The Musician's Guide to Theory and Analysis

THIRD EDITION

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To our teachers, colleagues, and students—
with whom we have shared the joy of music,
and from whom we continue to learn—
and, with thanks, to our families
for their patience and support

Brief Contents

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Appendixes

Preface

We are pleased to bring to you the third edition of *The Musician's Guide to Theory and Analysis* and its accompanying Workbook, Anthology, and media. With each revision, we hear from many colleagues around the country about what works best for their students, and we are proud to retain these features while introducing something new to each edition. Among the key pedagogical approaches that characterize the *Musician's Guide* series are

- student-centered pedagogy that features clearly written prose, recorded musical examples throughout, and multiple opportunities for reinforcement both in the text and online;
- introduction to each new topic through musical repertoire, using a spiral-learning approach that revisits familiar works while adding new layers of understanding;
- consideration of how analysis might impact performance decisions;
- incorporation of counterpoint and form chapters so that students can study complete works;
- reliance on the basic phrase model to teach principles of harmonic progression; and
- comprehensive coverage that extends through music of the twentieth and twenty-first centuries.

The Musician's Guide series is the most comprehensive and flexible set of materials available for learning music theory. For theory classes, this textbook and its accompanying Workbook cover a wide range of topics—from fundamentals to harmony, form and analysis, popular music, and twentieth and twenty-first century works. An Anthology features core repertoire for study along with recordings for each work. In this edition, we have added a new **Know It? Show It!** pedagogy, which provides unprecedented opportunities for online learning. Meanwhile, the accompanying *Musician's Guide to Aural Skills* offers complete coordination between theory and aural skills courses, so that the two are mutually reinforcing. Instructors can mix and match the components that are ideal for their classroom.

Features

- Each chapter of the text begins with an **Outline** and an **Overview** paragraph, which serve as a chapter preview.

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The Basic Phrase in SATB Style

Outline

The basic phrase
- Defining the phrase model: T–D–T
- Establishing the tonic area
- Cadential area and cadence types

The notation of four-part harmony
- Writing for voices: SATB

Connecting the dominant and tonic areas
- Resolving the leading tone in V and V^6
- Perfect consonances

Melody and accompaniment
- Writing for keyboard
- Harmonizing a melody
- Creating an accompaniment

Overview

This chapter introduces the basic phrase—the harmonic foundation for most tonal music, from short phrases to entire movements. We arrange its harmonic pillars, I and V, in SATB and keyboard styles, and harmonize a melody with keyboard accompaniment.

Repertoire

Johann Sebastian Bach
"Ach Gott, vom Himmel sieh' darein" ("O God, Look Down on Us from Heaven," Chorale No. 253)
"Wachet auf" ("Awake," Chorale No. 197)
Ludwig van Beethoven
Piano Sonata in D Minor, Op. 31, No. 2 (*Tempest*), mvt. 3
Sonatina in F Major, Op. Posth., mvt. 2
Muzio Clementi, Sonatina in C Major, Op. 36, No. 1, mvt. 1
"Clementine" (folk tune)
Joseph Haydn, Piano Sonata No. 9 in F Major, Scherzo
"Merrily We Roll Along"
Wolfgang Amadeus Mozart, Piano Sonata in C Major, K. 545, mvt. 1
"My Country, 'Tis of Thee"

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- The **Repertoire** list specifies which pieces are featured in the chapter. *The Musician's Guide* uses real music to explain every concept. Each time students encounter a piece from the Anthology, their understanding deepens, as does their knowledge of masterworks of music.
- **Boldface** type signals a new and important term. These terms are listed together at the end of the chapter and defined in the Glossary in Appendix 2. In the ebook, students can simply mouse over or tap on a term to retrieve its definition.

- **Key Concept** and **Summary** boxes in every chapter identify the most important ideas and summarize key information so that it is instantly available.

KEY CONCEPT Classical-era sonata-form expositions are usually repeated, and generally consist of the following sections:

First theme group	*Transition*	*Second theme group (optional codetta)*
Major key: I	Modulates to V.	V (may include a closing theme, still in V).
Minor key: i	Modulates to III (or v).	III (or v) (may include a closing theme in the same key).

SUMMARY

Intervals may be

- melodic—measured between successive notes,
- harmonic—measured between pitches sounding at the same time,
- simple—spanning an octave or less, or
- compound—spanning more than an octave.

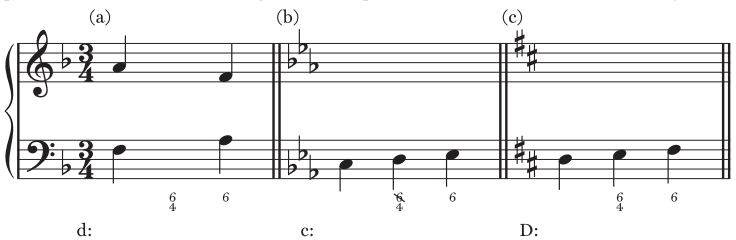
Intervals are labeled by their size and quality.

- Size measures the number of letter names spanned: U, 2, 3, 4, 5, 6, 7, 8.
- Intervals 2, 3, 6, and 7 may be major or minor, but not perfect (e.g., m2, M3, m6).
- Intervals U, 4, 5, and 8 may be perfect, but not major or minor (PU, P4, P5, P8).

- ***Try it*** boxes, scattered through every chapter, provide immediate opportunities to practice every core concept. Many of these exercises preview upcoming Workbook assignments. Answers appear in Appendix 1 or can be revealed by clicking the "reveal answers" button in the ebook.

Try it #3

Fill in the space between the I and I^6 (or i and i^6) with a passing $\frac{6}{4}$, from the bass and figures provided. Include a voice exchange with the soprano, and write a Roman numeral analysis.



- **Listening icons** (🎧) identify opportunities for listening—either to the excerpt immediately at hand or to a complete work in the Anthology. These recordings are all accessible online; in the ebook, a click on the icon brings you immediately to a recording of the example shown.

- Since many theory concepts can be learned in more than one way, **Another Way** boxes offer alternative explanations.

Another Way

Another way to spell secondary dominants quickly is to imagine them as "altered" diatonic chords, following the chart below (in C major). Add whatever accidentals are necessary to create a Mm7 quality. Use this method as a shortcut for spelling only; in analysis, you should write V7/IV, not I7, to capture more accurately how the chord functions.

TO MAKE A . . .		START WITH . . .		ALTER QUALITY TO Mm7
V7/IV	→	I7 (C-E-G-B)	→	I7 (C-E-G-B♭)
V7/V	→	ii7 (D-F-A-C)	→	II7 (D-F♯-A-C)
V7/vi	→	iii7 (E-G-B-D)	→	III7 (E-G♯-B-D)
V7/ii	→	vi7 (A-C-E-G)	→	VI7 (A-C♯-E-G)
V7/iii	→	vii∅7 (B-D-F-A)	→	VII7 (B-D♯-F♯-A)

- **Did You Know?** boxes at the end of each chapter explain certain historical developments, fill in background for composers and pieces featured in the chapter, or supply more advanced information. These are a source of enrichment and come from stories that we have told in class to our students.

Did You Know?

You will find a complete list of Messiaen's modes of limited transposition in his book *The Technique of My Musical Language*, translated by John Satterfield (Paris: Leduc, 1956). Messiaen wrote the *Quartet for the End of Time* while incarcerated in a prisoner-of-war camp during World War II. He chose his text from the Revelation of St. John. Messiaen says this about the instrumental ensemble, all fellow prisoners:

> The unusual group for which I wrote this quartet—violin, clarinet, cello and piano—is due to the circumstances surrounding its conception. I was a prisoner-of-war (1941), in Silesia, and among my fellow prisoners were a violinist . . . a clarinetist . . . and a cellist . . . myself being the pianist. . . . Why this choice of text? Perhaps because, in these hours of total privation, the basic forces which control life reasserted themselves. (From the liner notes to Angel/EMI recording S-37587.)

It is remarkable that an artwork of such power was composed in such dire circumstances—a testament to the human spirit.

- **Terms You Should Know** and **Questions for Review** provide essential end-of-chapter review.

TERMS YOU SHOULD KNOW

applied chord
chromatic voice exchange
cross relation
modulation
secondary dominant
secondary leading-tone chord
temporary tonic
tonicization
tonicized half cadence

QUESTIONS FOR REVIEW

1. Where are secondary dominants used? secondary leading-tone chords?
2. What do you need to remember when spelling secondary dominants? secondary leading-tone chords?
3. What are the special voice-leading guidelines for resolving secondary dominant chords? secondary leading-tone chords?
4. Under what circumstances are cross relations permitted in common-practice style?
5. In music for your own instrument, find two examples of secondary dominants (in two different pieces or keys). What guidelines can help you scan the score and find them quickly?

Workbook

Each **Workbook** chapter is organized so that ideas are reinforced in the same order they were presented in the chapter. Each assignment consists of a tear-out-and-turn-in worksheet. The Workbook includes the following:

- Short exercises such as chord spelling and two- or three-chord connections.
- Opportunities to write music—through melody harmonizations, figured bass realizations, or other short composition projects—most based on passages from music literature rather than contrived practice exercises. This edition features even more opportunities for composition.
- Analyses, from short passages to phrases, periods, and entire works. Longer analyses are often taken from works in the Anthology, allowing you to revisit the core repertoire and hear these works again.

We provide a **Teacher's Edition** that includes all answers, formatted to match the student pages, for easy grading. Contact your Norton representative to receive your copy.

Online Resources

An **ebook**, included with every new copy of the text, allows students to read on a wide variety of devices. Recordings of music examples are only a click or tap away.

Along with the ebook, there is a new **Know It? Show It!** online pedagogy, designed to enhance student learning.

