolved from the need to raise the leading tone but to make the scale easy to sing. If you listen to the harmonic minor scale, you'll hear a big interval (3 half steps) between scale degrees 6 and 7. That awkward, dissonant interval is hard to sing when used in a melody, so the melodic minor scale was created to smooth out that leap and make it pleasing to the ear and easy to sing.

The melodic minor scale is like a natural minor scale with raised scale degree 6 and 7 when ascending. It reverts back to natural minor without any accidentals outside of the key signature when descending. It is the only scale that changes the notes when descending. Why does it change? Typically in music, notes that are raised ascend to resolve, while notes that are lowered descend to resolve. The natural minor scale doesn't contain any awkward intervals to sing, so the scale can revert to natural minor when descending.



melodic minor scale ascending

natural minor scale descending

Scale Degree Names in Minor

The scale degree names in a minor scale are the same as those in major with one addition. If the leading tone is not raised, it is not functioning as a leading tone, and therefore we call it the subtonic because it is below tonic.

Scale Degree	Name	Name comes from
1	tonic	“home base,” most stable pitch, beginning and end point
2	supertonic	Pitch right above tonic (super means above)
3	mediant	Pitch halfway between tonic and dominant
4	subdominant	Pitch right below the dominant (sub means below)
5	dominant	Dominant to tonic motion is important in tonal music. We can see one instance of that in the Circle of 5th motion through keys in music.
6	submediant	Sub in this case means opposite the mediant. The mediant is a 3rd above tonic and the submediant is a 3rd below the tonic.
7	leading tone	The leading tone is a tendency tone with a strong drive to lead to and resolve to scale degree 1.
b7	subtonic	When scale degree 7 has not been raised in a minor key, it is called the subtonic because it is below tonic.

Bringing Theory to Life

The questions raised when looking at major keys and scales also apply to minor keys: Can you identify other scales or scale fragments in your music? How are they used? Do they help to outline the key? Do they help transition away? What key is your music in? Does it stay in one key for the whole piece? Why do you think the composer chose that key (Practicality, Character/Emotional association)? How often are tonic and dominant used in the music? Can you hear how the leading tone in a key has a strong tendency to resolve to tonic when it's in the melody and the harmony?

In addition, think about why a composer might choose a minor key instead of a major key when writing a piece. If you are currently playing or studying a piece in a minor key, which form or forms of the minor scale are used? Do you hear a raised leading tone? How are scale degree 6 and 7 used in the melody versus in the harmony? Try altering which form of the minor scales are used to see how and why composers chose one over the other. If you are playing a piece in a major key, try transposing it to minor to see how that changes the feel of the piece.

3.3 Minor Scales: Theory exercises

See Workbook Chapter 3.3

3.3 Minor Scales: Sight Singing exercises

Practice each of the following minor key, one-measure exercises

Step 1) Identify whether the first note is scale degree 1, 3 or 5, depending on the given key signature.

Step 2) Provide yourself a tonic pitch, sing up and down the scale (i.e. 1-2-3-4-5-6-7-1-7-6-5-4-3-2-1), then find your starting pitch if it is not scale degree 1.

Step 3) Sing the exercise on numbers. Be careful to distinguish between the natural minor scale degrees 6 and 7 verses the raised leading-tone 7 where indicated.

Step 4) Repeat the exercise several times from different starting tonic pitches.

The image displays two musical staves, one in treble clef and one in bass clef, both in 2/4 time. The top staff is in G minor (one flat) and the bottom staff is in D minor (two flats). Each staff contains four measures of eighth-note patterns. The top staff starts with a G# (scale degree 3) and the bottom staff starts with a D# (scale degree 3). The patterns consist of eighth notes and beamed eighth notes, creating a rhythmic exercise for sight singing.

3.3 Minor Scales: Aural Training exercises

Listen to each of the following minor key exercises

Step 1) Identify the tonic and whether the first note is scale degree 1, 3 or 5.

Step 2) Provide yourself a tonic pitch, sing straight up and down the scale (i.e. 1-2-3-4-5-6-7-1-7-6-5-4-3-2-1), then find the starting pitch of the exercise if it is not scale degree 1.

Step 3) Sing the each exercise back on numbers.

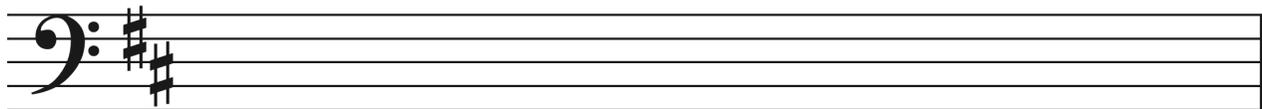
Step 4) Notate each exercise below using straight eighth notes (no time signature), using B as the tonic pitch (be sure to raise scale-degrees 6 and/or 7 as needed!).

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=165#audio-165-1>

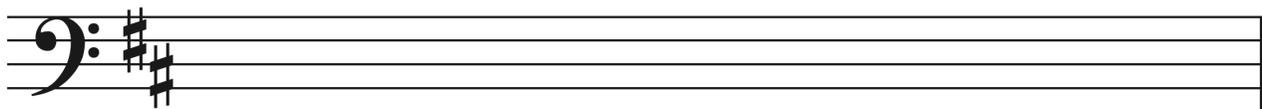
One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=165#audio-165-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=165#audio-165-3>

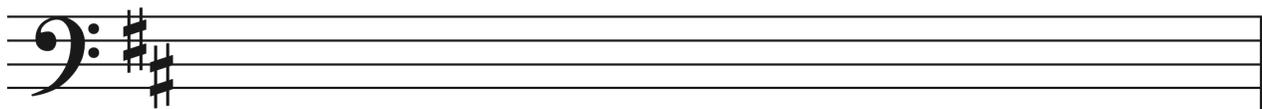
minor key melody 1



minor key melody 2



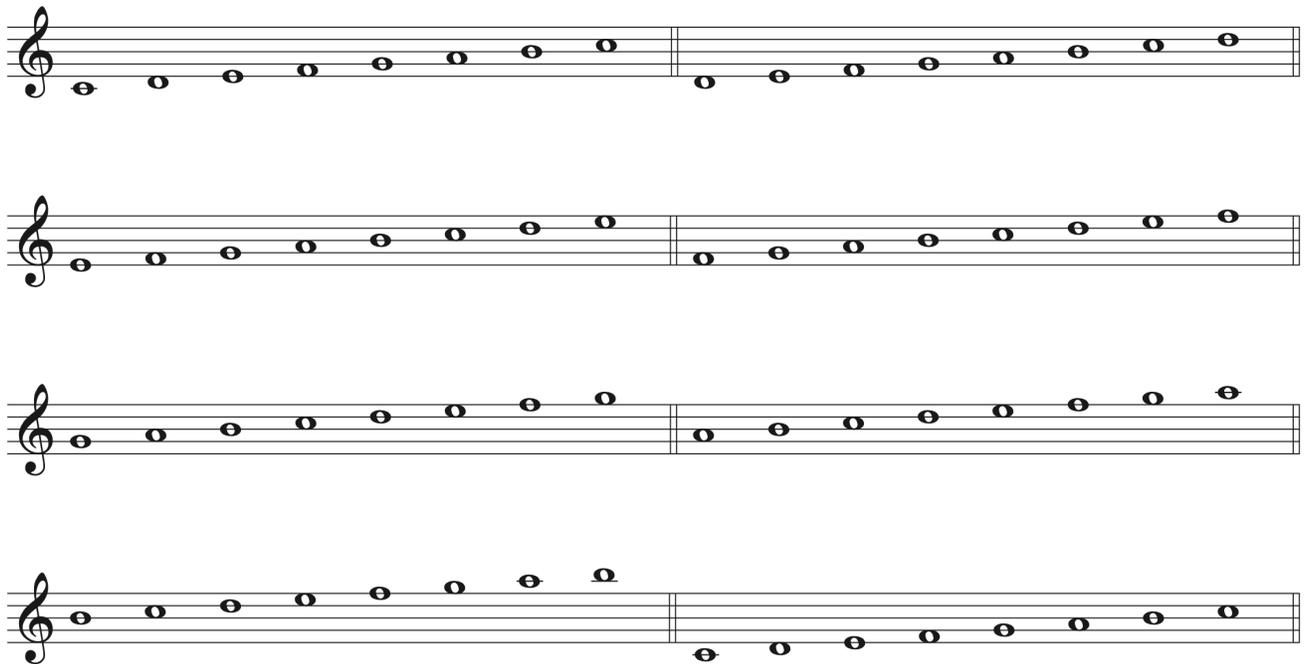
minor key melody 3



3.4 Modal Scales: Tutorial

Modal Scales

Early music contained no accidentals. It only included the white keys on the piano: C D E F G A B. How did composers write music that didn't all sound the same? Instead of keeping the same pattern of whole and half steps and transposing the scale so that it started on different tonics, like we do in order to change keys, composers kept the same notes, but changed which note started the scale. This resulted in scales that only used those same 7 pitches but changed the order of whole and half steps in each scale. These scales were called modal scales and were given Greek names. In the picture below, you can see the 7 modal scales.



We group modes into 2 categories: the major modes and the minor modes. The major modes are most closely related to the major scale, but contain alterations. The major modes include Ionian (which is the same as a major scale); Lydian, which is like a major scale with a raised scale degree 4; and Mixolydian, which is like a major scale with a lowered scale degree 7. The minor modes are most closely related to the natural minor scale, but contain alterations and include: Phrygian, which is like natural minor with lowered scale degree 2; Dorian, which is

like natural minor with raised scale degree 6; Aeolian, which is the same as a natural minor scale; and Locrean, which is like a natural minor scale with lowered scale degrees 2 and 5.

The image displays seven modes on a treble clef staff, each with its name and characteristics above it. The notes are connected by lines, and half-step intervals are marked with brackets and the text "half step".

- Ionian: Major Scale**: Shows a major scale with half steps between degrees 3-4 and 7-8.
- Dorian: minor with #6**: Shows a minor scale with a raised 6th degree and half steps between degrees 2-3 and 7-8.
- Phrygian: minor with b2**: Shows a minor scale with a lowered 2nd degree and half steps between degrees 2-3 and 7-8.
- Lydian: Major with #4**: Shows a major scale with a raised 4th degree and half steps between degrees 3-4 and 7-8.
- Mixolydian: Major with b7**: Shows a major scale with a lowered 7th degree and half steps between degrees 2-3 and 7-8.
- Aeolian: natural minor scale**: Shows a natural minor scale with half steps between degrees 2-3 and 7-8.
- Locrean: minor with b2 and b5**: Shows a minor scale with lowered 2nd and 5th degrees and half steps between degrees 2-3 and 7-8.

Modal Scale Function and Use in Music

Due to the variable placement of half steps in the scale, modal scales do not function like major and minor keys. They do not have the same functional relationship between scale degrees. As a result, modal scales sound different than major and minor scales.

Over time, accidentals were introduced and modal scales could be transposed to start on any pitch. Composers choose to write music using modal scales due to the unique nature of the sound of each mode. Let's look at the modes in order of brightest to darkest.

Lydian is the brightest of the modes because it is based on a Major scale with a raised scale degree 4. It hardly has any dissonance because it sounds like Major with a missing half step between scale degrees 3 and 4. It is used in dreamy compositions without a strong sense of motion because of its bright sound and lack of direction due to the missing expected half step in a Major scale.

Lydian Scale:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#audio-167-1>

Oceans by Pearl Jam features the Lydian mode.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#oembed-1>

Ionian is the next brightest mode and is the same as a Major scale. It has the expected “happy” Major sound.

Ionian scale:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#audio-167-2>

Free Fallin’ by Tom Petty is an example of Ionian.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#oembed-2>

Mixolydian is slightly darker and more unstable than major and lacks the directional push from leading tone to tonic.

Mixolydian scale:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#audio-167-3>

Norwegian Wood by the Beatles features the Mixolydian mode.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#oembed-3>

Dorian is the brightest of the minor modes due to its raised scale degree 6. It is often used in folk music and creates harmonies that do not sound as sad as minor.

Dorian scale:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#audio-167-4>

Scarborough Fair by Simon & Garfunkel is built around the Dorian mode.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#oembed-4>

Aeolian is the same as the natural minor scale and has the expected “sad” minor sound.

Aeolian scale:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#audio-167-5>

Losing My Religion by R.E.M. is an example of Aeolian.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#oembed-5>

Phrygian is a darker version of the natural minor scale. It creates an edgier version of minor and is often used in compositions that need a darker character.

Phrygian scale:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#audio-167-6>

Pyramid Song by Radiohead is built around the characteristic flat scale degree 2 sound of the Phrygian mode.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#oembed-6>

Locrean is the darkest of the modes and sounds unstable. Music written in this mode always sound like it needs to resolve to a different tonic note due to its half step placements. It also includes a dissonant interval between scale degree 1 and 5 and a diminished chord built on its

tonic. Due to its instability and tendency to sound unresolved, it is used more for special effect in a piece rather than for the basis on a full composition.

Locrean scale:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#audio-167-7>

The intro of Rush's YYZ uses the Locrean scale.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=167#oembed-7>

Bringing Theory to Life

Listen to examples of modal pieces and think about how they sound different from pieces written in Major or minor keys. Were there pieces listed above that you didn't realize were written in modes instead of keys? If you were to write a song in each mode, what lyrics might you use to highlight the specific quality of each mode?

3.4 Modal Scales: Theory exercises

See Workbook Chapter 3.4

3.4 Modal Scales: Sight Singing exercises

Step 1) Identify the mode of each of the following short melodic exercises. Each begins on scale degree 1 of the mode.

Step 2) Provide yourself a tonic pitch, sing up and down the relevant modal scale (i.e. 1-2-3-4-5-6-7-1-7-6-5-4-3-2-1).

Step 3) Sing the exercise on numbers.

Step 4) Repeat the exercise several times from different starting tonic pitches.



3.4 Modal Scales: Aural Training exercises

Listen to each of the following modal scale exercises, each begins on scale degree 1

Step 1) Identify modal scale being used for the melody.

Step 2) Provide yourself a tonic pitch, sing straight up and down the modal scale (i.e. 1-2-3-4-5-6-7-1-7-6-5-4-3-2-1).

Step 3) Sing the each exercise back on numbers.

Step 4) Notate each exercise below using straight quarter notes (no time signature), using C as the tonic/starting pitch and adding accidentals as needed.

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=173#audio-173-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=173#audio-173-2>

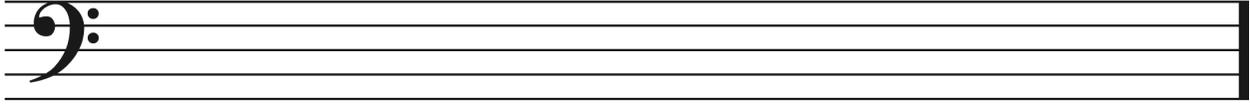
One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=173#audio-173-3>

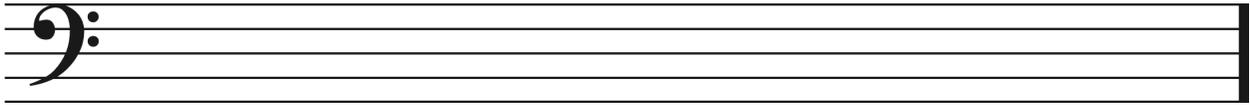
One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=173#audio-173-4>

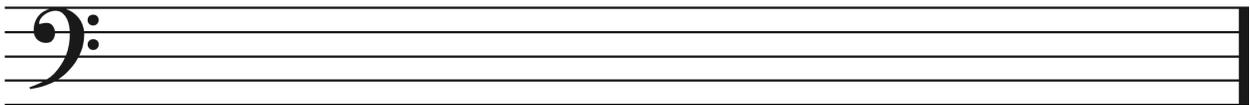
modal melody 1



modal melody 2



modal melody 3



modal melody 4

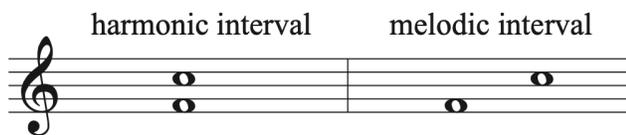


Chapter 4: Intervals

4.1 Intervals: Tutorial

Intervals

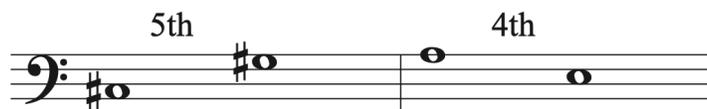
An interval is the measurement of the distance in pitch between two notes. Intervals can be represented harmonically, when two notes are played simultaneously, or melodically, when two notes are played successively. The method for measuring and naming intervals is the same for both harmonic and melodic intervals.



Naming intervals

There are two parts to any interval name: interval quality and interval size.

Interval size is determined by how far apart the notes letter names are, regardless of what accidentals are involved. We always count interval size starting from the lower pitch up to the higher pitch, regardless of whether the interval is ascending or descending. The starting pitch is always 1. For example, for the notes C# up to G#, we would count C as 1, D as 2, E, as 3, as 4 and G as 5. So, C# up to G# is a 5th in size. When determining size for A descending to E, we count from E as 1 to A as 4 to get a 4th in size.



Interval quality tells us the type of interval being used. The main types of intervals are perfect, major, minor, augmented, and diminished.

- Perfect intervals include unisons, 4ths, 5ths, and octaves
- Major and minor intervals include 2nds, 3rds, 6ths, and 7ths
- Augmented and diminished intervals result from altering a perfect, major, or minor

interval.

The number of half steps in each interval determines the quality of the interval. The list below shows the quality of the interval and how many half steps it contains.

- PU = 0
- m2=1
- M2 =2
- m3=3
- M3=4
- P4=5
- A4/d5=6 (also known as a tritone, though that is not a specific enough label for naming intervals)
- P5=7
- m6=8
- M6=9
- m7=10
- M7=11
- P8=12

In order to help yourself count half steps, you can draw a keyboard or write out the list of half steps: C C#/Db D D#/Eb E F F#/Gb G G#/Ab A A#/Bb B C

Look at the examples below. Determine the interval size and count the half steps in each interval to determine the quality.

The image shows a single treble clef staff divided into six measures, labeled A through F. Each measure contains two notes representing an interval. Measure A: C4 (middle C) and E4 (two lines up). Measure B: C4 and A4 (two lines up). Measure C: C4 and D4 (first line). Measure D: C4 and G4 (second space). Measure E: C4 and F4 (first space). Measure F: C4 and F#4 (first space with a sharp sign).

A. Size is a 3rd, has 4 half steps: M3

B. Size is a 6th, has 8 half steps: m6

C. Size is a 2nd, has 1 half step: m2

D. Size is a 5th, has 7 half steps: P5

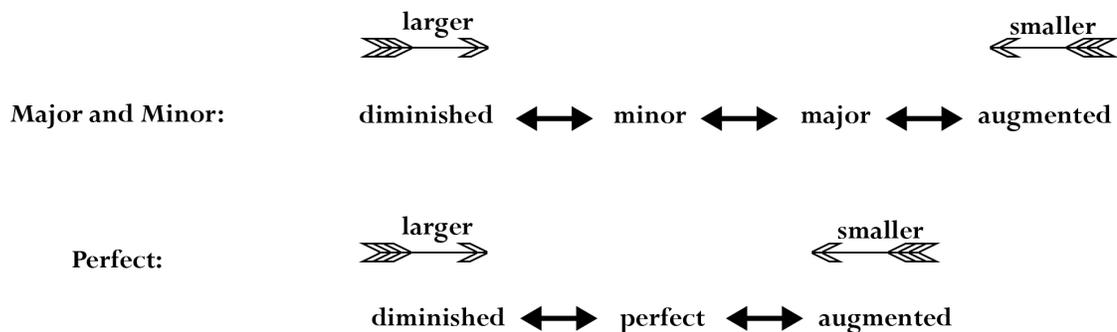
E. Size is a 4th, has 5 half steps: P4

F. Size is a 7th, has 11 half steps: M7

Augmented and Diminished Intervals

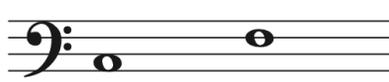
When an extra half step is added or taken away from an interval, it changes the interval quality. Remember that letter names determine interval size, so the interval size will not change when adding or subtracting a half step unless the letter names of the pitches change. Look at the chart below.

Increasing and decreasing interval size:

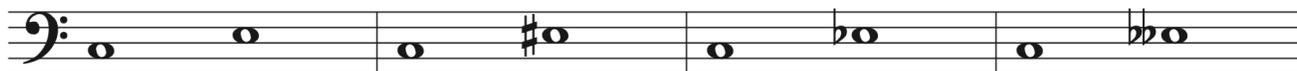


****Remember: Perfect cannot become Major or minor ; Major and minor cannot become Perfect**

If an interval is perfect and is increased by a half step, it becomes an augmented interval (symbolized by A or +). If it decreases by a half step, it becomes diminished (symbolized by d or by using a degree sign: °). A perfect interval can never become a major or minor interval.

		
P4 5 half steps	A4 6 half steps	d4 4 half steps

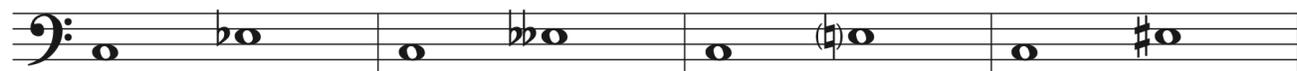
In an interval is major and it is increased by a half step, it becomes augmented. However, if it decreased by a half step it becomes minor. It has to be decreased by an additional half step in order to become diminished. Major intervals can never become perfect.



Musical staff showing four intervals:

- M3: 4 half steps
- A3: 5 half steps
- m3: 3 half steps
- d3: 2 half steps

If an interval is minor and is decreased by a half step, it becomes diminished. However, if it is increased by a half step it becomes major. It has to be increased by another half step in order to become augmented. Minor intervals can never become perfect.



Musical staff showing four intervals:

- m3: 3 half steps
- d3: 2 half steps
- M3: 4 half steps
- A3: 5 half steps

Doubly augmented and diminished intervals are possible, but rare.



Musical staff showing three intervals:

- P5: 7 half steps
- A5: 8 half steps
- AA5: 9 half steps



Musical staff showing three intervals:

- P5: 7 half steps
- d5: 6 half steps
- dd5: 5 half steps

Quickly recognizing intervals

Looking at how the two notes of an interval are placed on the staff can quickly tell you interval size.

- 2nds are always on an adjacent line and space
- 3rds are always a line or a space apart
- 4ths are always a line to a space or a space to a line and look one note larger than a 3rd

- 5ths are always two lined notes separated by one line or two spaced notes separated by a space
- 6ths are always a line to a space or a space to a line and look one note larger than a 5th
- 7ths are always space to space or line to line and look one less than an octave

2nds: next to each other 3rds: space-space or line-line 4ths: space-line or line-space (1 bigger than a 3rd)

5ths: space-space or line-line 6ths: space-line or line-space (1 bigger than a 5th) 7ths: space-space or line line (1 less than an 8ve)

Know your keys/scales and think of intervals in terms of being in a key

- Major scale (ascending) has only Major and perfect intervals
- Minor scale (natural minor ascending) has M2, m3, P4, P5, m6, m7
- If the bottom note in the interval is “tonic” then you can quickly tell if that interval is in a Major or minor key if you know your key signatures. If it’s not found in a key, you can see how it was altered to create the interval and label it accordingly.
- For example, if you see B to D#, you can think of B as tonic and determine that D# is an expected note in the key. Therefore, the interval will be a M3. If you see A to C, you can think of A as tonic and determine that A Major would have a C#, but a minor has a C natural, so the interval must be a m3.

Be able to recognize intervals by sound. You can play or sing them to aurally check your answers.

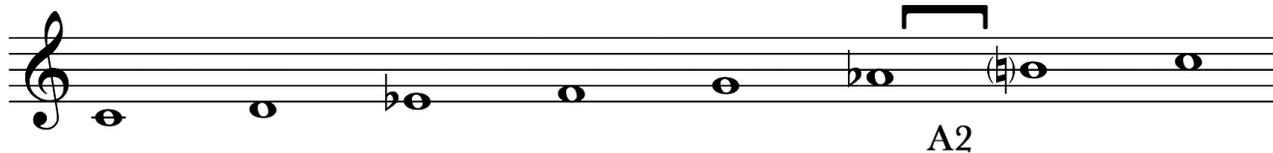
If intervals are played harmonically, use your knowledge of consonance and dissonant to help determine the interval. Consonant intervals sound pleasing to the ear and include perfect intervals, 3rds, and 6ths. Dissonant intervals are not pleasing to the ear and include 2nds, 7ths, augmented and diminished intervals.

Enharmonic Equivalence

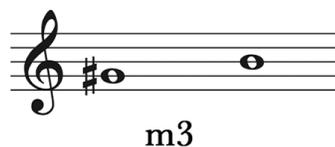
Just as it is possible to have enharmonically equivalent notes and keys, it is also possible to have

intervals that sound the same but are spelled differently. Think of the harmonic minor scale. It has 3 half steps between scale degrees 6 and 7. It is written like an augmented 2nd in the scale, but it sounds the same as a minor 3rd. It's important to double check the spelling of intervals so that the size of the interval always reflects the distance between the letter name of the two pitches, regardless of accidentals used.

harmonic minor scale



enharmonically
equivalent



Compound Intervals

Compound intervals are intervals that are larger than an octave. We call intervals that are an octave or less in size simple intervals. When naming compound intervals, the size of the interval is equal to the original interval size plus 7. Quality remains the same as it would be for a simple interval:

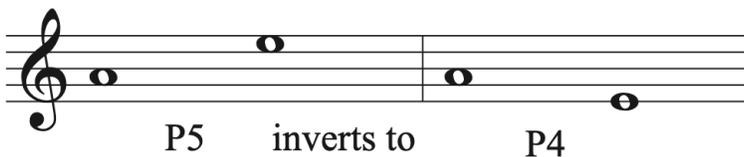
- m2 becomes m9
- M2 become M9
- m3 becomes m10
- M3 becomes M10
- P4 becomes P11
- P5 becomes P12
- m6 becomes m13
- M6 becomes M13
- m7 becomes m14
- M7 becomes M14
- P8 becomes P15

Look at the following compound interval examples.



Inverting Intervals

An interval can be inverted by switching the order of the pitches on the staff so that the pitch that was lower is higher, or the pitch that was higher is lower.



When an interval is inverted, it must be named according to its new position, so will have a different name from the original interval. The new interval size can be found by subtracting the original interval size numerical number from 9:

- 2nd inverts to 7th
- 3rd inverts to 6th
- 4th inverts to 5th
- 5th inverts to 4th
- 6th inverts to 3rd
- 7th inverts to 2nd

The quality of the interval also changes when it is inverted, with the exception of perfect intervals:

- minor inverts to major
- major inverts to minor
- perfect stays perfect
- augmented inverts to diminished
- diminished inverts to augmented

Look at the following interval inversions.

Musical staff showing interval inversions. The first measure shows a Major 6th (M6) interval between G2 and E4, which inverts to a minor 3rd (m3) interval between E3 and G3. The second measure shows a Major 7th (M7) interval between G2 and F#4, which inverts to a minor 2nd (m2) interval between F#3 and G3.

M6 inverts to m3 M7 inverts to m2

Musical staff showing interval inversions. The first measure shows a Perfect 4th (P4) interval between G2 and C4, which inverts to a Perfect 5th (P5) interval between C3 and G3. The second measure shows a minor 2nd (m2) interval between G2 and F#3, which inverts to a Major 7th (M7) interval between F#3 and G4.

P4 inverts to P5 m2 inverts to M7

Bringing Theory to Life

How carefully do you look at intervals in the music you are practicing or studying? What is the smallest interval that you see in your music and how is it used? What is the largest and how is it used? Are there any intervals that appear more often than others? Do they appear in specific places in the music? Can you hear the different qualities of the important intervals in your music? How does being able to recognize and hear intervals change the way that you hear the music? Does it make it easier to practice, perform, or teach?

4.1 Intervals: Theory exercises

See Workbook Chapter 4.1

4.1 Intervals: Sight Singing exercises

For each interval, from minor 2nd through major 7th, practice the following

Step 1) Pick a starting pitch, any pitch

Step 2) Sing the interval up or down from this pitch two times, first on “da”, then saying the name of the interval (see example).

Step 3) Repeat from a different starting pitch and for each interval

example

The example shows three intervals on a single staff in G major. The first interval is a minor second, starting on G4 and moving to A4. The second interval is a major second, starting on A4 and moving to B4. The third interval is a minor third, starting on B4 and moving to D5. Each interval is shown twice: first with a 'da' syllable on the starting pitch, and then with the interval name. The notes are quarter notes with stems pointing down.

" da da minor second" "da da major second" " da da minor third" etc...

4.1 Intervals: Aural Training exercises

Step 1) Listen to the string of twelve *ascending* intervals, all played up from the same pitch and ranging from minor second through octave. Each is played twice. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=182#audio-182-1>

Step 2) Label each of the twelve ascending intervals by quality and size.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.

Step 3) Listen to the string of twelve *descending* intervals, all played down from the same pitch and ranging from minor second through octave. Each is played twice. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=182#audio-182-2>

Step 4) Label each of the twelve descending intervals by quality and size.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

- 7.
- 8.
- 9.
- 10.
- 11.
- 12.

Chapter 5: Introduction to Chords

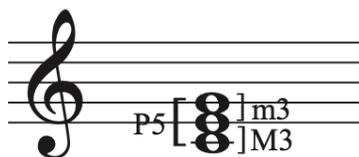
5.1 Triads and Inversions: Tutorial

Triads

A chord is made up of 3 or more pitches sounding together. Three note chords built from thirds are called triads. Triads are the fundamental harmonies used in major and minor keys. There are four types of triads, each built with a specific combination and order of either major or minor 3rds.

The Major Triad

The major triad is built starting with a major 3rd on the bottom, followed by a minor 3rd on top. Its outer interval forms a perfect 5th, which helps to give it a stable sound. Major triads are used frequently in music.



Major triad

The Minor Triad

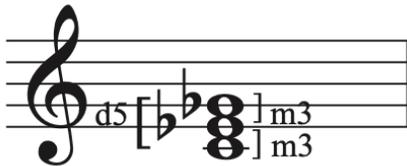
The minor triad is built starting with a minor 3rd on the bottom, followed by a major 3rd on top. Its outer interval also forms a perfect 5th, which helps to give it a stable sound. Minor triads are used frequently in music.



minor triad

The Diminished Triad

The diminished triad is built from stacking two minor 3rds. Its outer interval is a diminished 5th, which gives it its name. The diminished 5th interval is dissonant and unstable. It creates forward motion towards a resolution in the chord that follows. Diminished triads are naturally occurring in both major and minor keys, but are not used as frequently as major and minor triads.



diminished triad

The Augmented Triad

The augmented triad is built from stacking two major 3rds. Its outer interval is an augmented 5th, which gives it its name. Like the diminished 5th interval in the diminished triad, the augmented 5th interval is dissonant and unstable. Augmented triads are not naturally occurring in any major or minor key. In order to form an augmented triad, accidentals outside of the key signature must be used.



Augmented triad

Naming Chord Members

Each chord member is given a name based on its position in the chord. When the chord is stacked in its most close position, the lowest sounding member of the chord is called the root. That is the scale degree on which the chord is built. The middle chord tone is called the 3rd because it sits a 3rd above the root, and the top member of the chord is called the 5th because it sits a 5th away from the root of the chord. It is important to remember that while it is easiest to quickly determine the root, 3rd, and 5th of a chord when its stacked in its most close position,

chords can be written with the notes in any position. The notes that are classified as the root, the 3rd, and the 5th of the chord will not change no matter where they are located on the staff in relation to one another.

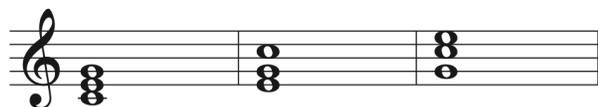


Triad Inversions

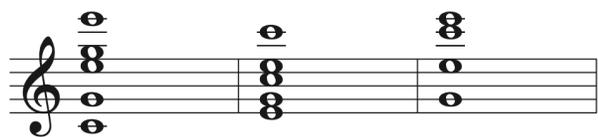
The lowest sounding pitch in a chord determines the inversion of a chord. Triads, because they contain 3 pitches, have 3 possible inversions.

- When the root of the chord is the lowest sounding member of the chord, the chord is in root position.
- When the 3rd of the chord is the lowest sounding member of the chord, the chord is in first inversion.
- When the 5th of the chord is the lowest sounding member of the chord, the chord is in second inversion.

The upper member of the chord can be in any order on the staff without changing the inversion. When analyzing music chord labels include the root, quality, and inversion of the chord.



Root Position 1st inversion 2nd inversion



Root Position 1st inversion 2nd inversion

Root position chords are the most stable inversion because the root of the chord is the lowest sounding member. Triads become more unstable as they progress from first inversion to

second inversion. Root position and first inversion triads occur most frequently in music and can generally be substituted for one another. Second inversion triads are special and serve as embellishing chords. They decorate other chords and can't be substituted for root position and first inversion chords. Second inversion chords are used less frequently in music than root position and first inversion chords.

Analyzing Triads in Music

Analyzing music requires decision making and attention to detail. It is often possible to interpret passages in different ways and come up with different analyses. That's what makes theory fun! As you learn more about how music work you will have a better understanding for why one choice might be better than another in an analysis. Here are the basic steps to follow when analyzing music:

First, stack the notes in 3rds so that you can find the root of the chord.

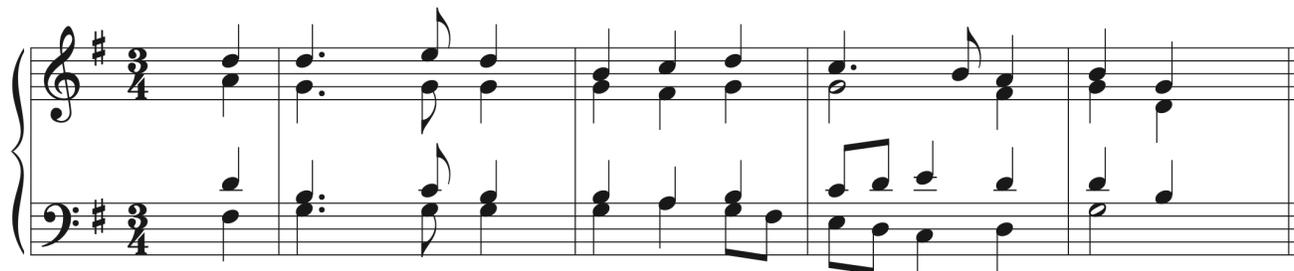
- Eliminate any double notes.
- Make sure to look at the key signature so you don't miss any accidentals that should be included with the chord.
- Make sure to look carefully at the rhythm so that any notes that are still sounding and were held over from previous chords can be included in your analysis.
- Figure out where the chord changes and make sure that all notes before the chord change are included with the chord. You know a chord changes when new notes appear that do not fit in the current chord, or when the bass pitch changes.
- Eliminate any pitches that are not chord tone. Non chord tones will be decorative pitches that are not part of the main chord and cannot be stacked into the triad. You can exclude those from your analysis.
- Fill in missing chord members if a triad is not complete. Not all chords will contain all notes. In order to have a triad, you need the root in order to establish the chord. The 3rd of the chord is most often included because it determines the quality of the chord. If a chord member must be omitted, the 5th is typically the chord member chosen. Any chord member that is omitted can be imagined as part of the chord, using the given key signature.

After determining which notes are chord members, and having stacked them in 3rd, analyze the quality of the triad (Major, minor, Augmented, or diminished).

Then, look at the inversion of the chord to determine if the chord is in root position, first inversion, or second inversion. Include the root, quality, and inversion in your labels.

Look at the following example and analyze the triads found in the score.

Hymn arrangement of "A Prayer for Thanksgiving," mm. 1-4



This example shows the score work that was done, following the guidelines listed above, in order to analyze the triads.

double notes crossed out

rhythm held through beat 2

non chord tone

bass held through beat 2

note in bass: 3rd root 5th root root 3rd root 3rd root root root

DM Root GM Root CM 2nd Root GM Root GM Root F#dim 1st GM Root CM 1st CM Root DM Root GM Root

Bringing Theory to Life

Look at the music you are currently practicing or studying. If you are playing a piece that has more than one part or line, can you stack the notes into thirds to find and identify triads? Did you find any chords that have more than three notes? We'll talk about how to identify those in later chapters. For now, simplify them into triads to analyze them. How often are root position chords used in comparison to first inversion and second inversion chords in your music? If you are playing a piece with only one part, can you find instances where triads are implied through chord arpeggiations in the music? We find chords used in music both vertically as part of the harmony, and melodically as components of the melody.

5.1 Triads and Inversions: Theory exercises

See Workbook Chapter 5.1

5.1 Triads and Inversions: Sight Singing exercises

Step 1) Pick a starting pitch, any pitch

Step 2) Sing a root position major triad up and down from this pitch (i.e. 1-3-5-3-1).

Step 3) Sing a first inversion major triad up and down from this same starting pitch, which is now scale degree 3 (i.e. sing 3-5-1-5-3 from the starting pitch).

Step 4) Sing a second inversion major triad up and down from the same starting pitch, which is now scale degree 5 (i.e. 5-1-3-1-5).

Step 5) Repeat steps 2 through 4 with a minor triad

See example below

1 3 5 3 1 3 5 1 5 3 5 1 3 1 5 | 1 3 5 3 1 3 5 1 5 3 5 1 3 1 5

5.1 Triads and Inversions: Aural Training exercises

Step 1) Listen to the string of six major or minor triads, each played *up and down* from the same *bass* (i.e. lowest) pitch. Each is played twice. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=190#audio-190-1>

Step 2) Label each of the six triads by quality and inversion.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Step 3) Listen to the string of six major or minor triads, each played *down and up* from the same *soprano* (i.e. highest) pitch. Each is played twice. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=190#audio-190-2>

Step 4) Label each of the six triads by quality and inversion (note: inversion is determined by the lowest pitch, not the first/last pitch in this case).

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

5.2 Seventh Chords and Inversions: Tutorial

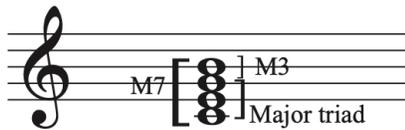
Seventh Chords

Seventh chords in music result from adding another 3rd to the top of a triad. Adding a 7th above the root of a chord creates a dissonance and instability that has to resolve. This activates chords and creates forward motion. While it is possible to create a variety of seventh chords by adding major and minor 3rds to major, minor, augmented, and diminished triads, only 5 types of seventh chords are commonly used in tonal harmony.

Types of Seventh Chords

The major-major 7th chord (abbreviated MM7 or M7)

The major-major 7th chord is formed by adding a major 3rd to the top of a major triad. This creates the interval of a major 7th chord with the root of the chord, giving the major-major 7th chord its name.



Major-Major 7th chord

The major-minor 7th chord (abbreviated Mm7 or just 7)

The major-minor 7th chord is formed by adding a minor 3rd to the top of a major triad. This creates the interval of a minor 7th with the root of the chord, giving the major-minor 7th chord its name. The major-minor chord is also called the dominant 7th chord and is the most frequently used 7th chord in tonal music.



Major-minor 7th chord

The minor-minor 7th chord (abbreviated mm7 or m7)

The minor-minor 7th chord is formed by adding a minor 3rd to the top of a minor triad. It is the only 7th chord that is built on a minor triad. The added 7th creates an interval of a minor 7th with the root of the chord, giving the minor-minor 7th chord its name.



minor-minor 7th chord

The half-diminished 7th chord (abbreviated with 7)

The half-diminished 7th chord is formed by adding a major 3rd to a diminished triad. The added 7th creates an interval of a minor 7th above the bass.



half-diminished 7th chord

The fully-diminished 7th chord, also just called the diminished 7th chord (abbreviated °7)

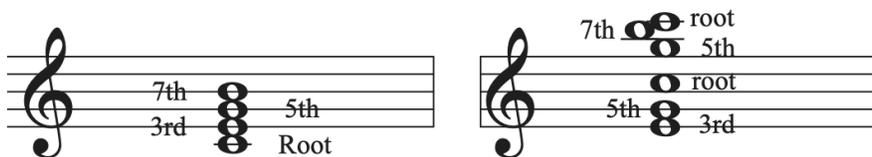
The fully-diminished 7th chord is formed by adding a minor 3rd to the top of a diminished triad. The added 7th creates an interval of a diminished 7th above the bass, giving the chord its name.



fully-diminished 7th chord

Naming chord members

The members of a 7th chord are named like triads. The chord consists of a root, a 3rd, and a 5th. The top member of a 7th chord is called the 7th of the chord. It's important not to confuse the 7th of a 7th chord with the leading tone, which is scale degree 7 in a key. Like triads, the root, 3rd, 5th, and 7th of the chord retain their names, regardless of where each chord member appears on the staff.



Inversions of 7th chords

Because 7th chords have 4 chord members, there are 4 possible positions for each chord.

