CHAPTER 1

Pitch and Pitch Class

Outline of topics

Introduction to pitch
- Letter names
- Pitch classes and pitches

The piano keyboard
- White keys
- Black keys: Flats and sharps
- Enharmonic equivalents
- 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

Overview

When we read a page of 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.

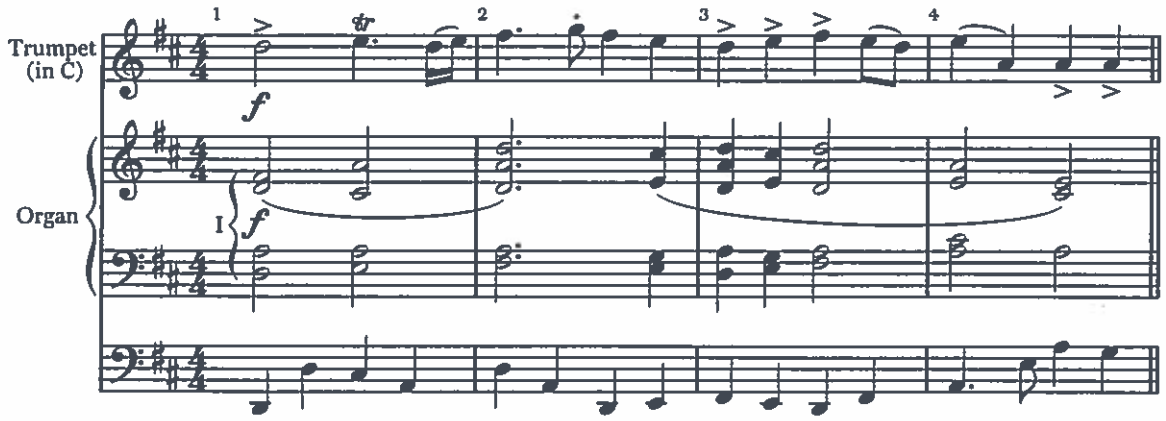
Repertoire

Jeremiah Clarke, *Trumpet Voluntary* (*Prince of Denmark's March*)
Scott Joplin, "Solace"

Introduction to Pitch

Listen to the beginning of Jeremiah Clarke's *Trumpet Voluntary*. Follow Example 1.1, the musical notation (or **score**) of the opening. You may not have encountered some of the musical symbols, but most will become familiar in the course of this chapter.

EXAMPLE 1.1: Clarke, *Trumpet Voluntary*, mm. 1–4

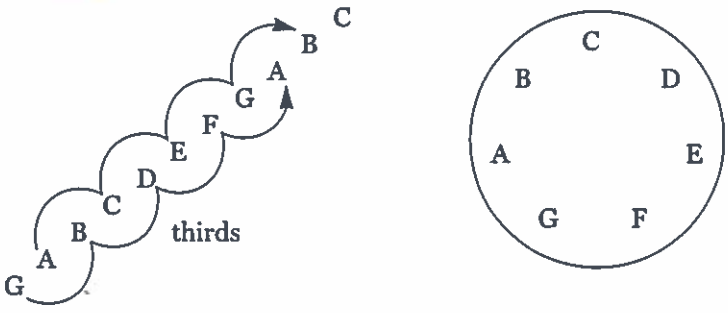


Letter Names

Musical tones 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).

FIGURE 1.1: Seven letter names



To count up beyond G, start over with A: E–F–G–A–B. . . . To count down below A, start over again with G: C–B–A–G–F–E. . . . You will read music more fluently if you also practice reading alternate letter names, as marked in Figure 1.1: A–C–E–G–B or G–B–D–F–A–C. 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 is G: C–D–E–F–G. To find six below E, count backward: the answer is again G (E–D–C–B–A–G). When counting letter names, always include the first and last letters in the series: 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

What is eight below C? The answer is another C. In this seven-name system, each letter name reappears every eighth position. Tones 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 a tone that sounds in one particular octave.

Listen again to Example 1.1 to hear pitch class D played in several octaves simultaneously. At the very beginning of the piece, the first two successive pitches of the lowest part (the organ pedal) sound similar because they are an octave apart. At the same time, the trumpet plays another D in a higher octave. These notes differ in octave and tone color, or **timbre** (trumpet vs. organ), but all three pitches belong to the same pitch class, D.