- As they read each chapter, students watch short video tutorials, created by Brad Osborn (University of Kansas) and Anna Gawboy (Ohio State University), keyed to each topic discussed in the text. Tutorials show students how to work through the problems they will encounter in their Workbook assignments.
- Students take carefully graduated **adaptive online quizze**s to deepen their understanding and demonstrate mastery of the material. **InQuizitive**, a new formative assessment tool, with questions written by Philip Duker (University of Delaware) and Sarah Sarver (Oklahoma City University), asks students questions until they've demonstrated that they understand the chapter material. When students have trouble, tailored feedback points them back to specific spots in the book and video tutorials. And once students complete the activity, data about their performance can be reported to your campus learning-management system to help you assess which topics need more review and which are well understood.

- In addition to the print version, the **online Workbook** makes nearly all exercises available in Noteflight, an online notation program that allows students to complete their homework and send it to their instructor electronically. Instructors can grade work and return it to students paperlessly.

With **Total Access**, all students who purchase a new book—regardless of format—will receive access to all the media, including the ebook and **Know It? Show It!** pedagogy. Students can access the media in a variety of ways:

- The **ebook** includes links to all accompanying media.
- With Norton **Coursepacks**, instructors can bring the media into their campus learning-management systems.
- At digital.wwnorton.com/guidetotheory3, students and instructors can launch all the online resources included with this text.

Anthology

Study of the **Anthology** works is integral to the book's approach to learning music theory—we strongly believe that the concepts we teach must emerge from the music itself. We have chosen music that we like, that many of our students have performed, and that they (and we) have enjoyed exploring together (see the complete list at back of book). Some works should be familiar to students ("Greensleeves," "The Stars and Stripes Forever"), while others will probably be new (Edgard Varèse's *Density 21.5*, Clara Schumann's Romanze). There are classics of the repertoire (Mozart and Beethoven piano sonata movements, German Lieder selected from Schubert and Schumann song cycles, and groundbreaking compositions by Schoenberg and Webern); pieces for varied performing ensembles (solo flute, cello, and violin; chamber orchestra, string quartet, band, and choir, among others); and pieces in contrasting musical styles—from American popular songs to French mélodie, from piano ragtime to minimalist music, from marches for band to hymns and anthems for choirs. While the Anthology includes gems of familiar repertoire, we have also included wonderful but less familiar works by women and African American composers (Fanny Mendelssohn Hensel, Clara Schumann, Scott Joplin), as well as diverse works written within the last century.

Every chapter begins by discussing one or two examples from the Anthology. With the text's spiral-learning approach, students return to Anthology selections again and again. A single piece might be used to illustrate scales, triads, cadence types, secondary dominants, common-chord modulation, sequence, and binary form. Because the Anthology works hand-in-hand with the text, revisions to the chapters in the third edition have provided opportunities to explore new repertoire. For example, we have expanded coverage of early twentieth-century music

before the advent of atonality; the Anthology now includes new songs by Ives and Debussy, Ravel's *Pavane pour une infant défunte*, and a movement from Stravinsky's piano transcription of *Petrouchka*.

Anthology recordings, performed by musicians at the Eastman School of Music, are included with each new copy of the text and are available online.

Aural Skills

The Musician's Guide to Theory and Analysis is the only theory book that is accompanied by a fully integrated companion text: *The Musician's Guide to Aural Skills*. This text consists of two volumes that can be used together with this text or on their own. Taken together, the two volumes provide all the materials needed for the aural skills sequence, from fundamentals to post-tonal ear training.

- The **Sight-Singing** volume features over 800 carefully selected melodies, rhythms, improvisation activities, and keyboard exercises.
- The **Ear-Training** volume includes hundreds of short, self-grading *Try it* dictations that help students identify common tonal gestures. Over 400 contextual-listening questions guide students through the process of taking dictation from performances of real music.
- New for this edition, both volumes of *The Musician's Guide to Aural Skills* have been organized in 40 chapters to match exactly the chapters of *The Musician's Guide to Theory and Analysis*, so that students can study the same concepts simultaneously in theory and aural skills. This coordination ensures that all terminology and pedagogical concepts match between the "written" and aural texts.

What's New?

We have worked to incorporate the ideas of many helpful reviewers, while retaining the key features of an effective pedagogical strategy.

- With new **Know It? Show It!** pedagogy, students get access to multiple short video tutorials for each chapter, adaptive written and aural quizzes, and an online Workbook free with every new copy of the text.
- Throughout the text, the prose has been streamlined, making important points even easier to grasp.
- Every chapter in the book has undergone revision, replacing repertoire from the second edition with fresh new pieces. We have revised and reorganized material in the chapter on sequences, introduced topic theory to our discussion of variation and sonata forms, and made countless small

changes to improve clarity and better annotate musical examples so that you can see in a glance what they illustrate.

- Chapters on form and twentieth-century theory have been reorganized for a smoother pedagogical progression. We have placed the Variations chapter earlier, so that students can explore this form as soon as they have sufficient harmonic understanding to do so. We have expanded our discussion of the Concerto, and moved Rondo later, combined with Sonata-Rondo and Large Ternary. In Part IV, we have expanded our discussion of early twentieth-century works before atonality, and consolidated the discussion of serialism into a single chapter. We also reorganized our treatment of rhythm, meter, and form after 1900 so that it follows a roughly chronological sequence: an initial chapter early in Part IV explores innovations in the first half of the twentieth century, while a second chapter near the end of the book discusses innovations after 1945.
- The Anthology features 26 new works, including additional compositions by major composers such as Bach and Beethoven, as well as new twentieth-century works by Berg, Ives, Debussy, and Ravel. Other new additions complement the form chapters: a variation movement for band by Gustav Holst, a very early minuet by Mozart, a large Romantic ternary movement by Clara Schumann, a Broadway-style song from Jerome Kern, and so on.

Our Thanks to . . .

A work of this size and scope is helped along the way by many people. We are especially grateful for the support of our families—Elizabeth A. Clendinning, David Stifler, Rachel Armstrong Bowers, Rocky Bowers, and Glenn, Russell, and Caroline West. Our work together as co-authors has been incredibly rewarding, and we are thankful for that collaboration and friendship. We also thank Joel Phillips (Westminster Choir College) for his many important contributions—pedagogical, musical, and personal—to our project and especially for the coordinated aural skills component of this package, *The Musician's Guide to Aural Skills*, with Paul Murphy (Muhlenberg College), who has become a key member of our team. While working on the project, we have received encouragement and useful ideas from our students at Florida State University and the Eastman School of Music as well as from music theory teachers across the country. We thank these teachers for their willingness to share their years of experience with us.

For subvention of the recordings that accompany the text and Anthology, and for his continued support of strong music theory pedagogy, we thank Jamal Rossi (Dean of the Eastman School of Music). For performance of many

of the short keyboard examples in the text, we thank Richard Masters, whose sight-reading abilities, flexibility, and good grace are all appreciated. We also thank Don Gibson (former Dean of Florida State University's College of Music) for his enthusiasm and unfailing support. For pedagogical discussions over the years, we are grateful to our colleagues and graduate students at Florida State University and the Eastman School of Music, and to the College Board's AP Music Theory Test Development Committee members and AP Readers. Special thanks to Mary Arlin for her thorough and meticulous checking and generous help with Workbook exercises.

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For production of all recordings, our thanks go to recording engineers Mike Farrington and John Ebert, who worked tirelessly with Elizabeth Marvin on recording and editing sessions, as well as to Helen Smith, who oversees Eastman's Office of Technology and Media Production. We also acknowledge the strong contributions of David Peter Coppen, archivist of the Eastman Audio Archive, for contacting faculty and alumni for permission to include their performances among our recordings. We finally thank the faculty and students of the Eastman School who gave so generously of their time to make these recordings. The joy of their music making contributed mightily to this project.

We are indebted to the W. W. Norton staff for their commitment to *The Musician's Guide* Series and their painstaking care in producing these volumes. Most notable among these are Justin Hoffman, who steered the entire effort with a steady hand and enthusiastic support; Susan Gaustad, whose knowledge of music and detailed, thoughtful questions made her a joy to work with; and Maribeth Payne, whose vision helped launch the series. We are grateful for Norton's forward-thinking technology editor Steve Hoge, who coordinated development of the ebook, video lessons, InQuizitive activities, online Workbook, and audio recordings with the assistance of Meg Wilhoite, Kate Maroney, William Paceley, and Stephanie Eads. Jodi Beder was invaluable in checking assignments, correcting errors, and copyediting the Workbook. Lissi Sigillo and Rubina Yeh created the book's design for all parts of the *Musician's Guide* package, Michael Fauver project-edited the Workbook and Anthology, Debra Nichols provided expert proofreading, Grant Phelps assisted in preparing the manuscript and arranging for reviews, Mary Dudley developed marketing strategies, and Megan Jackson pursued copyright permissions and helped us understand copyright law. David Botwinik set the text and Workbook, and Andy Ensor and Jane Searle oversaw the production of these multifaceted texts through to completion. Our gratitude to one and all.

Jane Piper Clendinning
Elizabeth West Marvin

To Our Students: Why Study Music Theory?

Have you ever tried to explain something without having the right words to capture exactly what you mean? It can be a frustrating experience. Part of the process of preparing for a professional career is learning the special language of your chosen field. To those outside the profession, the technical language may seem like a secret code intended to prevent the nonspecialist from understanding. For example, a medical doctor might speak of "cardiac infarction," "myocardia," or "angina" when referring to conditions that we might call (inaccurately) a heart attack. To those who know the technical terms, however, one or two words capture a wealth of associated knowledge—years of experience and books' worth of information.