- When the root is the lowest sounding member of the chord, the chord is in root position.
- When the 3rd is the lowest sounding member of the chord, the chord is in first inversion.
- When the 5th is the lowest sounding member of the chord, the chord is in second inversion.
- When the 7th is the lowest sounding member of the chord, the chord is in third inversion.

Remember that the lowest sounding member of the chord determines the inversion of the chord. The upper voices can be in any order on the staff.

The image displays two musical staves illustrating chord inversions. The first staff shows a triad in four positions: Root position (C-E-G), 1st inversion (E-G-C), 2nd inversion (G-C-E), and 3rd inversion (C-E-G). The second staff shows a seventh chord in four positions: Root position (C-E-G-Bb), 1st inversion (E-G-Bb-C), 2nd inversion (G-Bb-C-E), and 3rd inversion (Bb-C-E-G).

Why use Inversions?

Inversions add interest and smoothness to the melodic character of the bass line. Inversions keep the music moving forward because they are less stable than root position chords. Like triads, seventh chords become more unstable the farther they get from root position. Inversions add variety and interest to the music and can help expand the phrase.

Common Mistakes Made When Notating Chords

When writing notes that have accidentals on the staff, make sure to put the accidental on the line or space the corresponds with the altered note. Accidentals go to the left of the full chord, so should not be inserted between chord members in the middle of a chord.

Determining whether or not something is a 7th chord

When deciding whether or not a chord is a seventh chord, the first step is to make sure it qualifies as one of the 5 types of seventh chords we use in tonal music: MM7, Mm7, mm7, 7, or °7.

The musical genre used will also determine whether or not something can be called a seventh chord. In classical music, seventh chords started as non-chord tones. They eventually evolved and were considered part of chords, but the dissonant 7th of the chord was still carefully approached and resolved. In classical music, the 7th of a seventh chord is a tendency tone that always resolves down by step. It is approached by step or as a common tone from the previous chord. If the 7th chord is not approached and resolved properly, it is considered a non-chord tone. In other genres, like jazz and popular music that evolved later in history, the 7th of the

chord is used freely, both in how it is approached and resolved. So, when analyzing music and labeling seventh chords, make sure to consider the genre of the music.

Analyzing Seventh Chords in Music

As with triads, analyzing music with seventh chords requires decision making and attention to detail. It is often possible to interpret passages in different ways and come up with different answers. As you learn more about how music work you will have a better understanding for why one choice might be better than another in an analysis. Here are the basic steps to follow when analyzing music:

First, stack the notes in 3rds so that you can find the root of the chord.

- Eliminate any double notes.
- Make sure to look at the key signature so you don't miss any accidentals that should be included with the chord.
- Make sure to look carefully at the rhythm so that any notes that are still sounded and were held over from previous chords can be included in your analysis.
- Figure out where the chord changes and make sure that all notes before the chord change are included with the chord. You know a chord changes when new notes appear that do not fit in the current chord, or when the bass pitch changes.
- Eliminate any pitches that are not chord tone. Non chord tones will be decorative pitches that are not part of the main chord and can be stacked into the triad. You can exclude those from your analysis.
- Remember that in classical music, the chordal seventh chords must be approached by step or common tone from the previous chord and resolved down by step in the next chord. Music written in other genres has a freer use of 7th chords.
- Fill in missing chord members if a triad is not complete. Not all chords will contain all notes. In order to have a triad, you need the root in order to establish the chord. The 3rd of the chord is most often included because it determines the quality of the chord. The 7th of the chord must be included in order to have a 7th chord. If a chord member must be omitted, the 5th is typically the chord member chosen. Any chord member that is omitted can be imagined as part of the chord, using the given key signature.

After determining which notes are chord members, and having stacked them in 3rd, analyze the quality of the seventh chords. Seventh chords must be one of the 5 types used in tonal music.

Then, look at the inversion of the chord to determine if the chord is in root position, first

inversion, second inversion or third inversion. Include the root, quality, and inversion in your labels. See the examples below from J.S. Bach's Brandenburg Concerto No. 2, movement 1. The first example shows a progression to analyze. The second example shows markings from the analysis including the root position chords and the chordal 7ths with their approach and resolution labeled.

* All 7ths are approached by common tone from the chord before them

Gm7	CMm7	FM7	Bbm7	Em7	AMm7	DM
R	R	R	R	R	R	R

Bringing Theory to Life

Look for seventh chords in the music you are currently practicing or studying. How are they used in comparison to the triads in your music? Can you hear the type of seventh chord used by the quality of its sound? Is there a certain seventh chord that is used more frequently than the others? If you can't find any seventh chords, add sevenths to some of the triads in your music to see how that changes the sound and motion of the piece.

5.2 Seventh Chords and Inversions: Theory exercises

See Workbook Chapters 5.2.1 and 5.2.2

5.2 Seventh Chords and Inversions: Sight Singing exercises

Step 1) Pick a starting pitch, any pitch

Step 2) Sing a root position major-minor 7th chord up and down from this pitch, singing the numbers of the dominant V7 chord (i.e. 5-7-2-4-2-7-5).

Step 3) Sing a first inversion major-minor 7th chord up and down from this same starting pitch, which is now the third of the chord, or scale degree 7 (i.e. sing 7-2-4-5-4-2-7 from the starting pitch).

Step 4) Sing a second inversion major-minor 7th chord up and down from the same starting pitch, which is now scale degree 2 (i.e. 2-4-5-7-5-4-2).

Step 5) Sing a third inversion major-minor 7th chord up and down from the same starting pitch, which is now scale degree 4 (i.e. 4-5-7-2-7-5-4).

See example below

The musical notation shows four measures of music in bass clef. Each measure starts with a specific pitch and is followed by a sequence of notes with fingerings. The notes are marked with accidentals (b, #) to indicate the correct pitch for each exercise.

Measure 1: Starting pitch (F), notes: G (5), A (7), Bb (2), C (4), Bb (2), A (7), G (5).

Measure 2: Starting pitch (F), notes: G (7), Ab (2), Bb (4), C (5), Bb (4), Ab (2), G (7).

Measure 3: Starting pitch (F), notes: G (2), Ab (4), Bb (5), C (7), Bb (5), Ab (4), G (2).

Measure 4: Starting pitch (F), notes: G (4), Ab (5), Bb (7), C (2), Bb (7), Ab (5), G (4).

5.2 Seventh Chords and Inversions: Aural Training exercises

Step 1) Listen to the string of four major-minor 7th chords, each played *up and down* from the same *bass* (i.e. lowest) pitch. Each is played twice. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=198#audio-198-1>

Step 2) Label the inversion of each of the four major-minor 7th chords.

- 1.
- 2.
- 3.
- 4.

Step 3) Listen to the string of four major-minor 7th chords, each played *down and up* from the same *soprano* (i.e. highest) pitch. Each is played twice. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=198#audio-198-2>

Step 4) Label the inversion of each of the four major-minor 7th chords (note: inversion is determined by the lowest pitch, not the first/last pitch in this case).

- 1.
- 2.
- 3.
- 4.

5.3 Lead Sheet Notation: Tutorial

Lead-Sheet Symbols

Lead sheet symbols were developed for use in jazz and other popular music as a way to quickly show chord changes and as a way to allow those who do not read music to know what chords to play at specific times. Lead sheet symbols are typically drawn above the melody on the staff. The chord symbols tell the performer what chords to fill in to accompany the melody line. The lead sheet symbols specify the root of the chord, the quality of the chord, and the inversion of the chord. Lead sheet symbols also indicate the rate at which chords change. Once a lead sheet symbol is marked in the score, the chord stays the same until a new lead sheet symbol is indicated. Lead sheet symbols allow the performer to have a large degree of freedom for improvisation when playing the music. Performers playing the chords would determine what rhythm, articulation, octave, voicing, doubling, and instrumentation to use.

Rondo für Eva Maria, mm. 1-8 by Gregor Peters-Rey

The image shows two staves of musical notation in 6/8 time. The first staff contains the first four measures of the melody, with chord symbols F, Bb, and F placed above the notes. The second staff contains the next four measures, with chord symbols C, Dm, C/E, and F placed above the notes. The piece concludes with a double bar line and the marking 'rit.' below the final note.

Citation: *Rondo für Eva Maria* by Gregor Peters-Rey published under a Creative Commons Attribution license, imslp.org

Lead Sheet Notation

Lead sheet symbols contain the following 4 things in this order:

1. The letter name of the root of the chord written using capital letters (remember to include accidentals when needed)
2. A symbol that indicates the quality of the chord when needed
3. 7 if the chord is a 7th chord
4. A slash followed by the lowest sounding pitch for any chords in inversion

The most common symbols for chord qualities include:

Triads	7th chords
Major: no symbol, M, or \triangle	MM7: M7 or \triangle 7
Minor: m, min, or a dash (-)	Mm7: 7
Diminished: o or dim	mm7: m7, min7, or -7
Augmented: + or Aug	Half diminished 7: ϕ 7
	Fully diminished 7: o7

The chart below shows the common lead sheet symbols used for triads in all inversions. The lead sheet symbols are listed above each chord and the chords and inversions are listed below.

LS: Bb Bb/D Bb/F Bbm Bbmin/Db Bb-/G

BbM-root pos. BbM-1st inv. BbM-2nd inv. Bbm-root pos. Bbm-1st inv. Bbm-2nd inv.

Detailed description: This musical example shows six chords on a treble clef staff with a key signature of two flats (Bb). The first three chords are major triads: Bb (root position), Bb/D (first inversion), and Bb/F (second inversion). The next three chords are minor triads: Bbm (root position), Bbmin/Db (first inversion), and Bb-/G (second inversion). Each chord is represented by a vertical bar line and a chord symbol above it.

LS: BbAug Bb+/D Bb+/F# Bbdim Bb^o/Db Bb^o/Fb

Bb+-root pos. Bb+-1st inv. Bb+-2nd inv. Bbdim-root pos. Bbdim-1st inv. Bbdim-2nd inv.

Detailed description: This musical example shows six chords on a treble clef staff with a key signature of two flats (Bb). The first three chords are augmented triads: BbAug (root position), Bb+/D (first inversion), and Bb+/F# (second inversion). The next three chords are diminished triads: Bbdim (root position), Bb^o/Db (first inversion), and Bb^o/Fb (second inversion). Each chord is represented by a vertical bar line and a chord symbol above it.

The chart below shows the common lead sheet symbols used for 7th chords in all inversions. The lead sheet symbols are listed above each chord and the chords and inversions are listed below.

LS: EbM7 EbM7/G Eb Δ7/Bb EbΔ7/D

EbMM7-root pos. EbMM7-1st inv. EbMM7-2nd inv. EbMM7-3rd inv.

LS: Eb7 Eb7/G Eb7/Bb Eb7/Db

EbMm7-root pos. EbMm7-1st inv. EbMm7-2nd inv. EbMm7-3rd inv.

LS: Ebm7 Eb-7/Gb Ebmin7/Bb Eb-7/Db

Ebmm7-root pos. Ebmm7-1st inv. Ebmm7-2nd inv. Ebmm7-3rd inv.

LS: Eb^ø7 Eb^ø7/Gb Eb^ø7/Bbb Eb^ø7/Db

Eb^ø7-root pos. Eb^ø7-1st inv. Eb^ø7-2nd inv. Eb^ø7-3rd inv.

LS: Eb^o7 Eb^o7/Gb Eb^o7/Bbb Eb^o7/Db

Eb o7-root pos. Eb o7-1st inv. Eb o7-2nd inv. Eb o7-3rd inv.

Lead-Sheet Symbols in different editions

- The specific symbols used by a composer or arranger may differ from person to person, so it's important to be familiar with the possible symbols for each type of chord.
- Editors and arrangers routinely make chord substitutions to simplify or complicate the harmony as they see fit, so different editions of the same piece might contain different chords or chord variations.

Bringing Theory to Life

When might lead sheet symbols be useful to you in your musical life? Add lead sheet symbols to the music you are currently working on or studying. Does seeing the lead sheet symbols help you to better understand what is happening in the music while you play? Does it change the way you listen to the music, yourself, or to the accompaniment parts if you are playing in a group? How could adding lead sheet symbols help you as a teacher? What would seeing lead sheet symbols allow a student to do that they might not do on their own?

5.3 Lead Sheet Notation: Theory exercises

See Workbook Chapter 5.3

5.3 Lead Sheet Notation: Sight Singing exercises

For each given Lead Sheet chord (all are major or minor triads or major-minor 7th chords), practice the following:

Step 1) Play the bass note

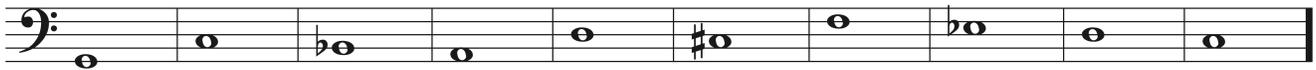
Step 2) Sing the indicated chord up and down above the bass note on scale degrees in the key.

1. **F7**
2. **G/B**
3. **F#m/A**
4. **Bb7/F**
5. **E7/D**
6. **Bm/F#**
7. **Db/Ab**
8. **Gb7/Bb**
9. **F7/Eb**
10. **Dm/F**
11. **Db/F**

5.3 Lead Sheet Notation: Aural Training exercises

Step 1) Listen to the string of ten chords, consisting of either major or minor triads or major-minor 7th chords in various inversions, each played *up and down* from the *bass note* given on the staff below (i.e. the given note is the starting pitch, not necessarily the root of the chord) pitch. Each is played twice. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=206#audio-206-1>



Step 2) Label the quality and inversion of each chord using lead-sheet notation.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

5.4 Figured Bass Notation: Tutorial

Figured Bass

Like lead sheet symbols, figured bass symbols are a way to symbolize chords in music. Figured bass, also known as thorough-bass, is a keyboard notation system. While lead sheet chord symbols are most often written over a melody, in figured bass, numbers and symbols are written under the bass line of the keyboard part in order to let the musician know which intervals to play above the bass. The performer would “realize” the figured bass symbols by improvising within the indicated chords. Figured bass shares many similarities to lead sheet symbols. While they both tell a musician what basic notes to play, they allow the musician to be creative with elements like rhythm, articulation, dynamics, register, voicing, and melodic embellishments. The score and recording below show an example of what figured bass looks and sounds like in music.

Couperin, Onzième Concert from Les Goûts-Réunis, Prélude, mm. 1-7

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=208#oembed-1>

The Art of Figured Bass

Baroque music is sometimes seen as uninteresting. The expression markings and articulation and dynamic marking found in modern scores provide a lot of direction to the modern performer. Those marking were generally not part of baroque musical scores, so modern

performers sometimes see baroque music as expressionless. Performance practice for period instruments and period music allows us to better understand the music of an older time period. Baroque music is highly expressive and elaborate, despite the lack of markings in the baroque scores. One of the elements that contributed greatly to drama and expression in baroque music was the art of realizing figured bass through improvisation. The keyboard player was a vital part in a baroque ensemble, and the expressive art of realizing figured bass is something that modern musicians often don't get to experience. Listen to the following two examples of *Winter* from Vivaldi's *Four Seasons*. The first recording is a modern orchestra. The second is a baroque ensemble. Listen to how including the keyboard player in the second example adds drama to the music.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=208#oembed-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=208#oembed-3>

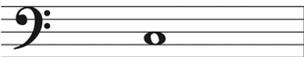
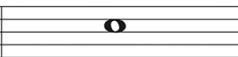
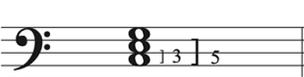
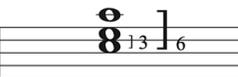
Figured Bass Symbols

Figured bass indications include numbers and symbols. The numbers given under a bass pitch represent the intervals that should be played above the bass pitch. These intervals form the triads and seventh chords we use in music. All notes played above the bass are in the key unless a symbol is given that would add an accidental to a specific interval above the bass. If there is no symbol listed under a bass pitch, a root position chord on the given bass pitch is assumed. This differs from lead sheet symbols because lead sheet symbols assume a chord continues until the next given lead sheet symbol. If a chord continues in figured bass, a dash symbol can be included between chords.

Triads

Look at the symbols used for triads to see how figured bass works.

Triads with Figured Bass

	root position	first inversion	second inversion
given bass line with figured bass			
		6	6 4
realization			
figured bass symbols used most often	(nothing)	6	6 4
complete figured bass symbols	5 3	6 3	6 4

Let's look at the root position chord first. You'll notice that in the given bass line, there are no symbols under the bass pitch in the first bar. When there is nothing under a bass pitch, you assume that the chord is in root position. If you look at the realization for the root position chord, you can see that the interval from the bass pitch (C) to the 3rd of the chord (E) is a 3rd and the interval from the bass pitch of the chord (C) to the 5th (G) is a 5th. While we don't normally see a figure bass symbol written under a root position chord, the complete name for the chord would be 5/3 due to the intervals created by each pitch above the bass. So, you could see 5/3 listed under the bass pitch of a root position chord.

The second chord is in first inversion. It has a 6 written under it. If you look at the realization for that chord you will see that 6 is used as the shorthand for a chord that has a 3rd above the bass and a 6th above the bass. When realizing figured bass always remember to count each number starting from the bass pitch. A 3rd above the bass pitch E is G. A 6th above the bass pitch E is C. Those intervals create a first inversion chord. It's most common to just write 6 under a first inversion chord, but you could also see the complete label: 6/3.

The third chord in the example is a second inversion chord. It has a 6 and 4 written under it. If we start from the bass pitch G and count up a 4th, we get C. If start at the bass pitch G and count up a 6th, we get E. That forms a triad in second inversion. Both numbers are included in a figured bass symbol for a triad in second inversion.

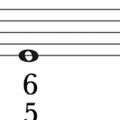
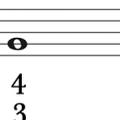
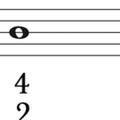
Summary for symbolizing triads with figured bass:

- Always count intervals up from the bass pitch when realizing figured bass
- Memorize:
 - Root position symbol: 5/3, but most often nothing is listed
 - 1st inversion symbol: 6, which stands for 6/3
 - 2nd inversion symbol: 6/4

Seventh Chords

Seventh chords are named in the same way using figured bass. Look at the following examples.

7th chords with Figured Bass

	root position	first inversion	second inversion	third inversion
given bass line with figured bass				
realization				
figured bass symbols used most often	7	6 5	4 3	4 2
complete figured bass symbols	7 5 3	6 5 3	6 4 3	6 4 2

Look at the root position 7th chord. There is a 7 under the given bass pitch. That implies a root position 7th chord. If we look at the realization, we can see the intervals above the bass that

form that chord. A 3rd above the bass pitch E is G#. A 5th above the bass pitch E is B. A 7th above the bass pitch E is D#. While the complete symbol for a 7th chord in root position is 7/5/3, it is more common to see just 7 listed under the bass pitch.

The second chord implies a 7th chord in first inversion. A 6/5 is written under the bass pitch. Look at the realization to see the intervals in this chord. The bass pitch is G#. A 3rd above G# is B. A 5th above G# is D#, and a 6th above the G# is E. The complete symbol for a 7th chord in first inversion is 6/5/3, but it is more common to see the numbers 6 and 5 listed under a first inversion 7th chord.

The third chord in the example implies a second inversion 7th chord. The complete symbol for a second inversion 7th chord is 6/4/3. We can see those intervals above the bass in the realization. While 6/4/3 is the complete symbol, it is more common to see the numbers 4/3 listed under the bass for a second inversion 7th chord.

The last chord in the example implies a third inversion 7th chord. The complete symbol for a third inversion 7th chord is 6/4/2. We can see those intervals above the bass in the realization. While 6/4/2 is the complete symbol, it is more common to see the numbers 4/2 listed under the bass for a second inversion 7th chord.

Summary for symbolizing seventh chords with figured bass:

- Always count intervals up from the bass pitch when realizing figured bass
- Memorize:
 - Root position 7th chord symbol: 7, which stands for 7/5/3
 - 1st inversion symbol: 6/5, which stands for 6/5/3
 - 2nd inversion symbol: 4/3, which stands for 6/4/3
 - 3rd inversion symbol: 4/2, which stands for 6/4/2

Accidentals in Figured Bass

In the examples we've look at so far, all notes have been in the key signature. However, in music, we often see accidentals used to alter chords. Any accidentals that are included in the score above the bass must be indicated in the figured bass symbols. If the bass pitch has an accidental added to it, we do not include an indication for that accidental in the figured bass label because figured bass symbols indicate intervals *above* the bass. The bass is the given note and not included in figured bass numbers.

Flats

Flats in figured bass are symbolized by writing a flat sign next to the figured bass number for the interval that contains the flat in the music.

The image shows two musical staves in bass clef. The first staff has a bass note F (one line below the staff) with a flat sign next to the number 6 and another flat sign next to the number 3. The second staff has a bass note F (one line below the staff) with a flat sign next to the number 7 and another flat sign next to the number 3.

In the first example, you see the number 6 and 3 under the bass pitch, both of which have flats on them. 6/3 implies a first inversion triad. You count up a 3rd from the bass pitch F to get A, then add a flat to get Ab. Then, you count up a 6th from the bass pitch F to get D, and add a flat to get Db. The second example shows the same process using a root position 7th chord.

Natural signs

Natural signs in the music are also included in the figured bass next to the number for the interval that contains the natural sign in the music.

The image shows two musical staves in bass clef. The first staff has a bass note F (one line below the staff) with a natural sign under it and a natural sign next to the number 5. The second staff has a bass note Ab (one line below the staff) with a natural sign next to the number 4 and another natural sign next to the number 2.

In the first example, you see a natural sign under the bass pitch without a number. Accidentals that written alone always apply to the 3rd above the bass. So, the 3rd (E) is raised from Eb to E natural in the first example because of the natural sign under the bass pitch. In the second example, the numbers 4/2 imply a 7th chord in 3rd inversion (complete symbol 6/4/2) and the natural sign is written next to the 4. When building the chord, you count up a 4th from the bass pitch Ab and get Db. Then, add a natural sign to that note to get D natural.

Sharps

There are 3 ways to raise a pitch in figured bass notation. A sharp sign can be used next to the

affected interval number, a plus sign can be used next to the affected interval number, and the affected interval number can have a slash through it.

Four examples of figured bass notation in bass clef with a key signature of one sharp (F#). Each example shows a chord with interval numbers 1, 3, and 5. Example 1: A sharp sign (#) is placed below the 3. Example 2: Sharp signs (#) are placed above the 3 and 4, and a sharp sign (#) is placed above the 6. Example 3: Slashes (/) are placed through the 3 and 5. Example 4: Plus signs (+) are placed next to the 3, 5, and 6.

In the first example, the lone sharp under the bass applies to the 3rd of the chord, so you raise the C to C#. The second example shows the use of sharp signs in figured bass notation, the third example shows the use of slashes through the numbers to indicate sharps, and the last example uses plus signs to indicate raising the pitch. Notice that in the last example, the bass pitch is sharp. That is not symbolized in the figured bass. Only accidentals in notes above the bass are included in figured bass symbols because those symbols refer to notes at specific intervals above the bass, not the bass note itself.

Summary for symbolizing accidentals using figured bass:

- Accidentals that are above the bass must be included next to their interval numbers in figured bass symbols. An accidental on the bass pitch does not affect the figured bass symbols.
- Symbols for flats: flat signs
- Symbols for naturals: natural signs
- Symbols for sharps: sharp signs, plus signs, or slashes through the numbers
- An accidental without a number always applies to the note that is a 3rd above the bass.

Figured Bass and Keyboard Spacing

Figured bass was designed as an effective tool for keyboard playing because the number system serves as a shorthand for finger placement on the keyboard. Look at the following example.

The diagram shows three examples of figured bass notation on a bass clef staff, each with a corresponding keyboard diagram below it. The keyboard diagram shows the left hand with fingers 5, 3, and 1 positioned over the notes of the chord.

- Root position:** The staff shows a chord with figured bass notation $\underline{8} \underline{13} \underline{5}$. The keyboard diagram shows the left hand with fingers 5, 3, and 1 positioned over the notes.
- First inversion:** The staff shows a chord with figured bass notation $\underline{8} \underline{13} \underline{6}$. The keyboard diagram shows the left hand with fingers 5, 3, and 1 positioned over the notes.
- Second inversion:** The staff shows a chord with figured bass notation $\underline{8} \underline{14} \underline{6}$. The keyboard diagram shows the left hand with fingers 5, 2, and 1 positioned over the notes.

Imagine that you were playing a piece on the keyboard with only a bass line and figured bass notation. Seeing nothing under the bass pitch would imply the intervals 5/3 above the bass. You would place your left hand with your pinky on the bass note and then on every other note (finger position 5 3 1). The position of the chord on the staff looks like the hand position on the keyboard. Any root position chord would have that basic hand position on that keyboard. For a first inversion chord, the hand pattern changes along with the figured bass pattern. The position of the notes on the staff looks like the position of the left hand when playing them on the keyboard. So, when you saw a 6 in the music, you'd know to move your hand to that position with your pinky on the bass note. The pattern shifts again for a chord in second inversion, but again, it matches the position of the hand on the keyboard. Figured bass notation is effective for keyboard playing because it quickly lets you see the position of the notes on the keyboard that are implied by the figured bass symbols. With practice, a player's understanding of how the notes implied by the figured bass symbols relate to their positions on the keyboard, would allow them to go beyond blocked chords and would allow them to improvise freely within the boundaries of a particular chord.

Realizing Figured Bass

Once you know how figured bass works, it's important to be able to realize figured bass from a given bass pitch and figured bass symbols.

Guidelines for Realizing Figured Bass

1. Look at the figured bass numbers. If a shortened version of the complete number is given (which is common), write out all numbers so that you don't miss any notes. For example, if you see 6, know that it stands for 6/3. If no number is given, remember that means 5/3 (a root position chord).

- Starting with the bottom figured bass number, count up from the bass pitch to find that interval above the bass. If accidentals are included on that number, make sure to look at the key signature before applying the necessary changes to the note.
- Look at the next higher figured bass number and count up from the bass pitch to find that interval above the bass, also looking for accidentals and checking the key signature.
- Continue until all numbers have been

Look at the following examples. Apply the guidelines above to the given bass pitch with figured bass to realize the figured bass. Then, see if your answer matches the realization included for each example.

The image displays two musical examples of figured bass notation and their realizations. Each example consists of a bass staff with a key signature of two sharps (F# and C#) and a bass pitch of F# (marked with a sharp sign). The figured bass numbers are 6, #4, 6, 4, 2, 7, #. The realization shows the notes G# (6), A# (#4), B# (6), C# (4), D# (2), E# (7), and F# (#).

Writing Figured Bass Symbols Under Chords

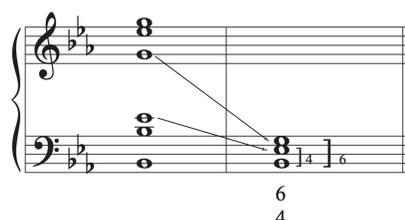
Another skill to develop is the ability to write a figured bass symbol for a chord that has been notation on the staff.

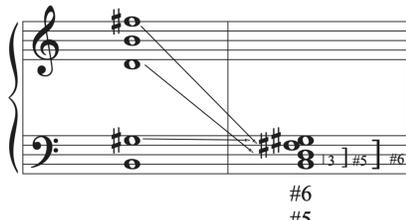
Guidelines for writing figured bass symbols

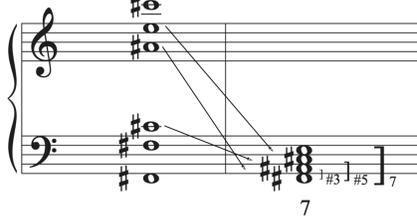
- Rewrite the notes in the chord so that they are in the closest possible position to the bass pitch, eliminating all double tones. Make sure not to change the given bass pitch.
- Count up from the bass pitch to the closest pitch above it, and write down the interval number. If there is an accidental on that pitch, make sure to include it along with the number.
- Count up from the bass pitch to the next closest pitch above it, and write down the interval number. Again, make sure to include accidentals.
- Continue to count up to each pitch, notating their interval numbers and accidentals until all pitches have been accounted for.
- Write the interval number, including accidentals, under the bass pitch in order of highest on top to lowest on the bottom. If there is a shortened, more often used version of the

figured bass symbol, you can change your numbers to the shortened version. However, you must include all accidentals in the figured bass symbols, so cannot eliminate any numbers from the label that include accidentals.

Look at the following examples. After each chord, you'll see a bar with the chord placed in its closest possible position with all doubled tones removed. Each interval above the bass is notated, including necessary accidentals.

1. 

2. 

3. 

Bringing Theory to Life

Though most, if not all, of the music you are working on probably does not include figured bass symbols, there are ways to use the concepts of figured bass in music today. The spirit of figured bass lies in the idea of improvisation over a given bass line. Analyze the music you are currently practicing or studying, noting the triads and seventh chords used. Write out the bass line for a passage in your piece and write figured bass symbols below. Then, sit down at a piano and feel and hear how that notation translates into keyboard spacing. Once you have learned the basic chord progression, try improvising to change things like the rhythms and voicing of notes in the chords. Be creative and see how that changes your perspective of the music. When you play it as written, or reflect on what you have learned through experimenting with improvisation created from figured bass notation.

5.4 Figured Bass Notation: Theory exercises

See Workbook Chapter 5.4.1 and 5.4.2

5.4 Figured Bass Notation: Sight Singing exercises

For each given Figured Bass chord (all are major or minor triads or major-minor 7th chords), practice the following

Step 1) Play the indicated bass note

Step 2) Sing the indicated chord up and down above the bass note on scale degrees in the key.

(accidentals do not carry through)

b6 6 6 6
 5 b5 6 #6 b6 6 4 6 6
 5 4 4 2 5 b4
 3

5.4 Figured Bass Notation: Aural Training exercises

Step 1) Listen to the string of ten chords, consisting of either major or minor triads or major-minor 7th chords in various inversions, each played *up and down* from the *bass note* given on the staff below (i.e. the given note is the starting pitch, not necessarily the root of the chord) pitch. Each is played twice. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=214#audio-214-1>

Step 2) fill in the remaining notes of the chord above each given bass note on the staff, adding accidentals as necessary (accidentals do not carry over the bar line).



5.5 Roman Numerals and Diatonic Harmony: Tutorial

Roman Numerals

Roman Numerals are another type of system for labeling chords in music. Like lead sheet symbols and figured bass symbols, Roman Numerals tell us what chord is being played and what inversion it is in. What Roman Numerals can do that lead sheet symbols and figured bass symbols cannot, is indicate the function of a chord in a key. For this reason, they are the standard system of chord labeling used in music theory.

A Review of Scale Degree Names

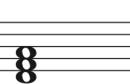
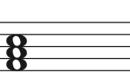
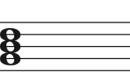
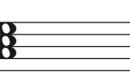
Scale degree names were discussed in the chapters on major and minor scales. Each scale degree in a key has a degree of tension that needs to be resolved and a functional relationship with those chords around them within the key. Each scale degree in a key has a name that indicates its function in the key.

Scale Degree	Name	Name comes from
1	tonic	“home base,” most stable pitch, beginning and end point
2	supertonic	Pitch right above tonic (super means above)
3	mediant	Pitch halfway between tonic and dominant
4	subdominant	Pitch right below the dominant (sub means below)
5	dominant	Dominant to tonic is an important motion in tonal music. We can see one instance of that in the Circle of 5th motion through keys in music.
6	submediant	Sub in this case means opposite the mediant. The mediant is a 3rd above tonic and the submediant is a 3rd below the tonic.
7	leading tone	The leading tone is a tendency tone with a strong drive to lead and resolve to 1.
b7	subtonic	When scale degree 7 has not been raised in a minor key, it is called the subtonic because it is below tonic.

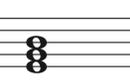
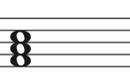
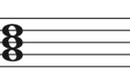
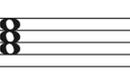
Diatonic vs. Chromatic chords

Diatonic chords are those found within a key. Chords built on each scale degree in a key use the key signature for that key. Chromatic chords are those that are altered by using accidentals that do not occur in the key. When analyzing music in a key, we expect diatonic chords built on each scale degree to have specific qualities. This is a list of the qualities of diatonic triads in major and minor keys:

Major

	$\hat{1}$	$\hat{2}$	$\hat{3}$	$\hat{4}$	$\hat{5}$	$\hat{6}$	$\hat{7}$
							
	Major	minor	minor	Major	Major	minor	diminished

Minor

	$\hat{1}$	$\hat{2}$	$\hat{3}$	$\hat{4}$	$\hat{5}$	$\hat{6}$	$\hat{7}$
							
	minor	diminished	Major	minor	Major	Major	diminished

Notice that in minor, we raise the leading tone on chords built on scale degrees 5 and 7. We do that because those chords function as dominant category chords, which lead back to tonic. We will learn more about this aspect of functional harmony in the chapter on functional harmony. We consider chords with a raised leading tone in minor to be diatonic chords because they are found as part of the harmonic and ascending melodic minor scales in minor keys.

Just like diatonic triads have an expected quality in major and minor keys, seventh chords do as well. Here is a list of the qualities of diatonic seventh chords in major and minor keys.

Major

Major

^1 ^2 ^3 ^4 ^5 ^6 ^7

M7 m7 m7 M7 Mm7 m7 ø7

Minor

Minor

^1 ^2 ^3 ^4 ^5 ^6 ^7

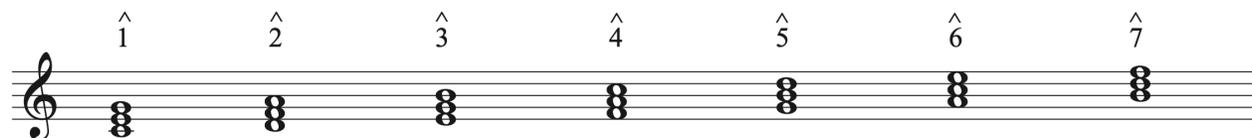
m7 ø7 M7 m7 Mm7 M7 o7

Memorize the qualities found for both triad and seventh chords in major and minor keys. Knowing what to expect on each chord can help you analyze music quickly and find chromatic chords that our outside of the key.

Roman Numerals: Triads

Roman Numerals are symbols used to label chords based on their scale degree positions in a key. The scale degree of the root of a chord is listed using a Roman Numeral. The Roman Numeral is upper case if the chord is major or augmented and lower case if the chord is minor or diminished. For example, a major chord build on scale degree 1 would be labeled as I. A minor chord built on scale degree 1 would be labeled as i. When labeling Roman Numerals, make sure there is an obvious different between your lower and uppercase letters. Hand written capitalized Roman Numerals use a horizontal line across the top and bottom of the numbers to clearly differentiate capital from lower case. An augmented triad would be symbolized by an uppercase letter as well as by a plus sign: I+. This distinguishes its quality from major. A diminished triad would be symbolized by a lowercase letter plus a small circle, like a degree sign: vii°. This distinguishes its quality from minor. Memorize the list of the diatonic triads found in major and minor keys labeled with Roman Numerals:

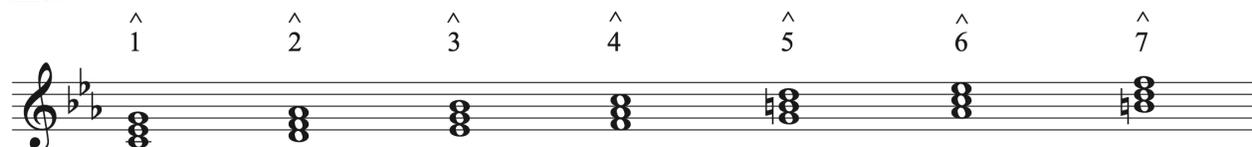
Major



Major minor minor Major Major minor diminished

RN: I ii iii IV V vi vii°

Minor



minor diminished Major minor Major Major diminished

RN: i ii° III iv V VI vii°

Roman Numerals: Seventh Chords

Like triads, Roman Numerals for seventh chords are labeled based on scale degree position in a key. Capital Roman numerals are used for major-major and major-minor seventh chords followed by a 7 to indicate the chord is a seventh chord instead of a triad. To distinguish between them, major-major seventh chords use a superscript triangle symbol or capital M placed before the 7, while major-minor seventh chords just use the Roman Numeral followed by 7. Minor-minor seventh chords use a lower case Roman Numeral followed by a 7 without any other quality symbol between. Half-diminished seventh chords use a lower case number followed by superscript \circ 7. Fully-diminished seventh chords use a lower case number followed by superscript \circ 7. Memorize the list of the diatonic seventh found in major and minor keys labeled with Roman Numerals:

Major

	[^] 1	[^] 2	[^] 3	[^] 4	[^] 5	[^] 6	[^] 7
	M7	m7	m7	M7	Mm7	m7	ø7
RN:	I ^{Δ7}	ii ⁷	iii ⁷	IV ^{Δ7}	V ⁷	vi ⁷	vii ^{ø7}

Minor

	[^] 1	[^] 2	[^] 3	[^] 4	[^] 5	[^] 6	[^] 7
	m7	ø7	M7	m7	Mm7	M7	o7
RN:	i ⁷	ii ⁷	III ^{Δ7}	iv ⁷	V ⁷	VI ^{Δ7}	vii ^{o7}

Symbolizing Chord Inversions Using Roman Numerals

Like lead sheet symbols, Roman Numerals indicate chord inversions as part of their symbol. Roman Numeral inversion symbols are called bass position symbols and evolved from the figured bass symbols commonly used for each type of chord. A triad in first inversion is labeled with 6/5 after its Roman Numeral. Though in writing, we add a slash between the two numbers, when writing the inversion next to a Roman Numeral, the numbers are stacked with the 6 on top of the 5, like it is in figured bass notation. A triad in second inversion is labeled with 6/4. Seventh chord inversion labels also come from figured bass symbols. A seventh chord in first inversion would be labeled 6/5. A second inversion seventh chord would be labeled 4/3, and a third inversion would be labeled 4/2. The following example shows what bass position symbols look like when added to Roman numerals. Notice their position next to the Roman numerals.

Triads

C Major: I I⁶ I⁶₄

Seventh chords

C Major: IV^{Δ7} IV^{Δ6}₅ IV^{Δ4}₃ IV^{Δ4}₂

Summary

Roman Numerals are labeled according to scale degree placement in a key, and can show chord function in a way that lead sheet symbols and figured bass cannot.

Memorize the diatonic triads and seventh chords found in each key and the symbols for chord inversion:

Triads In major:

- Major triads: I, IV, V
- Minor triads: ii, iii, vi
- Diminished triad: vii[°]
- Augmented triad: none

Triads In minor:

- Major triads: III, V, VI
- Minor triads: i, iv
- Diminished triads: ii[°], vii[°]

Triad inversion symbols:

- First inversion: 6
- Second inversion 6/4

Seventh chords in major:

- M7: IΔ7, IVΔ7

- Mm7: V7
- m7: ii7, iii7, vi7
- ø7: viiø7

Seventh chords in minor:

- M7: IIIΔ7, VIΔ7
- Mm7: V
- m7: i7, iv7
- ø7: iiø7
- °7: vii°7

Seventh chord inversion symbols:

- First inversion: 6/5
- Second inversion: 4/3
- Third inversion: 4/2

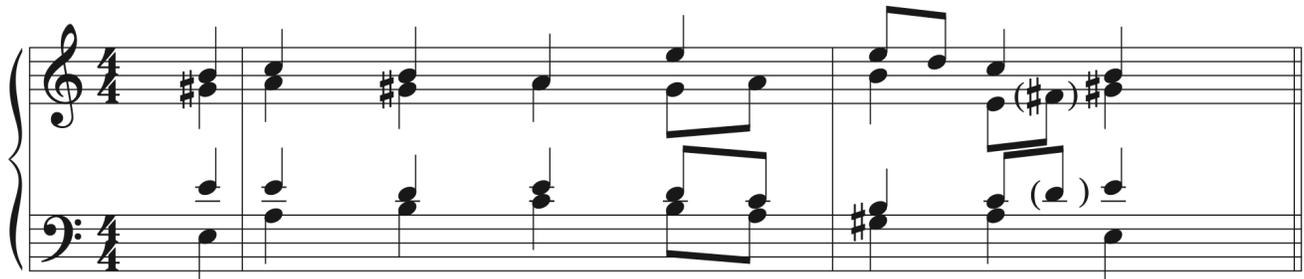
Roman Numeral Analysis

Now that you understand Roman Numerals, you can use them to label chords in music. Here are the steps to doing an analysis:

1. Determine the key and write the key below the bass line, to the left of first chord. Get in the habit of always including the key when writing Roman numerals. Major keys can use capital letters and an uppercase M followed by a colon sign, while minor keys can use lower case letters and a lowercase m followed by a colon sign. Roman numerals are always placed below the staff under their corresponding chords.
2. Stack the chord in thirds in root position, eliminating doubled tones. Double check accidentals that are part of the key signature or that carry through from earlier in the bar. Double check the rhythm to make sure that all chord tones are accounted for. Eliminate any notes that do not belong in the chord by putting those notes in parenthesis.
3. Identify the chord, including the root, quality, and inversion.
4. Provide a Roman Numeral label based on the scale degree of the root of the chord, including symbols for quality and inversion as needed.

