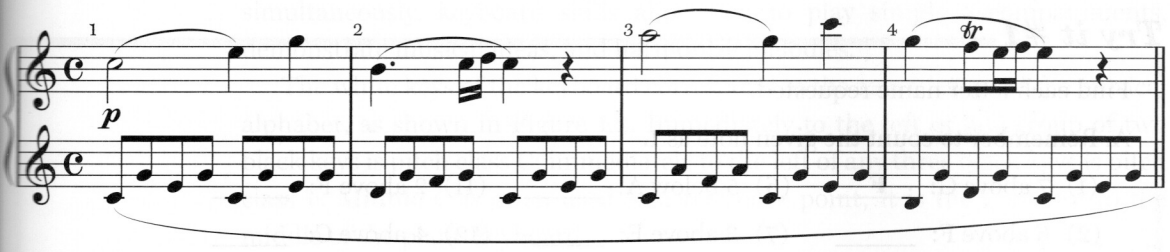
Introduction to Pitch: Letter Names

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.

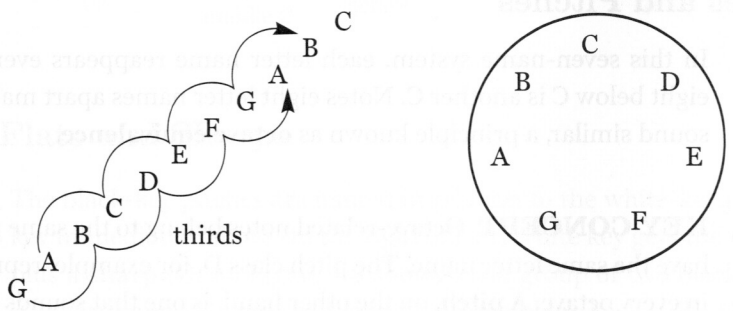
Example 1.1: Mozart, Sonata in C Major, K. 545, mvt. 1, mm. 4–7



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**
(2) 6 above F: _____
(3) 2 above D: _____
(4) 4 below B: _____
(5) 3 below C: _____
(6) 5 below A: _____
(7) 3 above E: _____
(8) 2 below C: _____
(9) 3 above G: _____
(10) 2 above B: _____
(11) 2 above F: _____
(12) 4 above C: _____
(13) 6 below A: _____
(14) 7 below E: _____
(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

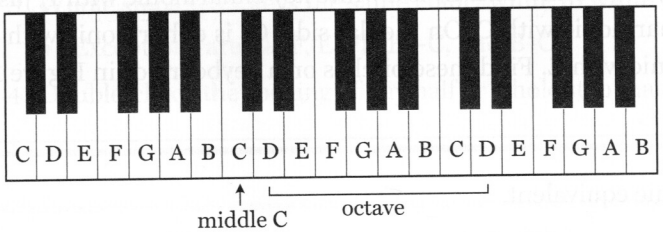
White Keys

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.

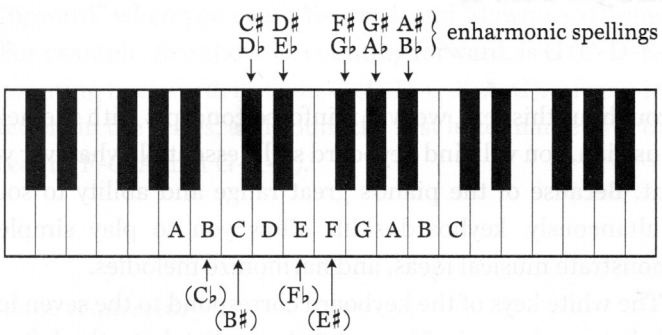
FIGURE 1.2: Piano keyboard with letter names



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: _____

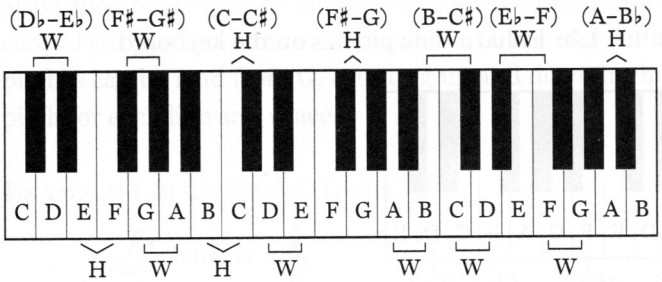
Intervals: Half Steps and Whole Steps

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 _____

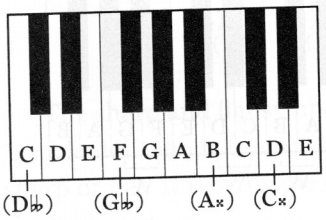
B. Identify the distance between the two notes by writing W (whole step), H (half step), or N (neither).