Words and symbols not only let us name things, they also help us to communicate how separate elements work together and group into categories. Music theory provides useful terms and categories, but it does more than that: it also provides a framework for considering *how* music is put together, *what* musical elements are in play, *when* particular styles were prevalent, and *why* music sounds the way it does. Understanding the vocabulary for categorizing and explaining musical events will prepare you to develop your own theories about the music you are playing and studying.

The purpose of this book is to introduce you to the technical language of music. In the first part, you will learn (or review) basic terminology and notation. Mastery of terminology will allow you to communicate quickly and accurately with other musicians; mastery of notation will allow you to read and write music effortlessly. You will next learn about small- to medium-scale musical progressions and how they work. Knowledge of these progressions will help you compose music in particular styles, structure improvisations on your instrument, make interpretive decisions in performance, and improve your sight-reading skills.

Later parts of the book deal with larger musical contexts, such as how sections of music fit together to make musical form. You will learn how to write in standard musical forms in differing styles, how to divide the pieces you perform into sections, and how to convey your understanding of form in performance. In the final chapters, we explore ways that these concepts are transformed (or abandoned) in music of the twentieth and twenty-first centuries, and consider

new theories that have arisen to explain music structure in this repertoire. We will apply this information in the same ways as in previous chapters—with direct links to performance, analysis, and writing.

We have written this text with you and your learning at the forefront. With the purchase of a new book, you receive **Total Access** to a wealth of media and learning aids—from an **ebook** version of the text to recordings, formative quizzes, an online Workbook, and even video lessons that you can watch and review as often as you wish. Each chapter begins with an overview of what you will learn and ends with a list of important terms and questions for review. In between, we provide clear prose dotted with many musical examples—nearly all of which you can hear with a click on the website or ebook. Our ***Try it*** exercises give you practice on concepts (with answers in an appendix, or with a click in the ebook) that will prepare you for **Workbook** assignments, and our **Another Way** and **Summary** boxes give you new ways to think about and consolidate the concepts you are studying. The **Anthology** that accompanies this text is full of pieces that we love, and that we hope you will come to love, too. We chose them for maximum variety of style, instrumentation, and genre; we also chose works that many college students will have performed in lessons and concerts themselves. Every piece in the Anthology comes with a recording so that you can listen easily. Feel free to compare and contrast these performances with others you find online and in the library; think about which ones you prefer and why. We encourage you to explore the ebook, online resources, and recordings even before class begins, and throughout each semester of your undergraduate training. We hope these tools will help make your learning more interactive and musical.

One of the most important things to remember about music theory is that it is all about *music*—how and why music sounds the way it does, and what elements of a piece or a performance move us. You will be listening to music in every chapter, so that you can associate terms and notation with sounding music. We want you to make connections every day between what you are learning in this book and the music you are playing, singing, hearing, and writing. Music theory is absolutely relevant to the music making we do—whether it's listening, performing, analyzing, or composing. You will see references in nearly every chapter to the way its content might inform your music making. Use this information! Take it to the practice room, the studio, and the rehearsal hall to make the connection between your coursework and your life as a practicing musician. We hope the concepts you learn here will impact the ways you think about music for many years to come.

Elements of Music

1

Outline

Introduction to Pitch: Letter names

- Pitch classes and pitches

The piano keyboard

- White keys
- Black keys: Flats and sharps
- Enharmonic equivalents
- Intervals: Half steps and whole steps
- Double flats and sharps

Reading pitches from a score

- Staff notation
- Treble clef
- Bass clef
- C-clefs
- Naming registers
- Ledger lines
- Writing pitches on a score

Dynamic markings

Style periods

Pitch and Pitch Class

Overview

When we read notated music, we translate its symbols into sound—sung, played on an instrument, or heard in our heads. We begin our study of music theory by learning to read and write the symbols that represent pitch, one of music's basic elements.

Repertoire

Scott Joplin, "Solace"

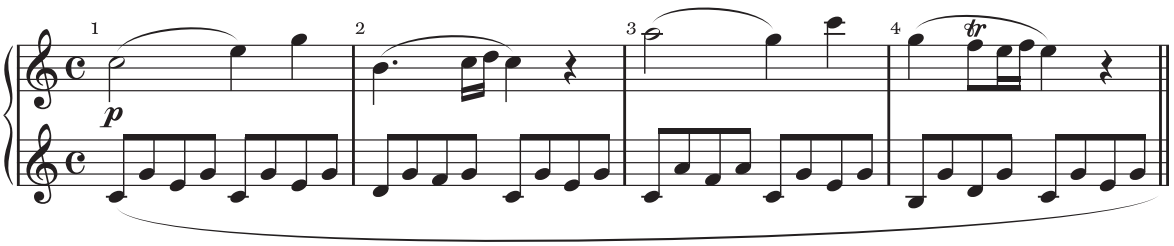
Wolfgang Amadeus Mozart, Piano Sonata in C Major, K. 545, mvt. 1

"Ubi caritas et amor" (Gregorian chant; "Where charity and love are")

Introduction to Pitch: Letter Names

Listen to an excerpt from a piano work by Wolfgang Amadeus Mozart as you follow Example 1.1, the musical notation (or **score**). Many of the score's elements will be introduced in this chapter, beginning with the notes you see here.

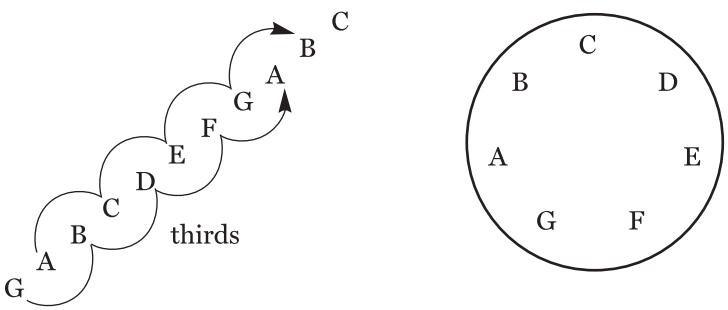
Example 1.1: Mozart, Sonata in C Major, K. 545, mvt. 1, mm. 4–7



By the end of the chapter, you will be able to name each note in this example. The first piece of information you need is that musical notes are named with the first seven letters of the alphabet—A, B, C, D, E, F, G—repeated endlessly.

KEY CONCEPT Imagine these seven letters ascending like stairs or arranged around a circle like a clock, as in Figure 1.1. "Count" up or down in the series by reciting the letters forward (clockwise) or backward (counterclockwise). To count up beyond G, start over with A; to count down below A, start over with G.

Figure 1.1: Seven letter names



You will read music much more fluently if you also practice reading alternate letter names, as marked in the figure: G-B-D-F-A or A-C-E-G-B. This is called counting in thirds, because each pair of notes spans three letter names: A-C encompasses A, B, and C.

Learning to count in letter names is a fundamental musical skill. Practice counting backward and forward from A to A, C to C, G to G, and so on, until you

feel as comfortable counting backward as forward. Think of the movement as "upward" when you count forward, and "downward" when you count backward. For example, five above C, counting forward, is G (C-D-E-F-G), and six below E, counting backward, is again G (E-D-C-B-A-G). Always include the first and last letters in the series, and count the first letter name as 1: three above F is A, not B (count F-G-A, not G-A-B).

Try it #1

Find each letter name requested.

A. Remember to count the given note as 1.

(1) 7 above G: **F** (6) 5 below A: _____ (11) 2 above F: _____

(2) 6 above F: _____ (7) 3 above E: _____ (12) 4 above C: _____

(3) 2 above D: _____ (8) 2 below C: _____ (13) 6 below A: _____

(4) 4 below B: _____ (9) 3 above G: _____ (14) 7 below E: _____

(5) 3 below C: _____ (10) 2 above B: _____ (15) 5 above G: _____

B. Count in thirds above the pitch given. Write one letter name in each blank.

(1) G: **B** - **D** -_____-_____ (2) D: _____-_____-_____-_____

(3) A: _____-_____-_____-_____ (4) B: _____-_____-_____-_____

(5) C: _____-_____-_____-_____

Pitch Classes and Pitches

In this seven-name system, each letter name reappears every eighth position: eight below C is another C. Notes eight letter names apart make an **octave**. They sound similar, a principle known as **octave equivalence**.

KEY CONCEPT Octave-related notes belong to the same **pitch class** and have the same letter name. The pitch class D, for example, represents every D in every octave. A **pitch**, on the other hand, is one that sounds in one particular octave.

Listen again to the first notes of the Mozart excerpt (Example 1.1) to hear pitch class C played in two octaves simultaneously: two different pitches that belong to the same pitch class.

The Piano Keyboard

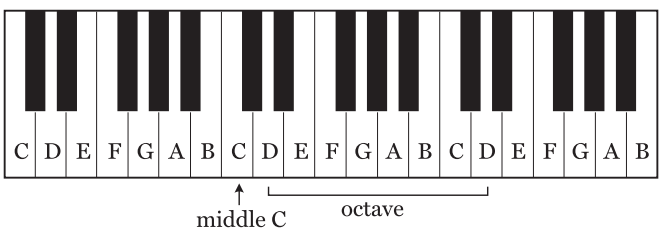
White Keys

Throughout this text, we will reinforce concepts with the help of a keyboard. As a musician, you will find keyboard skills essential, whatever your primary instrument. Because of the piano's great range and ability to sound several pitches simultaneously, keyboard skills allow you to play simple accompaniments, demonstrate musical ideas, and harmonize melodies.

The white keys of the keyboard correspond to the seven letters of the musical alphabet, as shown in Figure 1.2. Immediately to the left of any group of two black keys is pitch class C; immediately to the left of any three black keys is pitch class F. **Middle C** is often used as a reference point; it is the C closest to the middle of the piano keyboard.

KEY CONCEPT No black key appears between white keys E and F or between B and C.