Use the steps above to guide your analysis of the piece below. Cover the Roman numerals to see if you can analyze the chords correctly, then compare your answers to those given.

J. S. Bach, Chorale 3, *Ach Gott, vom Himmel sieh' darein*, mm. 1-2



am: V i vii^{o6} i⁶ V ^{$\frac{4}{3}$} i V ^{$\frac{6}{5}$} i V

Bringing Theory to Life

Create an analysis of the music you are currently practicing or studying using Roman Numerals. How does looking at the chord progression functionally within a key change your understanding of the music? What do you gain from using Roman numerals that you do not get from using lead sheet symbols or figured bass notation? Which system is easier to read in the moment? Which system is easier to use to understand the relationships between the chords in the key? When might you choose to use one system over the other in your life?

5.5 Roman Numerals and Diatonic Harmony: Theory exercises

See Workbook Chapters 5.5.1 and 5.5.2

5.5 Roman Numerals and Diatonic Harmony: Sight Singing exercises

Exercise 1

For each given Roman Numeral (all are major or minor triads or major-minor 7th chords), practice the following

Step 1) Pick a key and play the correct bass note for each of the following chords in the key.

Step 2) Sing each indicated chord up and down above the bass note on scale degrees.

1. **IV6**
2. **i6/4**
3. **V4/2**
4. **VI6**
5. **ii6/4**
6. **iii6**
7. **V4/3**
8. **IV6/4**
9. **V6/5**
10. **vi6**
11. **V4/2**
12. **i6**
13. **V4/3**

Exercise 2

For each chord on the staff (all are major or minor triads or major-minor 7th chords), practice the following

Step 1) Play the bass note.

Step 2) Sing the indicated chord up and down above the bass note on scale degrees in the key.

A musical staff in bass clef with a key signature of one sharp (F#). The staff contains eight measures, each with a chord symbol below it. The chords are: I (D major), iii (F# minor), IV (G major), V4/2 (A7), I6 (D major), ii6/4 (E minor), V6/5 (A7), and vi (F# minor). The bass notes for each measure are D, F#, G, A, D, E, A, and F# respectively.

D: I iii IV V_{4/2} I₆ ii_{6/4} V_{6/5} vi

5.5 Roman Numerals and Diatonic Harmony: Aural Training exercises

Exercise 1

Step 1) Orient yourself in the key: play a Bb and sing a Bb major tonic triad up and back down, 1-3-5-3-1. Be sure to keep the Bb tonic pitch in your ear and voice for the next steps below.

Step 2) Listen to each of the following six chords, consisting of major or minor triads or major-minor 7th chords in various inversions in the key of Bb major. Each chord is played up and down then in unison. Sing up and down the chord when it is played in unison.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-3>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-4>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-5>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-6>

Step 3) Identify the quality and inversion of each chord.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Step 4) For each chord, identify the scale degree of the bass note in the key of Bb major (i.e. the lowest note). Use your voice, finding the pitches relative to the tonic Bb triad, do not use a keyboard or other instrument! Finally, notate the notes of each chord in its given inversion on the staff below.



Exercise 2

Major Key

Step 1) Play an E and sing an E major tonic triad up and back down, 1-3-5-3-1. Be sure to keep the E tonic pitch in your ear and voice for the next steps below.

Step 2) Listen to each of the following series of three chords, each string consisting of major or minor triads or major-minor 7th chords in various inversions in the key of E major. Each chord is played twice, first up and down then in unison. Sing along with each the second time it is played.

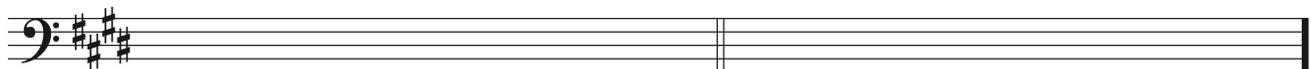
One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-7>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-8>

Step 3) For each three-chord exercise, identify the scale degrees of the bass notes in E major and *notate the chords* in the given inversions on the staff below in the key.

major key chord progression 1

major key chord progression 2



Minor Key

Step 1) Play a G and sing a G minor tonic triad up and back down, 1-3-5-3-1. Be sure to keep the G tonic pitch in your ear and voice for the next steps below.

Step 2) Listen to each of the following series of three chords, each string consisting of major or minor triads or major-minor 7th chords in various inversions in the key of G minor. Each chord is played twice, first up and down then in unison. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-9>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=222#audio-222-10>

Step 3) For each three-chord exercise, identify the scale degrees of the bass notes in G minor and *notate the chords* in the given inversions on the staff below in the key, adding accidentals for raised scale degree 7 if necessary.

minor key chord progression 1

minor key chord progression 2



Chapter 6: Functional Harmony

6.1 Functional Harmony: Tutorial

Functional Harmony

Functional harmony in tonal music centers around the idea that tonic serves as the “home base” in a key and chords built on each scale degree in the scale have predictable relationships with each other and predictable movements as they ultimately progress towards tonic. Each chord in a key has its own level of status, behavior, and stability. Expected progressions between chords make the music we hear make sense to our ears. Compare the following two examples. The first is written with a chord progression that follows expected motions, ultimately progressing towards tonic. You should have no trouble singing tonic after listening to the example. The second example, however, obscures the expected progressions found in music in such a way that our ears have trouble recognizing where tonic is and understanding where we are in the progression at any time.

Bb: I V⁶ I vii⁰⁶ I⁶ IV V⁷ I

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=224#audio-224-1>

Bb: IV iii vi V IV ii vi IV vii^{o7} ii

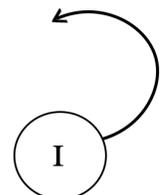
One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=224#audio-224-2>

Functional Harmony Chart

Chords built on each scale degree in a key can be grouped into categories that share a common function. Putting each category into a functional harmony chart shows the relationships between the chords and categories. We will examine individual chords in more detail in later chapters. We'll draw the functional harmony chart in major first, and then show the differences in minor.

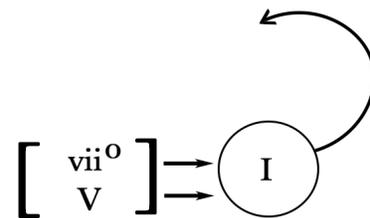
Tonic category

Tonic is the ultimate goal in tonal music. It is home base in a key, and has the most stability and flexibility. Tonic can move to any chord. Because it is the goal of motion, it will be the last chord on the functional harmony chart, so we will draw the tonic chord on right-hand side of the chart.



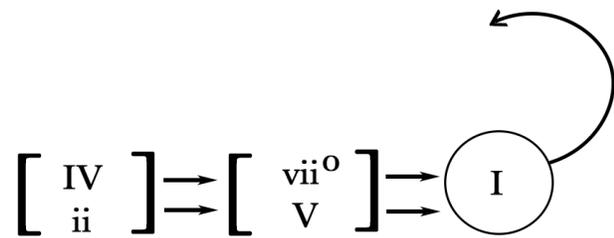
Dominant category

Chords in the dominant category most often directly precede tonic. Dominant function chords include V and vii°. The leading tone, a tendency tone that wants to resolve to tonic, exists in both chords in the dominant category. The dominant category chords are drawn within a bracket to show that they are part of the same category and have arrows that show that both chords can go to tonic. Chords can move within the same category, however, it is more common for vii° to move to V, rather than for V to move to vii°. Notice that the tonic category is contained within a circle instead of a bracket. That is done deliberately to show that tonic is different from the other categories because tonic is both home base and the most flexible chord. It can move to anything.



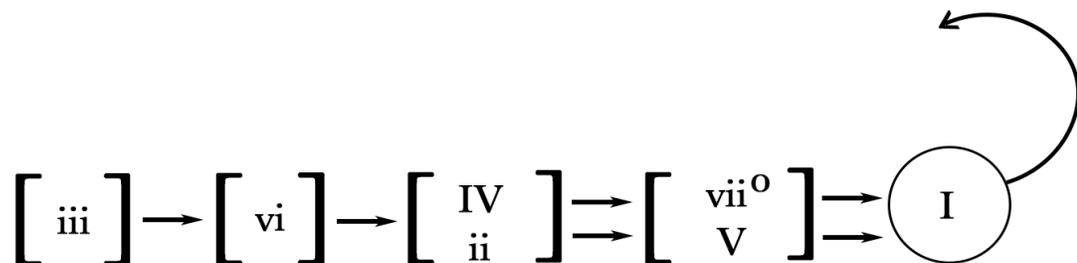
Predominant category

The predominant category comes before the dominant category on its way to tonic. The two chords contained in the predominant category are IV and ii. Like progressing from dominant to tonic, moving from predominant to dominant to tonic is one of the most fundamental and frequently used progressions in music. Like the dominant category, both chords are contained within a bracket with arrows to show that both chords can move to either chord in the dominant category. The chords can move within the same category, however, it is more common for IV to move to ii rather than for ii to move to IV.



Intermediate harmonies

The two remaining diatonic chords, vi and iii , act as intermediate harmonies but are not grouped together into one category. The vi chord precedes the predominant category, and the iii chord precedes the vi chord on the chart.

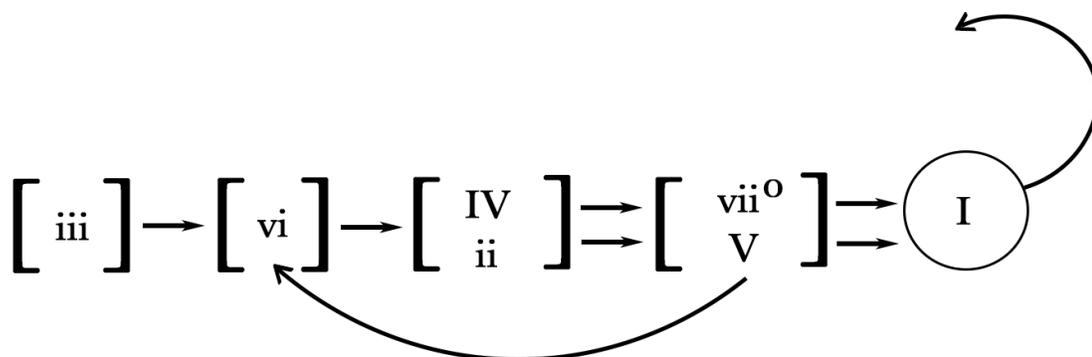


Addition common types of motion

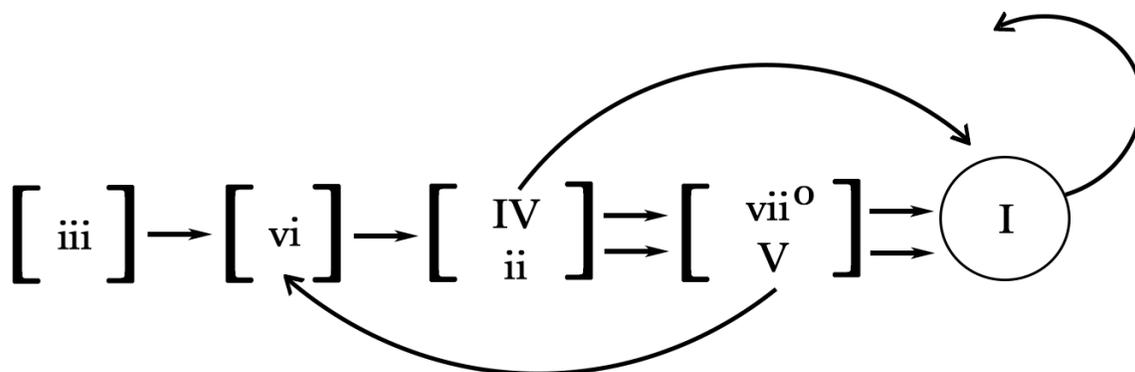
In addition to forward motion from left to right on the chart, there are three common types of motion between chords that can be indicated on the chart.

The first arrow that we can add to the chart is from V to vi , which is called deceptive motion because the vi chord acts as a temporary substitute for I . Though we commonly see this motion at a deceptive cadence, this type of motion is not limited to cadences and can be used internally in phrases. We draw the arrow from the V chord to the vi chord on the chart. Note that this arrow only moves in one direction, as vi-V is not a common enough motion to include

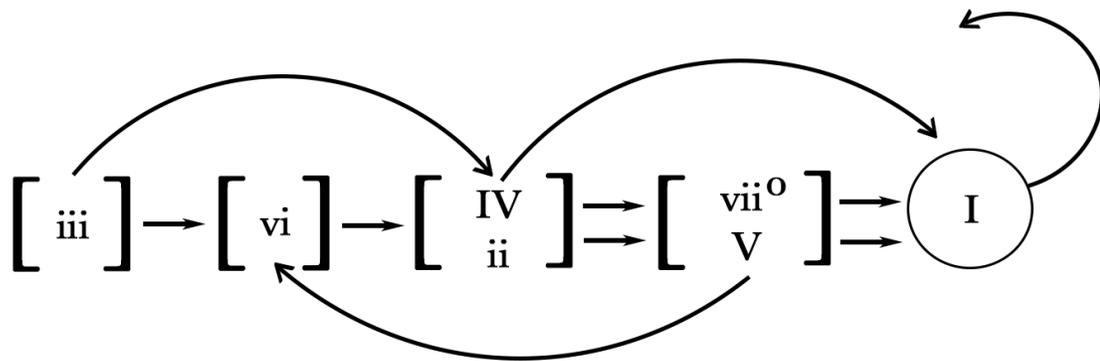
on the chart. Also note the arrow is specific to the V chord and that vii° does not commonly go to vi .



The second arrow we can add to the chart is from IV to I. IV to I is another type of cadence pattern called a plagal cadence. We will learn more about the plagal and deceptive cadences in the chapter on cadences.



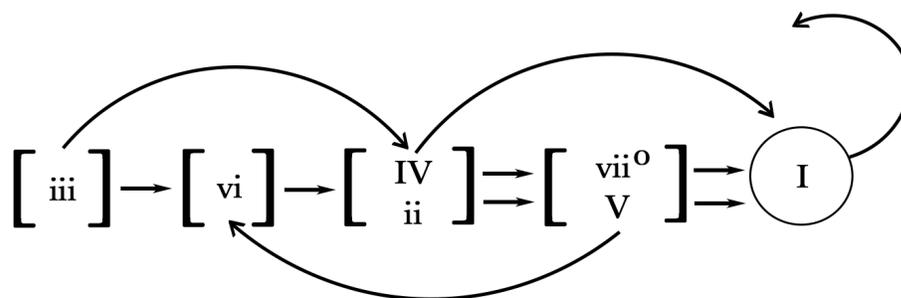
The last arrow we will add to the chart goes from iii to IV. The iii chord shares two notes with tonic chord and can sometimes be substituted for tonic in a progression (like the vi chord). Though the iii chord contains a leading tone, it is not a dominant function chord, so the leading tone does not need to resolve to tonic and may descend to scale degree 6, which is often part of a IV chord, allowing iii to move to IV. Keep in mind that iii goes to IV on the chart, but does not go to ii .



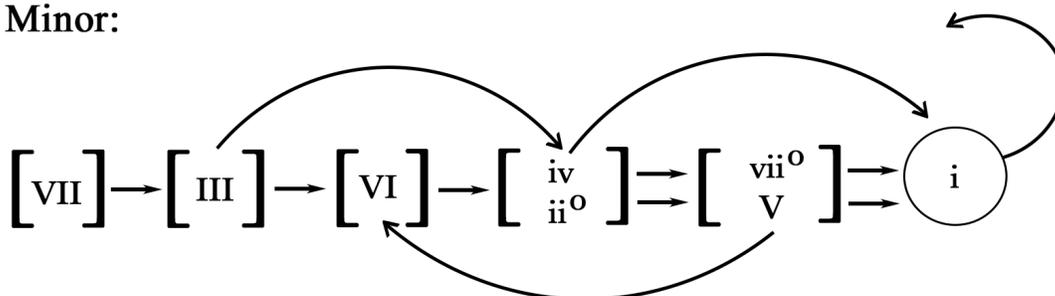
The functional harmony chart in minor

The functional harmony chart is almost the same in minor. The chord qualities change to reflect the diatonic chords found in a minor key. The other change is the addition of VII to the beginning of the chart. The subtonic chord is the result of not raising the leading tone on scale degree 7. The leading tone is essential to establishing the dominant category in a minor key (notice that the dominant category is the only category on the chart that is exactly the same in both Major and minor). Using VII in a prominent way can undermine the tonality of a minor key. It frequently is used to move to the relative Major key (III). The subtonic chord is on its own at the beginning of the chart.

Major:



Minor:



Types of Motion Between Chords

There are five types of motion possible between chords.

- Progression (P): forward motion on the chart by 1 category
 - V-I is an example of progression
- Tonic (T): motion from tonic to any other chord
- Retrogression (R): moving backwards on the chart by one or more categories
 - V-vi and vi-iii are examples of retrogression
- Similar Motion/Repetition (S): motion within a category
 - ii-IV, vii° -V, and vi-vi are examples of repetition
- Elision (E): forward motion on the chart, skipping one or more categories
 - IV-I and vi-V are examples of elision

Seventh Chords

Seventh chords function in the same categories as their triad counterparts. Seventh chords are often used to substitute for their triad counterparts. IΔ7 is an exception to this substitution.

functioning as a tonic chord, we label it $I6/4$. If it functioning as a dominant chord at a cadence, we change the label to $cad6/4$ on the $I6/4$ chord and bracket both the $cad6/4$ and V chords with a V underneath to show that both chords are really functioning as a V chord (Note that there are other variations of this label that you might find in music in other sources). Let's look at an example in music to see how tonic function $I6/4$ differs from dominant $I6/4$ in terms of labeling types of motion between chords.

am: i ii^o₅⁶ V I₄⁶ V vii^o₆ i₆ VI^Δ₃⁴ iv₂⁴ ii^o₇ cad₄⁶ V⁷ I

types of
motion
between
chords

T P P T S P T P S P S P

Bringing Theory to Life

Analyze the music you are currently working on or studying using Roman numerals. For any chords that you don't yet know how to analyze, simplify them into triads or seventh chords for this exercise. Look at your chord progression in terms of functional harmony categories and types of motion between chords. Are the chords following an expected progression? Does your analysis of the motion between chords match the sound of the music? Are there moments that sound easier to listen to than others? How does adding an analysis to your music affect the way you think about it when you practice? Do you hear things differently now that you've dived in a little deeper? What stands out that you didn't notice before? What new questions about the composition arose from working on a chordal analysis? What type of labeling system do you think would make the most sense for studying the piece you are working on: lead sheet symbols, figured bass, or Roman Numerals?

6.1 Functional Harmony: Theory exercises

See Workbook Chapters 6.1.1 and 6.1.2

6.1 Functional Harmony: Sight Singing exercises

Step 1) Play the Tonic pitch for the given chord progression.

Step 2) Sing the bass line only, from beginning to end.

Step 3) Sing each chord one at a time on scale degrees, ascending then descending, finding the next bass note before continuing to the next chord. Be sure you sing on the same pitch any common tones that may carry over from one chord to the next. If necessary, play the next bass note before singing each chord (see example).

Step 4) Pick a new Tonic pitch and repeat steps 2 and 3.

The image shows a musical staff in treble clef with a key signature of two flats (Bb and Eb). The staff contains ten chords, each represented by a vertical line with a stem and a chord symbol below it. The chord symbols are: Eb, I, V6/4, I6, ii6, V7, vi, IV, ii, V4/3, and I. The chords are written as follows: Eb (one flat), I (one note), V6/4 (two notes), I6 (three notes), ii6 (three notes), V7 (four notes), vi (three notes), IV (two notes), ii (two notes), V4/3 (three notes), and I (one note).

6.1 Functional Harmony: Aural Training exercises

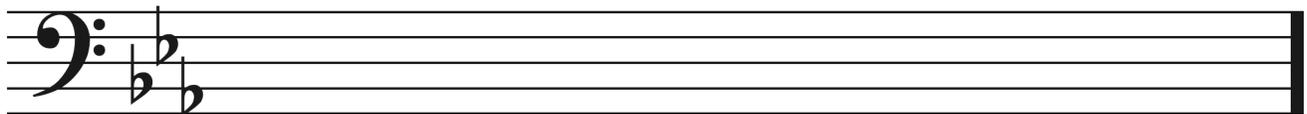
Major Key

Step 1) Play an Eb and sing an Eb major tonic triad up and back down, 1-3-5-3-1. Be sure to keep the Eb tonic pitch in your ear and voice for the next steps below.

Step 2) Listen to the six-chord harmonic progression below, consisting of major or minor triads or major-minor 7th chords in various inversions in the key of Eb major. Each chord is played twice, first up and down then in unison. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=238#audio-238-1>

Step 3) Identify the scale degrees of the bass line in Eb major and notate the chords in the given inversions on the staff below in the key.



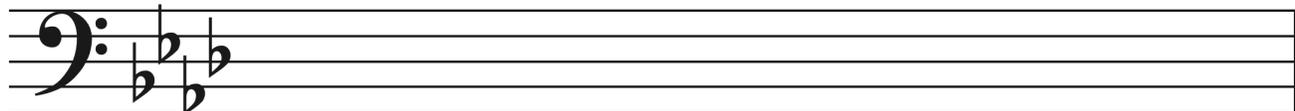
Minor Key

Step 1) Play an F and sing an F minor tonic triad up and back down, 1-3-5-3-1. Be sure to keep the F tonic pitch in your ear and voice for the next steps below.

Step 2) Listen to the six-chord harmonic progression below, consisting of major or minor triads or major-minor 7th chords in various inversions in the key of F minor. Each chord is played twice, first up and down then in unison. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=238#audio-238-2>

Step 3) Identify the scale degrees of the bass line in F minor and notate the chords in the given inversions on the staff below in the key, adding accidentals for raised scale degree 7 if necessary.



6.2 Cadences: Tutorial

Cadences

Cadences are like punctuation marks in music. They are harmonic events that serve to separate phrases to some degree. In order to learn more about cadences, it is important to have a basic knowledge of phrases in music.

Phrase

A phrase is a basic unit of musical thought, similar to a sentence in language. Phrases end with punctuation marks in the form of cadences. A common phrase length is four bars, though phrases can be longer or shorter. Phrases are often combined into larger groups or divided into subphrases. The essential component of a phrase is a cadence, or degree of separation. Listen to the following example to hear where the punctuation marks occur.

J. S. Bach, *Minuet in G*, mm. 1-16

The image displays a musical score for J.S. Bach's Minuet in G, measures 1 through 16. The score is written in G major (one sharp) and 3/4 time. It consists of two systems of music. The first system shows measures 1 through 8, and the second system shows measures 9 through 16. The melody is in the right hand, and the bass line is in the left hand. The piece ends with a double bar line at the end of measure 16.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=240#audio-240-1>

We mark phrase ending with half brackets to show separation. Look at the score below to see the phrase markings. Then, listen to the recording again to hear the cadences that occur at the ends of both phrases. Does the first cadence sound conclusive, like a period? Or does it sound like the music must continue? Does the final cadence sound more or less conclusive than the first?

J. S. Bach, *Minuet in G*, mm. 1-16

Cadences are points of rest and separation in the music. They can group, separate and dramatize musical ideas. They can be the equivalent of a comma, a period, or even an exclamation point.

Cadences have different degrees of finality and strength. Some are final and can end motion completely (called conclusive cadences), and some require that the music continues after a pause (called progressive cadences). The type and strength of a cadence is dependent on harmony and chord inversion, melodic motion, and metric placement. A cadence that is on a stronger beat will be stronger than a cadence on a weaker beat. Composers can choose the placement of a cadence and the chords and melody used in order to vary the strength of cadences and their relationships to one another in the piece.

Cadence Types

Perfect Authentic Cadence (PAC)

- The strongest, most conclusive type of cadence. Good for the last cadence of a piece.
- Chords: V-I (or V7-I) in major or minor
- In order to be a PAC, two things must be true:
 1. Both chords must be in root position
 2. The melody must end on scale degree 1



Bb: V I

PAC

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=240#audio-240-2>

Imperfect Authentic Cadence (IAC)

- A conclusive cadence, but not as strong as the PAC. It is often used for cadences on a tonic harmony that occur in the beginning or middle of a piece.
- Chords: dominant to tonic.
 - Triads can be in root position or first inversion.
 - Seventh chords can be in any inversion.
- Melody can end on scale degree 1, 3, or 5

Bb: V I

V6 I

vii^{o6} I

IAC

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=240#audio-240-3>

Half Cadence (HC)

- Progressive cadence. The music must go on after a HC.
- Harmony ends on a V chord (preceding chord can be any other chord)
 - Technically, the last chord can be any chord except I, but it most often ends on V
- No specific melodic motion requirement

Bb: I V

HC

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=240#audio-240-4>

Phrygian half cadence (PHC)

- Progressive cadence. It's a special type of half cadence named for the descending half step motion in the bass.
- Chords: iv⁶-V in minor keys only
- No specific melodic motion requirement

bm: iv⁶ V

PHC

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=240#audio-240-5>

Deceptive Cadence (DC)

- A progressive cadence:
 - A surprise ending! Results when the ear expects a V-I authentic cadence but gets V-vi chord instead.
 - Often used to extend a phrase a few bars until reaching a true authentic cadence.
- No specific melodic motion requirement

Expected: PAC Surprise: DC

Bb: V I V vi

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=240#audio-240-6>

Plagal Cadence (PC)

- A type of authentic cadence, though not as strong as the PAC or IAC (since it has no leading tone)
 - Often called the ‘Amen’ cadence because of its use for the final chords in hymns.
 - Occurs less often than the PAC and IAC
 - More commonly used in gospel and blues than in classical music
- Chords: IV-I
- No specific melodic motion requirement

Bb: IV I

PC

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=240#audio-240-7>

Important Note: a harmonic progression can include any of the progressions (chords) found at a

cadence. This does not automatically make it a cadence point. A cadence is the goal of a phrase, which has some degree of rest and separation.

Let's return to the Bach example to look at the cadences that were used and how they relate to one another.

J. S. Bach, *Minuet in G*, mm. 1-16

The image displays two staves of music from J.S. Bach's *Minuet in G*, measures 1-16. The first staff (measures 1-8) shows a phrase ending with a half cadence (HC) on the dominant chord (V). The second staff (measures 9-16) shows a phrase ending with a perfect authentic cadence (PAC) on the tonic chord (I). The harmonic analysis below the staves is as follows:

GM: I V (HC) I (PAC)

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=240#audio-240-8>

Notice that the first cadence is a half cadence (HC). That's why it sounds like the music cannot end at the end of that phrase. Compared the final cadence, which is a perfect authentic cadence (PAC), is much stronger than the half cadence. While the half cadence is a great choice to use to separate the phrases in the middle of the piece while creating motion, the perfect authentic cadence, as the strongest cadence possible, is the best choice to end the section. Notice that the tonic chord in the PAC ends on beat 1, the strongest beat possible, which makes the cadence even stronger.

Bringing Theory to Life

Listen and look for phrases and cadences in the music you are currently playing or studying. Can you hear different types of punctuation in music? How do the cadences progress from the beginning to the ends of sections and through full pieces? Where are the weaker cadences located? Where is the strongest cadence located and what makes it stronger than the ones around it? Can you hear the difference between the different types of cadences? Listen to music without the score to see if you have the same ability to hear phrases and cadence types without written notes to visually analyze.

6.2 Cadences: Theory exercises

See Workbook Chapter 6.2

6.2 Cadences: Sight Singing exercises

Step 1) Play the Tonic pitch (not the first bass pitch) for the given cadential progressions.

Step 2) Sing each chord one at a time, ascending then descending, finding the next bass note before continuing to the next chord. Be sure you sing on the same pitch any common tones that may carry over from one chord to the next.

Step 3) Pick a new Tonic pitch and repeat step 2.

The musical notation is a single staff in bass clef, 4/4 time, with a key signature of two sharps (D major). The progression consists of six measures, each containing a chord and a whole note bass line. The chords and their bass notes are: 1) D major (D, F#, A) with bass D; 2) G major (G, B, D) with bass G; 3) F# major (F#, A, C#) with bass F#; 4) C major (C, E, G) with bass C; 5) B major (B, D, F#) with bass B; 6) D major (D, F#, A) with bass D. The label 'A:' is positioned below the first measure.

6.2 Cadences: Aural Training exercises

Step 1) Listen to each of the four-chord cadencing progressions below, each in the same key and starting with a tonic triad in root position or inversion. Each consists of major or minor triads or major-minor 7th chords. Each chord is played twice, first up and down then in unison. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=246#audio-246-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=246#audio-246-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=246#audio-246-3>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=246#audio-246-4>

Step 2) Identify each four-chord progression by roman numeral and inversion, and identify the cadency type being played in each.

Progression 1:

Progression 1 cadence type:

Progression 2:

Progression 2 cadence type:

Progression 3:

Progression 3 cadence type:

Progression 4:

Progression 4 cadence type:

6.3 Harmonic Rhythm: Tutorial

Harmonic Rhythm

Harmonic rhythm is the rate at which chords change in a piece of music. The length that each chord in the music lasts is symbolized using standard rhythmic notation. Look at the following example. Notice that the rhythms used in each beat are not the same as the harmonic rhythm.

$\frac{4}{4}$ ||
 I V I V
 HR: $\frac{4}{4}$ ||

When symbolizing harmonic rhythm, all inversions of a chord count as part of the same chord. Look at the following example. Each beat has a tonic chord in a different inversion, but because the chord itself has not changed during the bar, the harmonic rhythm is symbolized using a whole note.

$\frac{4}{4}$ ||
 I I⁶ I₄⁶ I
 HR: $\frac{4}{4}$ ||

While harmonic rhythm shows the rate at which chords change, it does not show the functional relationship between chords. In the following example, we see a cadential $\frac{6}{4}$ -V-I progression in the last two bars. Functionally, the cad $\frac{6}{4}$ is a decoration of the V chord and is considered a

Beethoven, Piano Sonata op. 22, mvt 2, mm. 1-5
 Adagio con molt espressione

The image displays a musical score for the first five measures of the second movement of Beethoven's Piano Sonata op. 22. The score is in 9/8 time and B-flat major. It consists of two systems of music. The first system covers measures 1-5, with a key signature change from E-flat to B-flat/D in measure 3. The second system covers measures 6-8, with a key signature change from B-flat/D to E-flat in measure 8. The piano part is written in a grand staff (treble and bass clefs), and the harmonic rhythm (HR) is shown in a single treble clef staff. The piano part features a melodic line in the right hand and a rhythmic accompaniment in the left hand. The HR part consists of a single line of music with a 9/8 time signature.

Link for recording of movement 2 at 7:31: [Beethoven: Sonata No.11 in B-flat Major, Op.22](#)

Harmonic rhythm can also be faster, occurring as often as every beat or note in the melody. Look at the following example. Note that the harmonic rhythm changes on every beat. The harmonic rhythm also slows down at the cadence in bar 4. This is another characteristic of harmonic rhythm in music. The rate of chord change often accelerates or decelerates with the approach to a cadence.

J. S. Bach, Chorale harmonization, "Was Gott tut, das ist wohlgetan," from BWV 99

GM: I I V⁶ I IV⁶ I⁶ V I IV^{Δ7} V IV I⁶ I⁶ V⁷ I

HR:

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=248#audio-248-1>

Harmonic rhythm generalizations:

- Patterns of harmonic change often help to define the meter.
- Tempo and harmonic rhythm often display an inverse relationship. When tempo is fast, harmonic rhythm is often slow. When tempo is slow, harmonic rhythm is often fast.
- Harmonies most often change on strong beats rather than on weak beats, and more often on downbeats than upbeats.
- The rate of chord change often accelerates or decelerates with the approach to a cadence and final cadence chords usually are metrically stronger than the chord that precedes them. When looking for cadence points and phrase separations, examining the harmonic rhythm is often helpful.
- The tonic occupies an accented metric position more often than the dominant (the HC is a notable exception).
- Composers can use harmonic rhythm as a compositional tool. As an example, they can shift the harmonic rhythm to add variety and interest (rhythmic dissonance) to the music. They can also use the same harmonic rhythm to highlight similar phrases in the music, which can be useful when determining the phrase structure of a piece and when finding cadence points.

Bringing Theory to Life

Listen to various pieces of music to see if you can hear the rate at which chords change. In the music you are currently playing or studying, analyze the chords and map the harmonic rhythm. Does the harmonic rhythm highlight similarities in phrase structure? Do changes in the harmonic rhythm help you find cadences? Does the harmonic rhythm highlight the meter? Does it stay consistent throughout your piece, or does the composer create interest and variety through varying the harmonic rhythm? After studying the harmonic rhythm, listen to your piece with fresh ears. Does it sound different? If so, what do you hear that you didn't hear before?

6.3 Harmonic Rhythm: Theory exercises

6.3 Harmonic Rhythm: Sight Singing exercises

Step 1) Establish a tonic pitch and sing the given melodies in time.

Step 2) Determine the harmonic rhythm, i.e. on which beats does it feel like the harmony seems to change?

Step 3) What chords would best harmonize the melodies at these points of harmonic change?

The image displays two musical staves. The top staff is in bass clef, key of D major (two sharps), and 6/8 time. It contains a melody with notes: D4, E4, F#4, G4, A4, B4, C5, B4, A4, G4, F#4, E4, D4. The bottom staff is in treble clef, key of D major (two sharps), and 4/4 time. It contains a complex rhythmic accompaniment with many sixteenth notes and eighth notes, including rests and accidentals.

6.3 Harmonic Rhythm: Aural Training exercises

Step 1) Listen to the excerpts below, each consisting of a thick texture of harmony and melody. The first two are in 4/4 time, while the second two are in 12/8

Step 2) Conduct along and find the beats where the harmony changes

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=254#audio-254-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=254#audio-254-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=254#audio-254-3>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=254#audio-254-4>

Step 3) Notate the harmonic rhythm of each excerpt. You are not notating pitches, nor the complete rhythm of the excerpt, but simply a rhythm representing the change of harmony, i.e. the Harmonic Rhythm



Chapter 7: Melody

7.1 Melodic Material: Range, Interval Structure, Gesture: Sight Singing exercises: Aural Training exercises: Tutorial

Melodic Characteristics: Range, Interval Structure, Gesture

Recognizing, building, and labeling chords has been our primary focus in the last several chapters. It is time to turn our attention to melody. Understanding melodic characteristics opens another avenue of exploration into how music works. In this chapter, we will focus primarily on range, interval structure, and gesture.

Range

A composition's melodic range can be defined as the distance between its lowest and highest melody note. The range of a composition is often chosen for its intended performers. Music written to be easily sung by the masses, like folk music, popular music, chorales, and traditional songs normally spans an octave or less in order to make the music easy to sing and remember. Music written for trained musicians that is not intended for mass use often uses a much wider range.

Interval Structure

Interval structure refers to the use of steps versus leaps in the music. Music that is mostly stepwise uses conjunct motion, and is a good choice for music written to be easily sung by the masses. Music that uses disjunct motion uses more leaps than steps. The more a melody leaps, the harder it will be to sing, especially if those leaps are large and extend the range of the music. Music that contains an equal number of leaps and steps is labeled as balanced.

Let's compare two compositions to their range and interval structure. Look at the example below, and listen to the recording. Find the range of the melody and determine if the melody is conjunct, disjunct, or balanced.

"America" (My Country, 'Tis of Thee)



America:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=256#oembed-1>

My Country 'Tis of Thee is a patriotic song meant to be sung by a whole nation full of people of all ages. It's range is small. The lowest note is E4 and the highest is D5, making the range a minor 7th, which is less than an octave. This is a comfortable range for singability. The song only contains 4 leaps, making it conjunct and easily singable.

Next, look at example below and listen to the recording to compare Mozart's *Queen of the Night* aria to *My Country 'Tis of Thee*. What range and type of motion did Mozart use?

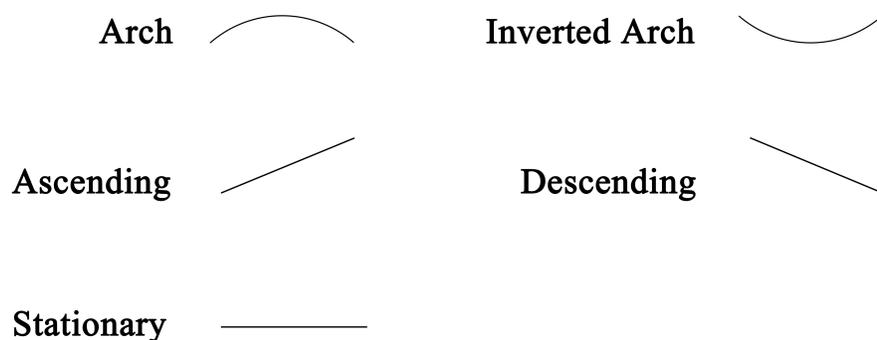
W. A. Mozart, "Der Hölle Rache kocht in meinem Herzen" from Die Zauberflöte, K. 620, excerpt

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=256#oembed-2>

Mozart's aria is drastically different from a patriotic song. The range is large. The lowest note of this excerpt is F4 and the highest is F6, which is a two-octave range. The extended range of this aria makes it challenging, even for trained singers. It also contains an abundance of leaps, especially in the extended part of the range. The disjunct nature of this melody also makes it hard to sing accurately. This piece was composed as a virtuosic show piece for a soloist and not meant to be accessible by the masses. Analyzing the range and interval structure of a melody can give us insight into how the piece works and who it's intended performers would be.

Gesture

The term gesture in music describes the shapes created by the melodic line. There are five main types of melody shapes in music: arch, inverted arch, ascending, descending, and stationary. Look at the example below to see the shape of each gesture.



Understanding gestures can help us analyze music more effectively by eliminating decoration in the melody and looking at underlying structure. Gestures can help us compare and contrast phrases and understand progressions in music. Being able to hear gestures can also help us develop strong skills for aural training. Gestures can also help us find meaning in the music because emotion in music is often expressed through gestures. Lines that ascend tend to build tension. Lines that descend release tension. Arch shapes often reach for something. Inverted arch shapes often pull away from something. Stationary music can portray something stuck, weighted, or aimless. To explore melodic shape examples in pop vocal melodies, watch this video: [Examples of Melodic Shapes in Vocal Melodies](#)

Bringing Theory to Life

Examine the melodic elements of range, interval structure, and gesture in the music you are currently practicing or studying. Is your music more conjunct or disjunct, and how does that affect the sound and character of the music? What is happening in the music at the highest and lowest points in the melodic range? Does the composer keep the same range and interval structure throughout, or is there a plan in how the music evolves? How do the shapes of each phrase help to tell the story of the music? Once you've looked at the details of those three melodic elements, listen to/play your piece again. Has your understanding and interpretation of the music changed? What are you doing differently now?

7.1 Melodic Material: Range, Interval Structure, Gesture: Sight Singing exercises

Melodic Range and Structure

Step 1) Sing each of the following musical excerpts

Step 2) For each melody, identify the contour and cadences used to form its structure.

Step 3) Choose one of the melodies. Start singing it, but improvise a different melodic path for it to take. For example, change the overall contour of the melody, or end with a different kind of cadence. Start small, changing only a few notes near the end, then try it again and again, changing more each time.

The image contains two musical excerpts. The first excerpt is written on a treble clef staff in 6/8 time, with a key signature of one flat (B-flat). The melody consists of eight measures: C4 (quarter), B3 (quarter), C4 (quarter), D4 (quarter), E4 (quarter), F4 (quarter), G4 (quarter), and F4 (quarter). The second excerpt is written on a bass clef staff in 3/4 time, with a key signature of one sharp (F-sharp). The melody consists of eight measures: G3 (quarter), F3 (quarter), E3 (quarter), D3 (quarter), C3 (quarter), B2 (quarter), A2 (quarter), and G2 (quarter).

7.1 Melodic Material: Range, Interval Structure, Gesture: Aural Training exercises

Melodic Range and Structure

Step 1) Listen to each of the melodies below and identify the tonic note using your voice.

Step 2) Label the *scale degrees* as requested for each.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=262#audio-262-1>

Melody 1 starting note:

Highest note:

Ending note:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=262#audio-262-2>

Melody 2 starting note:

Highest note:

Ending note:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=262#audio-262-3>

Melody 3 starting note:

Lowest note:

Ending note:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=262#audio-262-4>

Melody 4 starting note:

Longest note:

Ending note:

7.2 Melodic Material: Create/Vary/Repeat and Sequences: Tutorial

Melodic Variation and Repetition

The options available to a composer writing melodic material include: create a new idea, vary the idea, or repeat the idea. New material is melodic material that has not yet been seen in the music. A variation takes the original material and changes aspects of it. It could have decorative notes, or changes in rhythm and contour, for example. A variation sounds and looks similar to the original material, but is not exactly the same. A repetition of the melodic material takes the original material and either repeats it so that it is exactly the same, or repeats it so that it is primarily the same but is transposed so that it starts on a different pitch.

Let's look at an example and listen to the recording to see how these three options are used in the example below.