(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



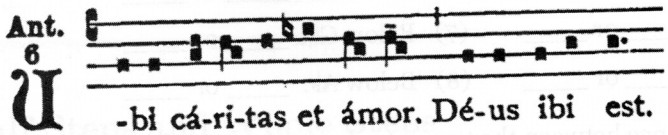
Reading Pitches from a Score

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.

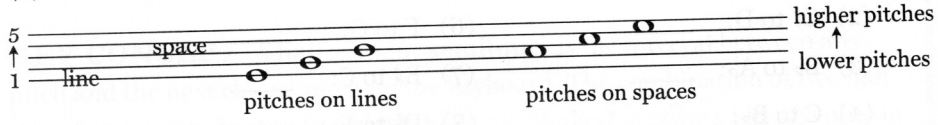
FIGURE 1.6: The staff

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



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

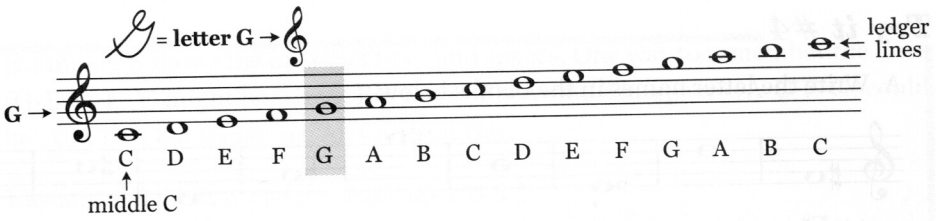
(b) Modern staff



Treble Clef

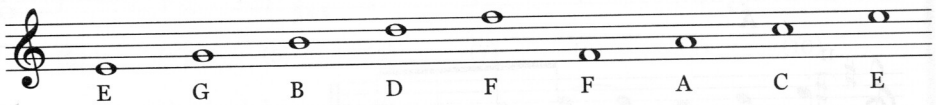
To identify notes on the staff's lines and spaces, you need a **clef**, the symbol that appears to the far left of every staff. The clef tells which line or space represents which pitch (in which octave). The treble clef is used for higher notes (those played by a piano's right hand or higher instruments 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



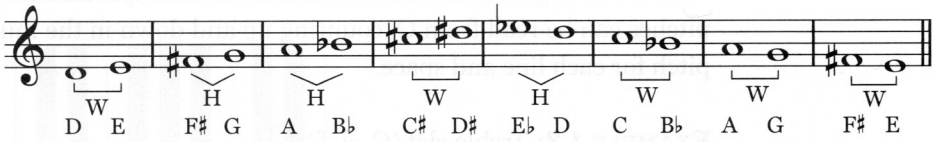
Another Way

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.

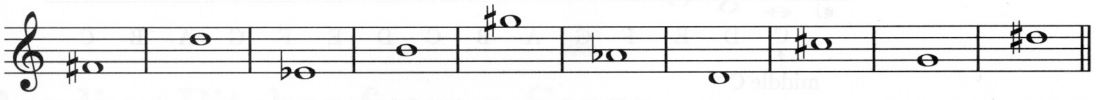
KEY CONCEPT When you write pitches on the staff, place the accidental before (to the left of) the **note head**, the main (oval) part of the note. When you say or write the letter names, however, the accidental goes after the letter name; for example, C♯ (C-sharp).