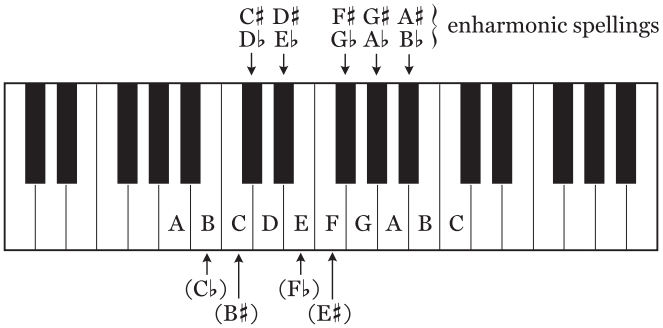
FIGURE 1.2: Piano keyboard with letter names



Black Keys: Flats and Sharps

The black-key pitches are named in relation to the white-key pitches. The black key immediately above (to the right of) any white key gets the white note's name plus a **sharp** (♯). As Figure 1.3 shows, each group of two black keys is called C♯ (C-sharp) and D♯, and each group of three black keys is F♯, G♯, and A♯. At the same time, the black key immediately below (to the left of) any white key gets the white note's name plus a **flat** (♭). That means the group of two black keys can also be called D♭ (D-flat) and E♭, and the three black keys G♭, A♭, and B♭. Every black key therefore has two possible names: one with a sharp and one with a flat. The two names are **enharmonic** spellings.

FIGURE 1.3: Keyboard with enharmonic pitches marked



The sharp and flat symbols are called **accidentals** (although there is nothing "accidental" about them). A third common accidental, a **natural** (♮) cancels a sharp or flat. It returns the pitch to its "natural" state and white-key location on the keyboard.

Enharmonic Equivalents

Enharmonic pitches, with the same sound but different names (B♭ = A♯), belong to the same pitch class. Not all sharped or flatted pitches are black keys, however: if you raise an E or B to the closest possible note on the keyboard, you get a white key, not a black one. E♯ is a white key enharmonic with F, just as B♯ is white and enharmonic with C. On the flat side, C♭ is enharmonic with B, and F♭ is enharmonic with E. Find these pitches on a keyboard or in Figure 1.3.

Try it #2

Name the enharmonic equivalent.

(1) G♭: **F♯**	(5) B: _____	(9) D♯: _____
(2) B♯: _____	(6) A♭: _____	(10) E: _____
(3) A♯: _____	(7) E♯: _____	(11) F♯: _____
(4) D♭: _____	(8) B♭: _____	(12) F: _____

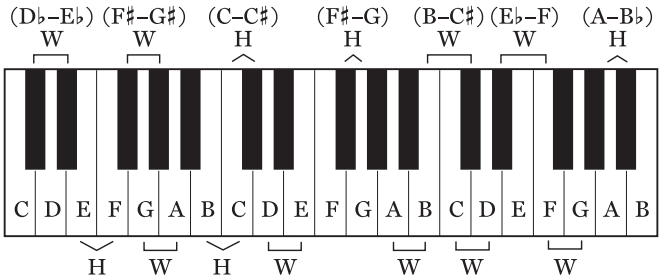
Intervals: Half Steps and Whole Steps

The distance between any two notes is called an **interval**. Two intervals that serve as basic building blocks of music are half steps and whole steps.

KEY CONCEPT A **half step** (or **semitone**) is the interval between any pitch and the next closest pitch on the keyboard. The combination of two half steps forms a **whole step** (or **whole tone**); a whole step always has one note in between its two notes.

On a keyboard, a half step spans a white note to a black note (or black to white)—except in the case of B to C and E to F, as shown in Figure 1.4. Whole steps span two keys the same color—again except in the case of B–C and E–F. A whole step above E is not F, but F♯; a whole step below C is not B, but B♭.

FIGURE 1.4: Examples of half and whole steps at the keyboard



SUMMARY

1. The distance between any two notes is an interval. Two important intervals are half and whole steps.
2. Half steps span keys of different colors: white to black or black to white.
   - Exceptions are E-F and B-C, the white-key half steps.
3. Whole steps span keys the same color: white to white or black to black.
   - Exceptions are E♭-F, E-F♯, B♭-C, and B-C♯.
4. Double-check the spelling of any half or whole step that includes E, F, B, or C.

Try it #3

A. Name the pitch a half step above or below the given pitch, and give an enharmonic equivalent where possible.

(1) Above G: **G♯** or **A♭**
(2) Below C♯: _____ or _____
(3) Above E: _____ or _____
(4) Below B♭: _____ or _____
(5) Above D: _____ or _____
(6) Below F: _____ or _____
(7) Below G♯: _____ or _____
(8) Below A♭: _____ or _____

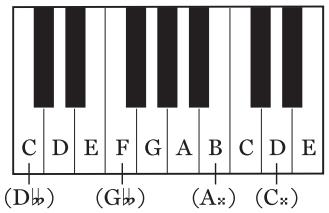
B. Identify the distance between the two notes by writing W (whole step), H (half step), or N (neither).

(1) F♯ to E: **W**
(2) C♯ to D: _____
(3) B♭ to A♭: _____
(4) C to B♭: _____
(5) E to F: _____
(6) F to G: _____
(7) B♯ to C: _____
(8) D♭ to E♭: _____

Double Flats and Sharps

Two remaining accidentals appear less frequently in musical scores. A **double sharp** (𝄪) raises a pitch two half steps (or one whole step) above its letter name; a **double flat** (𝄫) lowers a pitch two half steps below its letter name. For example, the pitches G𝄫 and F are enharmonic, as are A𝄪 and B (Figure 1.5).

FIGURE 1.5: Enharmonic pitches on the keyboard



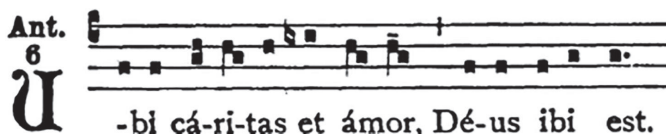
Reading Pitches from a Score

Staff Notation

The earliest forms of Western notation showed rising or falling melody lines, without identifying pitches by letter name. With the invention of the **staff** (the plural is "staves"), specific pitches could be notated by placing them on lines or spaces. Early staves had a variable number of lines (Figure 1.6a), but the modern staff consists of exactly five lines and four spaces (part b), which are generally read from bottom to top, with the bottom line called the first and the top line the fifth.

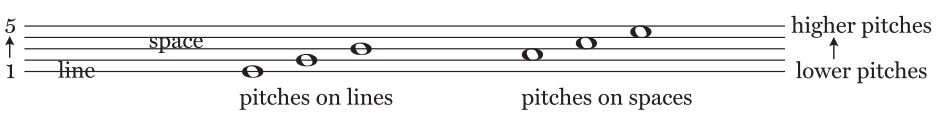
FIGURE 1.6: The staff

(a) Gregorian chant, "Ubi caritas et amor"



Translation: Where charity and love are, God is there.

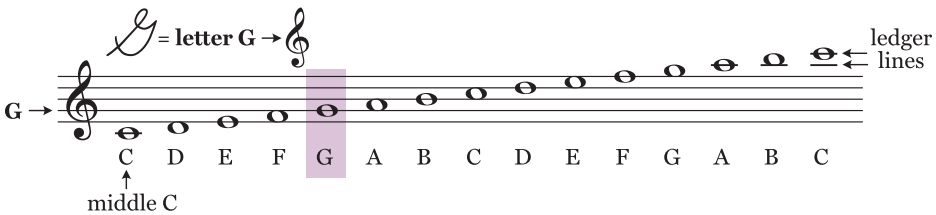
(b) Modern staff



Treble Clef

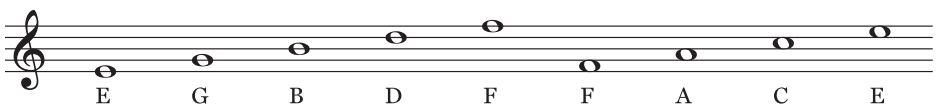
To identify notes on the staff's lines and spaces, you need a **clef**, the symbol that appears to the far left of every staff. The clef tells which line or space represents which pitch (in which octave). The treble clef is used for higher notes (those played by a piano's right hand or higher instruments and voices). This clef is also called the G-clef: its shape resembles a cursive capital G, and the end of its central curving line rests on the staff line G. Example 1.2 shows how all the other pitches can be read from G, counting up and down in the musical alphabet, one pitch for each line and space.

Example 1.2: Treble clef (G-clef)



To write notes lower or higher than the staff, we add short lines called **ledger lines** below or above it, as in Example 1.2. Memorize the note names for each line and space. Learn the "line notes" together and the "space notes" together, as in Example 1.3 (these should be familiar from counting letter names in thirds).

Example 1.3: Treble-clef lines and spaces



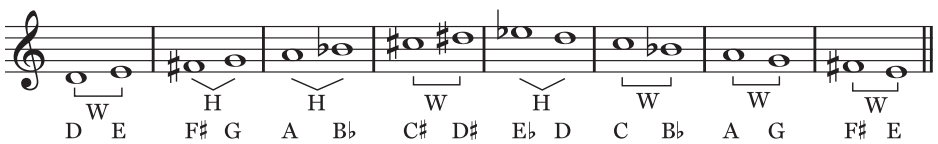
Another Way

To memorize the lines together or spaces together, you might make up sentences whose words begin with their letter names. The treble-clef lines (E-G-B-D-F), for example, might be "Every Good Bird Does Fly" or "Every Good Bond Drives Fast." The spaces of the treble clef make it easy for you: they simply spell F-A-C-E.

Example 1.4 shows whole and half steps on the treble staff, notated with accidentals. Listen to each one to hear the difference in sound between these intervals.