W. A. Mozart, *Piano Concerto K. 467*, mvt 1 orchestral reduction, mm. 1-12

The musical notation consists of three staves. The first staff contains measures 1 through 4. Measure 1 starts with a quarter rest, followed by eighth notes G4, A4, B4, C5. Measure 2 has a quarter note D5, followed by eighth notes C5, B4, A4. Measure 3 features a triplet of eighth notes G4, A4, B4, followed by a quarter note C5. Measure 4 has a quarter note D5, followed by eighth notes C5, B4, A4. The second staff contains measures 5 through 8. Measure 5 has a quarter note G4, followed by quarter notes A4, B4, C5. Measure 6 has a quarter note D5, followed by quarter notes C5, B4, A4. Measure 7 has a quarter note G4, followed by quarter notes A4, B4, C5. Measure 8 has a quarter note D5, followed by quarter notes C5, B4, A4. The third staff contains measures 9 through 12. Measure 9 has a quarter note G4, followed by quarter notes A4, B4, C5. Measure 10 has a quarter note D5, followed by quarter notes C5, B4, A4. Measure 11 has a quarter note G4, followed by quarter notes A4, B4, C5. Measure 12 has a quarter note D5, followed by quarter notes C5, B4, A4.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=264#audio-264-1>

The first notes of the composition are considered new material because nothing else has happened yet to compare them to. New material continues until a variation or repetition is seen. In b. 3 of the example above, we see material that looks very similar to the opening two

bars. It is not exactly the same, so it is not a direct repetition. It is also not the same material repeated at a different pitch level. It has changes in the shape of the line (contour). Instead of descending for the first interval, it ascends. We see several changes to contour. The material in b. 3 also includes a pickup note that was not part of the original material. Because it includes these changes, but is still recognizably related to the music of the first two bars, we call bars 3-4 a variation. Bar 5 begins with material that we haven't yet seen, so is labeled N for new material. Bar 6 repeats bar 5 starting on a different pitch level, so is labeled as a repetition (R). Bar 7 consists of new material (N). Bar 9 looks a lot like bar 5, but is decorated with a grace note and has a different rhythm. We call that a variation of bar 5 (V). Bar 6 looks like a repetition of bar 9 at a different pitch level. It is also a variation on the music in bar 6. So, we indicate both relationships in the score. Bar 11 looks like the material in b. 7, but with variation in rhythm and contour, so it called a variation (V). Look at the example below and listen to the recording again to see if you can hear the differences between creating new material, varying the material, and repeating the material.

The musical score consists of three staves of music in 4/4 time. The first staff (bars 1-4) is labeled "new material (N)" and "variation (V) of b. 1-2". The second staff (bars 5-8) is labeled "N", "repetition (R) of b.5", and "N". The third staff (bars 9-11) is labeled "V b. 5", "V b. 6 (also R b. 5)", and "V b. 7". The score includes various musical notations such as eighth notes, quarter notes, and triplets.

Repetition in Music

Music relies heavily on repetition. In fact, repetition is a vital feature in music of all genres. To understand how music repetition affect us, watch this video:

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=264#oembed-1>

Understanding repetition can help you:

- Sight read better
- Practice more efficiently
- Understand how musical ideas develop—help you create a musical interpretation
- Know what connects the repeated ideas
- Know how the repeated ideas move forward
- Know how the repeated ideas connect

Motives

Repetition in music can be exact or modified. It can apply to small musical units or large units. Motives in music are short figures that are used as building blocks to generate compositional material. One of the most famous examples of the successful use of a motive is Beethoven's Symphony No. 5.



Beethoven's famous motive consists of a pitch element: two notes that are a Major 3rd apart, and a rhythmic element: three eighth notes leading to a half note. Beethoven uses both elements separately as well as together to generate an entire symphony's worth of music. Listen to the symphony and see if you can catch the many ways that Beethoven uses the motive.

Beethoven video with score:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=264#oembed-2>

Link to score on imslp.org (scroll down to find public domain score): [Symphony No.5 in C Op.67 \(Beethoven, Ludwig van\)](#)

Sequence

A melodic sequence is a melodic idea that is immediately repeated at a different pitch level.

We label sequences by their type as well as their interval of transposition. There are two types of melodic sequences: real and tonal.

A real sequence uses the exact intervals between each pitch as the original melody statement.

m2 P4 M2 M2 m2 P4 M2 M2

statement real sequence up M3

In the example above, the intervals are exactly the same between statement and sequence, so it is a real sequence. To name the level of transposition, look at the first note of the statement in comparison to the first note of the sequence. The sequence starts a Major 3rd higher. The full label for the sequence is: real sequence up M3.

A tonal sequence alters the quality of the intervals in order to remain in the same key.

m2 M2

statement tonal sequence up M3

In the example above, the first interval in the sequence was changed in order to stay in the key (not use accidentals outside of the key). Therefore, the sequence is tonal. The first note of the sequence is a M3 higher than the first note of the statement, so the full label for the sequence is: tonal sequence up M3.

Both real and tonal sequences can be modified by changing the rhythm or contour.

m2
M2

statement
tonal sequence modified up M3

In the example above, the rhythm in the last beat of the sequence was altered. So, the full label for this sequence is: tonal sequence modified up M3.

Labeling sequences in music

1. Identify the statement: The first step to labeling sequences is finding where the statement (original melody) ends and when the sequence begins. The beginning of the sequence will look exactly like the beginning of the original melody written at a different pitch level. A sequence starts immediately after the statement ends, so there should be no extra music between the end of the statement and the beginning of the sequence. Once you have found the end of the statement, bracket it and label it “statement”.
2. Determine the type of sequence: compare each interval in the statement with each interval in the sequence. If all intervals are exactly the same, it is a real sequence. If the interval size is the same, but the quality was altered (in order to stay in the same key), it is a tonal sequence. If any part of the rhythm or contour was changed, include the word “modified” after either “real” or “tonal” in your label.
3. Determine the level of transposition of the sequence: look at the first note of the statement compared to the first note of the sequence. Make sure to include the exact interval and direction used between the two notes. For example: up a P4.
4. Follow these steps to identify each reiteration of the sequence. Level of transposition is measured from the first note of the statement to the first note of the first sequence. If there are more sequence reiterations, the level of transposition of the second sequence repetition is measured from the first interval of the first sequence repetition to the first interval of the second sequence repetition, etc. The type of sequence is always compared to the statement. It is possible to have different types of sequences used in different repetitions of the sequence, so make sure to check each one.

Sequences usually are repeated 3 times before moving on to different material. This is often

called the “rule of 3.” Repeating the sequence 3 times limits predictability and keeps interest going. Note that the example below uses the rule of 3.

statement tonal sequence up M3 tonal sequence down M2 tonal sequence modified up P4

Bringing Theory to Life

Sequences are common ways to create repetition in music. Can you find any instances of sequences in the music you are currently practicing or studying? If so, identify the type and think about why the composer chose either a real or tonal sequence. How would substituting a different type of sequence change the sound of the music?

Sequences are prevalent in classical music, but are just as popular in other genres. Watch this video to learn more about sequences in pop music: [Songs that use sequence](#)

7.2 Melodic Material: Create/Vary/Repeat and Sequences: Theory exercises

See Workbook Chapter 7.2

7.2 Melodic Material: Create/Vary/Repeat and Sequences: Sight Singing exercises

Create/Vary/Repeat

Step 1) Give yourself the tonic pitch and sing each of the given melodies.

Step 2) For each melody, identify the short melodic motifs that are used to generate it.

Step 3) Choose one of the melodies. Start singing it, but improvise a different melodic path for it to take, chaining together the given motifs in new ways. Start small, changing only a few notes near the end, then try it again and again, changing more each time.

The image shows two musical staves. The top staff is in treble clef, key of D major (one sharp), and 6/8 time. The melody consists of the following notes: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F#4 (quarter), E4 (quarter), D4 (quarter), C4 (quarter), B3 (quarter), A3 (quarter), G3 (quarter), F#3 (quarter), E3 (quarter), D3 (quarter). The bottom staff is in bass clef, key of D major (one sharp), and 2/4 time. The melody consists of the following notes: G3 (quarter), A3 (quarter), B3 (quarter), A3-G3 (beamed eighth notes), F#3 (quarter), E3 (quarter), D3 (quarter), C3 (quarter), B2 (quarter), A2 (quarter), G2 (quarter), F#2 (quarter), E2 (quarter), D2 (quarter).

Sequences

Sing and complete each melody by extending the given sequence until you reach a satisfying arrival on the tonic.

The image shows two musical staves. The top staff is in bass clef, key of B-flat major (two flats), and 4/4 time. The melody consists of the following notes: G2 (quarter), A2 (quarter), B2 (quarter), C3 (quarter), B2-A2 (beamed eighth notes), G2 (quarter), F2 (quarter), E2 (quarter), D2 (quarter), C2 (quarter), B1 (quarter), A1 (quarter), G1 (quarter). The bottom staff is in treble clef, key of D major (one sharp), and 6/8 time. The melody consists of the following notes: G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F#4 (quarter), E4 (quarter), D4 (quarter), C4 (quarter), B3 (quarter), A3 (quarter), G3 (quarter), F#3 (quarter), E3 (quarter), D3 (quarter).

7.2 Melodic Material: Create/Vary/Repeat and Sequences: Aural Training exercises

Create/Vary/Repeat

Step 1) Listen to each of the melodies below. The first two are in 4/4 time, while the second are in 9/8.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=270#audio-270-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=270#audio-270-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=270#audio-270-3>

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=270#audio-270-4>

Step 2) On the staff notate the rhythm of one melodic motif that is used to construct each melody. This rhythmic motif may not appear in *every* beat of the melody, but for each example there is one motif that is primarily used throughout.

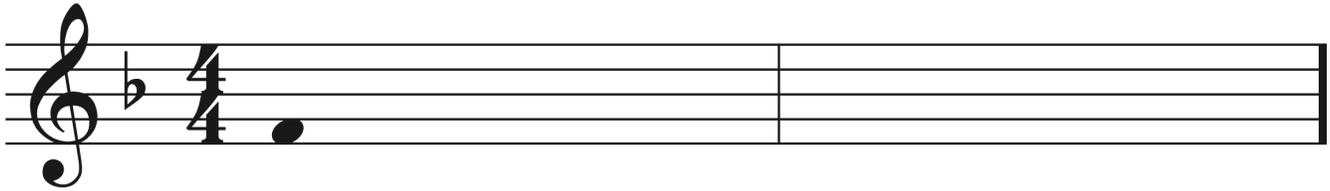


Sequences

Listen to each of the melodies below and *notate it on the staff*. The starting pitch for each is given. Note, each is constructed using a simple motive repeated in sequence at various pitches in the key.

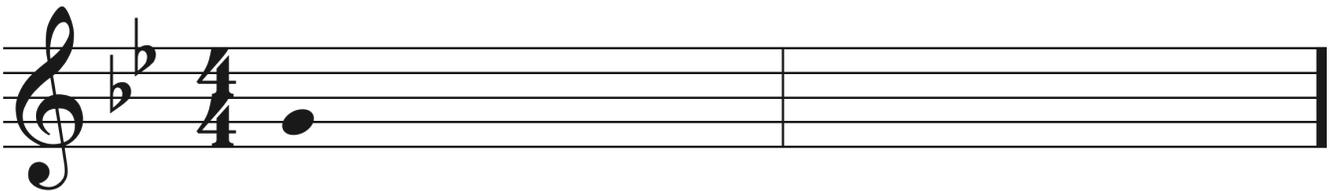
Example 1

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=270#audio-270-5>



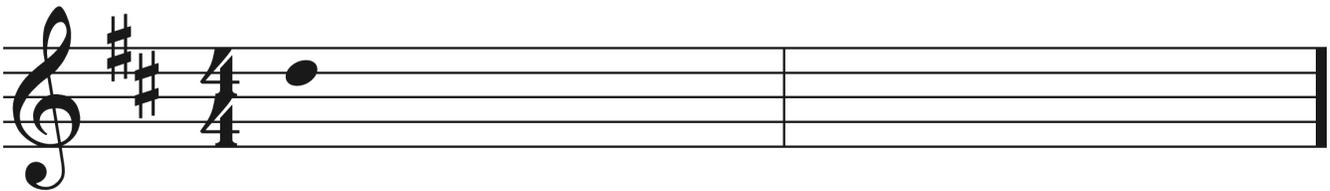
Example 2

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=270#audio-270-6>



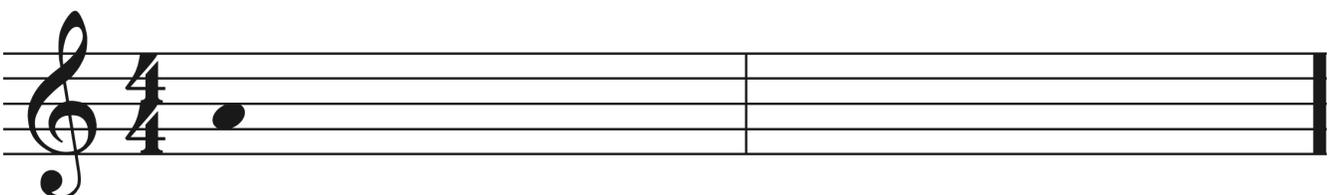
Example 3

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=270#audio-270-7>



Example 4

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=270#audio-270-8>



7.3 Embellishing Tones: Tutorial

Non-chord Tones (NCT)

Non-chord tones (also called non-harmonic tones or embellishing tones), are pitches that are not members of a chord. When analyzing music, NCTs are not included in the Roman Numeral labels for chords. NCTs are used to decorated and embellish, expand lines, provide interest, and create motion. They can be accented or unaccented, diatonic or chromatic, and ascending or descending. We often group NCTs by how they are approached and left between chord tones.

NCTs that are approached and left by step

Passing tones (PT)

A passing tone fills the space between two notes. It can be accented or unaccented, diatonic or chromatic, and ascending or descending. More than one passing tone can be used in a row to fill in the space between chord tones.

The image displays three measures of music in 4/4 time. The treble clef staff shows a sequence of notes: G4, A4 (circled and labeled PT), B4, C5. The bass clef staff shows a sequence of chords: G4, A4, B4, C5. The second measure shows a chromatic passing tone: G4, G#4 (circled and labeled PT), A4, B4. The third measure shows a diatonic passing tone: G4, A4, A#4 (circled and labeled PT), B4.

Neighbor tones (NT)

Neighbor tones embellish a single tone, which is heard before and after the Neighbor tone. Neighbor tones can be upper or lower, diatonic or chromatic, and accented or unaccented.



NCTs that are approaching and left with a step then leap, or a leap then step

Double Neighbor tones (DN)

Double neighbor tones are also called enclosures, cambiatas, changing tones, or neighbor groups. Double neighbors decorate a single note and form from using two neighbor tones in succession (either lower neighbor followed by upper neighbor or upper neighbor followed by lower neighbor)



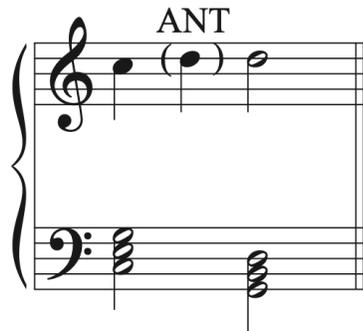
Appoggiaturas (APP) and Incomplete Neighbors (IN)

Appoggiaturas and Incomplete neighbors are both approached by leap and resolved by step (most often in the opposite direction as the leap). Incomplete neighbors fall on an unaccented part of the beat in comparison to the resolution note that follows them. Appoggiaturas fall on an accented part of the beat in comparison to the resolution note that follows them. It is easy to mix these two up, so make sure to always check to see if the NCT or the following resolution note are stronger. The chart below shows the strong beats or parts of the beat on which an APP can be placed and the weaker beats or parts of the beat on which an IN can be placed.

NCTs that use step-repetition motion

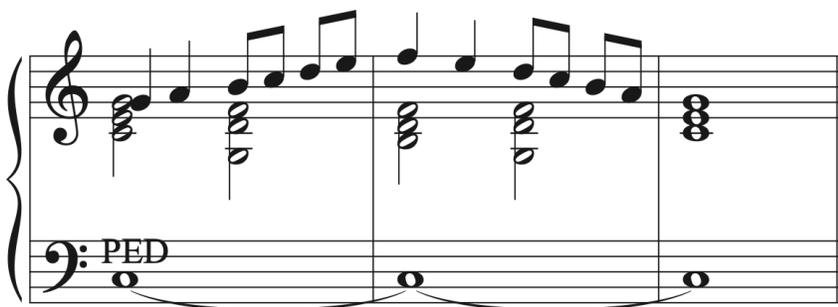
Anticipations (ANT)

An anticipation is a member of the next chord that arrives earlier than the rest of the chord. Because it arrives before the chord changes, it is a NCT with the chord it aligns with. Anticipations most often remain on the same note to become a chord tone when the next chord finally arrives. Anticipations are common at cadences, but can be found in other places as well.



Pedal Tones (PED)

Pedal tones derive their name from their frequent use in organ music because they were held using the foot pedals on the organ. A pedal tone is a long note that is sustained while the harmonies change around it.



Pedal tones are often found in the bass, but can be in any voice. When analyzing music with a pedal tone, write PED in the score when the note becomes an NCT. Then disregard that note during the rest of the chordal analysis. Pedal tones on tonic were often used to establish the key at the start of a piece. Pedal tones on dominant were used even more frequently to signal that the final cadence was coming. A great example of a pedal tone is J. S. Bach's Prelude and Fugue BWV 540. Watch this video to hear how long the pedal lasts: [Toccata & Fugue in F Major](#)

Suspensions (SUS)

A suspension happens when a note from the previous chord is held over when the rest of the chord changes. It resolves down by step. Suspensions occur on accented parts of the beat.

A suspension is made of three parts:

- *Preparation (prep)*: the note in the previous chord that is the same pitch as the suspension
- *Suspension (sus)*: the dissonant note following the preparation. It is the note that is held over when the rest of the chord changed. It can be tied to the preparation note or articulated.
- *Resolution (res)*: the note following the suspension. All suspension notes resolve down by step to the resolution note.

C: V⁶ I

Naming suspensions

- Suspensions are named according to harmonic intervals created by the suspension note and by the resolution above the bass pitch. The intervals are always name as simple intervals, even if the intervals are larger than an octave.
- Common suspension types:
 - 9-8 or 2-1 if the suspension resolves to a unison with the bass (upper voice suspension)
 - 7-6 (upper voice suspension)
 - 4-3 (upper voice suspension)
 - 2-3 (only suspension that occurs in the bass; cannot occur in the upper voices. It gets its name because one of the upper voices will form the intervals 2-3 with the bass when the suspension resolves.)

Suspensions with a change in bass

Suspensions with a change in the bass occur when the bass moves to another note at the same time that the suspension resolves. They can also occur in an upper voice in a 2-3 bass suspension when the upper voice changes notes when the bass resolves. These suspensions are still named for the interval between the suspended note and the bass followed by the interval between the resolution and the bass.

7-6 SUS

7-3 SUS

becomes

due to change in bass

CM: I V I

I V I

Consonant suspensions

While most suspensions are dissonant, it is possible to have a consonant suspension. While the suspended note is a non-chord tone, it does not create dissonance with the chord.

6-5 SUS

consonant suspension

CM: vii^ø₅ I

Embellishment of suspensions

Suspensions can be embellished between the suspended note and the resolution.

suspension with embellishments

CM: I IV⁶

Chain of suspensions

Suspension chains happen when the resolution of one suspension serves as the preparation for the next suspension.

suspension chain

CM: iii⁶ IV I⁶ vii⁰⁶ I

Retardations (RET)

- Retardations are like suspensions, but they resolve up by step instead of down by step. Unlike suspensions, they are not named with specific numbers.

CM: V⁷ I

Labeling NCTS

During analysis, any notes that are not part of the chord should be put in parenthesis in the score and labeled with the type of NCT. Put the label close to the parenthesis. Make sure only put NCTs in parenthesis. Chord tones should be included in the analysis.

Common mistakes made when drawing and labeling NCTS

- Labeling a chord tone as a non-chord tone. A non-chord tone is a note that is not in the chord. When inserting NCTs into a passage, always double check that the NCT is not actually a chord tone.
- Not labeling the NCT properly. The parenthesis goes around the actual NCT (no other notes) and there must be a label to show what kind of NCT it is.
- Rhythm must be accurately drawn so that each bar has the correct number of beats. Make sure all beats line up vertically. This is especially important on NCTs that must be inserted onto strong beat or parts of the beat, like appoggiaturas and suspensions.
- Be careful not to mix up Appoggiaturas (strong beat/part of the beat) vs. Incomplete Neighbor (weak beat/part of the beat)

Bringing Theory to Life

Look at the music you are currently practicing or studying. How many NCTs can you find? What would the music sound like without them? Write out a version without the NCTs and compare the two. What is gained by looking at the structure of the music without the NCTs? What is lost by leaving them out? Think about how the NCTs are used in your music. Which ones create forward motion (think of the ones with motion between note, like passing tones) and which ones create small pauses during which you can hear certain notes more prominently (like neighbors, appoggiaturas, and suspensions, for example). Reflect on how understanding the specific NCTs in your music has changed your experience playing and listening to the piece.

7.3 Embellishing Tones: Theory exercises

See Workbook Chapters 7.3.1 and 7.3.2

7.3 Embellishing Tones: Sight Singing exercises

Step 1) Sing each of the given simple melodies and note the given harmonies.

Step 2) For each melody add at least one Passing Tone, Neighbor Tone, Escape Tone and Appoggiatura.

Musical notation for the first melody in 4/4 time, Eb major. The melody consists of 10 notes: Eb, F, G, Ab, Bb, C, D, Eb, F, G. The harmonies are: Eb: I, IV, V, I, ii7, I, V7, I.

Musical notation for the second melody in 6/8 time, Em major. The melody consists of 10 notes: G, A, B, C, D, E, F#, G, A, B. The harmonies are: Em: i, VI, iv, V, i, iio, V, #i.

7.3 Embellishing Tones: Aural Training exercises

Listen to each of the two melodies below and notate them on the staves. The starting pitch for each is given, as is the underlying harmony. The harmonic rhythm is even quarter notes throughout. Circle and label the embellishing (i.e. non-chord) tones throughout.

Melody 1

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=278#audio-278-1>

Chord progression: Eb: I vi IV V I ii V I

Melody 2

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=278#audio-278-2>

Chord progression: Em: i V7 i VI iv i V i

Chapter 8: Melodic Form

8.1 Musical Phrases and Sentences: Tutorial

Melodic Form: Phrases and Sentence Form

Phrase

A phrase is a substantial musical thought that ends with a cadence. [For a review on cadences, see text Chapter 6.2.](#) Phrases are created through the interaction of melody, harmony, and rhythm. Though they can be any length, phrases are often 4, 8, or 16 bars long. Phrases can be sometimes combined into larger phrase groups and structures, and can sometimes be divided into smaller phrase segments.

Labeling Phrases

Brackets are used to divide and mark phrases in a musical score. We label each phrase or segment with lower case letters to show their melodic relationship to one another.

Phrases can be an exact repetition: aa

Exact repetition of the phrase

1. ^a

2. ^a

Phrases can be varied so that they are repeated with modifications and embellishments: aa'

Variation of the phrase

1. 

2. 

Phrases can also be contrasting so that they use different melodic material: ab

Contrasting phrases

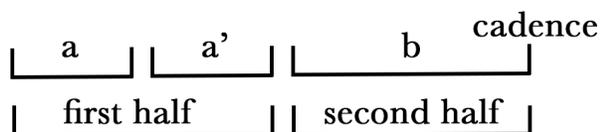
1. 

2. 

Sentence Form

Sentence form is a specific type of form within a phrase. In order to form a sentence, a phrase will have two halves. The first half consists of a statement (a) and a repetition of that statement at a different pitch level (a'). The second half consists of contrasting melodic material that concludes the phrase with a cadence (b). Sentences in music sound like conversations. Someone says something (a), someone comments on it (a'), and someone concludes the ideas (b).

Sentence Form



Look and listen to these examples of sentence form.

J. S. Bach, *Minuet in G*, mm. 1-16

sentence form

Phrase Ending

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=288#oembed-1>

Mozart Piano Sonata K.283 mvt , mm. 1-10

cadence

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=288#oembed-2>

8.1 Musical Phrase: Theory exercises

See Workbook Chapter 8.1

8.1 Musical Phrase: Sight Singing exercises

Step 1) Sing each of the following musical excerpts.

Step 2) For each excerpt, identify the phrases using lower-case letters (such as a, b, b', c, etc).



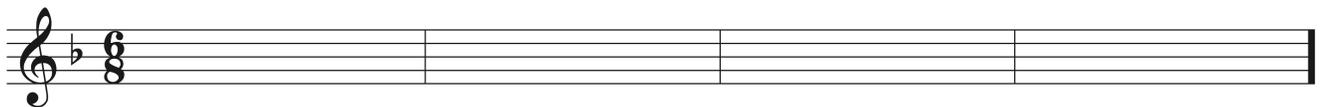
8.1 Musical Phrase: Aural Training exercises

Step 1) Listen to each of the following musical excerpts.

Step 2) For each excerpt, identify the phrases by placing lower-case letters (such as a, b, b', c, etc) above the appropriate points on the staff. Place each phrase letter above the point where the phrase begins.

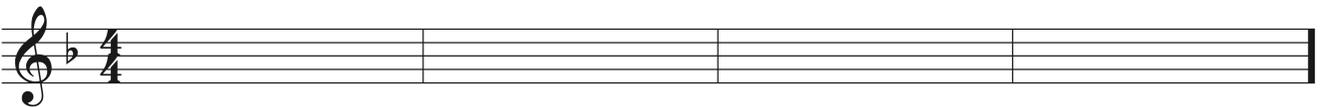
Excerpt 1

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=294#audio-294-1>



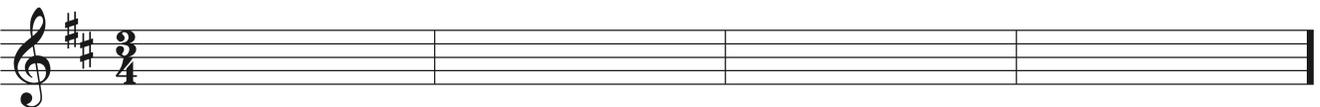
Excerpt 2

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=294#audio-294-2>



Excerpt 3

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=294#audio-294-3>

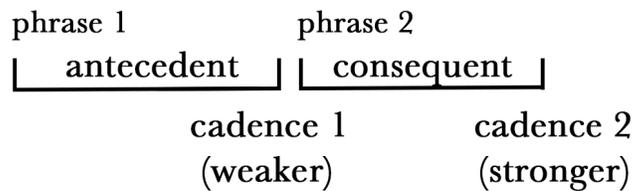


8.2 Sentences and Periods: Tutorial

Period

A period consists of a pair of phrases that combine to form a bigger, more coherent whole. The pair of phrases are harmonically dependent on each other. Each phrase has a cadence. The first phrase's cadence is progressive and needs to move on to the second phrase, while the second phrase's cadence is stronger and more conclusive. We call the first phrase the antecedent, and the second phrase the consequent.

Period

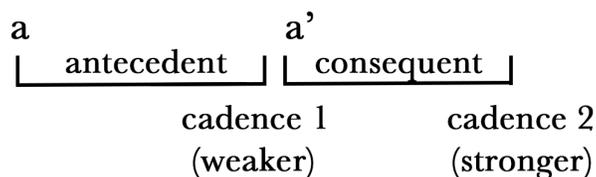


While the interdependent harmonic relationship and cadence structure define a period, periods can also be classified by the relationship of their melodic material.

Parallel Period

A parallel period is a period in which each phrase presents the same or similar melodic material. The two phrases start the same way melodically and harmonically: a a'

Parallel Period



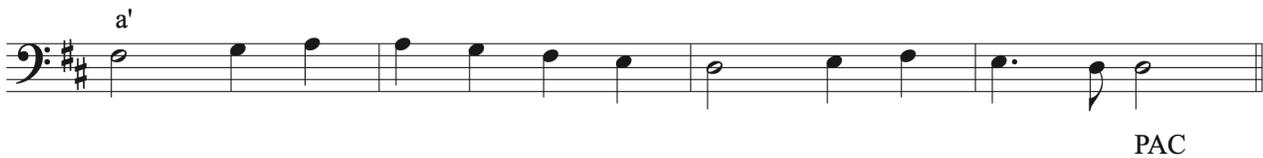
Beethoven Symphony 9, mvt 4 melody

a



HC

a'



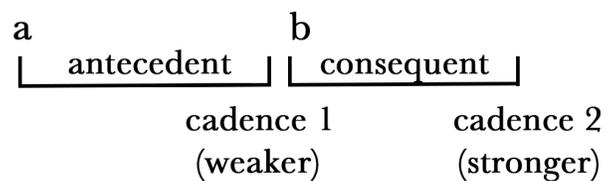
PAC

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=296#audio-296-1>

Contrasting Period

A contrasting period is a period with a consequent that starts with different material from the antecedent: a b

Contrasting Period



Beethoven Piano Sonata op. 13, mvt 3 mm.1-8

a (antecedent)

b (consequent)

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=296#audio-296-2>

Periods that use Sentence form

Phrases in a period can use sentence form as part of their phrase structure.

J. S. Bach, *Minuet in G*, mm 1-16

Parallel Period

Phrase Ending

sentence form HC

Phrase Ending

PAC

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=296#oembed-1>

Asymmetrical Phrases and Periods

A phrases or period in which the phrases are not equal in length is called an asymmetrical. Usually, the second or consequent phrase is extended, either in the middle or end. In the example below, instead of cadencing in bar 8, Mozart extends the end of the b section to cadence in bar 10.

Mozart Piano Sonata K.283 mvt , mm. 1-10

The musical score is presented in two systems. The first system (mm. 1-4) features a treble clef with a melody starting on G4 and a bass clef with a bass line of eighth notes. The second system (mm. 5-8) continues the melody and bass line. The piece concludes with a cadence in the final measure.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=296#oembed-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=296#audio-296-3>

8.2 Sentences and Periods: Theory exercises

See Workbook Chapters 8.2.1 and 8.2.2

8.2 Sentences and Periods: Sight Singing exercises

Step 1) Sing each of the given phrases and improvise a concluding phrase to complete a Period or Sentence as indicated.

Step 2) Improvise a different concluding phrase for each, using different rhythms, motives, and/or melodic contour than your first.

The image shows two musical staves for sight singing exercises. The top staff is in treble clef, 2/4 time, key of B-flat major. It contains two phrases: "Parallel Period" (labeled 'a') and "Contrasting Period" (labeled 'a' and 'b'). The bottom staff is in bass clef, 2/4 time, key of D major. It contains one phrase labeled "Sentence" (labeled 'a' and 'a'' and 'b').

8.2 Sentences and Periods: Aural Training exercises

Listen again to the melodies from the [8.1 Aural Training Exercise](#) and label each as either a Parallel-Period, Contrasting Period, or Musical Sentence.

Melody 1:

Melody 2:

Melody 3:

8.3 Phrase Groups and Double Periods: Tutorial

Beyond Sentences and Periods, multiple phrases can form larger groups as well.

Phrase Group

The term Phrase Group can be applied to any group of phrases that somehow, on account of their motivic length, phrase length, and/or cadences just *seem* to belong together, but not necessarily exhibiting the antecedent-consequent relationship found in a Period. A Phrase Group can be hard to define, but it's the kind of relationship wherein you know-it-when-you-hear-it.

Sing through and analyze the melody below in Eb major, from the 18-century hymn, “Rock of Ages, Cleft for Me”:

The musical notation shows a melody in Eb major (three flats) on a treble clef staff. The melody is divided into four phrases. The first phrase (labeled 'a') consists of four measures. The second phrase (labeled 'b') consists of two measures. The third phrase (labeled 'b') consists of two measures. The fourth phrase (labeled 'a') consists of four measures. Each phrase ends with a quarter rest on the tonic note (Eb).

Note how the delineations between the four separate phrases can be perceived. The first and last are four measures in length, while the inner two phrases are only two measures long. However, each phrase ends on the tonic note, implying an authentic cadence. While each of the four phrases is harmonically closed (none demand a consequent phrase to harmonically complete them), the four phrases seem to form a cohesive Phrase Group.

Double Period

The four phrases above form a kind of Phrase Group, belonging together without any antecedent-

consequent relationship. However, sometimes four phrases can form a group wherein the first two phrases set up an antecedent to be completed by the second two phrases which together form a consequent. This type of four-phrase group is called a **Double Period**.

Whereas the antecedent phrase of a Period will end in a half or other weak cadence, in a Double Period, it is the responsibility of the second of the four phrases to establish the feeling of an antecedent through cadential means. Similarly, it is the responsibility of the fourth phrase to satisfy the expectation of a consequent through a strong authentic cadence. The cadences of the first and third phrases in a Double Period are of little consequence.

Sing through and analyze the D minor melody below. What kind of cadence concludes each of the four phrases?

Notice how the first phrase ends in an authentic cadence, yet the second ends in a half cadence. This half cadence binds the first two phrases together into a single antecedent double-phrase. The third phrase ends in a half cadence, but the antecedent pair of phrases is fulfilled by the authentic cadence concluding the fourth phrase.

Parallel versus Contrasting Double Periods

Much as two-phrase periods can be defined as parallel or contrasting based on the similarity, or lack thereof, of the melodic content of at the beginning of each of the two phrases, so can Double Periods. A Double Period is defined as parallel or contrasting based on the relationship between the beginnings of the first and third phrases. In the example above, the third phrase begins very much like the first and has thus been labeled a'. As a result, one may call this four-phrase group a Parallel Double Period.

The nature of the melodic material in the second and fourth phrases has no bearing on whether a Double Period is defined as parallel or contrasting, only the relationship between the first and third phrases.

Parallel Double Period phrase groups may include the following phrase relationships:

a b a' b'

a b a c

a a' a a''

a b a' a'' etc, so long as the first and third phrases are similar.

Contrasting Double Period phrase groups may include the following phrase relationships:

a a' b a

a a b c

a b b' a

a b b' b''

a b c b'

a b c d etc, so long as the first and third phrases are different.

8.3 Phrase Groups and Double Periods: Theory exercises

In addition to Workbook Chapter 8.3, see the exercises below.

Exercise 1

Sing through and analyze the following four-phrase Phrase Group and answer the following questions:

1. Label the four phrases with letters
2. What cadences are implied at the ends of each phrase?
3. Do any pairs of phrases form a Period?
4. Do any pairs-of-pairs of phrases form a Double Period?

Exercise 2

Step 1) Sing through and analyze each of the following four-phrase Phrase Groups. Does each fulfill the prescribed structure? If not, why not?

Step 2) Alter a few notes in each so as to make the phrase group fulfill the prescribed structure. You will need to change the first or last few notes of one or two phrases to make it do so.

Parallel Double Period: a b a' b'



Phrase Group (no period structure): a b c a'



Contrasting Double Period: a b c d



8.3 Phrase Groups and Double Periods: Sight Singing exercises

Step 1) Improvise phrases to complete each Phrase Group or Double Period as indicated.

Step 2) Improvise different phrases for each, using different rhythms, motives, and/or melodic contour than your first.

Contrasting Double Period

a a' b c

Phrase Group

a b c b'

8.3 Phrase Groups and Double Periods: Aural Training exercises

Step 1) Listen to each of the following musical excerpts.

Step 2) For each excerpt, identify the phrases using letters (such as a, b, b', c, etc)

Step 3) Label each as a Parallel Double Period, Contrasting Double Period or Phrase Group.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=310#audio-310-1>

Melody 1 phrases (letters):

Melody 1 phrase form:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=310#audio-310-2>

Melody 2 phrases:

Melody 2 phrase form:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=310#audio-310-3>

Melody 3 phrases:

Melody 3 phrase form:

8.4 Phrase Elisions and Cadential Extensions: Tutorial

Phrase Elisions

Sometimes it can be musically interesting to elide one phrase with another. Instead of allowing a phrase to conclude as anticipated, for example on the fourth bar of a four-bar phrase, one can create a moment of surprise by eliding the end of this phrase with the beginning of the next, in effect shortening the first phrase.

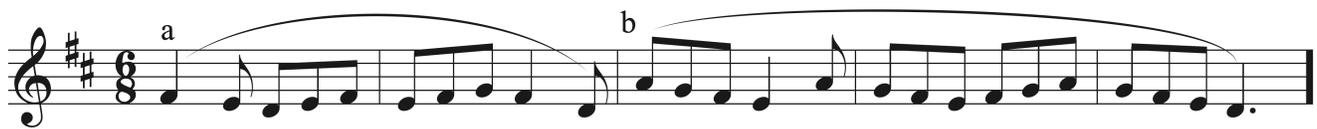
Sing through the first two-phrase melody below, noting how the first phrase reaches a natural conclusion in the fourth bar, and the second phrase begins as expected in the fifth. Then, sing through the second melody and compare.

The image contains two musical staves in treble clef with a key signature of two flats (B-flat and E-flat).
 The first staff shows two phrases, 'a' and 'b'. Phrase 'a' consists of four measures: C4, D4, E4, F4, G4, A4, B4, A4, G4, F4, E4, D4, C4. Phrase 'b' consists of four measures: C4, D4, E4, F4, G4, A4, B4, A4, G4, F4, E4, D4, C4. There is a clear gap between the end of phrase 'a' and the start of phrase 'b'.
 The second staff shows the same two phrases, 'a' and 'b'. Phrase 'a' is truncated to three measures: C4, D4, E4, F4, G4, A4, B4, A4, G4, F4, E4, D4. Phrase 'b' begins immediately after, starting with C4, D4, E4, F4, G4, A4, B4, A4, G4, F4, E4, D4, C4. This creates an elision where the end of the first phrase overlaps with the beginning of the second.

In the second two-phrase melody, note how the anticipated arrival on tonic at the end of the first phrase *becomes* the tonic beginning of the second phrase. By eliding the end of the first phrase with the beginning of the second, the first phrase in this case becomes truncated to three measures in length, creating a moment of surprise and melodic asymmetry.

Cadential Extensions

Another way to play with expectations of melodic form is to extend a melody beyond its expected conclusion. Sing through the following two-phrase melody:



Notice how the second phrase is longer than expected. The two-bar length of the first phrase set up an expectation of a two-bar second phrase, perhaps something like the following:



In the first example, the second phrase overshoots its expected length by one additional measure. This is an example of a **Phrase Extension**. Depending on how a phrase is extended, it can fall into one of two types:

1. Pre-Cadential Extension

Notice how the extended phrase in the first example delays the arrival on the tonic, meandering around for a couple more beats before arriving on scale degree 1 a measure later. Because this extension occurs before the conclusion of the final cadence, this phrase can be said to have a **Pre-Cadential Extension**. Now, compare that extended phrase with the following version:

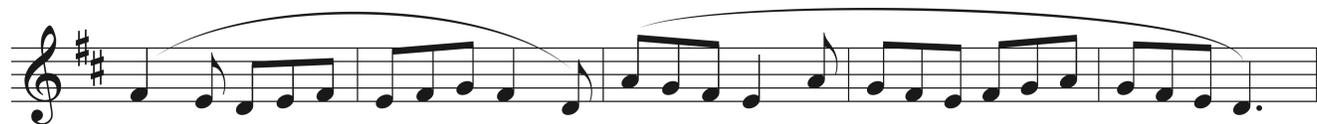


2. Post-Cadential Extension

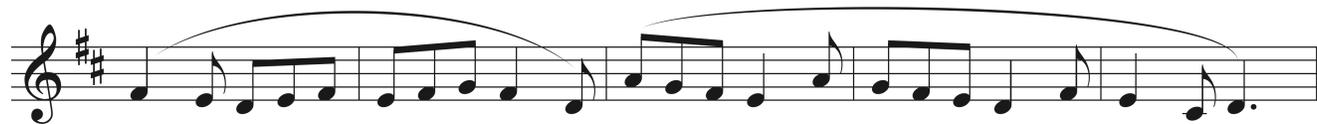
In this example, the second phrase ends on the tonic at the expected location, at the conclusion of the implied V7-I cadence on beat two of its second bar. Unlike the first extension example, the phrase could have ended right here, but in this case there is an additional tag at the end reiterating the arrival on the tonic. This is an example of a **Post-Cadential Extension**.

Here are these two extended phrases side-by-side, showing how one is extended prior to

the cadence, and the other extended after the cadence:



V ...pre-cadential extension... I



V I ...post-cadential extension

8.4 Phrase Elisions and Cadential Extensions: Theory exercises

Exercise 1

Complete the two phrases so as the anticipated conclusion of your first **a** phrase in the fourth bar elides with the beginning of your second four-bar **a'** phrase.

Exercise 2

Complete the second of the two given phrases, first with a pre-cadential extension, then with a post-cadential extension. First, think about where one would expect the **b** phrase to conclude, given the length of the preceding **a** phrase. Then, deny this expectation by adding the prescribed extension.

8.4 Phrase Elisions and Cadential Extensions: Sight Singing exercises

Step 1) Improvise concluding phrases with the indicated cadential extensions as indicated.