The Piano Keyboard

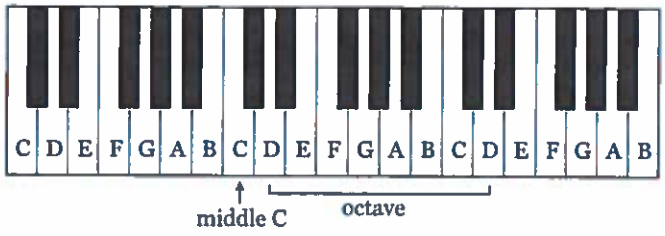
White Keys

Throughout this text, we will reinforce concepts with the help of a keyboard. As a musician, you will find keyboard skills essential, even if it is not your primary instrument. Because of the piano's great range and ability to sound numerous 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. Locate them in relation to the two- and three-note groups of black keys. 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 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.

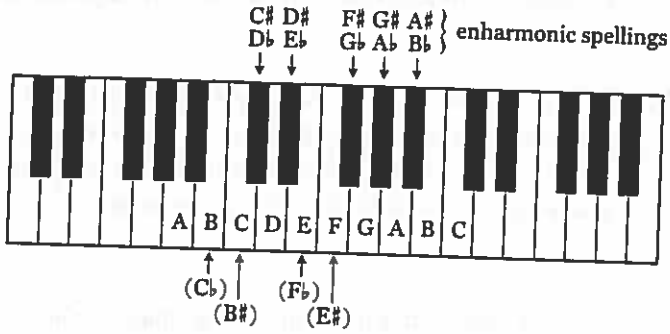
FIGURE 1.2: Piano keyboard with letter names



Black Keys: Flats and Sharps

The black-key pitches are named in relation to adjacent 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 with enharmonic pitches marked



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

Enharmonic Equivalents

Enharmonic pitches have the same sound but different names (B♭ = A♯); they 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. That means E♯ is a white key and is 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 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: ____

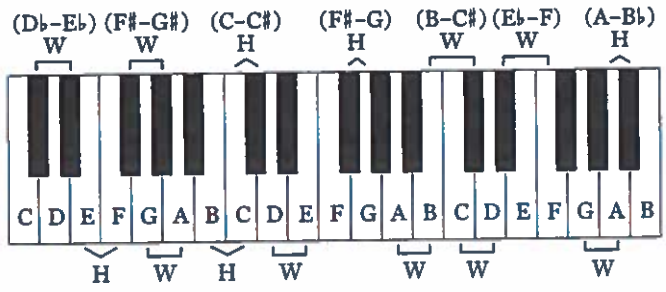
Half Steps and Whole Steps

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, in either direction. 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 usually 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 usually span two keys the same color: black to black (like F♯ to G♯) or white to white (like A to B). Again, the exceptions are the white-to-white half steps: a whole step above E is not F, but F♯; a whole step below C is not B, but B♭.

FIGURE 1.4: Half and whole steps at the keyboard



SUMMARY

1. The distance between any two notes is an interval. Two intervals that serve as basic building blocks of music are half and whole steps.
2. Half steps usually span keys of different colors: white to black or black to white.
   - The exceptions are E–F and B–C, the white-key half steps.
3. Whole steps usually span keys the same color: white to white or black to black.
   - The 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 ____

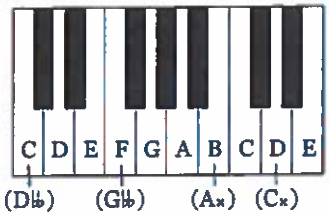
B. Identify the distance between the two notes by writing W (whole step), H (half step), or N (neither).

(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

Finally, there are two remaining accidentals, which appear much 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

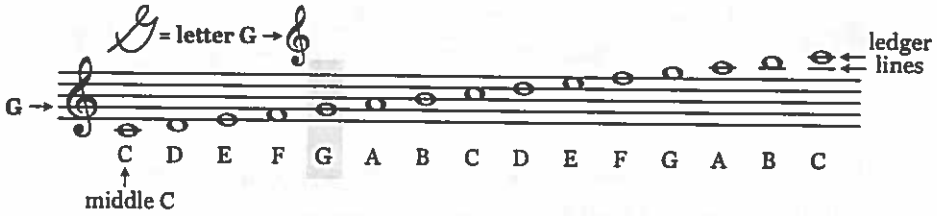
Perhaps you once improvised a piece of music on your instrument, then created your own system of notation so you could remember it to play again another day. Your system may have consisted of lines slanting up or down to indicate the shape of the melody or drawings to show fingerings. These are exactly the ways that the earliest forms of Western music notation were invented: early notation of melodies merely showed rising or falling lines, and did not identify 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. The modern staff consists of five lines and four spaces, 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