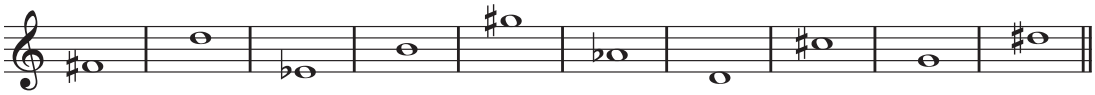
KEY CONCEPT When you write pitches on the staff, place the accidental before (to the left of) the **note head**, the main (oval) part of the note. When you say or write the letter names, however, the accidental goes after the letter name; for example, C♯ (C-sharp).

EXAMPLE 1.4: Half and whole steps on a staff



Try it #4

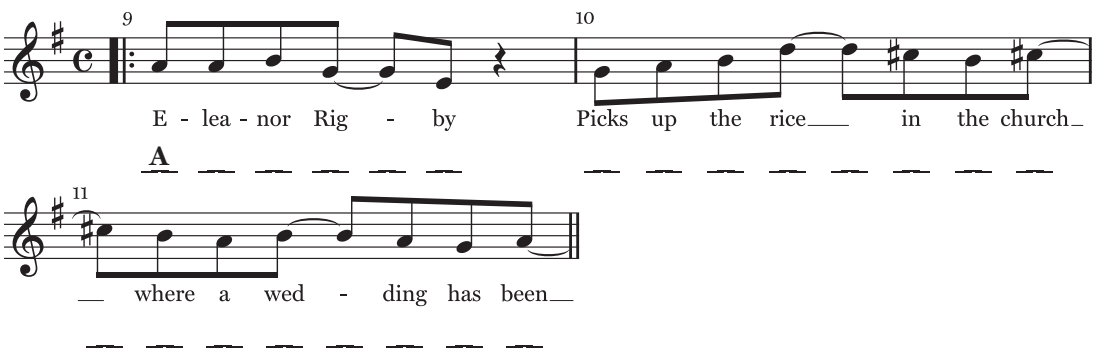
A. Write the letter names in the blanks below.



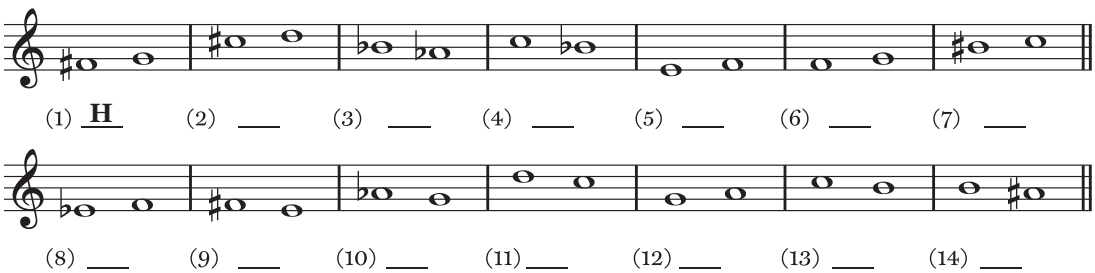
(1) F♯ (2)___ (3)___ (4)___ (5)___ (6)___ (7)___ (8)___ (9)___ (10)___

B. Write the letter name in every blank below (including when the note is repeated).

John Lennon and Paul McCartney, "Eleanor Rigby," mm. 9-11



C. Identify whether each pair of pitches spans a whole step (W), half step (H), or neither (N).



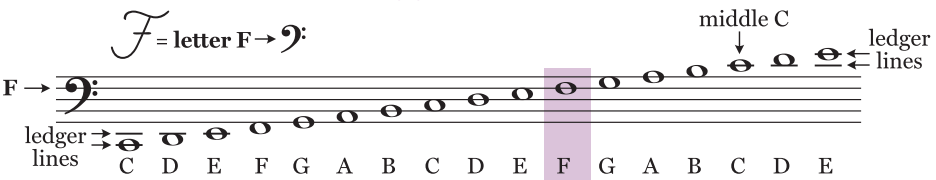
(1) H (2)___ (3)___ (4)___ (5)___ (6)___ (7)___

(8)___ (9)___ (10)___ (11)___ (12)___ (13)___ (14)___

Bass Clef

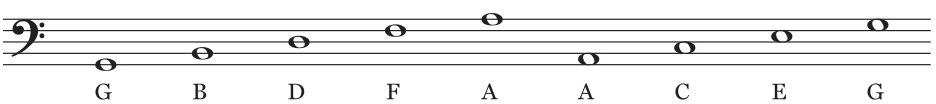
Lower notes (for a pianist's left hand or lower instruments like the cello) are designated with a **bass clef**, or F-clef. This clef resembles a cursive capital F, and its two dots surround the line that represents F (Example 1.5). You can count other pitches from F or memorize them by their position on the staff.

Example 1.5: Bass clef (F-clef)



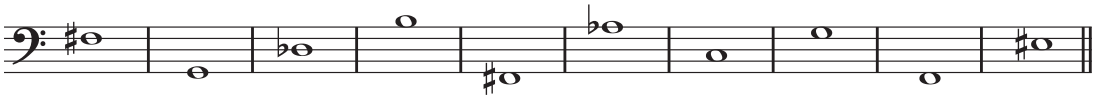
Example 1.6 shows the bass-clef lines and spaces. One way to remember the lines (G-B-D-F-A) might be "Great Big Doves Fly Away." The spaces (A-C-E-G) could be "All Cows Eat Grass" or "All Cars Eat Gas."

Example 1.6: Bass-clef lines and spaces



Try it #5

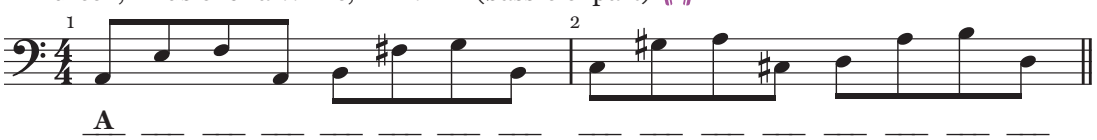
A. Write the letter names in the blanks below.



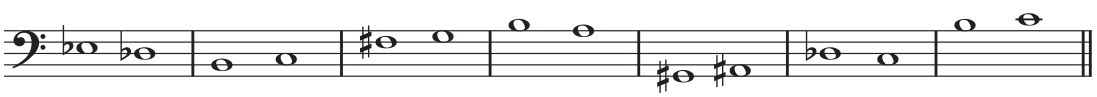
(1) F♯ (2)___ (3)___ (4)___ (5)___ (6)___ (7)___ (8)___ (9)___ (10)___

B. Write the letter name in each blank below.

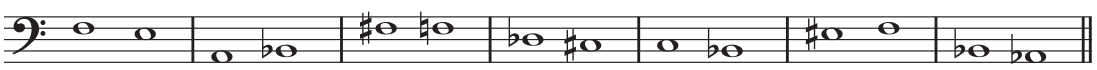
Purcell, "Music for a While," mm. 1–2 (bass-clef part)



C. Identify whether each pair of pitches spans a whole step (W), half step (H), or neither (N).



(1) W (2) ___ (3) ___ (4) ___ (5) ___ (6) ___ (7) ___

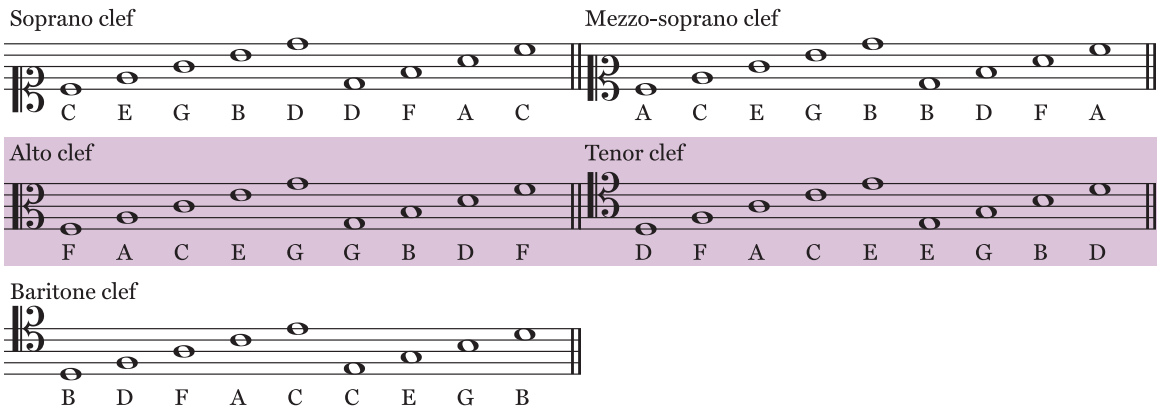


(8) ___ (9) ___ (10) ___ (11) ___ (12)___ (13) ___ (14) ___

C-Clefs

Although music reading starts with knowledge of the treble and bass clefs, you should learn how to read the C-clefs as well, since they are standard in orchestral and chamber music scores. A **C-clef** is a "movable" clef: its distinctive shape—𝄡—identifies middle C by the point on the staff at which the two curved lines join together in the middle, as illustrated in Example 1.7. Depending on its position, the clef may be called a soprano, mezzo-soprano, alto, tenor, or baritone clef. In modern scores, the alto and tenor clefs (shaded in the example) are most common, but you may come across the others in older editions. To read these clefs well, practice counting the lines and spaces in thirds (as in the example), then memorize them.