Step 2) Improvise a concluding phrase for each with a cadential extension *opposite* of what is indicated (i.e. if it says “pre-cadential”, make a post-cadential extension, and vice versa).

a b with pre-cadential extension a a' with post-cadential extension

elided phrase

a b

8.4 Phrase Elisions and Cadential Extensions: Aural Training exercises

Step 1) Listen to each of the following musical excerpts.

Step 2) For each excerpt, identify the phrases using letters (such as a, b, b', c, etc)

Step 3) Label the form of each (i.e. Sentence, Contrasting Period, Parallel Double Period, etc)

Step 4) Identify what kind of extension or elision each has (each has only one)

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=318#audio-318-1>

Melody 1 phrases (letters):

Melody 1 phrase form:

Melody 1 extension type or elision:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=318#audio-318-2>

Melody 2 phrases:

Melody 2 phrase form:

Melody 2 extension type or elision:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=318#audio-318-3>

Melody 3 phrases:

Melody 3 phrase form:

Melody 3 extension type or elision:

Chapter 9: Introduction to Counterpoint

9.1 First Species Counterpoint: Tutorial

What is counterpoint?

Counterpoint refers to two or more melodies that combine to make a consonant whole. The rules of counterpoint, which have varied over time, govern the use of dissonant intervals between the melodies to accomplish this goal.

Example 1: Woody Guthrie’s famous song, “This Land is Your Land” with a countermelody below.

- Play or sing the countermelody (the lower part) by itself: a pretty decent melody, right?
- Now, play both parts together and listen: Not so great!

1 3 5 7 7 6 tt 4 4 3 5 6 7 8 7 6 5 5 4 3 3 4 4 6 3

Example 2: a countermelody to “This Land is Your Land” following proper counterpoint rules.

- Play or sing the countermelody (the lower part) by itself: a good melody in and of itself.
- Now, play both parts together and listen: Hear how they work well as *counterpoint*

1 3 4 6 7 8 7 6 6 3 3 3 4 5 4 3 3 6 8 6 7 8 7 6 5 3 3 3 3

When and where did counterpoint develop?

Developed in 15th Century Italy. Codified in the 16th-century high Renaissance. In this class we will not study the history of counterpoint or complex rules as developed by Renaissance

musicians. Rather, we will explore the basic rules of organizing consonances and dissonances between two melodies that persist in many styles of Western classical and popular musics to this day.

Why is it important to study counterpoint in the 21st-century?

The general approach to counterpoint we will be learning in this class provides a window into how musicians have created multi-part music, from Bach's predecessors to contemporary rock, jazz, pop and hip-hop. More importantly, a rudimentary understanding of counterpoint will allow *you* to more effectively create interesting and effective music.

How does one create counterpoint?

Counterpoint is all about managing consonance and dissonance between two voices.

- **Consonant intervals** include 3rds, 6ths, and perfect 5ths unison and the octave.
- **Dissonant intervals** include 2nds, 7ths, 4ths and the tritone.

It may at first seem strange to our modern ears to think of the perfect 4th as a dissonance. In short, this is because the 4th creates a downward pull in the upper voice, wanting to resolve down to a third (think, 4-3 suspension). This is in part the reason why harmonies with a 4th above the bass (i.e. 6/4 chords) are inherently unstable and are only used in certain circumstances.

Species counterpoint

Early musicians considered counterpoint from the perspective of rhythm and duration between two melodies. For example, two melodies could have the exact same rhythm throughout (such as a homophonic hymn), or one melody might have two, three, or four different notes while the other holds a single pitch. Different ratios of rhythmic value, not the absolute values themselves, predicate different rules for use of consonance and dissonance.

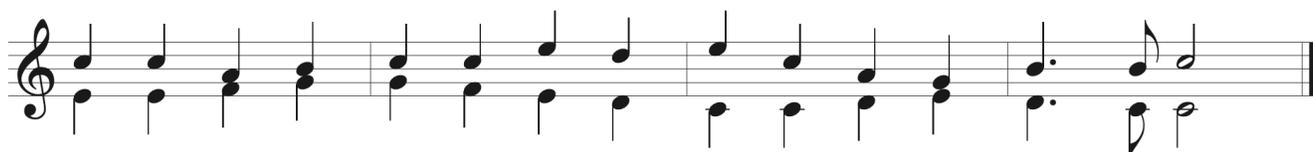
Such rhythmic ratios and the rules of consonance and dissonance they entail were codified into different "species".

First Species, 1:1

Note-against-note, both parts have the exact same rhythm.

- Consonances only. Every vertical interval between the parts must be a consonance. In other words, you should never have a 2nd, 4th, tritone, or 7th between the two voices.
- Parallel 5ths and 8ths are forbidden. This is a general rule for all counterpoint and part-writing.

Example (write the intervals for each vertical pair of notes below the staff and find three errors):



9.1 First Species Counterpoint: Theory exercises

Exercise 1

Find five errors in the following first species counterpoint.

Exercise 2

Complete a first species counterpoint above the given melody. Note: your counterpoint should follow the exact same rhythm as the melody below.

9.1 First Species Counterpoint: Sight Singing exercises

Step 1) Sing the given melody on scale degree numbers

Step 2) Play on the piano a first-species counterpoint above the melody as you sing. You should play exactly one quarter note against every note that you sing. Then, write it down.

Step 3) Play on the piano a different first-species counterpoint *below* the melody as you sing.

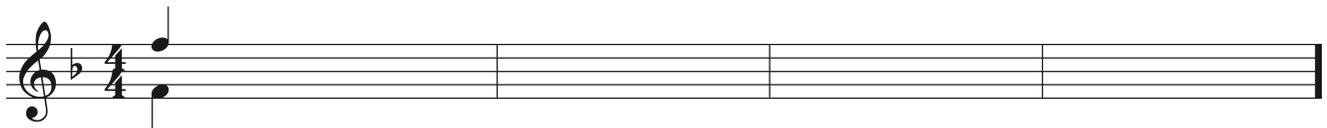


9.1 First Species Counterpoint: Aural Training exercises

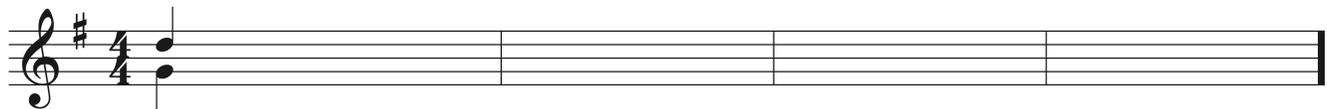
Step 1) Listen to the two-part examples below, each is in First species counterpoint.

Step 2) Notate both parts on the staff from the given starting pitches. Hint: focus on and notate one line at a time, choosing either the upper or lower line, and make sure each fulfill the proper rules of dissonance for the species (if they don't, you must have mis-notated it in some way!)

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=338#audio-338-1>



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=338#audio-338-2>



9.2 Second Species Counterpoint: Tutorial

Second Species, 2:1

Two notes against one note

- Passing tone and neighbor tone dissonances are permitted on weak beats (i.e. not when the two parts align).
- As always, parallel 5ths and 8ths are not allowed, but they can be tricky to spot, see below.

Example: study the “bad” and “good” counterpoints to This Land is Your Land presented earlier, now with the vertical intervals analyzed. Note how both are a mix of First and Second Species Counterpoint, either note-against-note or two notes against one note at any given time. See where the dissonances align in inappropriate ways in the first example, but are placed judiciously according to First and Second Species rules in the second.

Bad counterpoint

Musical notation for "Bad counterpoint" showing two staves. The intervals between the two parts are labeled below the notes: 1 3 5, 7 7 6 tt, 4 4 3 5 6 7, 8 7 6 5, 5 4, 3 3 4 4 6 3.

Good counterpoint

Musical notation for "Good counterpoint" showing two staves. The intervals between the two parts are labeled below the notes: 1 3 4, 6 7 8 7 6 6 3 3 3 4 5 4 3 3 6 8, 6 7 8 7 6 5 3 3 3 3.

9.2 Second Species Counterpoint: Sight Singing exercises

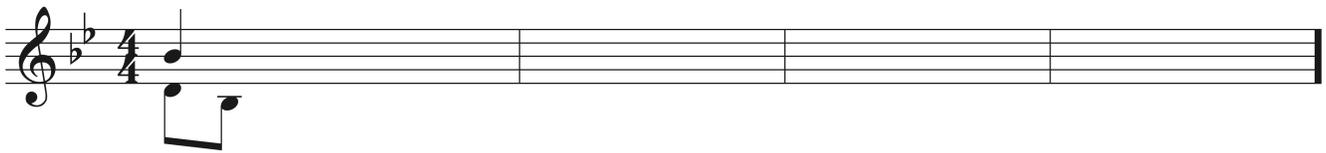
Sing a second species melody (i.e. eighth notes) above and/or below the piano countermelody you composed in the [9.1 Sight Singing exercise](#). Write it out first if necessary. Be careful that your eighth note melody conforms to the proper rules of dissonance for second species.

9.2 Second Species Counterpoint: Aural Training exercises

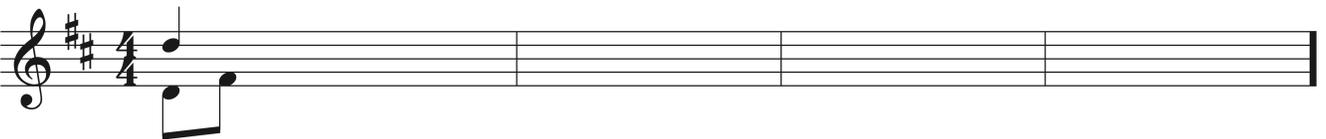
Step 1) Listen to the two-part examples below, each is in Second Species counterpoint.

Step 2) Notate both parts on the staff from the given starting pitches. Hint: make sure each fulfill the proper rules of dissonance for the species (if they don't, you must have mis-notated it in some way!)

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=346#audio-346-1>



One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=346#audio-346-2>



9.3 Third Species Counterpoint: Tutorial

Third Species, 4:1 (3:1 and 6:1 in compound meters)

Four notes against one note.

- Escape tones and appoggiaturas, in addition to passing tone and neighbor tone dissonances are permitted, but only on the second and fourth beats of a group of four. The first beat (where the parts align) must be consonant, and the third beat should be as well, but one can get away with the occasional third-beat dissonance, as long as not all three weak beats (2, 3, and 4) are dissonant.
- Again, watch for hidden parallel 5ths and 8ths coming from the fourth beat of a group of four to the next aligned downbeat.

Example: a Second and Third Species counterpoint to This Land is Your Land. Write the intervals below the staff and mark the type of dissonance in each instance.

The image shows four staves of musical notation. The top two staves are in 7/8 time, with the top staff containing a melody of quarter notes and the second staff containing a counterpoint of eighth notes. The bottom two staves are also in 7/8 time, with the third staff containing a melody of quarter notes and the fourth staff containing a counterpoint of eighth notes. The notation is arranged in a 2x2 grid.

9.3 Third Species Counterpoint: Theory exercises

Exercise 1

Find three errors in the following third species counterpoint.

Exercise 2

Complete a third species counterpoint above the given melody. Note: you should compose sixteenth notes against quarters, and vice versa.

Exercise 3

Complete a third species counterpoint below the given melody.

9.3 Third Species Counterpoint: Sight Singing exercises

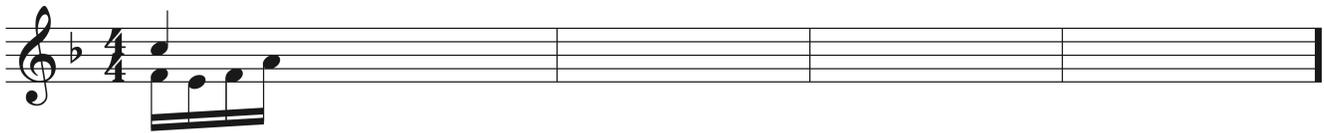
Sing a third species melody (i.e. sixteenth notes) above and/or below the piano melody you composed in the 9.1 Sight Singing exercise (the same melody you used for the 9.2 Sight Singing exercise). Be careful that your sixteenth note melody conforms to the proper rules of dissonance for third species.

9.3 Third Species Counterpoint: Aural Training exercises

Step 1) Listen to the two-part example below, in Third Species counterpoint.

Step 2) Notate both parts on the staff from the given starting pitches. Hint: make sure each fulfill the proper rules of dissonance for the species (if they don't, you must have mis-notated it in some way!)

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=357#audio-357-1>



Chapter 10: Voice Leading in Harmonic Progressions

10.1 Chord Voicing and Part Writing, General Principles: Tutorial

Voicing and Voice Leading Principles

Chapter 9 discussed the qualities that make a good melody and how those qualities are translated to music. When you combine more than one melody you take both the melodic (horizontal) and harmonic (vertical) elements into account in order to create smooth, pleasing lines.

In chapter 5, we learned how to build and recognize triads and seventh chords. Now, we will focus on learning how to connect chords through voice leading. We will be exploring voice leading and part writing by learning to build chords vertically and connect them together horizontally in a four-voice texture. Through this process we will learn how music works, how it is structured, what makes it sound good, and what makes it move forward.

To learn the process of voice leading we will be working in 4 voice texture comprised of a soprano, alto, tenor, and bass voice (SATB). Four voices are necessary so that each chord member can be present to have complete chords. This is especially important for seventh chords, which have four chord members. Using four voices provides fullness of sound without losing clarity, so that each voice can be heard. Writing in four voice texture allows us to consider voice leading between chords in a melodic (horizontal) way in order to create a singable melody in each voice. Writing for four voices also allows us to limit our range so that it corresponds to the ranges of voices, rather than the more expansive ranges of different instruments. That also means that all voices will be in the same key, without the need to transpose lines to work with instruments pitched in different keys. Writing in four voice texture also gives us the ability to easily sing part writing examples and compositions.

Voicing Chords in Four Voices (SATB)

Stem direction: In order to easily be able to tell voices apart and see their motion on the staff, each voice uses a specific stem direction.

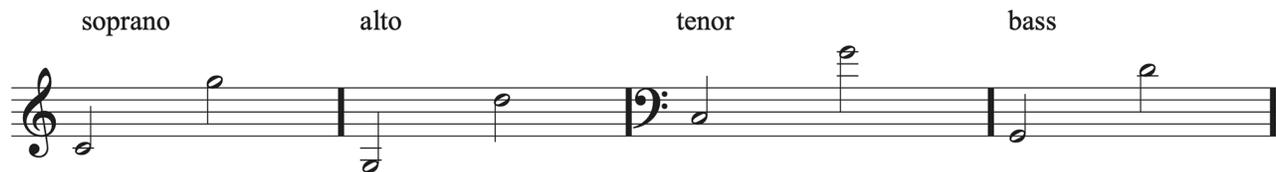
- Soprano: stems up

- Alto: stems down
- Tenor: stems up
- Bass: stems down

Spacing: Adjacent pairs of upper voices must remain within an octave of each other.

- Soprano and alto stay within an octave of each other.
- Alto and tenor stay within an octave of each other.
- The bass is the only exception. It can be more than an octave from the tenor. The bass needs freedom to move to fulfill its harmonic role in a melodic way.

Range: each voice has a range that should not be exceeded. However, the bass voice can move a bit more freely to expand the range by a few notes.



Doubling: when writing a three-note triad in four voices, one of the voices must be doubled. Use this general guide when doubling notes in each type of chord. Doubling for the different types of chords will be discussed in greater detail in the sections on part writing with root position chords, chords in inversion, and seventh chords.

- Do not double tendency tones (leading tone, altered tones, the chordal seventh of a seventh chord)
- Root position chords:
 - Major and minor chords: double the root (the bass)
 - Exception: V-vi: most often doubles the 3rd of the vi chord
 - Diminished chords: double the 3rd of the chord
- First inversion chords:
 - Major and minor triads: double anything except the leading tone or tendency tones
 - Diminished chords: double the 3rd of the chord
- Second inversion chords:
 - double the bass (the 5th of the chord)

Melodic Principles for Voice Leading (Connecting Chords)

These principles apply to each voice in order to produce melodic lines that are likely to be musical and singable.

Motion:

- Move each voice primarily by sustained or stepwise motion. Sustained motion between chords (using common tones) are always a good choice to connect chords.
- If no common tones are possible between chords, move each note in contrary motion to the bass. Use stepwise motion when possible.
- Use contrary and oblique motion instead of parallel motion between voices (when possible) in order to create strong counterpoint between voices.

Chromatic intervals:

- Do not use augmented/diminished intervals melodically.
- Watch out specifically for the augmented 2nd that can occur between scale degrees 6 and 7 in minor as a result of raising the leading tone.

Leaps:

- Use leaps larger than a 5th sparingly.
- Follow all leaps larger than a 3rd with stepwise motion in the opposite direction when possible.
- Successive melodic leaps in the same direction should arpeggiate the underlying harmony (the bass has more freedom).
- Avoid leaps in 3 or more voices, especially in the same direction.

Resolve tendency tones:

- The leading tone resolves to tonic.
- The chordal seventh of a seventh chord resolves down by step.
- Altered tones resolve by step in the direction of the chromatic inflection (raised note resolve up, lowered notes resolve down).

Part Writing Errors

Following the guidelines outlined above for correctly voicing and connecting chords through melodic motion can help avoid many part writing errors, but does not guarantee the absence of errors between chords. Errors often occur between certain chords that have connections that must be handled carefully, or when certain chords do not move well to other chords. Knowing the types of errors that can result during part writing is essential so that they can be corrected in order to create a better chord progression. When writing in four voices, always check each chord and each chord connection for the following list of potential errors.

All chords spelled correctly:

- Make sure all chord members are spelled correctly and are in the correct inversion.
- Remember to raise the leading tone in minor in V and vii° chords.

Leap errors:

- Leaps over a 5th and dissonant leaps (A2, TT, 7ths, etc.)

avoid avoid

The image shows two musical examples of leap errors to be avoided. Both examples are in 4/4 time and use a key signature of two flats (B-flat and E-flat). The first example shows a leap of a 2nd interval between two notes in the bass clef. The second example shows a leap of a 4th interval between two notes in the bass clef. The word 'avoid' is written above each example.

- Leaps in 3 or more voices, especially in the same direction

multiple leaps caused other errors:
 -voice overlap in soprano and alto
 -parallel octaves in bass and alto
 -parallel fifths in bass and tenor

CM: I IV

- Large leaps (4th or more) not resolved in the opposite direction

- Consecutive leaps in the same voice, in the same direction, not outlining a triad

Spacing errors:

- Keep adjacent voices within an octave of each other (exception: bass may be more than an octave below tenor).

avoid avoid good

spacing error spacing error an octave between voices is ok

- Voice crossing: when adjacent voices cross positions on the staff (ex: alto moving below tenor’s pitch in same chord)

avoid

voice crossing: alto and tenor

the tenor is higher than the alto

- Voice overlap: when one voice moves higher or lower than an adjacent voice was on the previous chord (ex: alto moving above the soprano’s pitch in the previous chord)

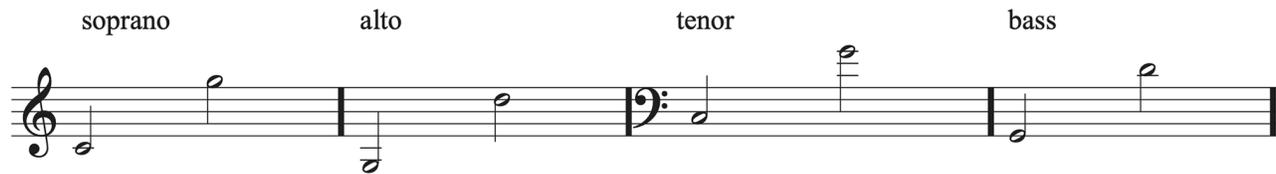
avoid

voice overlap: bass and tenor

the bass moves higher than the tenor's position on the previous note

- Voices exceeding their range. Remember that the bass has a little more flexibility to

extend a few notes beyond this range.



Motion errors:

- Similar motion in all voices

avoid

similar motion all voices

creates an error:
PP8 soprano and bass

- Parallel 5ths (PP5), Parallel octaves (PP8), Parallel unisons (PPU)
 - Voices move from a P5, P8, or PU to the same interval using similar motion

avoid

parallel octaves: bass and soprano

avoid

parallel 5ths: bass and tenor

- Contrary 5ths (C5), Contrary octaves (C8), Contrary unisons (CU)
 - Voices move from a P5, P8, or PU to the same interval using contrary motion

avoid

avoid

contrary octaves: bass and soprano contrary 5ths: bass and alto

- Direct 5ths (D5), Direct octaves (D8)
 - When the bass and soprano voices move in similar motion from any interval to a P5 or P8 and the soprano leaps.
 - This an error only when the intervals are created between the bass and soprano voices.

avoid

avoid

direct octave: bass and soprano direct 5th: bass and soprano

- Unequal 5ths
 - When the bass and an upper voice move from a diminished 5th to a Perfect 5th in similar motion, it is an unequal 5th.
 - This is an error only when the intervals are created between the bass voice and another voice.

avoid

unequal 5th: bass and soprano

Leading Tone errors:

- The leading tone should most often be raised in minor on V and vii° chords.
- The leading tone should resolve to tonic. If it is in the soprano, it has to resolve to tonic. If it is in the inner voices, it can resolve down to scale degree 5, but it is better to resolve it to tonic when possible. If it is in the bass voice, it can transfer to another voice if the chord changes to another dominant function chord with a leading tone. The leading tone then resolves in the new voice in the next chord.

Doubling errors:

- Do not double tendency tones (Leading tone, altered tones, 7th in a 7th chord)
- Root position chords:
 - Major and minor chords: double the root (the bass)
 - Exception: V-vi: double the 3rd in the vi chord
 - Diminished chords: double the 3rd
- First inversion chords:
 - Major and minor triads: double anything except the leading tone and tendency tones.
 - Diminished chords: double bass (the 3rd)
- Second inversion chords:
 - Double the bass (the 5th)

Summary of voice leading principles and part writing guidelines

- Connect chords horizontally through good melodic motion as well as vertically.

- Each voice in SATB part writing uses a specific stem direction.
- To help avoid part writing errors: build chords with correct spacing, staying within the designated voice ranges.
- Memorize the part writing guidelines for doubling, spacing, leaps, and motion between chords. These will help you avoid creating part writing errors.
- Memorize the possible part writing errors and make it a habit to check for errors on every chord and between every two chords in a progression.

10.1 Chord Voicing and Part Writing, General Principles: Theory exercises

In addition to Workbook Chapter 10.1 see the examples below.

Let's look at some part writing examples that illustrate the voice leading principles outlined. We will see that creating one part writing error often creates more errors. After examining the cause of each problem, we will fix the errors by following good part writing guidelines.

Example 1

Errors due to spacing + doubling:

spacing: tenor and alto

doubling: LT-chord 1;
root-chord 2

parallel octaves:
tenor and soprano

FM: $\text{vii}^{\circ 6}$ I

Fixed:

$\text{vii}^{\circ 6}$ I

In this example, there is a spacing problem between the alto and tenor voices in both chords. Both chords have also been incorrectly doubled. The first chord is a diminished triad and should have the 3rd doubled. In the example, the leading tone is doubled, which we want to avoid because it is a tendency tone (and also the root of the chord instead of the third). The second chord is a root position major chord, and should have the root doubled while including the 3rd and 5th of the chord. The doubling error in the diminished chord resulted in parallel octaves when both leading tones resolved correctly to tonic. Part writing both chords with correct spacing and doubling solves all issues. The 3rd of the diminished chord should be

doubled, and using only one leading tone will allow the major chord to be doubled correctly as well.

Example 2

Errors due to large leap:

DM: IV V

large leap: alto
parallel 5ths:
bass and tenor
voice crossing:
tenor and alto
voice overlap:
tenor and alto

Fixed:

IV V

In this example, a large leap in the alto has resulted in a number of errors. We see voice overlap when the alto voice moves lower on chord 2 than the position that the tenor voice occupied on chord 1. We see voice crossing between the alto and tenor on chord 2. We also see parallel 5ths between the bass and tenor voices. To fix these problems, the alto should follow good part writing guidelines by moving as stepwise as possible to the chord 2, eliminating the large leap. That change fixes all errors.

Example 3

Errors due to doubling:

am: vii⁰ i

doubling: chord 1

direct octaves:
bass and soprano

unequal 5ths:
bass and tenor

Fixed:

vii⁰⁶ i

The first chord in this example is a diminished chord. Diminished chords are most often placed in first inversion to avoid potential problems with part writing. This chord is in root position, and has the 5th of the chord doubled instead of having the 3rd doubled. That doubling error creates direct octaves between the bass and soprano as well as unequal fifths between the bass and tenor. Putting the chord in first inversion, doubling the 3rd of the chord, and moving each voice as stepwise as possible to avoid leaps larger than a 3rd fixes all problems.

Example 4

Errors due to doubling + LT resolution:

cm: V VI

doubling: chord 2

leading tone resolution

augmented 2nd: tenor

Fixed:

V VI

In this example, the leading tone does not resolve to tonic. Even though it is in an inner voice, because we are in a minor key and are connecting V to VI, moving the leading tone down to scale degree 6 creates an augmented 2nd interval in the tenor. We want to avoid any dissonant melodic intervals in a voice. Not resolving the leading tone also creates improper doubling in the second chord. When moving from V to VI, we most often double the 3rd in the VI chord instead of the root in order to avoid part writing errors. In this example, the 5th is doubled, which is an incorrect choice for a root position major chord. Resolving the leading tone to tonic creates correct doubling in the second chord and eliminates the augmented second interval in the tenor.

10.1 Chord Voicing and Part Writing, General Principles: Sight Singing exercises

Triad and 7th chord review. Sing the following chords up and down from the same bass note. Use 1-3-5 numbers for triads and 5-7-2-4 for major-minor 7th chords.



10.1 Chord Voicing and Part Writing, General Principles: Aural Training exercises

Triad and Mm7 chord review

Step 1) Listen to the string of ten major or minor triads or Mm7 chords in inversion. Each played twice, first up and down from the bass note, then in unison. Sing along with each the second time it is played.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=365#audio-365-1>

Step 2) Label all ten below by quality and inversion

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

10.2 Part Writing, Root Position Triads and Suspensions: Tutorial

Part Writing with Root Position Chords

Part Writing Guidelines

When part writing chords, we combined all of the knowledge we have learned about good horizontal and vertical connections between voices in order to create a set of guidelines for good part writing practices. Following these guidelines helps to ensure that part writing errors are avoided before they are written. Consider the following things when part writing:

- Common tones
 - Retain common tones when possible
 - If there are no common tones, try to move the upper voices in contrary motion to the bass voice.
- Complete vs. incomplete chords
 - A complete chord has all chord members present. Complete chords are preferred to incomplete chords.
 - An incomplete chord is missing a chord member. Most often, the 5th is omitted and the root is doubled or tripled. Chords with tripled roots appear at cadences, not within the phrase.
- General Doubling rules
 - Do not double tendency tones and more active scale degrees (like the leading tone or chordal seventh).
 - Double the root (bass) of the chord in root position major and minor chords (except when going V-vi, in which case the 3rd of the vi chord is most often doubled. See more about the V-vi progression below).
 - Diminished chords are most often used in first inversion with the 3rd of the chord doubled. It is best to avoid root position diminished chords when possible because their interval structure often creates part writing errors like parallel and unequal 5ths with surrounding chords. If a diminished chord must be used in root position, always double the 3rd of the chord to minimize the chances of part writing errors.

- Think horizontally at all times to create smooth lines in each voice, especially in the soprano. Avoid leaps larger than a 3rd, but if a larger leap is used, it should be filled in by step in the opposite direction.
- Resolve tendency tones (like the leading tone). A leading tone in the soprano should always resolve to tonic. A leading tone in an inner voice may move down to scale degree 5, though you should make an effort to resolve it to tonic when possible. Leading tones in the bass resolve to tonic unless they switch voices when moving to another dominant function chord. In that case, they should resolve to tonic in the new voice.
- Check for part writing errors. Always check each chord for doubling and spacing errors and check each chord connection for other part writing errors (like parallel 5ths and octaves). In addition, check that you have spelled the intended chord with the correct notes and accidentals, and that all notes in the chord line up vertically according to their rhythmic placement in the bar.

Part writing guidelines for V-vi or V-VI

The connection between V and vi chords can be problematic because of the creation of parallels between chords, because of a melodic augmented 2nd interval in one of the voices if in a minor key, or because of the inability to resolve the leading tone. Look at the following examples.

Example 1

Error: parallel octaves

em: V VI V VI

Fix: double 3rd in VI

Example 2a

Error: melodic augmented 2nd

em: V VI V VI

Fix: double 3rd in VI

Example 2b

Error: leading tone doesn't resolve

EM: V vi V vi

Fix: double 3rd in vi

Part writing V-vi

In example 1, parallel octaves occur. This happens in both major and minor keys. In example 2a, a melodic augmented 2nd is created by motion from scale degree 7 in the V chord to scale degree 6 in the VI chord. This only occurs in minor keys. You can see in example 2b that the augmented 2nd does not occur in a major key. However, in that example, the leading tone does not resolve to tonic. Doubling the 3rd of the vi chord solves all three of these problems.

V-vi part writing guidelines:

- Scale degree 7 in the V chord moves in parallel motion with the bass, resolving to scale degree 1.
- The other 2 voices move down, contrary to the bass, to the closest chord tones.
- This results in a doubled 3rd in the vi chord, which will resolve the leading tone, avoid parallels, and avoid a melodic augmented 2nd in a voice in a minor key.
- Moving away from a V-vi progression with a double 3rd in the vi chord can also cause problems. Always carefully check for errors between chords.

Summary of part writing steps

1. Write the names of the notes found in each chord using correct doubling and accidentals.
2. Voice the first chord using generous spacing between voices while keeping voices in their respective ranges. Plan to have the soprano move by step. Check for doubling and spacing errors before connecting chords.
3. Connect chords:
 1. If there are common tones, add those in first. Then move each voice to the closest note in the next chord using smooth, stepwise motion when possible.
 2. If there are no common tones, move all upper voices in contrary motion to the bass.
 3. If writing a V-vi progression, resolve the leading tone to tonic, move the other two voices to the closest chord tones in contrary motion with the bass. The third of the vi chord should be doubled.
4. Check for part writing errors.

Part writing with suspensions

[To review suspensions, see chapter 7.3 on non chord tones](#)

A suspension is an added non-chord tone that resolves down by step to a chord tone. When part writing using suspensions, follow the guidelines for part writing the chords without the suspensions first, making sure to avoid any part writing errors. Then, add in any suspensions. You cannot use a suspension to avoid part writing errors.

Not all chords can support all types of suspensions. Root position chords can support 9-8 (2-1) and 4-3 suspensions. The 7-6 and 2-3 suspensions are only possible when used over a chord in first inversion.

Summary of part writing with suspensions

1. Part-write the chords without the suspension first, following all part writing steps and guidelines. Check for errors. You cannot use a non-chord tone to fix part writing errors.
2. Locate the voice that will create the correct suspension numbers.
 1. The bass voice in the second chord will form the correct resolution interval with one of the upper voices (the resolution interval is the second number in the suspension label). That voice will get the suspension.
 2. Make sure that the chosen voice can be suspended from the previous chord, meaning

that it is coming from a step above in the previous chord.

3. Insert the suspension.
 1. Check rhythm and vertical alignment of beats in the bar.
 2. Choose a tied suspension or an articulated suspension.
4. Label the suspension
 1. Put the non-chord tone in parenthesis.
 2. Write the suspension numbers and SUS label near the suspended note.

Proceed to the theory exercises for guided exercises on part writing root position chords and suspensions.

10.2 Part Writing, Root Position Triads and Suspensions: Theory exercises

In addition to Workbook Chapters 10.2.1, 10.2.2, 10.2.3, 10.2.4, and 10.2.5, see the examples below.

Now that we are familiar with root position part writing guidelines, let's look at some part writing examples. A summary of the part writing steps outlined in the examples is included at the end of the examples section.

Example 1



am: i V

In this first example, we will be part writing a i-V progression in a minor key using common tones. First, write the notes possible in each chord with the correct doubling. Make sure to raise the leading tone in the V chord.



am: i V
 AACE EEG#B

Next, find a good spacing for the first chord. Choose pitches that create a more open spacing between notes in order to allow freedom to move without voice crossing or overlap. Remember to work within the range of each voice outlined in the guidelines for voicing chords in four voices. We want the soprano to move as stepwise as possible, so plan to use a soprano pitch that will be able to move by step to the next chord. Remember that the bass voice has the most flexibility to move, so you can change the octave of the pitches if needed in order to avoid errors. Check for spacing and double errors before moving on.



am: i V
 AACE EEG#B

Common tones help to create smooth connections between chords. The next part writing step is to find any common tones between chords and write them in.

am: i V
AACE EEG#B

The image shows a musical score in 4/4 time with two staves. The first staff (treble clef) contains two chords: the first chord has notes G4 and B4, and the second chord has notes A4 and C5. The second staff (bass clef) contains two chords: the first chord has notes A2 and C3, and the second chord has notes E2 and G#3. Vertical lines connect the notes between the two staves to show voice leading: G4 to A4, B4 to C5, A2 to E2, and C3 to G#3.

To complete the chord progression, find the smoothest, most stepwise connection between each pitch and the same voice in the next chord. Once the chords are complete, remember to always check for part writing errors.

am: i V
AACE EEG#B

The image shows a musical score in 4/4 time with two staves. The first staff (treble clef) contains two chords: the first chord has notes G4 and B4, and the second chord has notes A4 and C5. The second staff (bass clef) contains two chords: the first chord has notes A2 and C3, and the second chord has notes E2 and G#3. Vertical lines connect the notes between the two staves to show voice leading: G4 to A4, B4 to C5, A2 to E2, and C3 to G#3.

Example 2

The second example connects chords that have no common tones.



DM: I ii

We are in the key of D major and will be connecting I to ii. Step 1 is to write out the notes in each chord with the proper doubling.



DM: I ii

DDF#A EEGB

Next, we want to build the first chord using generous spacing between voices while keeping voices in their respective ranges. Check for doubling and spacing errors before moving on.

DM: I ii
DDF#A EEGB

The image shows a grand staff with two staves. The top staff is in treble clef and the bottom staff is in bass clef. Both staves have a key signature of two sharps (F# and C#) and a 4/4 time signature. The I chord (D major) is shown with notes D4, F#4, and A4 in the treble clef, and D3, F#3, and A3 in the bass clef. The ii chord (E minor) is shown with notes E4, G4, and B4 in the treble clef, and E3, G3, and B3 in the bass clef. The notes are written as quarter notes.

Now we can connect the I chord to the ii chord. Because the chords share no common tones, the best practice is to move all voices in contrary motion to the bass. The bass is ascending, so the upper voices will descend to the next closest chord tones. Once you complete the chord, make sure to check for part writing errors.

DM: I ii
DDF#A EEGB

The image shows a grand staff with two staves. The top staff is in treble clef and the bottom staff is in bass clef. Both staves have a key signature of two sharps (F# and C#) and a 4/4 time signature. The I chord (D major) is shown with notes D4, F#4, and A4 in the treble clef, and D3, F#3, and A3 in the bass clef. The ii chord (E minor) is shown with notes E4, G4, and B4 in the treble clef, and E3, G3, and B3 in the bass clef. The notes are written as quarter notes. The voice leading is shown with lines connecting the notes between the two chords: the bass line goes from D3 to E3 (ascending), the inner voice goes from F#3 to G3 (ascending), and the upper voice goes from A3 to B3 (ascending). The treble clef notes are D4, F#4, A4 for the I chord and E4, G4, B4 for the ii chord.

Example 3

The third example looks at part writing for V-vi motion.



cm: V VI

We are in the key of C minor using V-VI chords. Write the notes in each chord along with the proper doubling. Remember, in a V-VI progression, the 3rd in the VI chord is most often doubled to avoid part writing errors.



cm: V VI

GGBnatD AbCCEb

Next, we will build the first chord using generous spacing between voices while keeping voices in their respective ranges. Check for doubling and spacing errors before moving on.

cm: V VI
GGBnatD AbCCEb

We can now part write the remaining voices. Scale degree 7 in the V chord moves in parallel motion with the bass, resolving to scale degree 1. The other two voices move down, contrary to the bass to the next closest chord tones. Remember to check for part writing errors.

cm: V VI
GGBnatD AbCCEb

Example 4

This example uses a 9-8 suspension.



dm: iv V

In this example, we will be building a iv-V progression in d minor, then adding a 9-8 suspension. Just like with all other root position part writing examples, we will follow the part writing steps outlined in the summary of part writing steps. First, we will write the name of the notes in each chord along with their proper double and any needed accidentals.



dm: iv V

GGBD AAC#E

Then, we will build the first chord, and connect it to the second chord. Note that these chords do not share common tones, so all upper voices will move in contrary motion with the bass. Once the chords are complete, remember to check for part writing errors.

dm: iv V
 GGBD AAC#E

Now we can add in a 9-8 suspension. To do that, we need to remember that suspensions are notes that are held over from a previous chord. That means that the suspension must be placed on beat 3, when the chord changes so that it can resolve to a chord tone on beat 4. Then, we need to figure out which voice will have the suspension added to it. The numbers 9-8 tell us that the suspension will form the intervals of a 9th with the bass on the suspended note, and then an octave with the bass on its resolution. Looking at our example, we want to find the voice in the second chord that forms an octave with the A in the bass voice on beat 3. The only voice that forms an octave with the bass is the tenor voice. So, that's the voice that will get the suspension. When the A is suspended on beat 3, it forms a 9th above the bass, that resolves to an octave above the bass when the suspension resolves down by step.

dm: iv V
 GGBD AAC#E

Once the correct voice has been identified, the suspension can be placed. Remember that suspensions must occur on a strong part of the beat in comparison to their resolutions. Remember to check the rhythm to make sure you have the correct number of beats in the bar. Make sure that all notes line up vertically according to their rhythmic placement in the bar. Suspension can be tied or articulation, so unless indicated, the choice is up to you. Once the suspension has been placed, put the non-chord tone in parenthesis and label the suspension with its number.

dm: iv V
GGBD AAC#E

Example 5

We will follow the same steps when part writing using a 4-3 suspension.

CM: I V

We will be writing a I-V progression in C major with a 4-3 suspension. First, notate the notes used in each chord with correct double and accidentals.

CM: I V
 CCEG GGBD

Then, build the first chord and connect it to the second chord, following correct part writing steps and guidelines. These chords share a common tone and all other voices will move as stepwise as possible. Once the chords are complete, remember to check for part writing errors.

CM: I V
 CCEG GGBD

Now we can add in a 4-3 suspension. Remember, the key to find the voice that will form the correct suspension is to look at the bass voice for the second chord, and find the upper voice note that creates the resolution number of the suspension (the second number in the suspension name). Looking at our example, we need a 3rd above the G in the bass, which is a B.

The voice that has the B is the soprano voice. Remember to check that the soprano voice in the chord before is a step higher than the B so that it can be suspended and resolve down by step to the B.

CM: I V
CCEG GGBD

Next, insert the suspension. Check that the rhythm makes sense with the number of beats in the bar and that the chords all line up vertically according to the rhythm in the bar. Then, label the suspension by putting the non-chord tone in parenthesis and writing 4-3 SUS next to the suspended note.

CM: I V
CCEG GGBD

10.2 Part Writing, Root Position Triads and Suspensions: Sight Singing exercises

Sing each harmonic progression, consisting primarily of root-position triads

Step 1) give your self the bass note of the first chord.

Step 2) Sing the baseline only.

Step 3) Sing the whole progression, singing each chord up and down on scale degrees in the manner of SS exercise 6.2.3.

The image shows two musical staves in bass clef, 4/4 time. The first staff is in D major (one sharp) and the second is in C minor (two flats). Each staff contains a sequence of root-position triads with vertical stems and dots indicating the notes. Below each staff are Roman numeral chord symbols.

First staff (D major): D: I ii vii^o I vi IV V

Second staff (C minor): Cm: i VI iv V i III iv V

10.2 Part Writing, Root Position Triads and Suspensions: Aural Training exercises

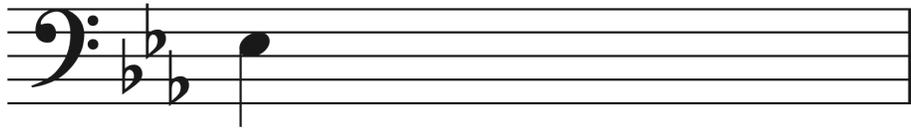
Step 1) Listen to each harmonic progression, consisting of four chords in root-position.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=373#audio-373-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=373#audio-373-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=373#audio-373-3>

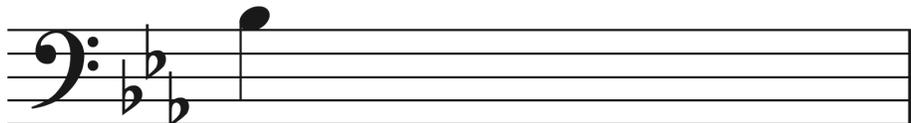
Step 2) Sing along with the bass line, then notate it on the staff



Eb: _____



Eb: _____



Eb: _____

Step 3) Sing up and down each chord as it goes along, finding the notes of each triad along the way. Note: the chord progression is played in open SATB voicing, but you should sing up and down each chord in closed position above each bass note (i.e. find the bass note and sing up to the third of the chord, then up again to fifth, and back down again).