Treble Clef

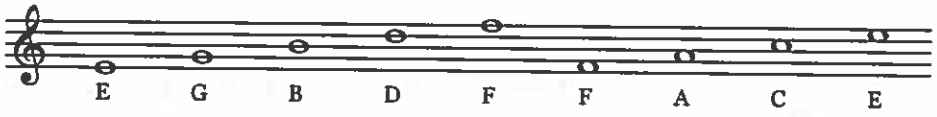
To identify notes on the staff's lines and spaces, you need a **clef**, the symbol that appears to the far left of every staff. The clef tells which line or space represents which pitch (in which octave). The **treble clef** is generally used for higher notes (those played by a piano's right hand, or by higher instruments such as the trumpet in Example 1.1). This clef is sometimes called the G-clef: its shape resembles a cursive capital G, and the end of its central curving line rests on the staff line for G. Example 1.2 shows how all the other pitches can be read from G, by counting up or 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, add short lines called **ledger lines** below or above the staff, as for middle C and the highest A, B, and C in the example. Memorize the note names for each line and space on the treble-clef staff. 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). One way to memorize them is to 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 simply spell a word: F-A-C-E.

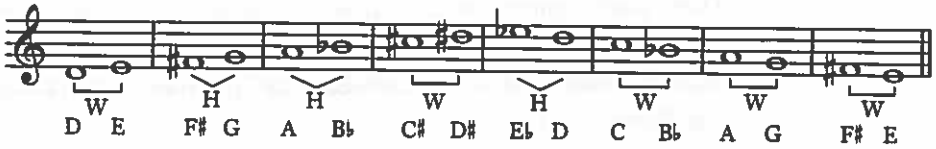
EXAMPLE 1.3: Treble-clef lines and spaces



KEY CONCEPT To write pitches with accidentals 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 (to the right of) the letter name; for example, C♯ (C-sharp).

Example 1.4 shows various whole and half steps notated on the treble-clef staff. Play each one to hear the difference in sound between these two intervals.

EXAMPLE 1.4: Half and whole steps on a staff

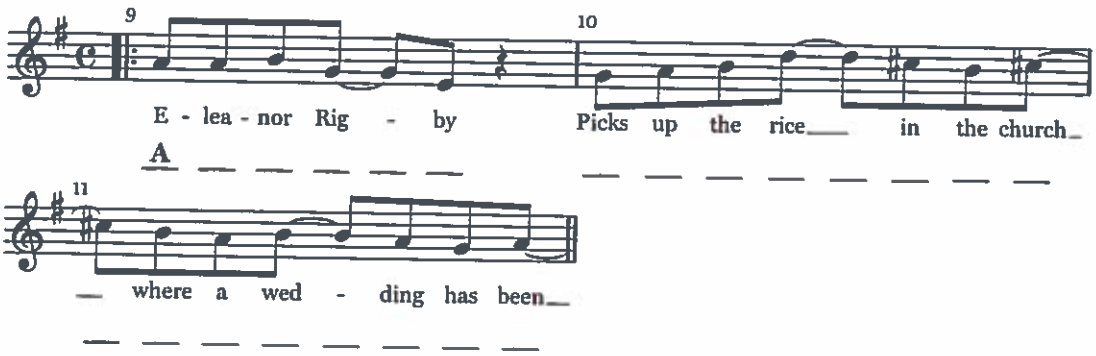


Try it #4

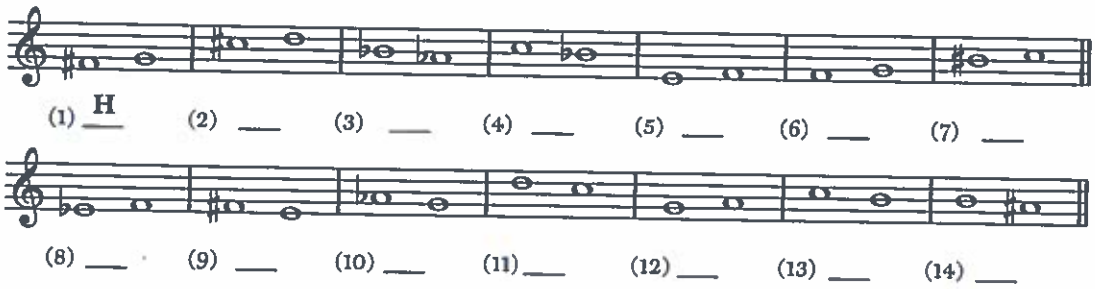
A. Write the letter names in the blanks below.