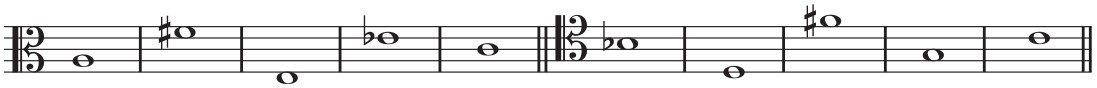
Example 1.7: Reading pitches in C-clefs



Try it #6

A. First identify the clef, then write each letter name in the blanks below.

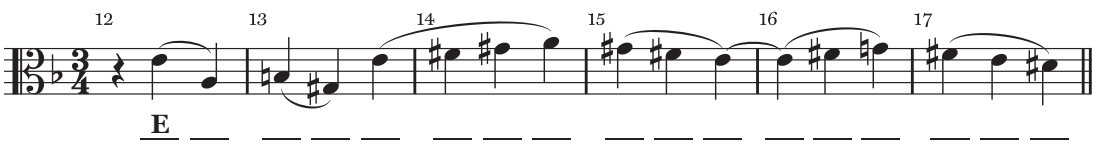
Clef: _____ Clef: _____



(1) **A** (2) ___ (3) ___ (4) ___ (5) ___ (6) ___ (7) ___ (8) ___ (9) ___ (10) ___

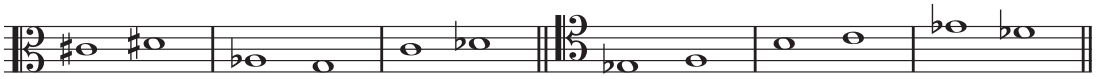
B. Write each letter name in the blanks below.

Mozart, String Quartet in D Minor, mvt. 3, mm. 12–17 (viola part)



E ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

C. Identify whether each pair of pitches spans a whole step (W), half step (H), or neither (N).



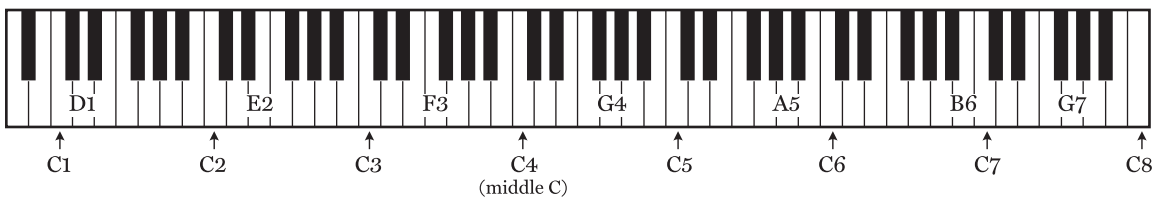
(1) **W** (2) ___ (3) ___ (4) ___ (5) ___ (6) ___

Musicians read different clefs because each one corresponds to the range of pitches needed for a particular instrument or voice type. The higher instruments, like the flute and violin, read treble clef. Lower instruments, like the cello and bass, generally read bass clef, while violas use the alto clef. Pianists read both bass and treble clefs, and bassoonists and cellists read both bass and tenor clefs. In choral scores, the tenor's voice part is often notated using a treble clef with a small "8" beneath it, known as the **choral tenor clef**. These pitches are read down an octave.

Naming Registers

When you name pitches, it helps to specify their precise octave placement. There are several systems for doing this: we will use the numeric system shown on the keyboard in Figure 1.7. The lowest C on the piano is C1 and the highest is C8; middle C is C4. The number for a particular octave includes all the pitches from C up to the following B, so the B above C4 is B4, and the B below C4 is B3. The three notes below the C1 on the piano are A0, B♭0, and B0.

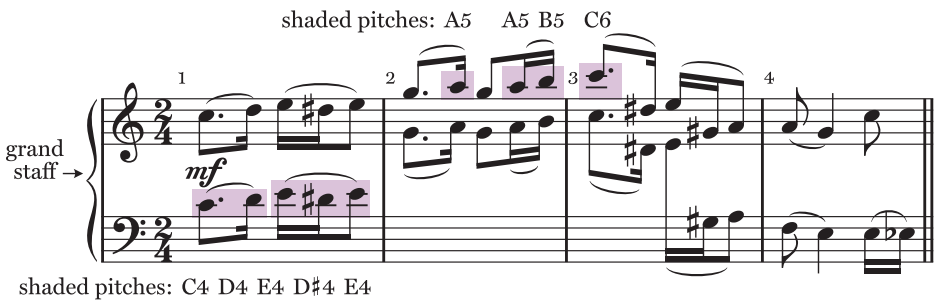
Figure 1.7: Piano keyboard with octave designations



Ledger Lines

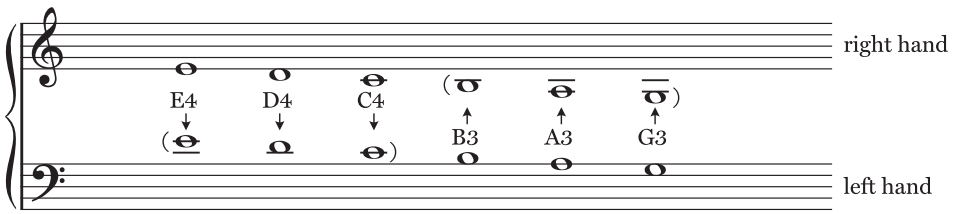
Listen to Example 1.8, the beginning of Joplin's rag "Solace." Like most piano music, this work is notated on a **grand staff**—two staves, one in treble clef and one in bass clef, connected by a curly brace. The shaded pitches are written with ledger lines, which may be written above, below, or between staves. Read ledger lines just like other staff lines, by counting forward or backward from pitches on the staff.

Example 1.8: Joplin, "Solace," mm. 1-4



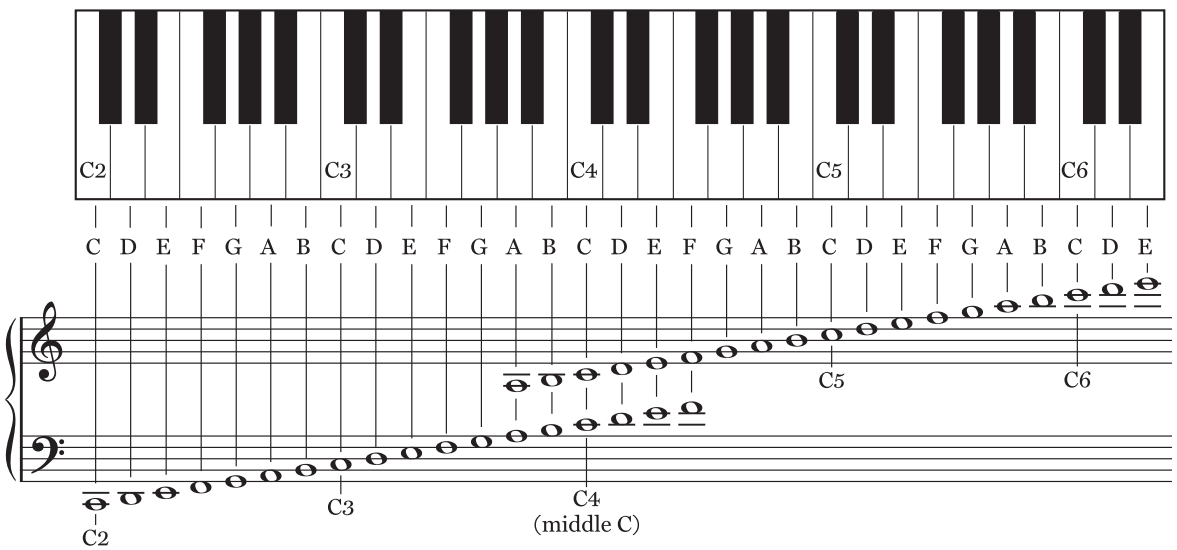
Pitches near middle C may be written between the two staves of the grand staff, as in the Joplin rag and Example 1.9 (arrows point to equivalent ledger-line pitches). In keyboard music, the choice of clef usually indicates which hand should play the note: bass clef for the left hand and treble clef for the right.

Example 1.9: Ledger lines between staves on the grand staff



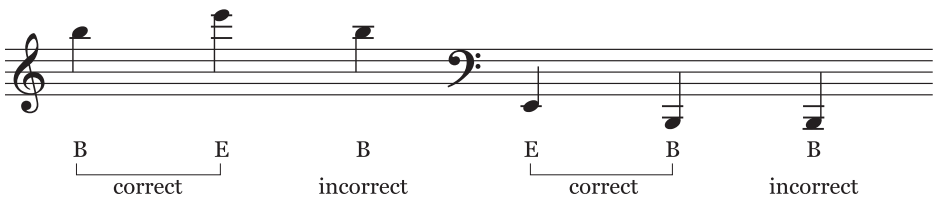
Example 1.10 shows pitches on a grand staff, extending over four octaves (some with ledger lines), and their positions on a keyboard.