Label the roman numeral of all four chords in each progression:

- 1.
- 2.
- 3.
- 4.

10.3 Part Writing, First Inversion Triads and Suspensions: Tutorial

Part Writing First Inversion Triads

Most phrases in tonal music use at least one inverted chord. Inverted chords are often used to create forward motion, since chords become less stable and more prone to move the farther that they get from their root position counterparts. Inverted chords are used to improve the contour of the bass line and to provide greater interest and variety in the bass voice. They can be used to weaken the strength of I and V chords within a phrase that do not serve as goals of the harmonic motion. They can also be used to prolong harmonies and expand the progression. Look at the following examples.

The example below improves the contour of the bass line, making it smoother, more interesting, and easier to sing. It also shows how inversions can lessen the weight of V and I chords that do not serve as goals in the progression. In addition to creating a smoother, more interesting bass line, the second version of the bass line ensures that the most prominent root position V-I progression is at the final cadence. All other V chords within the phrase are in inversion to lessen their weight and impact in comparison to the final chord.

FM: I V⁷ I V I IV V⁷ I I IV V⁷ I

FM: I V₃⁴ I V⁶ I IV⁶ V₅⁶ I I IV V⁷ I

The example below uses a first inversion V chord to prolong the tonic harmony to expand the progression and provide interest.

Haydn, Piano Sonata no. 43, mvt 1, mm. 12-13

Ab: I V⁶ I

Though most first inversion triads can be substituted for their root position counterparts, the use of diminished chords in root position compared to first inversion, and the use of the vi chord in first inversion need more explanation.

Diminished triads

As was mentioned when discussing rules of doubling and chord choices for part writing with root position chords, diminished chords are almost always used in first inversion. As you can see in the example below, first inversion is the only inversion in which there is no diminished 5th or augmented 4th created above the bass. That means far fewer part writing errors are possible when writing with first inversion diminished chords.

root position	1st inversion	2nd inversion

Diminished Chords

vi⁶

Though most first inversion chords can be substituted for their root position counterparts, vi⁶ should not be substituted for vi when coming from a root position V chord. While V-vi with both chords in root position is a standard progression, V-vi⁶ sounds like a mistake.

CM: I IV V vi vs. I IV V vi⁶

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=375#audio-375-1>

We often find vi⁶ used as part of harmonic sequences or to expand the harmony between I and ii, which helps avoid parallels between the I and ii chords.

CM: I vi⁶ ii

Part Writing First Inversion Triads

A greater degree of freedom is available when writing with first inversion chords due to the flexibility in doubling.

Part writing guidelines for first inversion triads:

- Doubling
 - Major and minor chords: Any note can be doubled as long as it is not a tendency tone (do not double the leading tone).
 - Diminished triads: double the 3rd (bass).
- Correct spacing, smooth voice leading, and avoiding all part writing errors still apply.
- Triads are normally complete. The fifth is most frequently omitted if the chord is incomplete.
- Use common tones to connect chords when possible.
- If common tones are not possible between chords, move the upper voices in contrary motion to the bass when possible.

Part writing first inversion chords with Suspensions

As we learned from adding suspension when part writing root position chords, you must follow the guidelines for part writing the chords without the suspension first, making sure to avoid any part writing errors. Then, add in the suspension. You cannot use a suspension to avoid part writing errors.

9-8 and 4-3 suspensions are used over chords in root position. 7-6 and 2-3 suspensions are over chords in first inversion.

There are two elements to consider when writing suspensions over first inversion chords that were not listed when writing suspensions over root position chords.

- Due to the flexible doubling on a chord in first inversion, it is often easier to write the first chords, find the suspension voice, then fill in the rest of the second chord, making sure that there are no errors (both without the suspension and with the suspension).
- Make sure not double the leading tone or the resolution note of the suspension.

Summary of part writing with suspensions over first inversion chords

1. Part-write the first chord without the suspension first, following all part writing steps and guidelines. Check for errors. You cannot use a non-chord tone to fix part writing errors.
2. Locate the voice that will create the correct suspension numbers.

1. The bass voice in the second chord will form the correct resolution interval with one of the upper voices (the resolution interval is the second number in the suspension label). That voice will get the suspension. If there is no voice that will work for the chosen suspension, revise the doubling on the first chord (if the chord is in first inversion and has that flexibility).
2. Make sure that the chosen voice can be suspended from the previous chord, meaning that it is coming from a step above in the previous chord.
3. Insert the suspension note and resolution.
 1. Double check the rhythm and vertical alignment of beats in the bar.
 2. Chose a tied suspension or an articulated suspension.
4. Label the suspension
 1. Put the non-chord tone in parenthesis.
 2. Write the suspension numbers and SUS near the suspended note.
5. Part-write the remaining voices in the first inversion chord.
 1. Do not double the leading tone
 2. Do not double the resolution note of the suspension
 3. Check for errors

Proceed to the theory exercises for guided examples on part writing with first inversion triads.

10.3 Part Writing, First Inversion Triads and Suspensions: Theory exercises

In addition to Workbook Chapters 10.3.1 and 10.3.2, see the examples below.

Example 1

The first example uses a diminished chord in first inversion. As usual, the first part writing step is to write the notes in each chord with proper doubling and accidentals.



gm: ii^{o6} V
ACCE^b DDF[#]A

Then, voice the first chord, taking into account usual part writing guidelines. Remember that in a diminished chord, we double the 3rd of the chord. Check for errors.

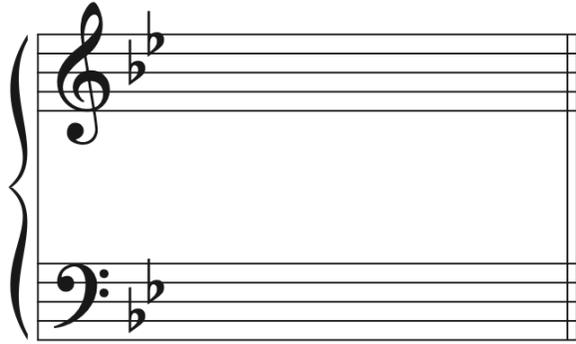
gm: ii^{o6} V
 ACCE^b DDF[#]A

Next, voice the second chord. It's a root position chord, so double the root. Move the voices as step-wise as possible to connect the chords. Then check your answer for errors.

gm: ii^{o6} V
 ACCE^b DDF[#]A

Example 2

Now, let's look at a chord progression involving two first inversion triads. After listing the notes available in each chord with correct doubling and accidentals, we are ready to part write.



Bb: IV⁶ V⁶ I
 EbGBb FAC BbBbDF

Let's voice the first chord, taking into account good part writing guidelines. We can double any member of a first inversion chord as long as it is not a tendency tone like the leading tone. When deciding on which note to double, write all three members of the chord in first, then add the double note that fits the best with spacing. Keep in mind that you might have to go back and change the chord doubling depending on what chord comes next. Then, check for errors.



Bb: IV⁶ V⁶ I
 EbGBb FAC BbBbDF

We will follow the same process for the next first inversion chord. When deciding what to double, fill in the three chord members first, then choose the pitch that produces the most step-wise motion with the remaining voice. Check for errors.

Bb: IV⁶ V⁶ I
EbGBb FAC BbBbDF

The last chord is a root position triad, so we must double the root. Look for the most step-wise motion possible from each voice to complete the chord. Check for errors.

Bb: IV⁶ V⁶ I
EbGBb FAC BbBbDF

Example 3

Let's look at how the 7-6 suspension works over chords in first inversion. The first step is always to write the notes in each chord with correct doubling and accidentals.



bm: i iv⁶
 BBDF# EGB

Then, part write the first chord following normal part writing guidelines. Check for errors.



bm: i iv⁶
 BBDF# EGB

At this point, the easiest way to find a doubling for the first inversion chord that will work with the suspension is to find the voice that has the suspension and write in the suspension before the rest of the second chord. Since we do not have the second chord written, you need to use the first number of the suspension to identify which chord member in the first chord would form that interval with the bass of the second chord. Since the bass pitch of iv⁶ is G, and we are writing a 7-6 suspension, we need the note that is a 7th above G. That note is F#, which is in the alto voice, so the alto voice gets the suspension.

bm: i iv⁶
BBDF# EGB

Now, you can part-write the rest of the iv⁶ chord. Make sure to remember not to double the leading tone if there is one (there is not in this example) or the resolution note of the suspension, which is E. We don't double the resolution of a suspension note because it muddies the sound of the suspension on the main part of the beat. That means the D in the tenor should not move to an E in the next chord, and should go to a B (the next closest chord tone). Once you finish the chord, check for errors and make sure to label the suspension.

bm: i iv⁶
BBDF# EGB

Example 4

Let's look at how the 2-3 suspension works over chords in first inversion. The example is in C major. Write the notes in both chords, observing proper doubling and accidentals.



CM: I V⁶
CCEG GBD

Next, part-write the first chord and check for errors.



CM: I V⁶
CCEG GBD

Now that the first chord is complete, we can find the suspension voice. Since this is a 2-3 suspension, it must go in the bass. It is the only suspension possible in the bass and cannot be used in the upper voices. So, we can draw in the suspension.

CM: I V⁶
CCEG GBD

Now, complete the chord. When choosing what to double, remember not to double the leading tone or the resolution of the suspension. They happen to be the same note in this example. Retain common tones and move the other voices as stepwise as possible. Since the B cannot be doubled, the soprano will go up to a D to complete the chord. Make sure to label the suspension and check for errors.

2-3 SUS

CM: I V⁶
CCEG GBD

10.3 Part Writing, First Inversion Triads and Suspensions: Sight Singing exercises

Sing each harmonic progression, consisting primarily of first inversion chords, singing each chord up and down.

The image shows two harmonic progressions on a bass clef staff in 4/4 time. The first progression is in B-flat major (Bb:), and the second is in C# minor (C#m:). Each chord is represented by a vertical line with a dot indicating the pitch, and the chord symbol is written below the staff.

Progression 1 (Bb:): I, vi6, vii°6, I6, ii6, IV, I

Progression 2 (C#m:): i, V6, VI6, i6, ii°6, vii°6, i

10.3 Part Writing, First Inversion Triads and Suspensions: Aural Training exercises

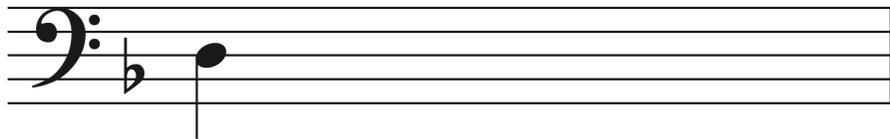
Step 1) Listen to each harmonic progression, consisting of four chords in root-position or first-inversion.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=385#audio-385-1>

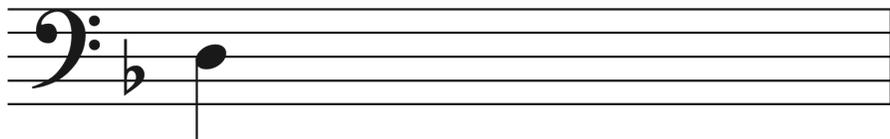
One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=385#audio-385-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=385#audio-385-3>

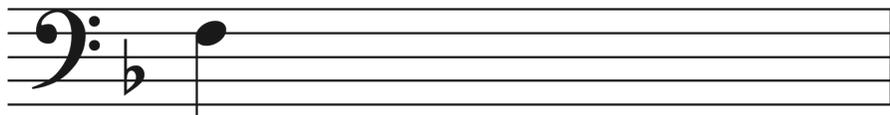
Step 2) Sing along with the bass line, then notate it on the staff



Dm: _____



Dm: _____



Dm: _____

Step 3) Sing up and down each chord as it goes along, finding the notes of each triad along the way. Note: the chord progression is played in open SATB voicing, but you should sing up and down each chord in closed position above each bass note (i.e. find the bass note and sing up to the next closest pitch in the chord, then up again to the next pitch, and back down again, recognizing the role—root, 3rd, or 5th—in the chord and quality of each bass note and notes above).

Label the roman numeral and inversion of all four chords in each progression:

- 1.
- 2.
- 3.
- 4.

10.4 Part Writing, Second Inversion Triads: Tutorial

Part Writing with Triads in Second Inversion

Second inversion triads were originally considered a dissonant sound that resulted from adding non-chord tones between chords. They had a perfect 4th interval between the bass and an upper voice, which is an interval that was originally considered a dissonance. Though we now consider second inversion triads to be chords, their function is still to embellish the chords around them. Chord inversions become more unstable the farther away they are from root position. Second inversion triads are less stable than first inversion or root position chords, and create more motion because they need to move to another chord. Second inversion chords are used much less frequently than root position or first inversion triads, and because they function as embellishing chords, they are not used as substitutes for root position or first inversion triads. Four types of second inversion triads are used in music. When part writing, a second inversion chord must be one of these four types in order to be used in a progression.

Cadential 6/4 chord

The cadential 6/4 chord is the most common 6/4 chord used in music. It is spelled as a I 6/4 chord, but serves to decorate a V chord, directly preceding it at a cadence. Since it is functioning as a decoration to the V chord, it is assigned a dominant function, not a tonic function. A cadential 6/4 chord must meet the following criteria when used during part writing:

- It must be metrically stronger than the V chord that comes after it.
- One of the upper voices will double the bass and serve as common tones between the cad 6/4 and V chords.
- The other two upper voices will move down by step, using intervals 6-5 and 4-3 above the bass.

metrically stronger than V

C: ii⁶ $\underbrace{\text{cad}_4^6 \text{ V}}_{\text{V}}$ I

- Make sure to label the cad 6/4 properly. The I 6/4 chord is labeled as cad 6/4. The V chord that follows it is bracketed together with the cad 6/4 chord, and we write V underneath both chords to show that both chords together are considered a V chord with embellishment. Note that while this label is commonly used for cadential 6/4 chords, other ways to label a cadential 6/4 chord exist.

Here's an example of a cadential 6/4 chord in music:

Clementi, Sonatina Op. 36, No. 5, mvt 3 mm 50-51

GM: I⁶ ii⁶ $\underbrace{\text{cad}_4^6 \text{ V}}_{\text{V}}$ I

Passing 6/4 chord

Another type of 6/4 chord is called the passing 6/4 chord due to how the chord passes between the chords that surround it. The passing 6/4 chord is often used to connect the following chords:

- As a V6/4 chord between two I chords
- As a I 6/4 chord between two IV chords
- It is usually metrically weaker than the chords that it embellishes.

Part writing a passing 6/4 uses the following motion:

- The bass steps up between the two surround chords, or steps down between the two surrounding chords.
- One of the upper voices will step in the opposite direction as the bass.
- One of the upper voices is a common tone between all three chords.
- One of the upper voices will act as a lower neighbor between the two surrounding chords.

The image shows a musical score in 4/4 time for a passing 6/4 chord. The score is written in F major and consists of three measures. The first measure is an I chord (F major), the second is a V_{6/4} chord (C7 with a 6/4 suspension), and the third is an I⁶ chord (F major with a 6/4 suspension). The bass line moves up from F to C to F, and the upper voices move in a way that creates a passing 6/4 chord in the second measure. To the right of the score is a diagram labeled "part writing shape" which shows the voice leading pattern: a horizontal line for the common tone, a line that steps up from the left and then down to the right, and a line that steps down from the left and then up to the right.

F: I V_{6/4} I⁶

Passing 6/4

part writing shape

Here's an example of a passing 6/4 chord in music:

W. A. Mozart, Piano Sonata in D, K. 311, mvt 2, mm. 1-3

G: I IV⁶/₄ I⁶/₄ IV

Passing 6/4

Pedal 6/4 chord

The pedal 6/4 chord is also called a neighbor 6/4, embellishing 6/4, or static 6/4. These names derive from the way it moves to connect chords. Pedal 6/4 chords often connect the following two chords:

- As a I⁶/₄ chord between two V chords
- As a IV⁶/₄ chord between two I chords
- It is usually metrically weaker than the chords it embellishes.

Part writing a pedal 6/4 uses the following motion:

- The bass is sustained as a common tone between all three chords.
- One of the upper voices is also sustained as a common tone between all three chords.
- Both of the other upper voices create upper neighbors with the surrounding chords.

part writing shape

C: IV I⁶₄ IV I

Pedal 6₄

Here's an example of a pedal 6/4 chord in music:

Franz Grüber, "Silent Night," mm 1-2

Si - lent night, Ho - ly night,

C: I IV⁶₄ I I I IV⁶₄ I I

Pedal 6₄ Pedal 6₄

Arpeggiated 6/4 chord

The arpeggiated 6/4 chord results from a bass arpeggiation. Most often, either tonic or dominant is arpeggiated. An arpeggiated 6/4 chord is usually metrically weak, but can appear in either position. Since the same harmony is used between the root position or first inversion chord and the arpeggiated 6/4 version of the chord, it does not have specific part writing

motion for each voice like the other second inversion chords. Here's an example of an arpeggiated chord in music:

"America" (My Country Tis of Thee), mm. 7-10

Land where my fa - thers died,

FM: I I⁶ I⁶₄ I

Arpeggiated 6₄

Summary of Part Writing with Second Inversion Chords

- The bass voice will be doubled in all second inversion triads.
- You must follow the part writing guidelines specific to each chord.
 - Cadential 6/4
 - Metrically stronger than the V chord that comes after it
 - Bass and an upper voice doubled with a common tone
 - Remaining upper voices move to create 6-5 and 4-3 intervals above the bass
 - Label the cadential 6/4 correctly to show its dominant function
 - Passing 6/4
 - Bass moves by step
 - One upper voice moves by step in contrary motion to the bass
 - One upper voice holds a common tone
 - One upper voice uses a lower neighbor motion
 - Pedal 6/4
 - Bass sustained over all three chords
 - One upper voice doubles the bass in all three chords
 - Remaining upper voices move in upper neighbor motion
 - Arpeggiated 6/4
 - Used as an arpeggiation of the same chord

Proceed to the theory exercises for guided examples for part writing with second inversion chords.

10.4 Part Writing, Second Inversion Triads: Theory exercises

In addition to Workbook Chapters 10.4.1 and 10.4.2, see the examples below.

Part writing with second inversion chords

The bass voice will be doubled in all second inversion triads. Beyond that generalization, you must follow the part writing guidelines specific to each chord. Let's look at examples for each type of 6/4 chord.

Exercise 1

FM: IV⁶ cad $\frac{6}{4}$ V
 BbDF FACC V CCEG

In this example, we are part writing a cadential 6/4 chord. Step 1 is to write the names of the notes in each chord using proper doubling and accidentals. Next, write the bass line in for the cad 6/4 and V chords. They both have scale degree 5 in the bass. One of the upper voices also shares that same common tone between both chords. In this example, both the tenor and soprano have scale degree 5 in the previous chord, so you must choose which voice to use to continue the common tone. One of the typical features of the cadential 6/4 chord is the downward stepwise motion in the soprano voice. For that reason, choose the tenor to hold the common tone so that the soprano can move down by step.

FM: IV⁶ cad⁶₄ V

BbDF FACC CCEG

The remaining upper voices need to move down by step. They form the intervals of 6-5 and 4-3 with the bass. Let's insert the 6-5 interval first. The soprano voice will create those intervals with the bass.

FM: IV⁶ cad⁶₄ V

BbDF FACC CCEG

Then, part write the remaining voice. It will create the intervals 4-3 with the bass.

FM: IV⁶ cad⁶₄ V

BbDF FACC CCEG

Always double check the notes in each chord after you complete the part writing. Because each chord has a specific part writing shape, it's easy to create the shape on the wrong pitches. Make it a habit to always double check your chord spellings when part writing second inversion chords.

Example 2

Let's look at another example and determine the type of 6/4 chord used.

bm: i V⁶₄ i⁶

BBDF# F#A#C#C# BDF#

The chord progression used is i V_{6/4} i⁶, which will create a stepwise bass line. That means this is a passing 6/4 because it is the only 6/4 chord that uses a stepwise bass line.

bm: i V₄⁶ i⁶
 BBDF# F#A#C#C# BDF#

Next, we can find the voice that will move downward by step in contrary motion to the bass. The only voice that can move down by step and use notes possible in the V_{6/4} and i⁶ chords is the soprano. Insert the descending passing motion in the soprano.

bm: i V₄⁶ i⁶
 BBDF# F#A#C#C# BDF#

Next, let's add the common tone between the three chords. The only note that all three chords share is F#.

bm: i V₄⁶ i⁶
 BBDF# F#A#C#C# BDF#

The remaining voice will create a lower neighbor motion. Don't forget to raise the leading tone.

bm: i V₄⁶ i⁶
 BBDF# F#A#C#C# BDF#

After the part writing is complete, remember to check your answer to make sure each chord was spelled using the correct notes and doubling.

Example 3

Let's look at another example and determine the type of 6/4 chord used. In this example, the chord progression I IV_{6/4} I creates a common tone in the bass between all three chords. That means this has to be a pedal 6/4.

DM: I IV⁶₄ I
 DDF#A GBDD DDF#A

One of the upper voices will double the bass, keeping a common tone between all three chords. That voice is the tenor voice in this example.

DM: I IV⁶₄ I
 DDF#A GBDD DDF#A

The remaining two upper voices create upper neighbor motion between the three chords.

DM: I IV⁶₄ I
 DDF#A GBDD DDF#A

Once part writing is complete, remember to check your answer to make sure all chords use the correct notes and doubling.

10.4 Part Writing, Second Inversion Triads: Sight Singing exercises

Sing each harmonic progression, consisting primarily of second inversion chords, singing each chord up and down

The image shows two musical staves in bass clef, 4/4 time. The first staff is in B major (two sharps) and the second is in D minor (one flat). Each staff contains a sequence of chords with vertical lines indicating their positions. The chord symbols are listed below the staves.

Chord symbols for the first staff (B major):
 B: I IV^{6/4} V^{6/4} vi^{6/4} IV I^{6/4} V I

Chord symbols for the second staff (D minor):
 Dm: i III^{6/4} ii^{6/4} i^{6/4} V V^{6/4} i

10.4 Part Writing, Second Inversion Triads: Aural Training exercises

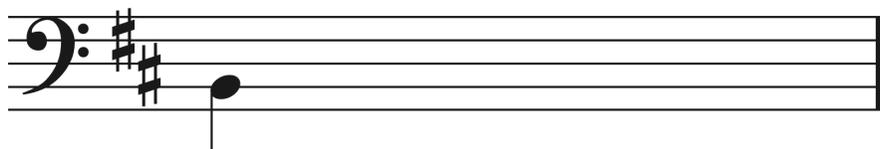
Step 1) Listen to each harmonic progression, consisting of four chords in root-position, first- and/or second-inversion.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=393#audio-393-1>

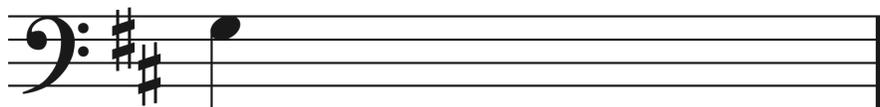
One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=393#audio-393-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=393#audio-393-3>

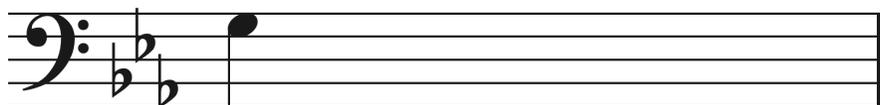
Step 2) Sing along with the bass line, then notate it on the staff



Bm: _____



D: _____



Eb: _____

Step 3) Sing up and down each chord as it goes along, finding the notes of each triad along the way. Though the chord progression is played in open SATB voicing, you should sing up and down each chord in closed position above each bass note (i.e. find the bass note and sing up to the next closest pitch in the chord, then up again to the next pitch, and back down again, recognizing the role—root, 3rd, or 5th—in the chord and quality of each bass note and notes above).

Label the roman numeral and inversion of all four chords in each progression:

- 1.
- 2.
- 3.
- 4.

10.5 Part Writing, Seventh Chords: Tutorial

Part Writing with 7th Chords

To review the types of seventh chords found in tonal music, see [Chapter 5.2](#).

Seventh chords can be separated into dominant seventh chords, leading tone seventh chords, and non-dominant seventh chords. Each group will be discussed separately.

The V7 chord

The V7 chord, also called the dominant seventh chord, is the most frequently used and strongest seventh chord in music. The dominant seventh chord is a frequent substitute for V. Due to its strength, it is used most often in root position at cadences, and most often found in inversions within a phrase. It is not typically used for a half cadence due to its strength.

V7 tendency tones

The V7 chord is strong because it has two tendency tones: the leading tone and the chordal seventh. The leading tone most often resolves up to tonic and the chordal seventh always resolves down by step. The added chordal seventh also creates a tritone interval between scale degrees 4 and 7, which increases its dissonance and its need to move to tonic to resolve.

Part Writing the V7 in Root Position

There are three ways to part write a V7-I progression when V7 is in root position. The first option is to have a complete V7 chord move to an incomplete I chord, where the I chord omits the 5th of the chord. The omission of the 5th and triple root is necessary to avoid doubling the 3rd of the chord or to avoid contrary or parallel 5ths. Memorize the scale degree movements between V7 and I.

Correct resolution

$\hat{4} -- \hat{3}$
 $\hat{2} -- \hat{1}$ (no $\hat{5}$)
 $\hat{7} -- \hat{1}$
 $\hat{5} -- \hat{1}$

CM: V7 I
Complete-Incomplete

Incorrect

$\hat{4} -- \hat{3}$
 $\hat{2} -- \hat{1}$ (no $\hat{5}$)
 $\hat{7} -- \hat{1}$
 $\hat{5} -- \hat{1}$

V7 I
doubles 3rd

Incorrect

$\hat{4} -- \hat{3}$
 $\hat{2} -- \hat{1}$ (no $\hat{5}$)
 $\hat{7} -- \hat{1}$
 $\hat{5} -- \hat{1}$

V7 I
Contrary 5th
(or Parallel 5ths)
bass + tenor

The second option to have an incomplete V7 chord move to a complete I chord. An incomplete V7 chord will omit the 5th of the chord. Memorize the scale degree movements between V7 and I.

Correct resolution

$\hat{4} -- \hat{3}$
 $\hat{7} -- \hat{1}$
 $\hat{5} -- \hat{5}$ (no $\hat{2}$)
 $\hat{5} -- \hat{1}$

CM: V7 I
Incomplete-Complete

The third option is to use a complete V7 and a complete I chord. In this option, it is impossible to resolve the leading tone to scale degree 1. It must move down to scale degree 5, and must be an inner voice. Memorize the scale degree movements between V7 and I.

Correct resolution

$\hat{4} -- \hat{3}$
 $\hat{2} -- \hat{1}$
 $\hat{7} -- \hat{5}$ (does not resolve LT)
 $\hat{5} -- \hat{1}$

CM: V7 I
Complete-Complete

Other resolutions of V7 in root position

In a V7-vi progression, the bass moves from scale degree 5 to 6. The leading tone will resolve to scale degree 1, or can go to 6 if it's in an inner voice. The other voices will move down by step.

Correct resolutions

CM: V7 vi V7 vi

Part Writing V7 in Inversions

Part writing for V7 chord in inversion is less complicated than the root position V7. All chords will be complete and each V7 chord will resolve in the following way:

Scale degrees move from:

- 5-5
- 7-1
- 2-1
- 4-3

Correct Resolutions

CM: $V \frac{6}{5}$ I $V \frac{4}{3}$ I $V \frac{4}{2}$ I⁶

All Inversions Resolve:

$\hat{4} -- \hat{3}$
 $\hat{2} -- \hat{1}$
 $\hat{7} -- \hat{1}$
 $\hat{5} -- \hat{5}$

Leading tone 7th chords

The $vii\circ 7$ and $vii^\circ 7$ chords are leading tone seventh chords. Part writing these chords can be challenging due to the possible parallel and unequal 5ths that can develop due to the tritones in the chords. In general, both chords resolve using the same scale degree motions to a tonic chord:

- 7-1
- 2-1 or 2-3 to avoid errors
- 4-3
- 6-5

Leading tone seventh chords can also move to $V7$ and its inversions before resolving to tonic.

$vii\circ 7$

The $vii\circ 7$ chord is used less often than V , $V7$, and vii° chords. It normally resolves to a I chord, but can also move to $V6/5$ first. Both chords will be complete. When part writing, scale degrees move from:

- 7-1 (or stay on 7 if moving to V6/5)
- 2-1 or 2-3 (or stay on 2 if moving to V6/5)
- 4-3
- 6-5

Correct resolutions

$\hat{6} -- \hat{5}$
 $\hat{4} -- \hat{3}$
 $\hat{2} -- \hat{1}$ (or 3)
 $\hat{7} -- \hat{1}$

CM: vii[°]7 I vii[°]7 V⁶/₅

Parallel 5ths are a common problem in part writing the vii[°]7 chord. Parallels can be avoided by doubling the 3rd of the I chord or re-voicing the chord so that parallel 5ths are replaced by parallel 4ths.

Common problem: Parallel 5ths

CM: vii[°]7 I

2 options to fix:

vii[°]7 I vii[°]7 I

revoice to create 4th instead of 5ths between scale degrees 2 and 6

double 3rd: scale degrees move 2-3

vii°7

The vii°7 chord contains two tritone intervals that need to be resolved. This creates a highly dissonant chord with tendency tones that create forward motion. Scale degrees generally move:

- 7-1 (or stay on 7 if moving to V6/5)
- 2-1 or 2-3 (or stay on 2 if moving to V6/5)
- 4-3
- 6-5

The root position vii°7 chord resolves to I or V6/5.

Correct resolutions

The diagram illustrates the correct resolutions of the root position vii°7 chord. It shows two musical staves: the left staff shows the resolution to the tonic (I), and the right staff shows the resolution to the dominant (V6/5). The vii°7 chord is shown in root position with scale degrees 2, 4, 6, and 7. The tonic (I) is shown with scale degrees 1, 3, and 5. The dominant (V6/5) is shown with scale degrees 2, 4, 6, and 5. The resolution of the 7th degree to the 1st degree is shown as 7̂ -- 1̂ (or 3̂). The resolution of the 2nd degree to the 1st degree is shown as 2̂ -- 1̂. The resolution of the 4th degree to the 3rd degree is shown as 4̂ -- 3̂. The resolution of the 6th degree to the 5th degree is shown as 6̂ -- 5̂.

am: vii^{o7} i

vii^{o7} V^{6/5}

In first and second inversion, it usually resolves to I6 to avoid part writing errors.

Common problem: unequal 5ths

am: $\text{vii}^{\text{06}}_5 \text{ i}$

To fix:

$\text{vii}^{\text{06}}_5 \text{ i}^6$

double 3rd:
scale degrees
move 2-3

In third inversion, it is usually followed by V7 or either a cadential 6/4 or passing 6/4 chord. It is used less commonly in 3rd inversion.

am: $\text{vii}^{\text{04}}_2 \text{ V7}$

$\text{vii}^{\text{04}}_2 \text{ cad}^{\text{6}}_4$

scale degrees 7-5 in
an inner voice only

Non-dominant seventh chords

Non dominant seventh chords are any seventh chord build on a scale degree other than 5 or 7. In a major key we use: ii7, iii7, IVΔ7, and vi7. In a minor key we use: i7, iiø7, IIIΔ7, iv7, and VIΔ7.

Part writing for non-dominant seventh chords is not as specific as for dominant and leading tone seventh chords. In general:

- Resolve the chordal 7th down by step
- Resolve tendency tones
- Most chords are complete. An incomplete chord will omit the 5th.
- All non-dominant seventh chords function the same as their triad counterparts, but $I\Delta 7$ should not be substituted for I when I is used in a structural context, like at a cadence.

Non-dominant seventh chords: specific chord details

ii7

The ii7 chord is the most common non-dominant seventh chord. It typically moves to a dominant function chord. Root position ii7 is often used near the end of a phrase, leading to V. First inversion ii6/5 often substitutes for ii6 in a progression, leading to V near the end of a phrase. Third inversion ii4/2 is most often used at the beginning of a phrase leading to V to expand tonic. The second inversion ii4/3 chord is not commonly used, but when used it substitutes for a predominant at the end of a phrase.

IV7

The IV7 chord typically moves to a dominant function chord, often passing through some form of the ii chord. Resolution to ii7 is especially easy because only the chordal 7th moves. When part writing iv7-V, parallel fifths can occur, and can be avoided by voicing the chord differently or by first moving to a cad 6/4 chord. The IV7 chord is most often found in root position in a progression.

VI7

The VI7 chord, like the vi chord, is most often used to expand tonic, moving to a predominant, before moving towards V. This chord serves as a passing chord between two dominant function chords, and moves smoothly to vii°. The VI7 chord is not used in deceptive cadences.

I7

Adding a 7th to the tonic triad weakens its tonal stability, creating an active chord that needs

to resolve. It often moves to IV, though sometimes moves to vi or ii. The resolution chord must contain scale degree 6 so that the chordal 7th (scale degree 7) can move down by step to resolve.

III7

The III7 chord is the least frequently used seventh chord, and most often occurs in sequences. It usually moves to VI or VI7 and can also be followed by IV.

Part writing non-dominant seventh chords:

- Chordal 7th always resolves down by step
- Move all other voices in a way that avoids errors (no strict scale degree motion like the dominant function 7th chords)

Approaching the resolving the chordal seventh of any seventh chord

Remember to check the approach and resolution of each seventh chord. The chordal seventh must be approached through common tone motion (like a suspension) or by step (like a passing tone or neighbor tone). The chordal seventh must resolve down by step in the next chord.

Summary of Part Writing with 7th chords

- The chordal seventh of any 7th chord must resolve down by step.
- The chordal seventh must be approached through common tone motion (like a suspension) or by step (like a passing tone or neighbor tone).
- Dominant 7th chords
 - V7 in root position
 - Complete V7 to Incomplete I uses scale degrees:
 - 5-1
 - 7-1
 - 2-1
 - 4-3
 - Incomplete V7 to Complete I uses scale degrees:
 - 5-1
 - 7-1
 - 5-5 (no 2)

- 4-3
 - Complete V7 to Complete I
 - 5-1
 - 7-5 (inner voice only)
 - 2-1
 - 4-3
 - V7 in inversions resolving to I uses scale degrees:
 - 5-5
 - 7-1
 - 2-1
 - 4-3
 - V7-vi
 - Root motion 5-6
 - 7-1 (or 7-6 if in an inner voice only)
 - Other voices move down by step
- Leading tone seventh chords use scale degrees:
 - 7-1
 - 2-1 or 2-3 to avoid errors
 - 4-3
 - 6-5
 - They can also easily move to V7 using common tones.
 - Always check leading tone seventh chords for errors. Avoid errors by re-voicing chords to replace 5ths with 4ths or by moving from scale degree 2 to 3 to double the 3rd in the tonic chord that follows them.
- Non dominant 7th chords
 - The chordal seventh always resolves down by step.
 - Move all other voices in a way that avoids errors (no strict scale degree motion like the dominant function 7th chords).

Proceed to the theory exercises for guided examples on part writing with seventh chords.

10.5 Part Writing, Seventh Chords: Theory exercises

In addition to Workbook Chapters 10.5.1, 10.5.2, 10.5.3, 10.5.4, and 10.5.5, see the examples below.

Example 1

In the first example, we will be connecting V7 and i.



gm: V7 i

First, build the V7 chord. You can choose to use a complete V7 chord or an incomplete V7 chord (omitting the 5th, scale degree 2). In this example we will use a complete V7 chord. If we were connecting from another chord before the V7, we would place the chordal seventh (scale degree 4) in the voice that would move by common tone or stepwise motion from the chord before it. Dominant function seventh chords use specific scale degree motions to connect between the seventh chord and its resolution, so it is helpful to write in the scale degrees on the V7 chord to help facilitate the correct scale degree motion in each voice.

gm: V7 i
 DF#AC

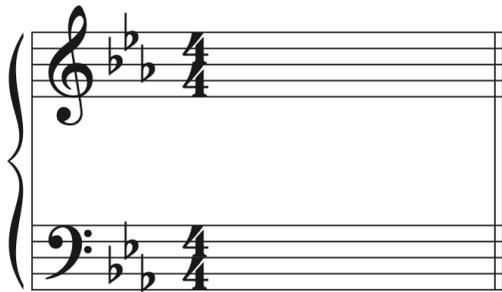
Simply move each scale degree to its correct location to resolve the V7 chord. Scale degree 5 goes to 1, 7 goes to 1, 2 goes to 1, and 4 goes to 3.

gm: V7 i
 DF#AC GGBbD

Notice that this solution creates an incomplete i chord. It is missing the 5th of the chord. In order to have a complete V7 chord and a complete I chord, the leading tone must resolve down to scale degree 5, but this can only be done if the leading tone is in an inner voice.

Example 2

Next, let's look at a leading tone seventh chord. In the example below, we will build a $\text{vii}^\circ 6/5$ chord and resolve it to i.



cm: vii^{o6}₅ i

First, we will build the vii^o7 chord and put it in first inversion. This chord should be complete. Like the V7 chord, leading tone seventh chords use specific scale degree motions to resolve, so write in the scale degrees.



cm: vii^{o6}₅ i

BnatDFAb

Resolve this chord according to the normal scale degree resolutions: scale degree 7 goes to 1, 2 goes to 1, 4 goes to 3, and 6 goes to 5. Errors are common in vii^o7 chords due to the two tritone intervals. Always check a vii^o7 chord for errors. We can see that resolving according to normal scale degree motion has produced parallel 5ths between the bass and soprano voices.

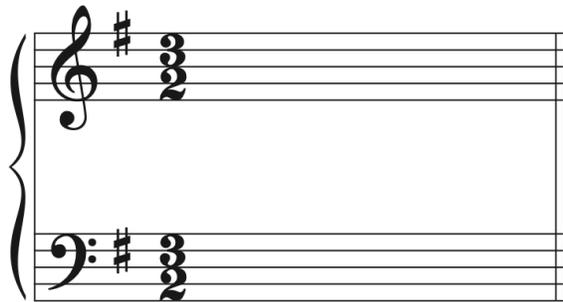
cm: vii⁰⁶₅ i
BnatDFAb CCEbG

To eliminate parallels, scale degree 2 can move to scale degree 3 instead of to scale degree 1. That would change the inversion of the chord to a i⁶ chord, and would eliminate any part writing errors.

cm: vii⁰⁶₅ i⁶
BnatDFAb CCEbG

Example 3

Let's also look at an example of part writing a non-dominant seventh chord.



GM: I ii⁶/₅ V

First let's part write I⁶-ii⁶/₅. The chordal 7th in the ii⁶/₅ chord, G, needs to be approached by common tone or stepwise motion from the I⁶ chord. It will come from the G in the I⁶ chord as a common tone. The bass pitch of the ii⁶/₅ chord must be C. That leaves an E and an A left to part write in the ii⁶/₅ chord. In the I⁶ chord, the tenor voice is the doubled voice. It could be B, or it could be G. Both would move smoothly by step to the A in the ii⁶/₅ chord. Let's choose B to create contrary motion with the bass.

GM: I⁶ ii⁶/₅ V
 GBD ACEG

Next, we need to resolve the ii⁶/₅ chord to V. Unlike dominant function seventh chords, non-dominant seventh chords do not use strict scale degree motion to resolve. We need to make sure to resolve the chordal seventh down by step, and all other voices should move by common tone or as stepwise as possible. Make sure to check for errors.

Musical notation for three chords in G major (one sharp, 3/4 time signature). The notation is presented in two staves: a treble clef staff and a bass clef staff. The first chord is I⁶ (G major 6th), the second is ii⁵ (B minor 5th), and the third is V⁷ (D major 7th). The bass clef staff shows the root notes of each chord: G, B, and D. The treble clef staff shows the 6th, 5th, and 7th notes of each chord: B, A, and F#.

GM: I⁶ ii⁵ V
GBD ACEG DDF#A

10.5 Part Writing, Seventh Chords: Sight Singing exercises

Sing each harmonic progression, consisting primarily of seventh chords, singing each chord up and down

Ab: I V4/3 I6 ii7 vi4/3 ii6/5 V Bm: i i4/2 iiø4/3 V7 VI i6/4 V7 i

10.5 Part Writing, Seventh Chords: Aural Training exercises

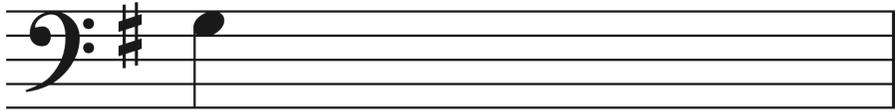
Step 1) Listen to each harmonic progression, consisting of four triads and/or 7th chords in root-position or inversion.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=401#audio-401-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=401#audio-401-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=401#audio-401-3>

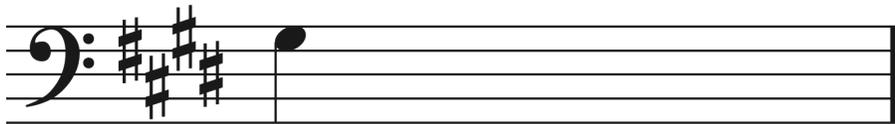
Step 2) Sing along with the bass line, then notate it on the staff



G: _____



Dm: _____



E: _____

Step 3) Sing up and down each chord as it goes along, finding the notes of each chord along the way. Though the chord progression is played in open SATB voicing, you should sing up and down each chord in closed position above each bass note (i.e. find the bass note and sing up to the next closest pitch in the chord, then up again to the next pitch, and back down again, recognizing the *scale degrees* of each note in the chord. From there, identify the quality and roman numeral of each chord.