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

B. Write each letter name of the melody in the blank below. (Write repeated notes twice.)
John Lennon and Paul McCartney, "Eleanor Rigby," mm. 9–11



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



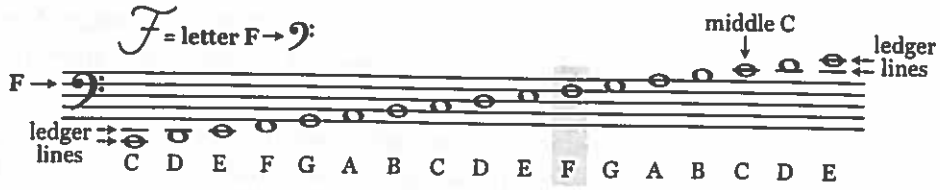
(1) H (2) ___ (3) ___ (4) ___ (5) ___ (6) ___ (7) ___

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

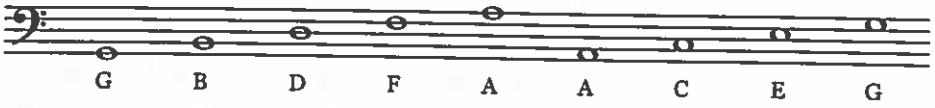
Bass Clef

The **bass clef** is used for lower notes (played by a pianist's left hand or lower instruments like the cello). It's also known as the F-clef: it resembles a cursive capital F. As Example 1.5 shows, its two dots surround the line that represents F. Other pitches may be counted from F or, more likely, memorized according to their position on the staff. Two ways to remember the bass-clef spaces (A-C-E-G) are "All Cows Eat Grass" or "All Cars Eat Gas." The lines (G-B-D-F-A) might be "Great Big Doves Fly Away."

EXAMPLE 1.5: Bass clef (F-clef)



EXAMPLE 1.6: Bass-clef lines and spaces



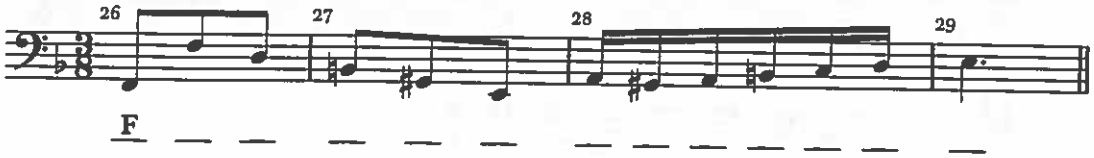
Try it #5

A. Write the letter names in the blanks below.

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

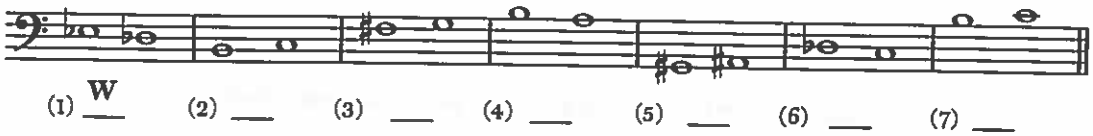
B. Write each letter name of the melody in the blank below.

Bach, Invention in D Minor, mm. 26–29 (bass-clef part) 🎧



F ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

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



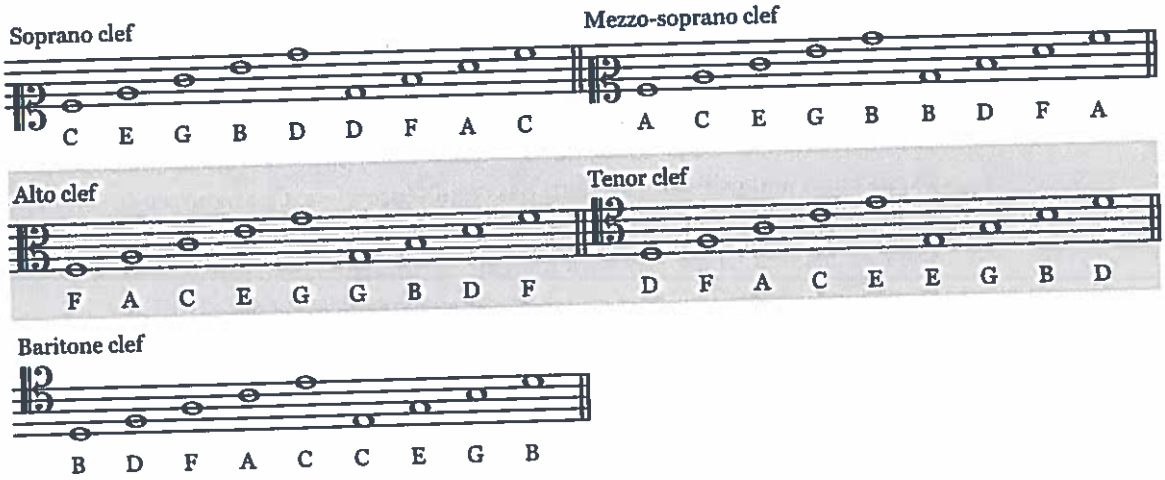
(1) W (2) ___ (3) ___ (4) ___ (5) ___ (6) ___ (7) ___