Example 1.10: Pitches on a grand staff and keyboard



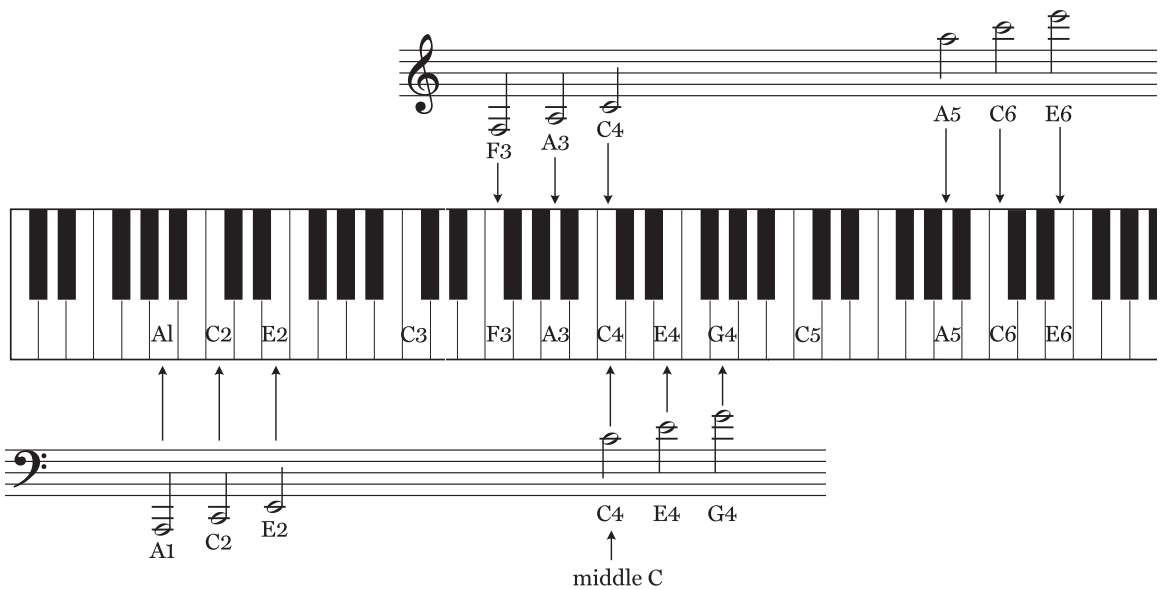
Notes higher than the staff have ledger lines drawn through them or below them, but never above them; notes below the staff have ledger lines through them or above them, but never below. Draw ledger lines the same distance apart as staff lines, as in Example 1.11.

Example 1.11: Correct and incorrect ledger lines



Memorize landmark pitches above and below the staves to help you read ledger lines quickly—as in Example 1.12, which gives the first three lines above and below each staff.

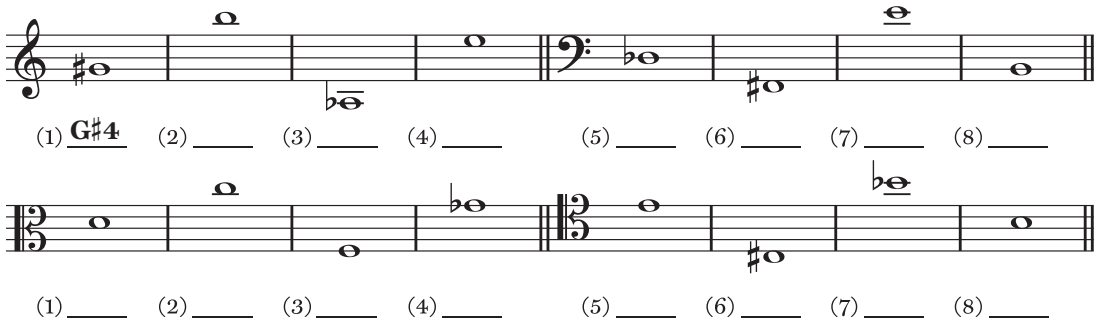
Example 1.12: Landmark ledger-line pitches



An alternative to ledger lines is the **ottava sign**. An "8va" above the staff means to play an octave higher (the "8v" stands for "octave," and the "a" stands for *alta*, Italian for "above"). An "8vb" beneath the staff means to play an octave lower (the "b" stands for *bassa*, or "below").

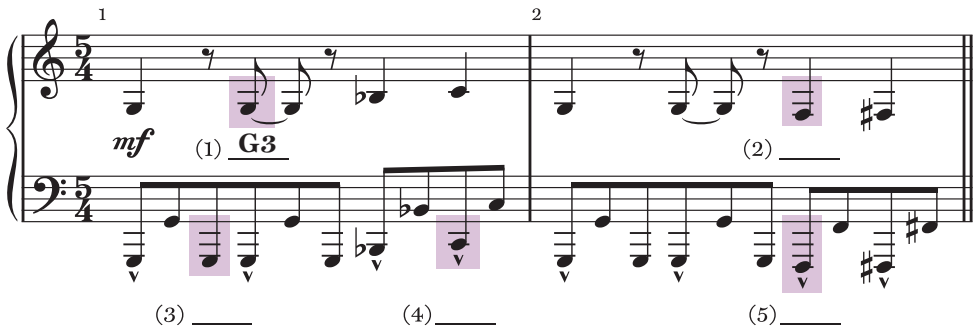
Try it #7

A. Write the name and octave number of each pitch in the blank.



B. Write the name and octave number of each shaded pitch in the blank.

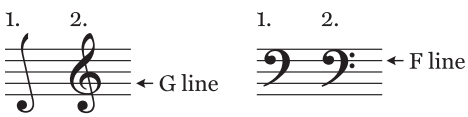
Lalo Schifrin, theme from *Mission Impossible*, mm. 1-2



Writing Pitches on a Score

Though software for music notation is widely available, it is important to know how to notate music by hand. Draw a treble clef with a single continuous curved line, or in two strokes (Example 1.13): (1) draw a wavy line from top to bottom, like an elongated S; then (2) draw a second line that joins at the top and curves around it (ending on G4). To draw a bass clef, follow the diagram in the example, and make sure that the two dots straddle the F line.

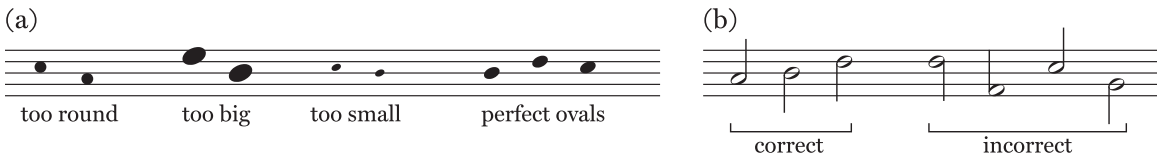
Example 1.13: Drawing treble and bass clefs



When you draw note heads, make them oval-shaped rather than round, and not so large that it is hard to tell whether they sit on a line or space (Example 1.14a). Most notes are attached to thin vertical lines, called **stems**, that extend

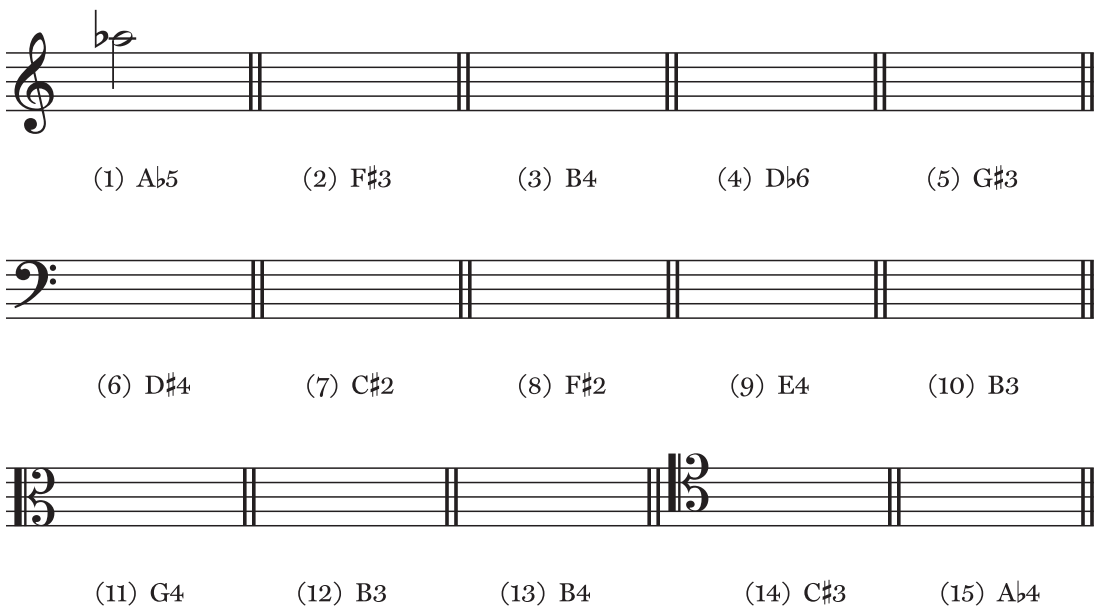
above or below the note head (). If a note lies below the middle line of the staff, its stem goes up, on the right side of the note head; if a note lies above the middle line, its stem goes down, on the left side (part b). A stem attached to a note *on* the middle line generally goes down (more about this in Chapter 2). The length of a stem from top to bottom spans about an octave.

Example 1.14: Notation guidelines



Try it #8

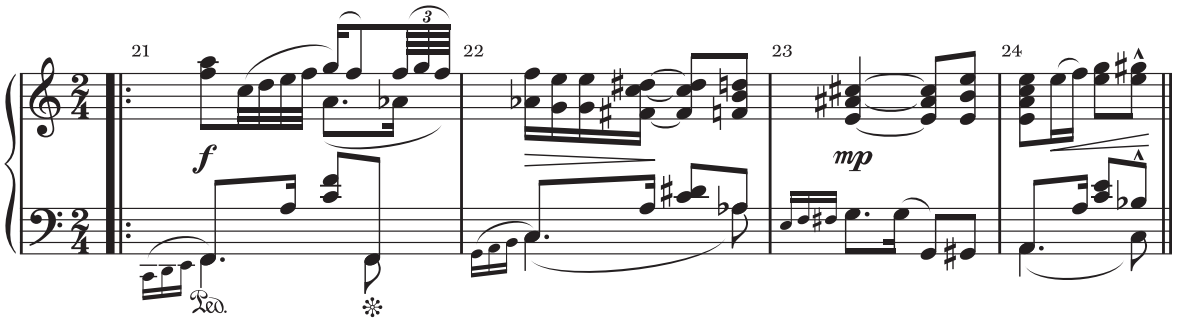
Write each of the specified notes in the correct octave, using hollow note heads and correctly notated stems and ledger lines. Place accidentals before (to the left of) the note head.