Label the roman numeral and inversion of all four chords in each progression:

- 1.
- 2.
- 3.
- 4.

10.6 Part Writing, Non-Chord Tones: Tutorial

Part Writing with Non-Chord Tones

[To review non-chord tones, see chapter 7.3.](#)

Guidelines for using Non-Chord Tones (NCTs) in Part Writing

- Do not use a NCT to avoid a part writing error. Check for and resolve errors before inserting NCTs.
- For clarity, do not write more than one NCT between the same two chords.
- When part writing with NCTs, complete the part writing without NCTs first, then look for places to insert NCTs.

Where to insert NCTs

When inserting non-chord tones, look for the following types of motion:

- Suspension: stepwise motion down
- Retardation: stepwise motion up
- Anticipation: any motion
- Passing Tone: two pitches at least a major second apart
- Neighbor Tone: same pitches
- Double Neighbor: same pitches
- Appoggiatura: ability to leap, then step on a strong beat/part of the beat
- Incomplete Neighbor: ability to leap then step on a weak beat/part of the beat
- Escape Tone: ability to step, then leap

Label all NCTs appropriately

- Put a parenthesis around the NCT (only around the actual non-chord tone or tones)
- Label the NCT
- Make sure to label suspensions with the number of the suspension as well as “SUS”

Figured Bass and Lead Sheet symbols with NCTs

Usually, suspensions are the only NCTs indicated in figure bass. The list below shows the typical figured bass symbols for each suspension.

- 9-8 suspension figured bass symbol: 9-8
- 7-6 suspension figured bass symbol: 7-6
- 4-3 suspension figured bass symbol: 4-3
- 2-3 suspension figured bass symbol: 5/2-6

The musical notation consists of four measures, each with a suspension indicated by a circled note. The first measure shows a 9-8 suspension in the treble clef. The second measure shows a 7-6 suspension in the treble clef. The third measure shows a 4-3 suspension in the bass clef. The fourth measure shows a 2-3 suspension in the bass clef. Below the notation are the figured bass symbols: C: ii⁶, V, V, I⁶, I, V, I, V⁶.

Lead-Sheet symbols indications for suspensions

The list below shows the common lead sheet symbols used for suspensions. Suspensions will use one lead sheet symbols for the suspension itself, and another lead sheet symbol for the resolution.

- 9-8 suspension lead sheet symbol: sus2
- 7-6 suspension lead sheet symbol: sus or sus4
- 4-3 suspension lead sheet symbol: sus2/
- 2-3 suspension lead sheet symbol: no 3rd/

Gsus2 G Csus2/E C/E Gsus G G no 3rd G/B
 9-8 SUS 7-6 SUS 4-3 SUS 2-3 SUS
 9 - 8 7 - 6 4 - 3 5 - 6
 2
 C: ii⁶ V V I⁶ I V I V⁶

The “Sus” numbers used in lead sheet symbols are equal to the interval formed by the note above the ROOT of the chord (not necessarily the note in the bass).

- 9-8 suspension: “sus2” refers to a triad in which the third has been replaced by a second (C D G).
- 4-3 suspension: “sus4” refers to a triad in which the third has been replaced by a fourth (C F G).
- “sus” alone refers to a 4-3 suspension
- 7-6 suspension: “sus2/” refers to a chord in 1st inversion in which the root has been replaced by a second
- 2-3 suspension: refers to a first inversion chord with no 3rd over the suspended note followed by a first inversion chord

Common mistakes when part writing with NCTS

- NCTs have to be non-chord tones. Check to make sure that the note you choose are not chord tones.
- Do not put more than one NCT in the same spot. It muddies the harmony and sound.
- Make sure that all rhythm adds up correctly and that all chords line up vertically in the bar.
- Check for part writing errors both with and without the NCTs. You can’t use a NCT to avoid an error.
- Suspensions have 2 lead sheet symbols: one for the suspension and one for the resolution chord.

- Check the doubling. Normal doubling rules still apply when using NCTs

Guidelines to using NCTS when part writing

- Part writing must be correct, both without the NCT and with the added NCT. You cannot use a NCT to avoid part writing errors.
- Non-chord tones need to be one of the types found in music:
 - Passing tone
 - Neighbor tone
 - Double neighbor
 - Appoggiatura
 - Incomplete neighbor
 - Escape tone
 - Anticipation
 - Suspension
 - Retardation
 - Pedal tone
- Make sure to label all NCTS with parenthesis or a circle around the note or notes that are the non-chords and a label that abbreviates the type of non-chord tone used.
- Do not use more than one NCT in any one spot on or between two chords. It muddies the harmonies and sound, and can create unwanted harmonies.
- Do not add NCTs between the chordal seventh in any seventh chord and its resolution note. It needs to resolve down by step in the same voice to the next chord.
- When adding NCTs to a progression, look for places to use NCTS that have the strictest type of motion first (like suspensions).
- Make sure each NCT added is actually a NCT and is not part of the chord.

Proceed to theory exercises for guided examples for part writing with NCTs.

10.6 Part Writing, Non-Chord Tones: Theory exercises

In addition to Workbook Chapters 10.6.1 and 10.6.2, see the example below.

In the example below, we will add suspensions, a double neighbor, a neighbor tone, a passing tone, a retardation, an appoggiatura, an escape tone, and an anticipation.

am: i V i⁶ vii^{o6} i iv V i i⁶ V i

We can tell from the figured bass where the 7-6 and 4-3 suspensions should be added. To add the 7-6 suspension to beat 2 of bar 2, we need to figure out which voice should have the suspension. When inserting suspensions from figured bass, it's important to know that 9-8 and 4-3 suspensions occur over root position chords, and 7-6 and 2-3 suspension occur over first inversion chords. Therefore, in the 7-6 suspension we know the B in the bass is the 3rd of a chord in first inversion. The voice that forms a 7-6 interval between the bass and the suspension and the bass and the resolution is the alto voice. The A in the alto is suspended and resolves to the G# on the second half of beat 2. We know that G has been raised to G# because of the slash marking on the 6 in the figured bass symbol. That raises the leading tone in the vii^{o6} chord. Make sure to label the suspension.

Chord symbols: A-, E, A-/C, G#°/B A-, D-, E, A-, A-/C, E, A-

Figured bass: #, 6, 7-♭, #, 6, 4-#

Labels: G#°sus2/B, 7-6 SUS

Am: i V i⁶ vii^{o6} i iv V i i⁶ V i

Next, we can add the 4-3 suspension on beat 1 of bar 4. The tenor voice must have the suspension in order to create the needed 4-3 intervals above the bass. Make sure label the suspension.

Chord symbols: A-, E, A-/C, G#°/B A-, D-, E, A-, A-/C, Esus2, E, A-

Figured bass: #, 6, 7-♭, #, 6, 4-#

Labels: G#°sus2/B, 7-6 SUS, 4-3 SUS

Am: i V i⁶ vii^{o6} i iv V i i⁶ V i

When determining which NCTs to add to a progression, it is helpful to add the ones that have the strictest type of motion first so that you don't run out of places where more specific NCTs can be inserted. Let's look for places to insert double neighbor and neighbor tones. Bar 3, beat 2 and beat 4 use common tones, and are a good place to put a double neighbor or neighbor tone. Let's add a double neighbor to the alto in beat 2, and a neighbor tone to the alto on beat 4. Make sure to label both NCTs. Also make sure that adding the NCT did not create part writing errors. Check for errors between chords.

Chord symbols: A- E A-/C G#°/B A- D- E A- A-/C Esus2 E A-

Annotations: (NCT) (DN) (NT) 7-6 SUS 4-3 SUS

Fingering: # 6 7-6 # 6 4-#

Scale degrees: am: i V i⁶ vii⁰⁶ i iv V i i⁶ V i

Let's look for a place to insert a passing tone next. We need motion in once voice that uses notes at least a major 2nd apart. We can insert a passing tone into the soprano voice in bar 3, beat 1. Label the NCT and check for errors.

Chord symbols: A- E A-/C G#°/B A- D- E A- A-/C Esus2 E A-

Annotations: (PT) (DN) (NT) 7-6 SUS 4-3 SUS

Fingering: # 6 7-6 / # 6 4-#

Scale degrees: am: i V i⁶ vii⁰⁶ i iv V i i⁶ V i

Next, let's insert a retardation. A retardation is like a suspension, but instead of resolving up, it resolves down to the next chord tone. So, we are looking for ascending stepwise motion in a voice. A retardation can be inserted into the tenor voice in bar 3, beat 3. Label the NCT and check for errors.

am: i V i⁶ vii⁰6 i iv V i i⁶ V i

The appoggiatura is a NCT that moves first by leap, then resolves to a chord tone by step, most often in the opposite direction. Remember that the appoggiatura must be on a stronger beat or part of the beat than the resolution note that follows it. Otherwise, we call it an incomplete neighbor. We can add one to the alto voice in bar 1, beat 3. Label the NCT and check for errors.

am: i V i⁶ vii⁰6 i iv V i i⁶ V i

Next, let's add an escape tone. An escape tone moves by step to the NCT, and then by leap to the next chord tone, most often in the opposite direction. We can add on beat 1 of bar 1. Label the NCT and check for errors.

am: i V i⁶ vii⁰⁶ i iv V i i⁶ V i

The last NCT we will add to this progression is the anticipation. Anticipations are commonly found decorating the melody right before the final chord in a piece. Let's add one to the soprano voice between beats 2 and 3 in bar 4. We already have a suspension on beat 1, that resolves on beat 2. In order to maintain clarity, we want to avoid using more than one NCT in the same space between chords. So, we need the anticipation to sound after the resolution of the suspension. We can use a dotted quarter/eighth rhythm to achieve that placement. Label the NCT and check for errors.

am: i V i⁶ vii⁰⁶ i iv V i i⁶ V i

10.6 Part Writing, Non-Chord Tones: Sight Singing exercises

Sing a melody that implies the given harmonic progression. You should not sing every note of each chord, but rather only one or two notes, filling in some of the gaps and transitions from harmony to harmony with non-chord tones. See the given example.

Example

The example shows a melody in D major (one sharp) in 4/4 time. The melody consists of the following notes: D4 (quarter), E4 (quarter), F#4 (quarter), G4 (quarter), A4 (quarter), B4 (quarter), A4-G4 (beamed eighth notes), F#4-E4 (beamed eighth notes), D4 (half). Above the notes are labels: 'p.t.' above E4, 'n.t.' above F#4, 'e.t.' above A4, and 'sus.' above B4. Below the staff is the harmonic progression: D: I, ii7, V7, I⁴⁻³, D: I, vi, V7, I.

10.6 Part Writing, Non-Chord Tones: Aural Training exercises

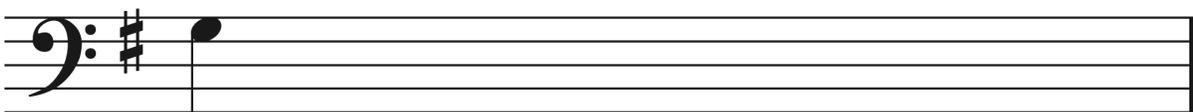
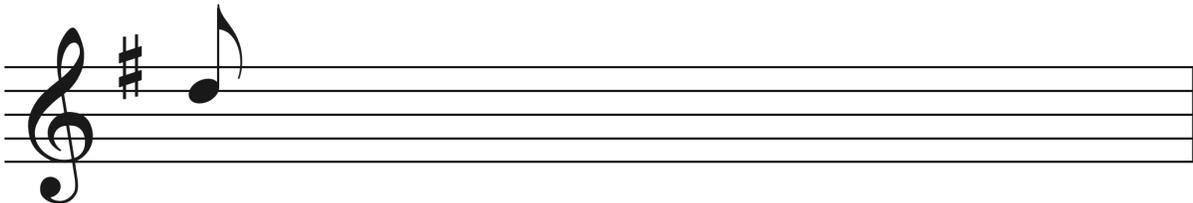
Step 1) Listen to each harmonic progression, consisting of six triads and/or 7th chords in root-position or inversion.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=409#audio-409-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=409#audio-409-2>

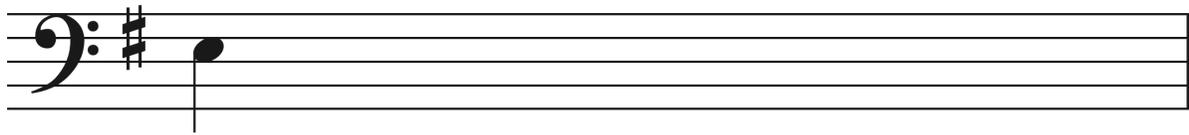
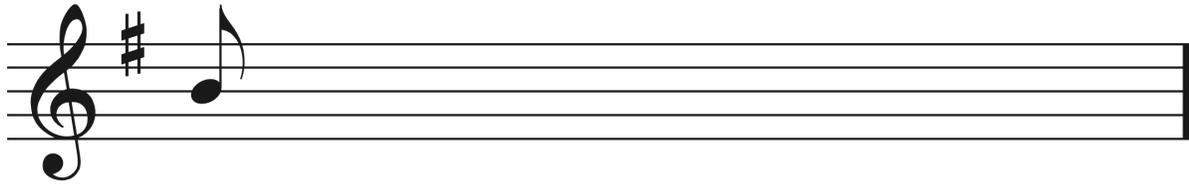
Step 2) Sing along with the bass line and notate it on the staff. Then, sing along with the soprano line and notate it on the staff.

Example 1



G: _____

Example 2



Em: _____

Step 3) Sing up and down each chord as it goes along, finding the notes of each along the way. For each chord, you will need to decide which soprano notes, if any, do not belong in the chord. Identify the quality and roman numeral of each chord.

Label the roman numeral and inversion of all six chords in each progression:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Step 4) Given your harmonic analysis, circle and label the non-chord tones in the soprano line on the staff

Chapter 11: Harmonizing a Melody

11.1 Introduction to Harmonizing a Melody: Tutorial

Harmonizing a Melody

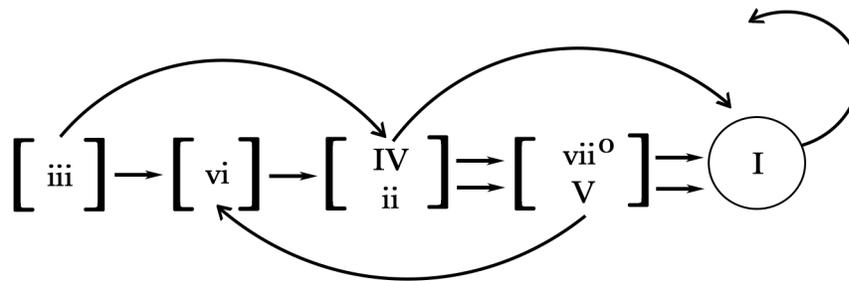
The ability to harmonize a melody is a useful skill. It allows you to take any melody from any piece of music and create arrangements or compare different versions with different chord progressions. When we harmonize a melody we combine our knowledge of functional harmony, phrases, cadences, harmonic rhythm, chords and chord inversions, and part writing.

Things to Consider Before Choosing Chords in a Progression

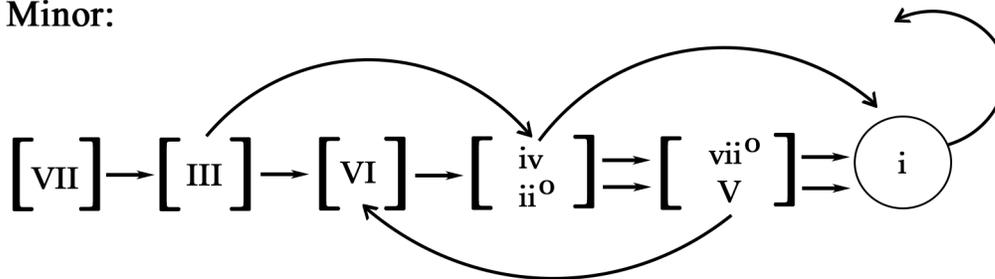
Functional harmony and types of motion between chords

- Review the functional harmony chart so that you can make good decisions about what types of chords make sense in a progression. [For more information on functional harmony, see chapter 6.1.](#)

Major:



Minor:



- Review the types of motion between chords:
 - Progression (P): forward motion on the chart by 1 category
 - Tonic (T): motion from tonic to any other chord
 - Retrogression (R): moving backwards on the chart either by one or more categories
 - Similar Motion/Repetition (S): motion within a category
 - Elision (E): forward motion on the chart, skipping one or more categories

Cadences, phrases, harmonic rhythm, and melodic form

- Understand melodic form, phrases, harmonic rhythm, and cadences in order to determine the phrases in a melody, the chords used to support the phrase motion, harmonic rhythm, and cadences. Make good to consider relative cadence strength in each phrase in order to choose a progression that makes sense.
- Melodic form and phrases: melodic form describes the relationship of each phrase in the overall structure of the melody.
 - Phrases (often 4 bars in length) end with a cadence.
 - Phrases can be independent or combine to form periods.
 - Sentence form is a common type of melodic form used with phrases and periods.
 - [For review on melodic form and phrases, see chapter 8.1.](#)

- Harmonic rhythm
 - Helps define the meter.
 - Often speeds up or slows down at cadence points.
 - Often use a new chord for every note in the melody.
 - Avoid holding the same chord over a bar line unless the harmonic rhythm is very slow. It creates stagnant feel to the harmonic motion.
 - [For review on harmonic rhythm, see chapter 6.3.](#)
- Cadence possibilities:
 - Final cadence: PAC
 - Used as the final cadence
 - Harmonic pattern is most often Predominant-Dominant-Tonic
 - Dominant used is most often V or V7
 - vii° is not used because it is too weak for a final cadence
 - Cadences within the piece:
 - Usually IAC instead of PAC
 - vii°-I (and with inversions) is possible within the phrase
 - V-I is (and with inversions) possible within the phrase
 - Half: not used as the final cadence, V7 is too strong to use at a half cadence
 - DC: not used as the final cadence
 - PC: not used as often as the other cadences
 - [For a review on cadences, see chapter 6.2.](#)

Type of motion between chords

- Progression, Repetition, and Tonic motion are used most often because they create the smoothest part writing when connecting chords.

Chords and chord inversions

- Most pieces begin and end with tonic, first to establish the key, then to bring the music home.
- Avoid using iii or vi. They are not used as often as the other chords.
- Do not use diminished chords in root position.
- ii does not go to I
- Do not use IΔ7 as a substitute for tonic.
- V is always easier to part write with than vii°.
- Use V7 in root position at cadences, and V7 in inversion within the phrase.

- The dominant and leading tone seventh chords resolve in specific ways, and therefore need to resolve to specific chords, so the melody can either support their use or prohibit their use.
- When possible, inversions should be used in order to create a smooth bass line.
- Second inversion chords must be one of the 4 types in order to be used in a progression, and the chord choices must support their part writing.
- When using seventh chords, if the chordal seventh is in the soprano, it must resolve down by step in the next chord in order to support the use of a seventh chord.

Part Writing Guidelines

- Doubling
 - Root position major and minor chords: double the root
 - Diminished chords: double the 3rd
 - First inversion triads: double anything except tendency tones like the leading tone
 - Second inversion triads: double the bass
- Connecting chords
 - Choose common tones when possible.
 - Move upper voices in contrary motion with the bass when common tones are not possible.
 - Resolve the leading tone whenever possible.
- Make sure each chord is spelled correctly, including necessary accidentals.
- Always check for part writing errors.

Steps for Harmonizing a Melody

This is the general list of steps for harmonizing a melody. The list will become more specific as we explore root position chords, chords in inversions, seventh chords, and non-chord tones.

1. Identify the key.
2. Write down the chords contained in the key in root position.
3. Write in the scale degrees in the soprano voice.
4. List chord possibilities under each note in the soprano.
5. Identify the melodic phrase structure/cadence points and determine harmonic rhythm.
6. Eliminate any chords that cannot be used (either from motion in the soprano, connections between chords, or from choices made in phrasing/harmonic rhythm/

cadences).

7. Choose a progression (if using inversions, choose chords that create a smooth bass line).
8. Write in the bass voice and check for it for errors against the soprano voice before writing the inner voices.
9. Part-write the inner voices (make good choices in connecting chords melodically). Check your answers for errors.

Proceed to the theory exercises for guided examples for harmonizing a melody.

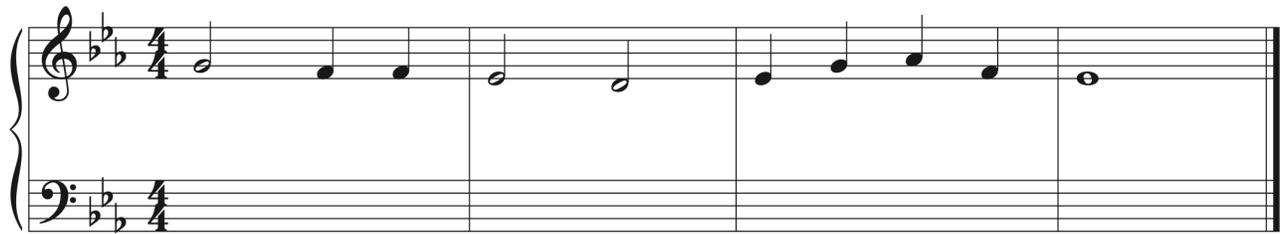
11.1 Introduction to Harmonizing a Melody: Theory exercises

Steps for Harmonizing a Melody

This is the general list of steps for harmonizing a melody. The list will become more specific as we explore root position chords, chords in inversions, seventh chords, and non-chord tones.

1. Identify the key.
2. Write down the chords contained in the key in root position.
3. Write in the scale degrees in the soprano voice.
4. List chord possibilities under each note in the soprano.
5. Identify the melodic phrase structure/cadence points and determine harmonic rhythm.
6. Eliminate any chords that cannot be used (either from motion in the soprano, connections between chords, or from choices made in phrasing/harmonic rhythm/cadences).
7. Choose a progression (if using inversions, choose chords that create a smooth bassline).
8. Write in the bass voice and check for it for errors against the soprano voice before writing the inner voices.
9. Part-write the inner voices (make good choices in connecting chords melodically). Check your answers for errors.

Let's look at an example of how this list is used. The melody below has a melody that we will be using to outline the steps above. Listen to the how the melody sounds. Think about melodic phrasing, cadences, and harmonic rhythm. When do you hear chord changes? When do you hear pauses and endings in the music?



One or more interactive elements has been excluded from this version of the text. You can view them online here:

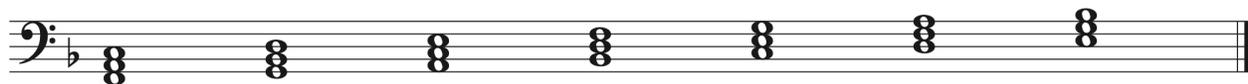
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=415#audio-415-1>

The first steps to harmonizing a melody are to identify the key, and write down a list of the chord used in that key. For our example, we will only use triads in root position.



F:

Chords used in the key:



Next, we write the scale degrees above the soprano pitches. This will help us determine the chords possible on each note of the melody. When working with triads, each scale degree can be used in 3 triads because each soprano note could be the root, 3rd, or 5th of a chord. To quickly list the chords possible on any scale degree, start with the chord that is built on the root of the scale degree, then count backwards two chords in the scale to find the next possible chord, then count backwards from that chord two more in the scale order to find the last possible chord choice. For example, in our melody, we start on scale degree 3. Scale degree 3

is used in a iii chord, a I chord (2 backwards from iii), and a vi chord (2 backwards from I). With practice, knowing what chords are possible on a scale degree will become automatic. The example below shows the three possible chords for scale degree.

[^]3 [^]2 [^]2 [^]1 [^]7 [^]1 [^]3 [^]4 [^]2 [^]1

Eb:	iii	ii	ii	I	vii°	I	iii	IV	ii	I
	I	vii°	vii°	vi	V	vi	I	ii	vii°	vi
	vi	V	V	IV	iii	IV	vi	vii°	V	IV

Now, think about the melodic form, phrases, harmonic rhythm and cadences. There is a pause in the motion after bar 2, and a conclusive ending in bar 4. Let's eliminate the chord choices on each scale degree that are not possible to further narrow down our possible progressions and better evaluate harmonic rhythm. We can eliminate anything but tonic for the first and last chords. Since we want the strongest conclusive cadence for the end of the fourth bar, we can eliminate everything other than V-I for our final two chords. Since we are writing in root position, we can eliminate any vii° chords because those chords should be used in first inversion. We can also eliminate iii and vi, especially in a root position progression because they are much less frequently used harmonies, and are usually used to expand progressions and connect more structural harmonies. We can also eliminate the IV chord in bar 3 because we are coming from a half cadence on V, and must go to I following the chord on the downbeat in b. 3. The best choice for that is a I chord. Look at the example below with all of the eliminate choices.

towards both cadence points, which is a feature of harmonic rhythm in music. Now, we have to decide which progression to use to end the melody. The I IV V I choice is a standard progression in music, it can be part writing smoothly with less worry about potential parallels between I and ii, and it would provide variety from the first two bars that are using a ii chord. So, our final choice for the 4-bar progression is:

- I ii V I V—I IV V I

The next step is to fill in the bass voice and check it for errors with the soprano. You want to catch any errors before you start part writing the entire melody because if you need to change a chord, you will have to erase a lot more of your work. Once the bass line is checked for errors, you are ready to part writing the inner voices.

$\hat{3}$ $\hat{2}$ $\hat{2}$ $\hat{1}$ $\hat{7}$ $\hat{1}$ $\hat{3}$ $\hat{4}$ $\hat{2}$ $\hat{1}$

	Eb:	I	ii	V	I	V	I	IV	V	I
chord		ii	ii	I	vii°	I	ii	IV	ii	I
choices:		I	vii°	vii°	vii°	V	vii°	I	ii	vii°
		vii°	V	V	IV	ii	IV	vii°	V	IV

We will look at the part writing process itself in the next few chapters as we progress from root position chords to adding inversions, seventh chords, and non-chord tones to our melodic harmonizations.

11.2 Harmonizing a Melody with Root Position Triads: Tutorial

Harmonizing a Melody with Root Position Chords

In this chapter, we apply the process of harmonizing a melody to harmonize melodies in root position. Limiting our harmonies to root position chords offers several advantages. It offers a controlled environment in which to learn the process of harmonizing a melody before opening up an overwhelming number of chord choices. It teaches us how to better include and eliminate chord choice. Having fewer choices allows us to focus on phrasing, cadences, and harmonic rhythm in a more fundamental way. It is also easier to focus on functional harmony and the reasons for selecting one chord over another when starting with more simple progressions. Limited options also allow us to recognize and learn to predict any part writing mistakes more easily. There are also disadvantages to working solely with root position chords. The progressions can be overly simple and not as interesting or satisfying, and the bass line will be disjunct.

We looked at the knowledge needed and the basic process for harmonizing a melody in the last chapter. Now, we will fully harmonize a melody using root position chords using the steps below. It is important to realize that multiple answers for melody harmonizations usually exist. One key elements of music analysis is having the ability to justify why your choice is better than the options that you rejected.

Steps to Harmonizing a Melody in Root Position

1. Identify the key.
2. Write down the chords contained in the key in root position.
3. Write in the scale degrees in the soprano voice.
4. List chord possibilities under each note in the soprano.
5. Identify the melodic phrase structure/cadence points and determine harmonic rhythm.
6. Eliminate any chords that cannot be used (either from motion in the soprano, connections between chords, or from choices made in phrasing/harmonic rhythm/cadences). For root position chords, we are not using iii and vi to focus on the more structural chords. We will also focus on Progression, Repetition, and Tonic motions

between chords.

7. Choose a progression.
8. Write in the bass voice and check for it for errors against the soprano voice before writing the inner voices.
9. Part-write the inner voices (make good choices in connecting chords melodically). Check your answers for errors.

Proceed to the theory tutorial for a guided example of the full process of harmonizing a melody with root position chords.

^3 ^2 ^1 ^2 ^2 ^3 ^4 ^2 ^3 ^2 ^1

F:

Chords used in the key:

Next, create a list of the three possible chords that can be supported by each scale degree. Each scale degree could be the root, 3rd, or 5th of a chord. Start with the chord built on the scale degree. Then count backwards two chords in the scale in order to find the next chord. Then count two chords backwards in the scale to find the last chord. Our melody begins on scale degree 3: A. Our first chord is a iii chord. The next possible chord is a I chord (2 backwards from iii), and the last possible chord is vi (2 backwards from I). Fill in the rest of the chord choices.

[^]3 [^]2 [^]1 [^]2 [^]2 [^]3 [^]4 [^]2 [^]3 [^]2 [^]1

F:

chords	iii	ii	I	ii	ii	iii	IV	ii	iii	ii	I
possible:	I	vii°	vi	vii°	vii°	I	ii	vii°	I	vii°	vi
	vi	V	IV	V	V	vi	vii°	V	vi	V	IV

Chords used in the key:

The next step is to eliminate any chords from the list that we can't use. Determine the melodic structure, phrasing, cadences, and potential harmonic rhythm choices. Then, look at functional harmony to eliminate choices. We can eliminate all iii and vi chords because we are not using them in our root position progressions. We can then look at the first and last chords. They should be I chords, so we can eliminate all other choices. We can then look at the cadence chords. This 4-bar progression has two halves. Bar 2 has a pause in the music and needs a weaker cadence than the cadence in bar 4, which should be a strong, conclusive cadence. In order to create a PAC in the last bar, we need a V-I progression. Bar 2 also ends on I, and since we are not using vii°, V is the only chord on beat 2 that can go to that I chord. Remember that ii does not go to I so can be eliminated as a choice. Though both cadences use the same chords in the same metric position, the final cadence uses 1 in the soprano, which makes it stronger than the cadence in b. 2. Always plan for cadence strength when harmonizing a melody.

F:

chords	ii	ii	I	ii	ii	ii	IV	ii	ii	ii	I
possible:	I	vii°	vii	vii°	vii°	I	ii	vii°	I	vii°	vii
	vii	V	IV	V	V	vii	vii°	V	vii	V	IV

Chords used in the key:

The next step is to choose a chord progression that works with the phrasing, cadences, harmonic rhythm, and uses good functional harmony. After eliminating chord choices, the second half of the melody only has one choice for a chord progression:

- IV V I V I; harmonic rhythm: half note, quarter note, half note, half note

Let's choose a progression for bars 1-2 that works with the progression for bars 3-4. Our choices are:

- I ii IV V I; harmonic rhythm: half note, quarter note, quarter note, half note, half note
- I V I V I; harmonic rhythm: half note, quarter note, quarter note, half note, half note

Both progressions share the same harmonic rhythm, which matches nicely with the harmonic rhythm for bars 3-4. Out of the two choices for progressions for bars 1-2, one works better in terms of functional harmony than the other. When we have repetition between chord in a category, like the predominant category, one of those chords usually moves to the other much more often than the reverse motion. In the predominant chord category, IV is much more likely to move to ii than ii is to move to IV. On the other hand, I V I V I is the most fundamental motion in music, even if it not the most interesting progression to use without the help of inversions to smooth out the bass line and provide variety. For those reasons, we will choose the tonic-dominant progression.

[^]3 [^]2 [^]1 [^]2 [^]2 [^]3 [^]4 [^]2 [^]3 [^]2 [^]1

F:	I	V	I	V	I	IV	V	I	V	I
chords	iix̂	ii	I	ix̂	ix̂	iix̂	IV	ix̂	iix̂	I
possible:	I	v̂ix̂°	v̂ix̂	v̂ix̂°	v̂ix̂°	I	ix̂	v̂ix̂°	I	v̂ix̂
	v̂ix̂	V	IV	V	V	v̂ix̂	v̂ix̂°	V	v̂ix̂	V
										IV

Chords used in the key:

Once we have chosen a progression, the next step is to write in the bass voice and check it for errors against the soprano voice. If errors exist, it is good to catch now when it is easier to rework the progression. If you part write all of the voices and then find an error that causes you to change the progression, it will take much more time and work to redo.

[^]3 [^]2 [^]1 [^]2 [^]2 [^]3 [^]4 [^]2 [^]3 [^]2 [^]1

F:	I	V	I	V	I	IV	V	I	V	I
chords	iix̂	ii	I	ix̂	ix̂	iix̂	IV	ix̂	iix̂	I
possible:	I	v̂ix̂°	v̂ix̂	v̂ix̂°	v̂ix̂°	I	ix̂	v̂ix̂°	I	v̂ix̂
	v̂ix̂	V	IV	V	V	v̂ix̂	v̂ix̂°	V	v̂ix̂	V
										IV

Chords used in the key:

Once the bass voice has been checked against the soprano, we can part-write the remaining voices. Let's review the considerations and steps for part writing.

Considerations for Part Writing (review)

- Common tones
 - Retain common tones when possible
 - If there are no common tones, try to move the upper voices in contrary motion to the bass voice.
- Complete vs. incomplete chords
 - A complete chord has all chord members present. Complete chords are preferred to incomplete chords.
 - An incomplete chord is missing a chord member. Most often the 5th is omitted and the root is doubled or tripled. Chords with tripled roots appear at cadences, not within the phrase.
- General Doubling rules
 - Do not double tendency tones and more active scale degrees (like the leading tone or the chordal seventh)
 - Double the root (bass) of the chord in root position major and minor chords (except when going V-vi, in which case the 3rd of the vi chord is most often doubled. See more about the V-vi progression below).
 - Diminished chords are most often used in first inversion with the 3rd of the chord doubled. It is best to avoid root position diminished chords when possible because their interval structure often creates part writing errors like parallel and unequal 5ths with other chords. If a diminished chord must be used in root position, always double the 3rd of the chord to minimize the chances of part writing errors.
- Think horizontally at all times to create smooth lines in each voice, especially in the soprano. Avoid leaps larger than a 3rd, but if a larger leap is used, it should be filled in by step in the opposite direction.
- Resolve tendency tones (like the leading tone and chordal seventh). A leading tone in the soprano should always resolve to tonic. A leading tone in an inner voice may move down to scale degree 5, though you should make an effort to resolve it to tonic when possible. Leading tones in the bass resolve to tonic unless they switch voices when moving to another dominant chord. In that case, they should resolve to tonic in the new voice.
- Check for part writing errors. Always check each chord for doubling and spacing errors and check each chord connection for other part writing errors (like parallel 5ths and

octaves). In addition, check that you have spelled the intended chord with the correct notes and accidentals, and that all notes in the chord line up together vertically.

Summary of part writing steps

1. Write the names of the notes found in each chord using correct doubling and accidentals.
2. Voice the first chord using generous spacing between voices while keeping voices in their respective ranges. Plan to have the soprano move by step. Check for doubling and spacing errors before connecting chords.
3. Connect chords:
 1. If there are common tones, add those in first. Then move each voice to the closest note in the next chord using smooth, stepwise motion when possible.
 2. If there are no common tones, move all upper voices in contrary motion to the bass.
 3. V-vi progressions will not follow a. or b., so move each voice to the closest note in the next chord.
4. Check for part writing errors.

Part-write the remaining voicing in the progression following the guidelines above. Then, compare your answers to the completed example below.

	^	^	^	^	^	^	^	^	^	^	
	3	2	1	2	2	3	4	2	3	2	1
F:	I	V	I	V	I	IV	V	I	V	I	I
chords	i̇i̇	ii	I	i̇i̇	i̇i̇	i̇i̇	IV	i̇i̇	i̇i̇	i̇i̇	I
possible:	I	v̇i̇i̇°	v̇i̇	v̇i̇i̇°	v̇i̇i̇°	I	i̇i̇	v̇i̇i̇°	I	v̇i̇i̇°	v̇i̇
	v̇i̇	V	IV	V	V	v̇i̇	v̇i̇i̇°	V	v̇i̇	V	IV

Chords used in the key:

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=423#audio-423-2>

11.2 Harmonizing a Melody with Root Position Triads: Sight Singing exercises

Step 1) Sing the following melody, listening for the harmonic rhythm.

Step 2) Decide where the following chords fit under the melody (some may be used more than once): **i iv V VI**

Step 3) Modify the melody in order to add the following suspensions: **9-8, 4-3**



11.2 Harmonizing a Melody with Root Position Triads: Aural Training exercises

Step 1) Sing through the following three melodies. Consider the harmonic rhythm and implied harmonies.



Step 2) Listen to the following three chord progressions, played at dotted-quarter note = 60

Step 3) Sing along with the chord progressions and decided which best fits each of the three melodies above.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=427#audio-427-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=427#audio-427-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=427#audio-427-3>

11.3 Harmonizing a Melody With Triads in Inversion: Tutorial

Harmonizing a Melody with Triads in Inversion

Now that we understand harmonizing a melody with root position chords, we can expand our palate and add on chords in first and second inversion. Inversions will allow us to create more interest and variety in the music as well as a smoother, more singable bass line. Part writing in all inversions allows us to put combine our knowledge of part writing for root position, first and second inversion chords. The basic steps to harmonizing a melody are the same as those used for root position chords, but we look for opportunities to use second inversion chords as well as smooth out our progression and add flexibility to our chord choices using first inversion chords.

[For a review on part writing first inversion chords, see chapter 10.3.](#)

[For a review on part writing second inversion chords, see chapter 10.4.](#)

Steps to harmonizing a melody

1. Identify the key.
2. Write down the chords contained in the key in root position.
3. Write in the scale degrees in the soprano voice.
4. List chord possibilities under each note in the soprano.
5. Identify the melodic phrase structure/cadence points and determine harmonic rhythm.
6. Eliminate any chords that cannot be used (either from motion in the soprano, connections between chords, or from choices made in phrasing/harmonic rhythm/cadences). When part writing with first inversion chords, we can allow using iii and vi, but need be very careful of when and how they are used to prolong progressions and connect chords. We will still focus primarily on Progression, Repetition, and Tonic motions between chords.
7. Look for places where you can insert a 6/4 chord
 - cadential 6/4: most common 6/4 chord, so it's a good option to look for first

- Used only at a cadence directly before a V chord.
 - Need a soprano line that can support tonic followed dominant harmony.
 - The cad 6/4 must be metrically stronger than the V that follows.
 - Passing 6/4:
 - The soprano motion can be sustained between the 3 chords, can move stepwise in contrary motion to the bass between the 3 chords, or use lower neighbor motion between the 3 chords.
 - Make sure the passing 6/4 is connecting 2 chords of the same category (like I and I6).
 - The most common passing 6/4 chords are I6/4 between V chords and V6/4 between I chords.
 - Do not use this chord at a cadence.
 - Pedal 6/4:
 - The soprano motion can be sustained between the 3 chords or will use upper neighbor motion between 3 chords.
 - Pedal 6/4 chords usually connect 2 of the same chords, or chords with the same function.
 - The most common pedal 6/4 chords are I6/4 between IV chords and IV 6/4 between I chords.
 - Do not use this chord at a cadence.
8. Choose a chord progression, looking for places to insert chords in first inversion to make motion smoother (exception: we want the leap from V to I at a final cadence). Remember that you cannot use a 6/4 chord unless it is one of the types of 6/4 chords (even if trying to avoid part writing errors).
 9. Write in the bass voice for your chosen chord progression and check it for errors against the soprano voice.
 10. Part-write the inner voices (make good choices in connecting chords melodically). Check your answers for errors.

Summary of harmonizing a melody using chords in inversion

- Follow the steps outlined for harmonizing a melody using chords in inversions.
- Remember that while first inversion chords can be substituted for root position chords, second inversion chords must be one of the types of second inversion chord possible and be supported by the notes in the harmony and melody. Double the bass in second inversion chords and follow correct part writing procedures. Since second inversion

chords have the most specific requirements for motion and chord choices supported by the scale degrees, make sure to look for places to insert second inversion chords before selecting the rest of the chord progression.

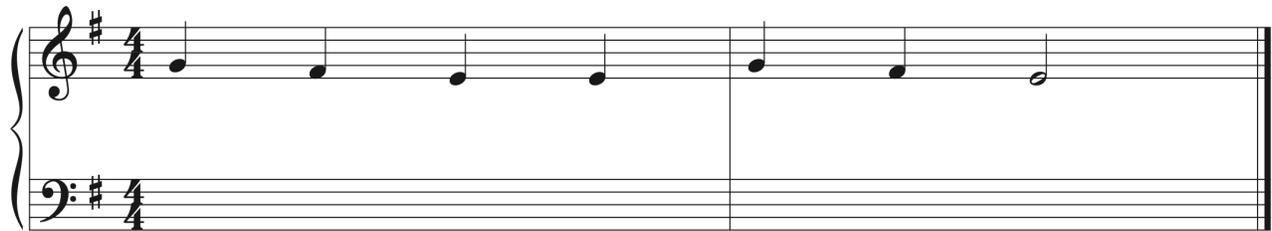
- If you create errors, you can change the bass octave (if possible), change the chord inversion, or select a different chord.