EXAMPLE 1.4: Half and whole steps on a staff



Try it #4

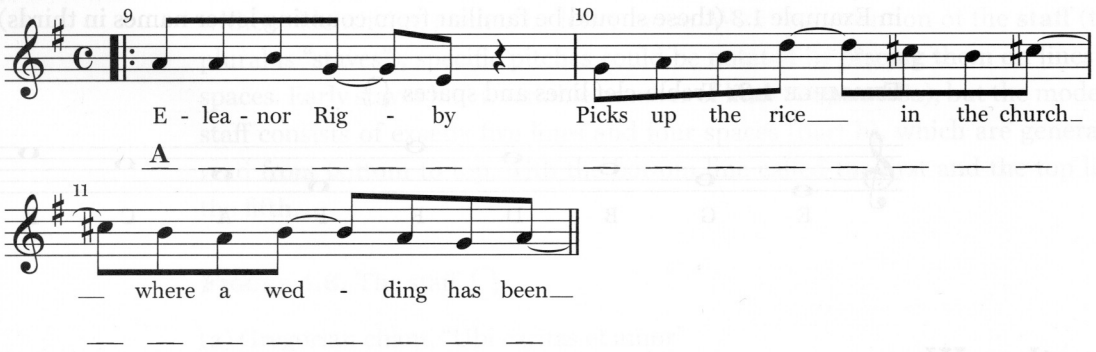
A. Write the letter names in the blanks below.



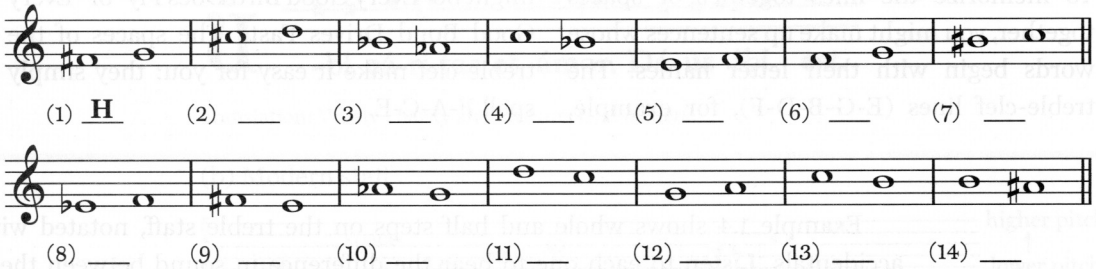
(1) F♯ (2)___ (3)___ (4)___ (5)___ (6)___ (7)___ (8)___ (9)___ (10)___

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).



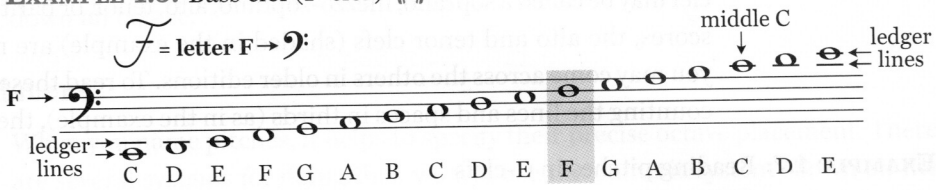
(1) H (2) ___ (3) ___ (4) ___ (5) ___ (6) ___ (7) ___

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

Bass Clef

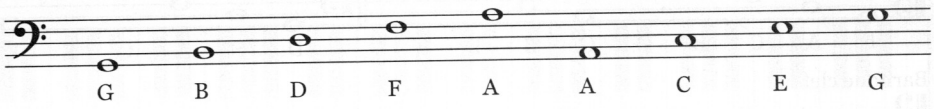
Lower notes (for a pianist's left hand or lower instruments like the cello) are designated with a **bass clef**, or F-clef. This clef resembles a cursive capital F, and its two dots surround the line that represents F (Example 1.5). You can count other pitches from F or memorize them by their position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

EXAMPLE 1.5: Bass clef (F-clef)



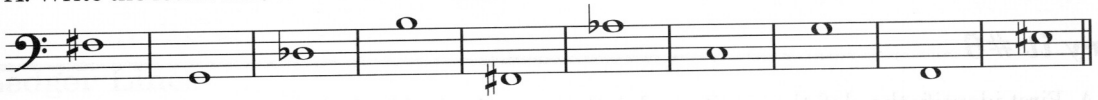
Example 1.6 shows the bass-clef lines and spaces. One way to remember the lines (G-B-D-F-A) might be "Great Big Doves Fly Away." The spaces (A-C-E-G) could be "All Cows Eat Grass" or "All Cars Eat Gas."

EXAMPLE 1.6: Bass-clef lines and spaces



Try it #5

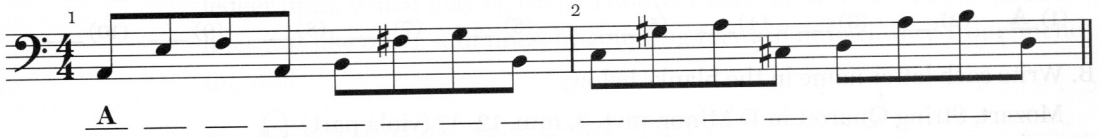
A. Write the letter names in the blanks below.