Dynamic Markings

Now listen to another excerpt from Joplin's "Solace," shown in Example 1.15. This passage begins with a full sound, marked with a large ***f*** in the score. This is a **dynamic** indication, which tells performers how soft or loud to play. Such markings also help musicians make decisions about the character or mood of a piece.

Example 1.15: Joplin, "Solace," mm. 21–24



The ***f*** stands for *forte*, a loud dynamic marking; *piano* (abbreviated ***p***) is a soft one. Other frequently encountered markings are ***mp*** (for *mezzo piano*, "half as soft") and ***mf*** (for *mezzo forte*, "half as loud"). Figure 1.8 shows a typical range of dynamic markings. The indication that tells you to get louder is *crescendo* (<), while *decrescendo* or *diminuendo* (>) means to grow softer. In the Joplin example, a *diminuendo* (m. 22) extends from a *forte* to *mezzo piano*. When performing, pay careful attention to the dynamic markings. They will contribute greatly to shaping a musical and sensitive performance.

Figure 1.8: Dynamic indications

pp	***p***	***mp***	***mf***	***f***	***ff***
pianissimo	*piano*	*mezzo piano*	*mezzo forte*	*forte*	*fortissimo*
softest		medium			loudest

crescendo (growing louder) *diminuendo* (diminishing)

Style Periods

In this book, we will often refer to the following style periods; general dates and a few significant composers are provided for each.

- **Early music**
  - **Medieval (c. 500–1400):** Gregorian chant, Hildegard von Bingen, Guido d'Arezzo
  - **Renaissance (c. 1400–1600):** Tomás Luis de Victoria, William Byrd, Giovanni Pierluigi da Palestrina

- **Common practice**
  - **Baroque (c. 1600–1750):** Elisabeth-Claude Jacquet de la Guerre, Arcangelo Corelli, Henry Purcell, Johann Sebastian Bach, George Frideric Handel
  - **Classical (c. 1730–1820):** Joseph Haydn, Wolfgang Amadeus Mozart, Ludwig van Beethoven
  - **Romantic (c. 1815–1910):** Franz Schubert, Robert and Clara Schumann, Frédéric Chopin, Fanny Mendelssohn Hensel, Richard Wagner, Johannes Brahms, Gabriel Fauré
- **Modern and contemporary**
  - **Early twentieth century and modernist (c. 1890–1945):** Scott Joplin, Claude Debussy, Maurice Ravel, Béla Bártok, Arnold Schoenberg, Anton Webern, Igor Stravinsky
  - **Post–World War II and late twentieth century (c. 1945–2000):** Pierre Boulez, Luciano Berio, György Ligeti, John Cage
  - **Twenty-first century:** Steve Reich, Arvo Pärt, John Corigliano, Ellen Taaffe Zwilich, Chen Yi

Did You Know?

Scott Joplin was born into a musical family: his father, a former slave, played violin, and his mother played the banjo. One of Joplin's most famous compositions, "Maple Leaf Rag" (published in 1899), earned him one penny for every sheet-music copy sold, an income that helped support him for the rest of his life. Although his opera *Treemonisha* (composed in 1911) won an award for being the "most American opera" ever written, Joplin never saw it fully staged. His music was played in bars, dance halls, and other popular gathering places from the 1890s to the 1910s—and became popular once again in the 1970s after it was featured in the movie *The Sting* (1973), with Paul Newman and Robert Redford. Joplin's rags have remained among the best-known American music of the early twentieth century.

TERMS YOU SHOULD KNOW

- accidental
  - flat
  - sharp
  - natural
  - double flat
  - double sharp
- clef
  - treble clef
  - bass clef
  - C-clef
  - alto clef
  - tenor clef
- counting in thirds
- dynamic marking
- enharmonic pitch
- grand staff
- half step
- interval
- ledger line
- musical alphabet
- octave
- octave equivalence
- pitch
- pitch class
- staff
- whole step

QUESTIONS FOR REVIEW

1. How do a staff and clef work together to identify pitches?
2. How do pitches and pitch classes differ?
3. What is the function of (a) C-clefs, (b) accidentals, (c) ledger lines?
4. How do the piano's white and black keys help you determine whole and half steps?
5. Which white-key pairs of notes form half steps, without the addition of accidentals?
6. Give two guidelines each for notating ledger lines, note heads, and stems.
7. How are octave numbers assigned? What is the octave number for middle C?
8. Pick a melody from the anthology or music that you are playing that includes ledger lines. Identify all its pitches and octave numbers.

Know It? Show It!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Apply what you've learned to complete the workbook assignments.

2

Simple Meters

Overview

We turn now to the organization of music in time. This chapter explains how beats are grouped and divided to create meter, then focuses on simple meters, whose beats divide into two parts.

Repertoire

Anonymous, Minuet in D Minor

Frédéric Chopin, Mazurka in F Minor, Op. 68, No. 4

"Greensleeves"

George Frideric Handel
- Chaconne in G Major
- "Rejoice greatly," from *Messiah*

Fanny Mendelssohn Hensel, "Neue Liebe, neues Leben" ("New Love, New Life")

Scott Joplin
- "Pine Apple Rag"
- "Solace"

John Newton, "Amazing Grace"

John Philip Sousa, "The Stars and Stripes Forever"

Tomás Luis de Victoria, "O magnum mysterium" ("O Great Mystery")

Antonio Vivaldi, "Domini Fili unigenite" ("Lord, the only-begotten Son"), from *Gloria*

Outline

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Dividing Musical Time

Beat, Beat Division, and Meter

Listen to the opening of Joplin's "Pine Apple Rag" and Handel's "Rejoice greatly"—two lively works in contrasting styles. As you listen, tap your foot in time: this tap represents the work's primary pulse, or **beat**. You should also hear a secondary pulse, moving twice as fast. Tap the secondary pulse in one hand while your foot continues with the primary beat. This secondary pulse represents the **beat division**.

KEY CONCEPT Musical meters are defined by
(1) the way beats are divided, and
(2) the way beats are grouped into larger recurring units.

Beats typically divide into two or three parts. In the Joplin and Handel examples, the beat divides into twos. Now listen to the English folk tune "Greensleeves." Tap your foot along with the slow beat, as before. When you add the beat division in your hand, you'll notice that the beat divides not into twos, but into threes.

KEY CONCEPT There are two principal meter types: simple and compound. Works in **simple meters** have beats that divide into twos. Those in **compound meters** have beats that divide into threes.

There can be quite a difference in character between these two types: simple meters feel like walking or marching, while compound meters may sound lilting, like a waltz.

Try it #1

Listen to each piece below to determine the beat and its division. If the beat divides into twos, circle "simple"; if it divides into threes, circle "compound."

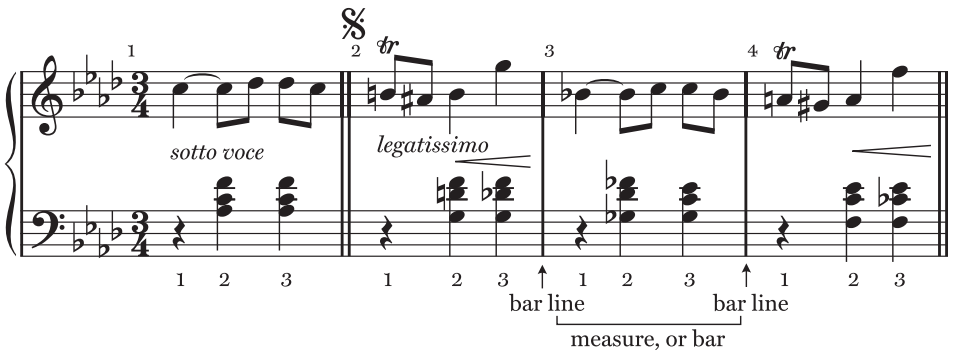
(a) Joplin, "Solace"	simple	compound
(b) Gilmore, "When Johnny Comes Marching Home"	simple	compound
(c) Mozart, *Variations on "Ah, vous dirai-je Maman"*	simple	compound
(d) Schumann, "Wilder Reiter" ("Wild Rider")	simple	compound

Listen now to the opening of Sousa's "Stars and Stripes Forever" and Chopin's Mazurka in F Minor. Tap the primary beat for each. In both works, the beat divides into twos: both are in simple meter. But besides dividing, primary beats also *group*—into twos, threes, or fours. As you listen to each piece, try counting "1-2, 1-2" (one number per beat); if the piece doesn't fit that pattern, try "1-2-3, 1-2-3" or "1-2-3-4, 1-2-3-4."

KEY CONCEPT When beats group into units of two, the meter type (either simple or compound) is **duple**. When they group into units of three, the meter type is **triple**; and when they group into units of four, it is **quadruple**.

As you may have heard, the meter type for the Sousa march is simple duple, and for the Chopin mazurka simple triple. In music notation, the beat groupings are indicated by **bar lines**, which separate the notes into **measures**, or **bars**. Measures are often numbered at the top, as in Example 2.1, to help you find your place in a score. Listen again to the mazurka while following the notation in the example and the counts written beneath.

EXAMPLE 2.1: Chopin, Mazurka in F Minor, mm. 1-4



Conducting Patterns

Conductors' motions outline specific patterns for each meter to keep an ensemble playing together and to convey interpretive ideas. The basic conducting patterns for duple, triple, and quadruple meters given in Figure 2.1 are the same whether the piece is in a simple or compound meter (although the conductor may distinguish between them by subdividing the basic pattern).

As you practice each pattern, you will feel a certain physical weight associated with the **downbeat**—the motion of the hand down on beat 1 of the pattern. You will probably feel anticipation with the **upbeat**—the upward lift of the hand for the final beat. Practice these patterns until you feel comfortable with them, and use them to help you recognize meter types by ear.