Proceed to the theory exercise for a guided example on harmonizing a melody with chords in inversions.

11.3 Harmonizing a Melody With Triads in Inversion: Theory exercises

In addition to Workbook Chapters 11.3.1 and 11.3.2, see the example below.

Let's look at an example to apply the guidelines for harmonizing a melody using chords in inversion.



One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=431#audio-431-1>

Listen to how the melody sounds. Think about melodic phrasing, cadences, and harmonic rhythm. When do you hear chord changes? When do you hear pauses and endings in the music?

Our first steps are to label the key, write the chords used in the key in root position, and write in the scale degrees in the soprano voice.

em:

Next, create a list of the three possible chords that can be supported by each scale degree. The choice of chords support by each scale degree does not change just because we are using inversions. Each scale degree could be the root, 3rd, or 5th of a chord. Start with the chord built on the scale degree. Then count backwards two chords in the scale in order to find the next chord. Then count two chords backwards in the scale to find the last chord. Fill in the list of chord possibilities.

em:

chord	III	ii°	i	i	III	ii°	i
choices:	i	vii°	VI	VI	i	vii°	VI
	VI	V	iv	iv	VI	V	iv

The next step is to eliminate any chords from the list that we can't use. Determine the melodic structure, phrasing, cadences, and potential harmonic rhythm choices. Then, look at functional harmony to eliminate choices. This passage is a continuous phrase with a final cadence. We want the final cadence to be V-I. That means we can cross off any other chords at the end of the piece. Working backwards from the final V chord, neither iii or vi go directly to V, so they can be crossed off. Skipping to the beginning, we want to start on tonic, so we can cross off III and VI for the first chord. The ii° chord is crossed out in the next chord because it does not go to i, VI, or iv, which are the choices in the next chord. On beat 3, the VI and iv chords are crossed out because we will be arriving on that beat from either a V or vii° chord, and neither of those chords go to VI or iv. That still leaves many more options for chords than we saw when only using root position chords.

em:

chord	III	ii°	i	i	III	ii°	i
choices:	i	vii°	VI	VI	i	vii°	VI
	VI	V	iv	iv	VI	V	iv

Next, we want to look for places where it is possible to use a second inversion chord. Second inversion chords are great to use in part writing progressions because if you follow the correct voice leading, you can't create part writing errors. The most common 6/4 chord in music is the cadential 6/4 chord, so that's a good chord to consider first. In order to have a cadential 6/4 chord, the chord must come before a V chord at a cadence and must be metrically stronger than the V chord. A cadential 6/4 would be possible to insert on beat 1 of bar 2. It is supported by tonic harmony followed by dominant harmony at a cadence, and it would be on beat 1, which is metrically stronger than V. There is only once cadence in this progression, so this is the only

place a cadential $6/4$ could be inserted. Generally, it is best to use this chord to strengthen the final cadence at the end of a piece.

The next second inversion chord we can look for is a pedal $6/4$. Due to the way it moves during voice leading, we must see either sustained motion or upper neighbor in the soprano between 3 notes in order to be able to use a pedal $6/4$. There are no examples of either type of motion in the soprano chord in this example, so a pedal $6/4$ cannot be used.

Next, let's look for places to insert a passing $6/4$ chord. Due to its voice leading, a passing $6/4$ needs either sustained motion in the soprano between 3 notes, lower neighbor motion between 3 notes, or passing motion between 3 notes. There are 2 places where we see passing motion in the soprano. While the soprano motion could support a passing $6/4$ chord on beat 2 in bar 2, that beat is part of a cadence. The only type of $6/4$ chord that can be used at a cadence is a cadential $6/4$, so we can cross out that option for a passing $6/4$ chord. The other place we could use the chord is in bar 1 on beat 2. Beyond having the correct motion in the soprano, the chords possible on beats 1 through 3 need to be able to support a passing $6/4$ in order to use the chord. A passing $6/4$ chord is most often used as a $I6/4$ between two V chords or a $V6/4$ chord between two I chords. In this example, we would be able to use the chord as a $V6/4$ between I and $I6$. We know a $I6$ chord must be on beat 3 because the soprano line has to step in the opposite direction of the bass.

*no pedal 6₄

passing 6₄ cad 6₄ ~~passing 6₄~~

em:

chord choices:

	♯II	♯iv°	⓪ i	i	♯II	♯iv°	i
	⓪ i	vii° ⓪ V	⓪ VI	VI	⓪ i	vii° ⓪ V	VI
	VI	V	iv	iv	VI	V	iv

We can use the cadential 6/4 chord in bar 2 and the passing 6/4 chord in bar 1. Let's insert those chords into our progression.

em:	i	V ₄ ⁶	i ⁶		cad ₄ ⁶	V	i
chord	I	passing	i	i	I	V	i
choices:	i	vii°	VI	VI	i	vii°	VI
	VI	V	iv	iv	VI	V	iv

We only have 1 chord left to choose to complete the progression. Remember that the cadential 6/4 is essentially a dominant harmony. So, we need a chord that will get us from I6 to V. I and iv would both work, but iv would provide more interest, strengthen the progression with a predominant-dominant-tonic motion, and would move by step in the bass line. For these reasons, we will choose the iv chord.

em:	i	V ₄ ⁶	i ⁶	iv	cad ₄ ⁶	V	i
chord	I	passing	i	i	I	V	i
choices:	i	vii°	VI	VI	i	vii°	VI
	VI	V	iv	iv	VI	V	iv

After writing in the bass line and checking it for voice leading errors against the soprano, we are ready to part write. The first progression is the passing 6/4. The bass moves up by step and the soprano moves down by step. That means one of the other voices will remain on a common tone and the other will use lower neighbor motion to connect the tonic chords. The common tone is B in the tenor. Make sure to double check that the chord is spelled and doubled correctly instead of relying just on the shape of the part writing.

em: $\hat{3}$ $\hat{2}$ $\hat{1}$ $\hat{1}$ $\hat{3}$ $\hat{2}$ $\hat{1}$

chord: $\hat{\text{I}}$ $\hat{\text{V}}_4^6$ $\hat{\text{i}}^6$ $\hat{\text{iv}}$ $\hat{\text{I}}$ $\hat{\text{V}}$ $\hat{\text{i}}$

choices: $\hat{\text{I}}$ $\hat{\text{vii}}^\circ$ $\hat{\text{VI}}$ $\hat{\text{VI}}$ $\hat{\text{I}}$ $\hat{\text{vii}}^\circ$ $\hat{\text{VI}}$
 $\hat{\text{VI}}$ $\hat{\text{V}}$ $\hat{\text{iv}}$ $\hat{\text{iv}}$ $\hat{\text{VI}}$ $\hat{\text{V}}$ $\hat{\text{iv}}$

EEGB BD#F#F# EGB

Next, we can part write the iv chord, doubling the root and moving the voices as stepwise as possible. To part write from iv to cad 6/4, remember to double the bass in any 6/4 chord.

em: i V⁶₄ i⁶ iv cad⁶₄ V i

chord choices: I^{I} I° i I I^{I} I° i
 VI VII° VI VI VI VII° VI
 VI V IV IV VI V IV

EEGB BD#F#F# EGB

When we check for errors, we find parallel octaves between bass and tenor. No alternate voicing will fix all problems with this chord connection. When this happens, your choices are to change the bass octave to avoid the error (which won't work in this instance), change the chord inversion, or use a totally different chord. Using another tonic chord wouldn't be a great choice because the music would stay on tonic and never go anywhere else before cadencing. Instead, try changing the chord inversion. Remember, you can't just insert 6/4 chords anywhere in order to avoid errors. They must be a type of 6/4 chord and must work with the melody and harmony. The best choice is using a first inversion chord because they can always substitute for their root position counterparts. If we change the chord from iv to iv⁶, we can eliminate the problem in the bass. Remember that you can double anything except for the leading tone in a first inversion triad.

em: i V_4^6 i^6 iv^6 cad_4^6 V i

chord choices: II IV° i i II IV° i
 i vii° VI VI i vii° VI
 VI V iv iv VI V iv

passing IV° V

EEGB BD#F#F# EGB

This solution doesn't have the nice stepwise bass progression that using a iv in root position would have created. It creates a leap of a 4th, but we are able to step in the opposite direction right after the leap.

Next, we can write the cadential $6/4$ chord. Remember to double the bass in the $I_6/4$ chord. Move to the cadential $6/4$ chord, using the smoothest motion with the smallest intervals possible. Then, to move to V , remember that the voice that is doubled with the bass stays a common tone between both chords. The other two voices move down by step to create 6-5 and 4-3 intervals above the bass in the two chords. To resolve the V to I , the leading tone has to move down to scale degree 5 in the alto voice in order to maintain correct doubling.

$\hat{3}$ $\hat{2}$ $\hat{1}$ $\hat{1}$ $\hat{3}$ $\hat{2}$ $\hat{1}$

em: i V_4^6 i^6 iv^6 cad_4^6 V i

chord choices: I ii° i i I ii° i
 i vii° V VI i vi° V
 V V iv iv V V iv

EEGB BD#F#F# EGB

Listen to the finished example:

$\hat{3}$ $\hat{2}$ $\hat{1}$ $\hat{1}$ $\hat{3}$ $\hat{2}$ $\hat{1}$

em: i V_4^6 i^6 iv^6 cad_4^6 V i

chord choices: I ii° i i I ii° i
 i vii° V VI i vi° V
 V V iv iv V V iv

EEGB BD#F#F# EGB

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=431#audio-431-2>

11.3 Harmonizing a Melody With Triads in Inversion: Aural Training exercises

Step 1) Sing through the following melody.



Step 2) Listen to the following three chord progressions, played at quarter note = 60. The chord progressions contain identical harmonies but use different inversions to create different bass lines.

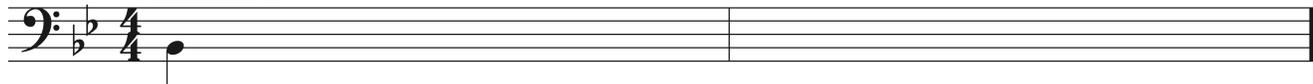
One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=435#audio-435-1>

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=435#audio-435-2>

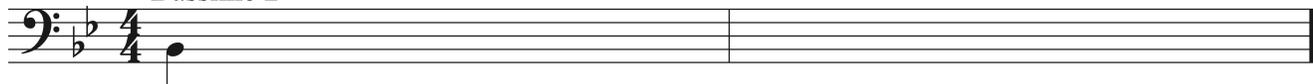
One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=435#audio-435-3>

Step 3) Notate the baseline for each harmonization and decide which provides the best counterpoint to the melody above (i.e. avoid parallel 5ths/8ves and poor doublings, etc).

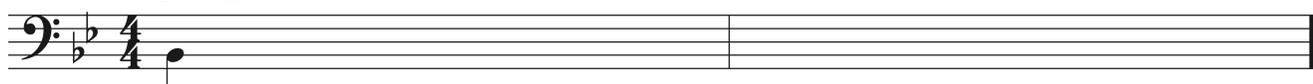
Bassline 1



Bassline 2



Bassline 3



11.4 Harmonizing a Melody With Seventh Chords: Tutorial

Harmonizing a Melody with Seventh Chords

Adding a 7th above the root of a chord creates a dissonance and instability that has to resolve. This activates chords and creates forward motion. The addition of seventh chords to our melody harmonizations creates more chord choices and the opportunity to incorporate more diverse sonorities. When part writing with seventh chords, we must be mindful of how we approach and resolve the chordal seventh in a seventh chord. We must also remember that some seventh chords, like dominant function seventh chords, resolve in a specific way. [To review part writing with seventh chords, see chapter 10.5.](#)

Steps to harmonizing a melody with seventh chords

1. Identify the key.
2. Write down the chords contained in the key in root position.
3. Write in the scale degrees in the soprano voice.
4. List chord possibilities under each note in the soprano.
5. Identify the melodic phrase structure/cadence points and determine harmonic rhythm.
6. Eliminate any chords that cannot be used (either from motion in the soprano, connections between chords, or from choices made in phrasing/harmonic rhythm/cadences). When part writing with seventh chords, we can allow using iii and vi, but need be very careful of when and how they are used to prolong progressions and connect chords. We will still focus primarily on Progression, Repetition, and Tonic motions between chords.
7. Look for places where you can insert a 6/4 chord
 - cadential 6/4: most common 6/4 chord, so it's a good option to look for first
 - Used only at a cadence directly before a V chord.
 - Need a soprano line that can support tonic followed dominant harmony.
 - The cad 6/4 must be metrically stronger than the V that follows.
 - Passing 6/4:

- The soprano motion can be sustained between the 3 chords, can move stepwise in contrary motion to the bass between the 3 chords, or use lower neighbor motion between the 3 chords.
- Make sure the passing 6/4 is connecting 2 chords of the same category (like I and I6).
- The most common passing 6/4 chords are I6/4 between V chords and V6/4 between I chords.
- Do not use this chord at a cadence.
- Pedal 6/4:
 - The soprano motion can be sustained between the 3 chords or will use upper neighbor motion between 3 chords.
 - Pedal 6/4 chords usually connect 2 of the same chords, or chords with the same function.
 - The most common pedal 6/4 chords are I6/4 between IV chords and IV 6/4 between I chords.
 - Do not use this at a cadence.

8. Look for places to insert 7th chords.

- Seventh chords can potentially be applied to any chords built on each scale degree in the melody.
- Any 7th chords with the chordal seventh in the soprano must resolve down by step in the soprano. If the soprano does not move down by step, you cannot use that particular seventh chord. This can help you eliminate chord choices.
- V7 is the most common seventh chord of any type, and usually found at a final cadence in root position. Use it in inversion within the phrase. It is too strong to use as part of a half cadence.
- ii7/ii⁷ is the most common non-dominant seventh chord.
- Do not use IM7/i7 like a I chord. It is not a substitute for I.
- Check the approach and resolution of each 7th chord. The chordal 7th must resolve down by step in the next chord. The chordal seventh should be approached through common tone or stepwise motion with the voice before it.

9. Look for places to insert chords in first inversion to make motion smoother (exception: we want the leap from V to I at a final cadence). Remember that you cannot use a 6/4 chord unless it is one of the types of 6/4 chords (even if trying to avoid part writing errors).

10. Write in the bass voice for your chosen chord progression and check it for errors against

the soprano voice.

11. Part-write the inner voices (make good choices in connecting chords melodically). Check your answers for errors.

Summary for harmonizing a melody with 7th chords

- Follow the steps outlined for harmonizing a melody using seventh chords.
- Remember that in order to use seventh chord with the chordal seventh in the soprano, the soprano must move down by step to the next note.
- Remember to approach all chordal sevenths by common tone or using stepwise motion and to resolve the chordal seventh down by step in the next chord.
- V7 is the most common type of seventh chord and should be used in root position at final cadences and in inversions within the phrase.
- ii7 is the most common type of non-dominant seventh chord.
- Dominant seventh chords and leading tone seventh chords follow specific motion from each scale degree to the next chord. Put the scale degrees in the music to help guide the resolution.

Proceed to the theory exercises for a guided example on how to harmonize a melody with seventh chords.

11.4 Harmonizing a Melody With Seventh Chords: Theory exercises

In addition to Workbook Chapter 11.4, see the example below.

Let's look at an example to apply the guidelines outlined when harmonizing a melody using seventh chords. Since we covered using second inversion chords in the last chapter, we will not use second inversion chords in this progression in order to allow room to explore the different types seventh chords.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=439#audio-439-1>

Listen to how the melody sounds. Think about melodic phrasing, cadences, and harmonic rhythm. When do you hear chord changes? When do you hear pauses and endings in the music?

Our first steps are to label the key, write in the scale degrees in the soprano voice, and write in the possible chord choices that could be used on each scale degree in the soprano. Because seventh chords have 4 chord members, there are 4 chord choices possible for each scale degree that will use the scale degree as the root, 3rd, 5th, or 7th of the chord. Use the method outlined in harmonizing a melody with root position chords and with first inversion chords to find and list all chord choices.

CM:

chord	iii	ii	iii	IV	IV	iii	I	I	I	vii°	vii°	I
choice:	I	vii°	I	ii	ii	I	vi	vi	vi	V	V	vi
	vi	V	vi	vii°	vii°	vi	IV	IV	IV	iii	iii	IV
	IVΔ7	iii7	IVΔ7	V7	V7	IVΔ7	ii7	ii7	ii7	IΔ7	IΔ7	ii7

The next step is to eliminate any chords from the list that we can't use. Determine the melodic structure, phrasing, cadences, and potential harmonic rhythm choices to help eliminate choices. Then, look at functional harmony to eliminate choices.

This example has a progressive cadence in bar 2 and a final cadence in bar 4. If we start from the end, we want V-I for our final cadence and can eliminate all other chords. Looking at the chord before last bar, we can eliminate the IΔ7 chord because the chordal seventh is in the soprano and doesn't move down by step to the next chord to resolve. We can also eliminate IΔ7 because it does not function like a I chord, and is not commonly used. The iii chord can also be eliminated because it does not go to V. On beat 3 of bar 3, we can eliminate the vi chord because it does not move to V. On beat 1 of bar 3, we are starting a new part of the phrase. While any chord is possible after cadencing on tonic in bar 2, it is always clearer to start on tonic at the start of a phrase or section. Also, scale degree 1 repeats for 3 beats in bar 3, so we can establish tonic on beat 1 before using other chords to support scale degree 1 for the rest of the bar.

Looking at the cadence in bar 2, we can eliminate IV and ii on beat 1, which leaves vii° and V7 to move to I for a cadence. While we could use a deceptive cadence, we would have to use a V7 chord in order to use a V chord on beat 1 due to scale degree 4 in the soprano, and V7 is a strong chord that wants to move to I. It is best to use it in inversion within the phrase, especially to create a weaker cadence than the final cadence in bar 4.

Working from the beginning, we want to start on tonic, so can eliminate all other chord choices. The iii7 chord on beat 2 can be eliminated because the soprano note does not resolve

down by step to the next pitch. We can also eliminate the ii chord because it does not move to any of the chords on beat 3. On beat 3, we can eliminate IV Δ 7 because the soprano motion doesn't support the resolution of the chordal seventh. We can also eliminate the iii and vi chords because they can not come after the dominant chords on beat 2.

The image shows a musical staff in 4/4 time with a soprano line. Above the staff, there are 12 notes with chord numbers written above them: 3, 2, 3, 4, 4, 3, 1, 1, 1, 7, 7, 1. The notes are: G4, F4, G4, A4, A4, G4, E4, E4, E4, D4, D4, C4.

CM:

chord	\hat{ii}	\hat{ii}	\hat{ii}	IV	\hat{IV}	\hat{ii}	I	I	I	vii $^\circ$	v \hat{ii} $^\circ$	I
choice:	I	vii $^\circ$	I	ii	\hat{ii}	I	v \hat{ii}	vi	v \hat{ii}	V	V	v \hat{ii}
	v \hat{ii}	V	v \hat{ii}	vii $^\circ$	vii $^\circ$	v \hat{ii}	\hat{IV}	IV	IV	\hat{ii}	\hat{ii}	\hat{IV}
	$\hat{IV}\Delta 7$	$\hat{ii} 7$	$\hat{IV}\Delta 7$	V 7	V 7	$\hat{IV}\Delta 7$	$\hat{ii} 7$	ii 7	ii 7	I $\Delta 7$	I $\Delta 7$	$\hat{ii} 7$

Next, we can choose a progression, looking for places to insert seventh chords and use first inversion chords to make the bass line smoother. We can choose I-V-I or I-vii $^\circ$ -I for the first motion. We could potentially use seventh chords on V and vii $^\circ$ as well. However, we are just starting the piece and it's a good idea to establish the key without using stronger chords so that we create forward motion. V is a stronger chord than vii $^\circ$, and we will probably see it often in this progression, so let's use vii $^\circ$ for variety of sound as well as strength. We need to put it in inversion because it's a diminished chord. To create an interesting bass line and create forward motion, we can use tonic in first inversion. Check the bass against the soprano to look for errors.

CM: I vii⁶ I⁶

chord	ii̇	ñ	ii̇	IV	IV̇	ñii	I	I	I	vii°	vñi°	I
choice:	I	vii°	I	ii	ñ	I	ñi	vi	ñi	V	V	ñi
	ñi	V	ñi	vii°	vii°	ñi	IV	IV	IV	ii̇	ii̇	IV̇
	IV̇Δ7	ii̇7	IV̇Δ7	V7	V7	IV̇Δ7	ii̇7	ii7	ii7	IΔ7	IΔ7	ii̇7

Next, we need to approach the cadence in bar 2. We could use a IV, ii, vii° (with or without sevenths) or V7 chord. We haven't used a seventh chord yet in the phrase, so that would be a good option. The most common non-dominant seventh chord is ii7, but for variety, let's use viiø7 so that we can see what the part writing would look like. We can use ii7 in the next phrase instead, which could help set up a stronger predominant-dominant-tonic motion towards the final cadence. We can use viiø7 in first inversion in order to create a stepwise bass line. Check the bass against the soprano to look for errors.

CM: I vii⁶ I⁶ vii^{ø6}₅

chord	ii̇	ñ	ii̇	IV	IV̇	ñii	I	I	I	vii°	vñi°	I
choice:	I	vii°	I	ii	ñ	I	ñi	vi	ñi	V	V	ñi
	ñi	V	ñi	vii°	vii°	ñi	IV	IV	IV	ii̇	ii̇	IV̇
	IV̇Δ7	ii̇7	IV̇Δ7	V7	V7	IV̇Δ7	ii̇7	ii7	ii7	IΔ7	IΔ7	ii̇7

Next, we can cadence in b. 2. We've already used vii° as a triad and seventh chord, so let's use V. Because the soprano is on scale degree 4, we can't use a triad built on 5. We need scale degree 4 to be part of the chord, so we must use V^7 . V^7 in root position is too strong to use for an internal cadence, so we need to put the chord in inversion. The $\text{vii}^\circ_6/5$ chord will connect nicely to $\text{V}^7_4/3$ because they share 3 common tones. Then we can finish on I. Check the bass against the soprano to look for errors.

CM: I vii°_6 I^6 $\text{vii}^\circ_6/5$ V^6_5 I

chord	ii°	ii°	ii°	IV	IV^6	ii°	I	I	I	vii°	vii°	I
choice:	I	vii°	I	ii	ii°	I	vi°	vi	vi°	V	V	vi°
	vi°	V	vi°	vii°	vii°	vi°	IV^6	IV	IV	ii°	ii°	IV^6
	$\text{IV}^\Delta 7$	ii°_7	$\text{IV}^\Delta 7$	V^7	V^7	$\text{IV}^\Delta 7$	ii°_7	ii°_7	ii°_7	$\text{I}^\Delta 7$	$\text{I}^\Delta 7$	ii°_7

In bar 3, we will start on a I chord. The soprano then repeats scale degree 1 two more times. Looking at the chord choices, this would be a good time to add some variety to our progression and expanding the motion by using vi . If we start with I-vi , then we need to go to IV or ii. As mentioned, we saved the ii°_7 chord for use in this phrase to help strengthen the progression towards the cadence. This would be a great place to put it. If we use it in first inversion, it gives us the classic bass line motion using scale degrees 1-6-4-before going to 5. The $\text{ii}^\circ_6/5$ chord needs to move to the dominant to resolve, so we can use V in root position to finish that classic bass line. The final cadence should be the strongest possible, so we can use $\text{V}^7\text{-I}$ in root position. Check the bass against the soprano to look for errors.

CM: I vii⁶ I⁶ vii⁶₅ V⁶₅ I I vi ii⁶₅ V V7 I

chord	ii̇	ñ	ii̇	IV	IV̇	ii̇	I	I	I	vii°	vii°	I
choice:	I	vii°	I	ii	ñ	I	vi	vi	vi	V	V	vi
	vi	V	vi	vii°	vii°	vi	IV	IV	IV	ii̇	ii̇	IV
	IVΔ7	ii̇7	IVΔ7	V7	V7	IVΔ7	ii̇7	ii7	ii7	IΔ7	IΔ7	ii̇7

Now it's time to part write. We can start at the beginning with I vii⁶ I⁶. Voice the I chord following part writing guidelines, the double the 3rd in the diminished chord. The I⁶ chord can double anything.

CM: I vii⁶ I⁶ vii⁶₅ V⁶₅ I I vi ii⁶₅ V V7 I
CCEG BDDF CEG

chord	ii̇	ñ	ii̇	IV	IV̇	ii̇	I	I	I	vii°	vii°	I
choice:	I	vii°	I	ii	ñ	I	vi	vi	vi	V	V	vi
	vi	V	vi	vii°	vii°	vi	IV	IV	IV	ii̇	ii̇	IV
	IVΔ7	ii̇7	IVΔ7	V7	V7	IVΔ7	ii̇7	ii7	ii7	IΔ7	IΔ7	ii̇7

Next, let's part write the vii⁶₅ chord. The notes are BDFA. The chordal seventh, A, must be approached by common tone or stepwise motion from the I⁶ chord, so should come from the G in the alto voice. The remaining voice can move by step to the leading tone. To connect this chord to V⁴/₃, the only note that moves is the A in the alto. It is the chordal seventh and

resolves down to G in the V4/3 chord. The rest of the notes are common tones. In the move from V4/3 to I, it is important to move each scale degree in the precise way outlined in the guidelines for part writing with V7 chords in chapter 10.5. Put in the scale degrees on the V4/3 chord to help guide the resolution. Scale degree 5 remains on 5, 7 resolves to 1, 2 moves to 1, and the chordal 7th, 4, resolves down to 3 to complete the I chord.

CM: I vii⁶ I⁶ vii⁶ V⁶ I I vi ii⁶ V V⁷ I

CEG BDDF CEG BDFA GBDF CCEG I vi ii⁶ V V⁷ I

chord ~~ii~~ ~~ii~~ ~~ii~~ IV ~~IV~~ ~~ii~~ I I I vii^o ~~vii^o~~ I

choice: I vii^o I ii ~~ii~~ I ~~ii~~ vi vi ~~ii~~ V V ~~ii~~ I

~~ii~~ V ~~ii~~ vii^o vii^o ~~ii~~ ~~IV~~ ~~IV~~ IV IV ~~ii~~ ~~ii~~ ~~IV~~

~~IV~~^{Δ7} ~~ii~~⁷ ~~IV~~^{Δ7} V⁷ V⁷ ~~IV~~^{Δ7} ~~ii~~⁷ ii⁷ ii⁷ ii⁷ I^{Δ7} I^{Δ7} ~~ii~~⁷

Bar 3 begins on a re-voiced I chord, then moves smoothly to vi. When part writing the ii⁶/₅ chord, make sure to place the chordal seventh first so that it is approached by common tone or stepwise motion from the chord before. The chordal seventh, C, is the in the soprano and is resolved down by step when the soprano moves to the V chord. Part write the remaining three voices using common tones and stepwise motion. Then voice the V chord, doubling the root of the chord and using common tones and stepwise motion.

CM: I vii⁶ I⁶ vii^{ø6} V⁶ I I vi ii⁶ V V7 I
 CCEG BDDF CEG BDF A GBDF CCEG CCEG AACE DFAC GGBD

chord choice: \hat{ii} \hat{ii}° \hat{ii} IV \hat{IV} \hat{ii} I I I vii[°] vii[°] I
 \hat{vi} \hat{V} \hat{vi} vii[°] vii[°] \hat{vi} \hat{IV} \hat{IV} \hat{IV} \hat{ii} \hat{ii} \hat{IV}
 $\hat{IV}\Delta 7$ $\hat{ii} 7$ $\hat{IV}\Delta 7$ $\hat{V} 7$ $\hat{IV}\Delta 7$ $\hat{ii} 7$ $\hat{ii} 7$ $\hat{ii} 7$ $\hat{I}\Delta 7$ $\hat{I}\Delta 7$ $\hat{ii} 7$

The final cadence uses a root position V7 to root position I chord. The chordal seventh, F, must come from the G in the chord before. All of the other notes are common tones. When part writing from V7 to I, put in the scale degrees on all notes and move each scale degree in the precise way outlined in the guidelines for part writing with V7 chords in chapter 10.5 Scale degree 5 in the bass moves to 1. Scale degree 2 moves to 1, the chordal 7th resolves down from 4 to 3, and 7 resolves to 1. Note that the I chord is incomplete. In order to have both chords complete, the leading tone would have to resolve down to 5, and it can only do that in an inner voice. In this example, it is in the soprano, so must resolve up to 1, creating a I chord without its 5th.

CM: I vii⁶ I⁶ vii^{ø6} V⁶ I I vi ii⁶ V V7 I
 CCEG BDDF CEG BDF A GBDF CCEG CCEG AACE DFAC GGBD GBDF CCE(G)

chord choice: \hat{ii} \hat{ii}° \hat{ii} IV \hat{IV} \hat{ii} I I I vii[°] vii[°] I
 \hat{vi} \hat{V} \hat{vi} vii[°] vii[°] \hat{vi} \hat{IV} \hat{IV} \hat{IV} \hat{ii} \hat{ii} \hat{IV}
 $\hat{IV}\Delta 7$ $\hat{ii} 7$ $\hat{IV}\Delta 7$ $\hat{V} 7$ $\hat{IV}\Delta 7$ $\hat{ii} 7$ $\hat{ii} 7$ $\hat{ii} 7$ $\hat{I}\Delta 7$ $\hat{I}\Delta 7$ $\hat{ii} 7$

Listen to the full progression:

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=439#audio-439-2>

11.4 Harmonizing a Melody With Seventh Chords: Sight Singing exercises

Step 1) Sing the following melody. The harmonic rhythm is indicated.

Step 2) Decide where the following circle-of-fifths harmonic progression fits under the melody: **i iv7 VII7 III7 VI7 iiø7 V7 i**

harmonic rhythm (*)

11.4 Harmonizing a Melody With Seventh Chords: Aural Training exercises

Step 1) Listen to the following harmonic progression, featuring a circle of 5ths progression with numerous 7th chords.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=443#audio-443-1>

Step 2) Sing through the following three melodies along with the harmonic progression (dotted quarter note = 60) and decide which best fits the given harmonies.



11.5 Harmonizing a Melody With Non Chord Tones: Tutorial

Harmonizing a Melody with Non-Chord Tones

When determining the harmonic progression for a given soprano melody, you can choose to have all soprano melody notes be part of a chord, or can decide that some notes are not functioning as chord tones within the soprano melody and should be labeled as non-chord tones. The harmonic rhythm and melodic motion can help you determine what is an is not a chord tone. Look at these three examples.

#1

CM: I ii V I V I

HR:

#2a

CM: I I V I V I IV V I

HR:

#2b

CM: I V I V I V I V I IV V I

HR:

In the first example, it is easy to see the non-chord tones because they create faster motion than the beat and are typical types of NCTs.

In example #2a, bars 2-4 outline chords, but bar 1 could be a tonic chord for the entire bar if beat 2 is a NCT, or could use a different chord on each beat. The harmonic rhythm is vastly different from the first two bars to the second two bars, and these bars are linked with a progressive cadence. It makes more sense for each note in bar 1 to be a different chord to match the harmonic rhythm of the piece, as illustrated in #2b. When harmonizing a melody, you can use harmonic rhythm to help distinguish between what is a chord tone and what is a non-chord tone. Keep in mind that each non-chord tone you use needs to be a type of non-chord tone used in music. [See chapter 7.3 to review non-chord tones.](#)

Whether you choose to have each note of the soprano supported by a chord with non-chord tones added into voices, or choose to include non-chord tones in the soprano melody, the key to harmonizing a melody using non-chord tones is to make sure the part writing is done correctly first, and does not contain errors. Then, non-chord tones can be inserted.

Guidelines to using NCTS when harmonizing a melody

- Part writing must be correct, both without the NCT and with the added NCT. You cannot use a NCT to avoid part writing errors.
- Non-chord tones need to be one of the types found in music:
 - Passing tone
 - Neighbor tone
 - Double neighbor
 - Appoggiatura
 - Incomplete neighbor
 - Escape tone
 - Anticipation
 - Suspension
 - Retardation
 - Pedal tone
- Make sure to label all NCTS with parenthesis or a circle around the note or notes that are the non-chords and a label that abbreviates the type of non-chord tone used.
- Do not use more than one NCT in any one spot on or between two chords. It muddies the harmonies and sound, and can create unwanted harmonies.
- Do not add ornaments between the chordal seventh in any seventh chord and its resolution note. It needs to resolve down by step in the same voice to the next chord.
- When adding NCTS to a progression, look for places to use NCTS that have the strictest type of motion first (like suspensions).

- Make sure each NCT added is actually a NCT and is not part of the chord.

Adding non-chord tones allow creativity, motion, and add a personal voice in a composition. Make sure to follow the guidelines outlined as you learn more through further experimentation with NCTS.

Proceed to the theory exercises for a guided example on adding NCTs when harmonizing a melody.

11.5 Harmonizing a Melody With Non Chord Tones: Theory exercises

In addition to Workbook Chapter 11.5, see the example below.

Let's take a look at an example to add NCTs. We will use the harmonizing a melody solution found for harmonizing seventh chords in chapter 11.4. Here is the completed melody harmonization and recording.

The musical score is in 4/4 time and C major. The melody line consists of 12 notes: C4, D4, E4, F4, G4, A4, B4, A4, G4, F4, E4, D4. Above the notes are numbers indicating NCTs: 3, 2, 3, 4, 4, 3, 1, 1, 1, 7, 7, 1. The bass line consists of 12 notes: C3, C3. Below the staff are the following chord symbols: CM: I, vii°6, I6, viiø6/5, V6/5, I, I, vi, ii6/5, V, V7, I.

One or more interactive elements has been excluded from this version of the text. You can view them online here: <https://iastate.pressbooks.pub/comprehensivemusicianship/?p=447#audio-447-1>

When looking for places to insert NCTs, first, we want to find places for the NCTS that have the most specific limitations on where they can be placed and how they can move. Suspensions are a good example, so we will start by looking for places where a suspension can be added. Suspensions need to move down by step to resolve, so we are looking for descending stepwise motion in a single voice between two chords. The intervals created by the suspension and resolution over the bass of the second chord will also have to be one of the types of suspensions used in music: 9-8, 7-6, 4-3, 2-3. The first place we see that motion is between the first 2 chords in bar 1. We could put a 9-8 SUS in the soprano, a 4-3 SUS in the alto, and a 7-6 SUS in the tenor. Since we are just starting the piece, and suspensions are often more effective in the melody, let's add a 9-8 SUS to beat 2 of bar 1.

CM: I vii⁶ I⁶ vii⁶₅ V⁶₅ I I vi ii⁶₅ V V7 I

Let's see if we can find another type of suspension to add to bar 2. The bass and soprano could support a suspension on beat 3. Let's add a 4-3 SUS to the soprano line. Notice that the suspended note is the chordal 7th. By adding the suspension, we are delaying the resolution, not decorating between the chordal 7th and its resolution.

CM: I vii⁶ I⁶ vii⁶₅ V⁶₅ I I vi ii⁶₅ V V7 I

Next, let's look at places to insert other NCTS. Passing tones are one of the most frequently used NCTS. Normally, adding passing tones to a piece of music is easy and there are many places to put them. However, since our goal when part writing is to create smooth, stepwise melodic lines, there are less places where we can add diatonic passing tones between notes a 3rd apart. If we look at the score, the first place that has a third in a single voice, is the soprano in bar 2 on beat 3. However, we already inserted a suspension in that spot, so can't use an additional passing tone there. The bass line in bar 3 has two places where we can insert passing tones. They will create motion in the progression and provide interest in the bass line.

CM: I vii^{°6} I⁶ vii^{ø6}₅ V⁶₅ I I vi ii⁶₅ V V7 I

The rest of bar 3 now needs some NCTs added to beats 3 and 4 in order to keep the motion going that was created in beats 1 and 2. On beat 3, we can add a neighbor tone in the tenor. On beat 4, we can add a neighbor tone in the alto. Neighbor tones are usually the easiest to add to a melody harmonization because of the preferred use of common tones between chords. It's a good idea to spread NCTs across all voices to add interest to the music and variety for the ear when listening.

CM: I vii^{°6} I⁶ vii^{ø6}₅ V⁶₅ I I vi ii⁶₅ V V7 I

The added NCTs in bar 3 have created a drive to the final cadence, but the longer note values in the last bar stop the motion and the lines sound too bare. An anticipation is a great choice of NCT to add before the final note of the piece in the melody. We can also have the bass change octaves to create rhythmic variety in the last bar. This is not a non-chord tone, but adding chord tones can also be used to decorate a melody. Chord tones do not need to be labeled in the score. Adding the extra chord tone rhythm and the anticipation continue the motion towards the final cadence.

Chord symbols for the first system: CM: I vii°6 I6 viiø6₅ V₅⁶ I I vi ii₅⁶ V V7 I

Now that bars 3-4 have been ornamented, let's revisit bars 1-2 to add more motion so that the opening bars have the same feel as the last 2 bars. In bar 1, we can't add anything else between beats 2 and 3 due to the suspension, but we could place a NCT between beats 3 and 4. Let's use a NCT we haven't used yet, an incomplete neighbor, and add it to the alto line for variety. Then we can add a NCT between beats 4 and 1 in that bar. Let's decorate the bass voice to contrast with the soprano. We can use a lower neighbor tone. Notice that we do not want to decorate the A in the alto, since it is the chordal seventh.

Chord symbols for the second system: CM: I vii°6 I6 viiø6₅ V₅⁶ I I vi ii₅⁶ V V7 I

Only two more spaces between chords are left without NCTS. We can decorate the long note on beat 1-2 of bar 2 by adding a NCT. Let's insert a double neighbor into the alto voice, since we haven't used that type of NCT before and have enough space to accommodate a double neighbor. When using a double neighbor, you have to choose a rhythm for the figure. We can use two eighth notes followed by a quarter note in order to mimic the rhythm used in the bar before on beat 3. This provides some cohesion and repetition, which will be recognizable to the listener.

We can also add a NCT to end of beat 4 in bar 2 to connect it to the next phrase. This is a common way of connecting a weaker cadence to the music that follows. Because we have

the suspension resolving on beat 4, the NCT, which we can add as a NT in the bass, needs to happen after the downbeat on beat 4.

The musical score is in 4/4 time and consists of two staves. The upper staff (treble clef) contains a melodic line with various intervals and suspensions. The lower staff (bass clef) contains a bass line with non-chord tones (NT) and pedal points (PT). Above the treble staff, numbers 3, 2, 3, 4, 4, 3, 1, 1, 1, 7, 7, 1 are placed above the notes, indicating intervallic movement. Annotations include '9-8 SUS' and '4-3 SUS' in the treble staff, and 'IN', 'DN', 'NT', and 'ANT' in both staves. Below the bass staff, the chord progression is given as: CM: I vii°6 I6 vii°6/5 V5 I I vi ii6/5 V V7 I.

Now that we've added NCT between all beats, let's listen to compare the original progression to the final progression.

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=447#audio-447-2>

One or more interactive elements has been excluded from this version of the text. You can view them online here:

<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=447#audio-447-3>

11.5 Harmonizing a Melody With Non Chord Tones: Aural Training exercises

Step 1) Listen to the following harmonic progression.

One or more interactive elements has been excluded from this version of the text. You can view them online here:
<https://iastate.pressbooks.pub/comprehensivemusicianship/?p=451#audio-451-1>

Step 2) Sing through the following melody along with the harmonic progression (quarter note = 60).



Step 3) Sing the melody again, adding eighth-note embellishing tones, including at least one of the following: passing tone, upper neighbor, escape tone, appoggiatura, 4-3 suspension.

Music Theory Workbook

[Workbook for Comprehensive Musicianship: A Practical Resource](#)

This workbook is a supplement to *Comprehensive Musicianship: A Practical Resource*. Each workbook chapter corresponds to the equivalent chapter in the textbook, and is designed to facilitate the exploration and mastery of the concepts presented through a variety of exercises. Exercises contained in the workbook consist of musical analysis and writing drills, presented both in isolated examples and in context in musical literature, as well as the application of music theory concepts through composition exercises. These exercises can be used as class examples as well as homework assignments.

Sight Singing and Aural Training Supplement

[Aural Training and Sight Singing Supplement for Comprehensive Musicianship: A Practical Resource](#)

This supplement was designed to help students build a strong foundation in aural training and sight singing by progressing through the core rhythmic and melodic patterns that are found in music. Through the progression of content, students will build skills in pattern recognition and an understanding of how music functions. Rhythms for each section include single and two-part examples as well as pitched examples for use in aural training. Melodies for each section include single line melodies, canons, duets, and chorales. Melodies were designed to be easily accessible for students with basic keyboard skills, and were written without articulation and dynamic markings to allow students and instructors the flexibility to personalize them.