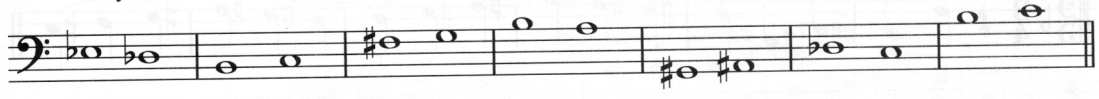
(1) F♯ (2)___ (3)___ (4)___ (5)___ (6)___ (7)___ (8)___ (9)___ (10)___

B. Write the letter name in each blank below.

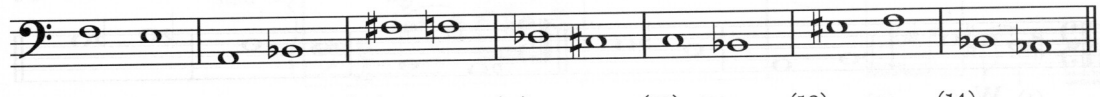
Purcell, "Music for a While," mm. 1–2 (bass-clef part)



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) ___

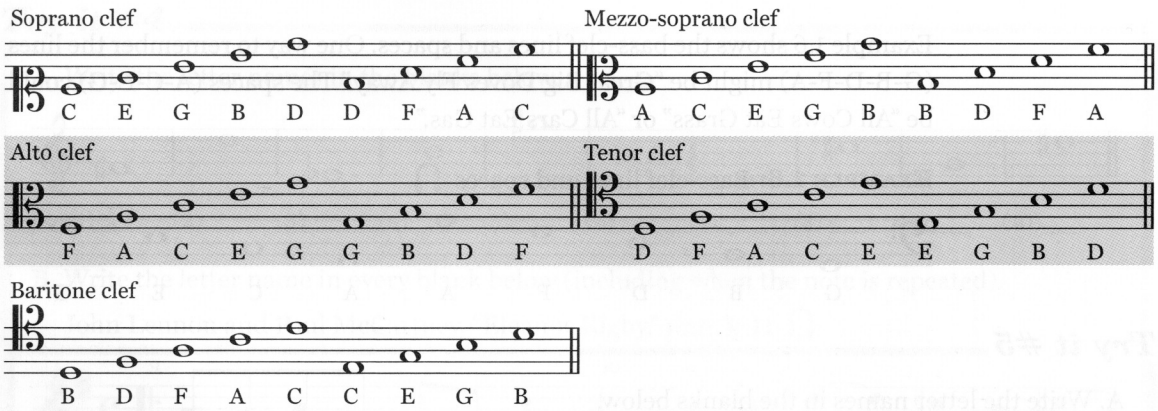


(8) ___ (9) ___ (10) ___ (11) ___ (12)___ (13) ___ (14) ___

C-Clefs

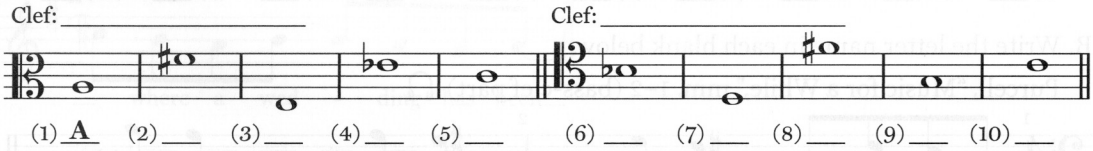
Although music reading starts with knowledge of the treble and bass clefs, you should learn how to read the C-clefs as well, since they are standard in orchestral and chamber music scores. A **C-clef** is a "movable" clef: its distinctive shape—𝄡—identifies middle C by the point on the staff at which 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



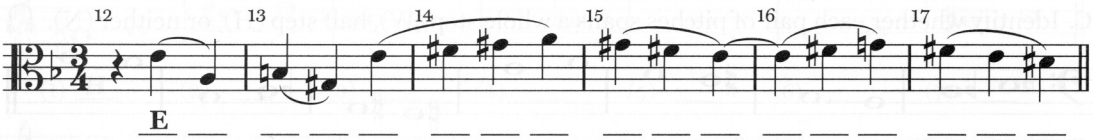
Try it #6

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

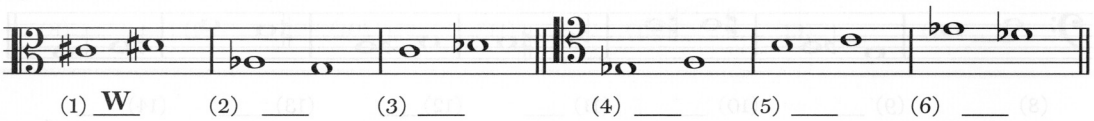


B. Write each letter name in the blanks below.

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



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

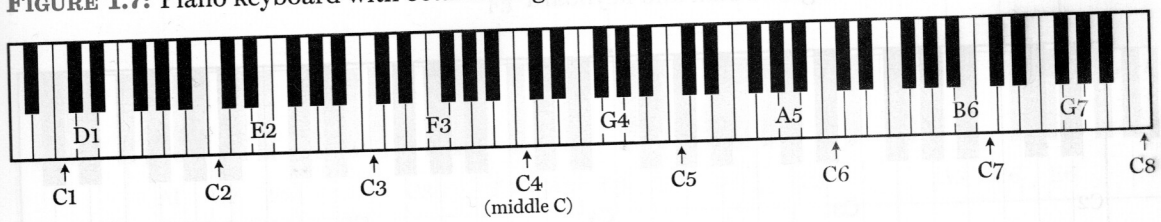


Musicians read different clefs because each one corresponds to the range of pitches needed for a particular instrument or voice type. The higher instruments, like the flute and violin, read treble clef. Lower instruments, like the cello and bass, generally read bass clef, while violas use the alto clef. 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.

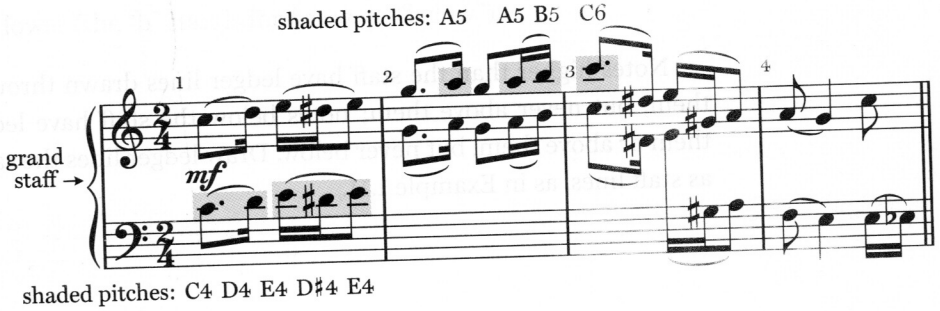
FIGURE 1.7: Piano keyboard with octave designations



Ledger Lines

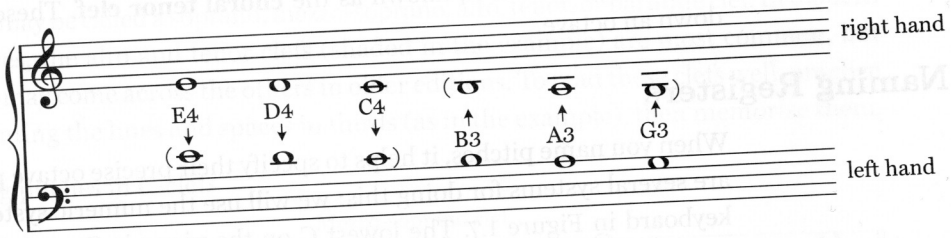
Listen to Example 1.8, the beginning of Joplin's rag "Solace." Like most piano music, this work is notated on a **grand staff**—two staves, one in treble clef and one in bass clef, connected by a curly brace. The shaded pitches are written with ledger lines, which may be written above, below, or between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



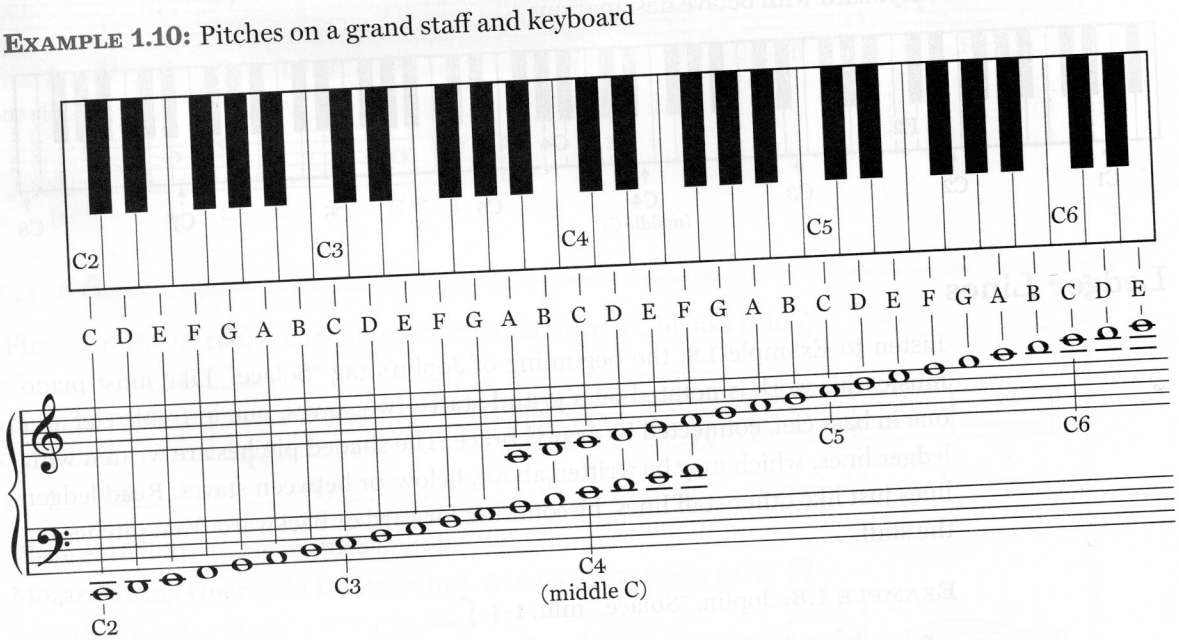
Pitches near middle C may be written between the two staves of the grand staff, as in the Joplin rag and Example 1.9 (arrows point to equivalent ledger-line pitches). In keyboard music, the choice of clef usually indicates which hand should play the note: bass clef for the left hand and treble clef for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

EXAMPLE 1.9: Ledger lines between staves on the grand staff



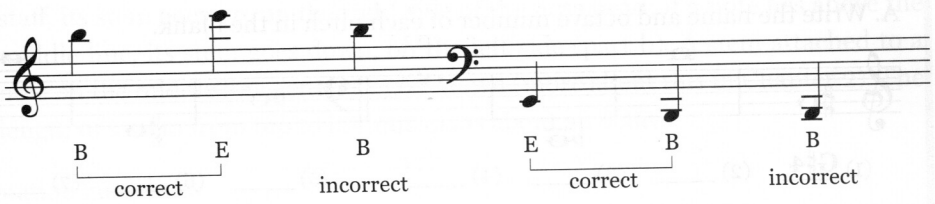
Example 1.10 shows pitches on a grand staff, extending over four octaves (some with ledger lines), and their positions on a keyboard.

EXAMPLE 1.10: Pitches on a grand staff and keyboard



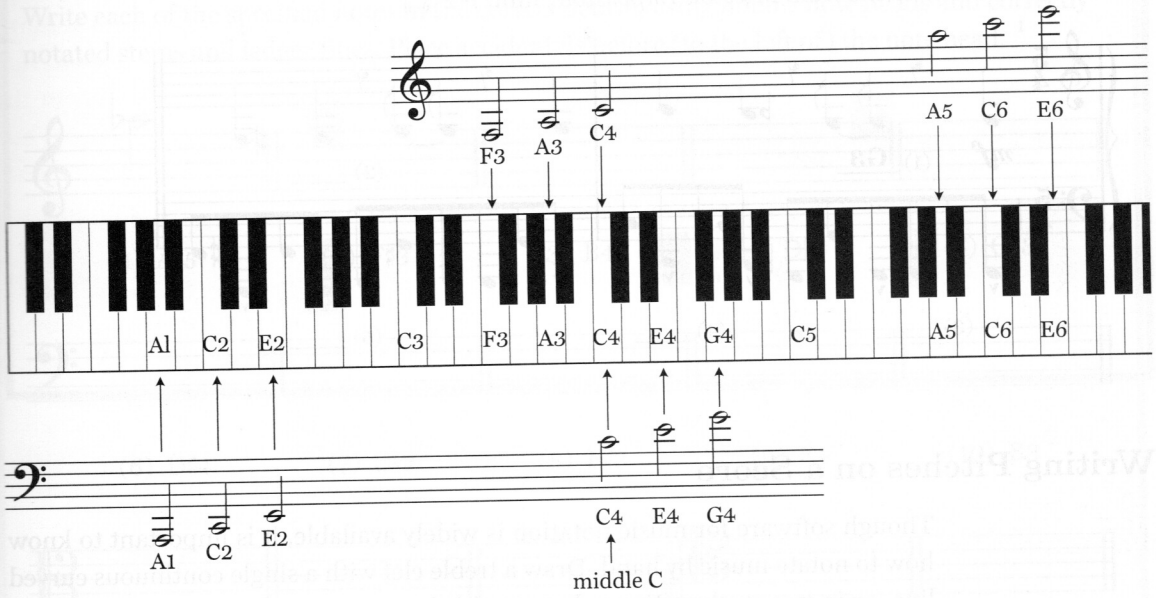
Notes higher than the staff have ledger lines drawn through them or below them, but never above them; notes below the staff have ledger lines through them or above them, but never below. Draw ledger lines the same distance apart as staff lines, as in Example 1.11.

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.

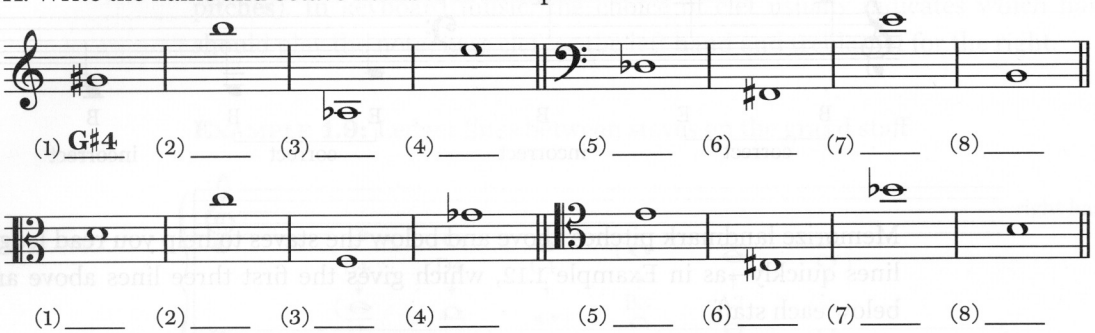
Example 1.12: Landmark ledger-line pitches



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").

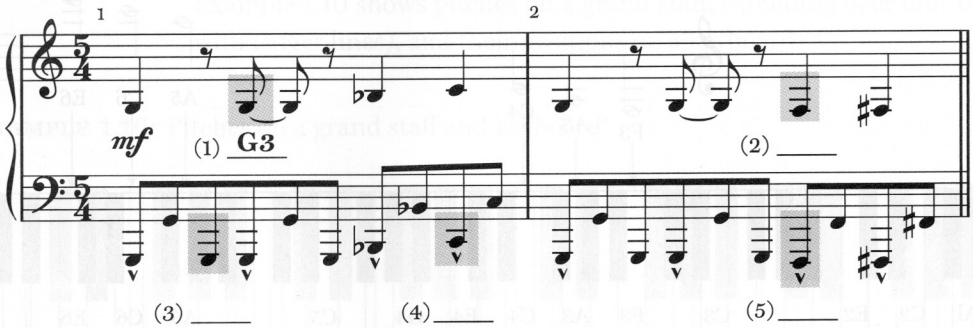
Try it #7

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.

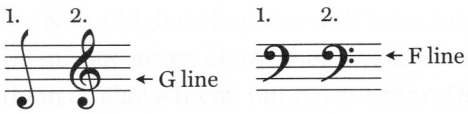
Lalo Schifrin, theme from *Mission Impossible*, mm. 1-2



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.

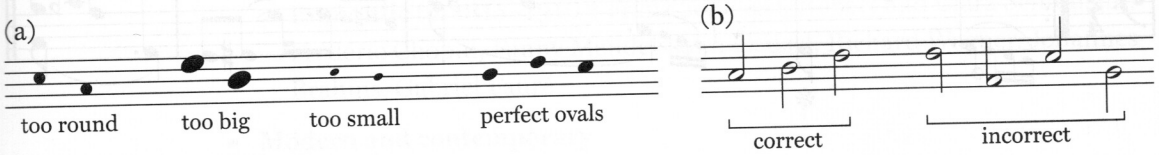
EXAMPLE 1.13: Drawing treble and bass clefs



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

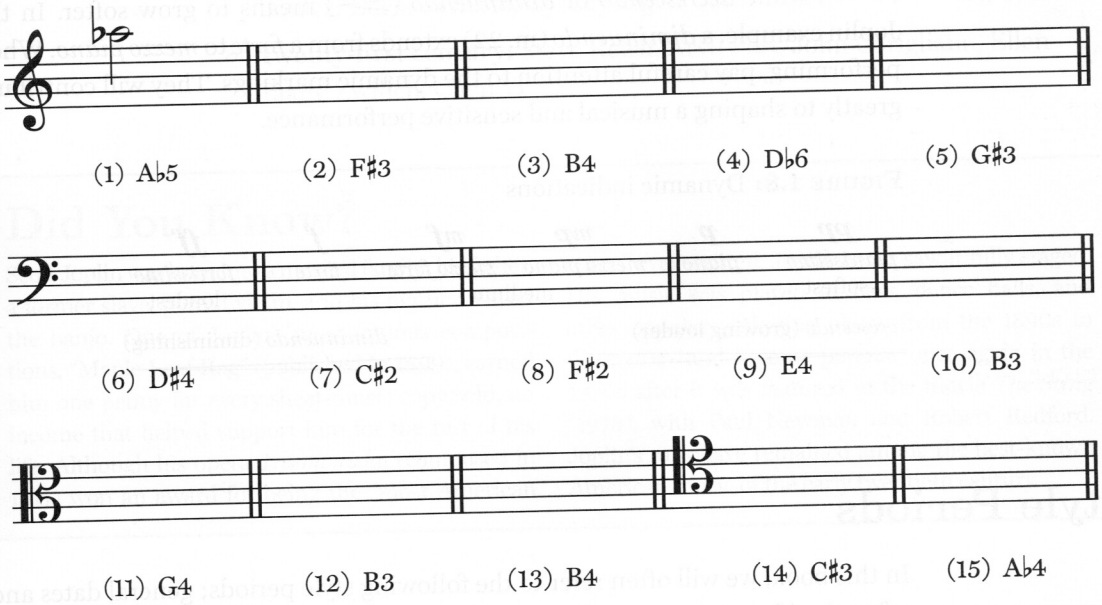
above or below the note head (). If a note lies below the middle line of the staff, its stem goes up, on the right side of the note head; if a note lies above the middle line, its stem goes down, on the left side (part b). A stem attached to a note *on* the middle line generally goes down (more about 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

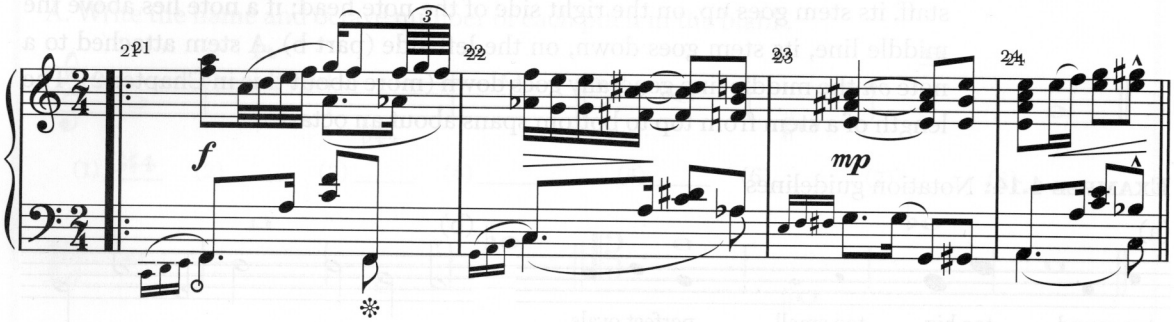
Write each of the specified notes in the correct octave, using hollow note heads and correctly notated stems and ledger lines. Place accidentals before (to the left of) the note head.



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