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

C-Clefs

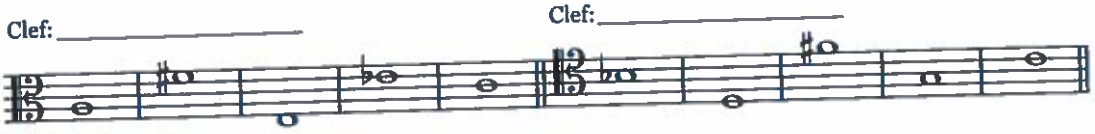
Although music reading starts with knowledge of the treble and bass clefs, it is good to learn how to read the C-clefs as well, since they are standard in orchestral and chamber music scores. A **C-clef** is a "movable" clef: it may appear in different positions on the staff to identify any one of the five lines as middle C. (In Bach's time, the treble and bass clefs could move as well.) Its distinctive shape—𝄡—identifies middle C by the point 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. While the only C-clefs you will probably see in modern scores are the alto and tenor clefs (shaded in the example), you may come across the others in older editions. To read these clefs well, practice counting the lines and spaces in thirds, as for the other clefs, and then memorize.

EXAMPLE 1.7: Reading pitches in C-clefs



Try it #6

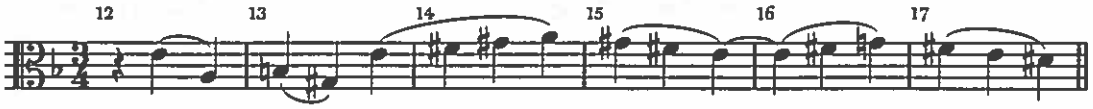
A. Identify the clef, then write each letter name in the blank below.



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

B. Write each letter name of the melody in the blank below.

Mozart, String Quartet in D Minor, K. 421, third movement (mm. 12–17, viola part)



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

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

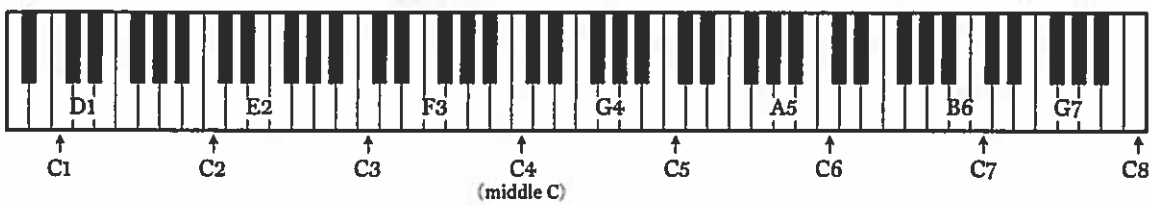
(1) W (2) ___ (3) ___ (4) ___ (5) ___ (6) ___

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, generally read treble clef. Lower instruments, like the cello and bass, generally read bass clef. Violas use the alto clef. Some players regularly read more than one clef: for example, pianists read both bass and treble clefs, and bassoonists and cellists read both bass and tenor clefs. Changing clefs can help avoid long passages of ledger lines. In choral scores, the tenor's voice part is often notated using a treble clef with a small "8" attached beneath it, known as the **choral tenor clef**. This part's pitches are read down an octave.

Naming Registers

When you name pitches, it often 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.

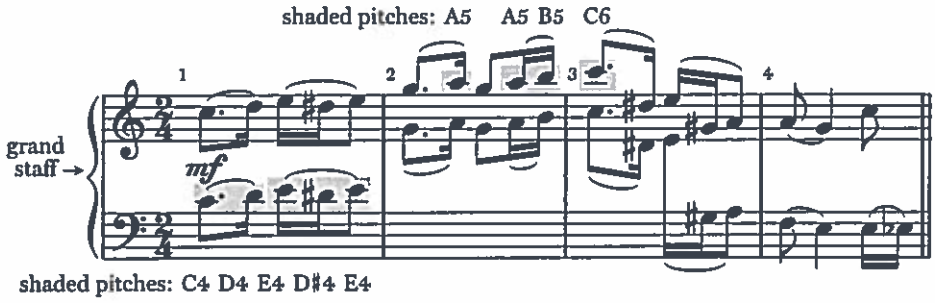
FIGURE 1.7: Piano keyboard with octave designations



Ledger Lines

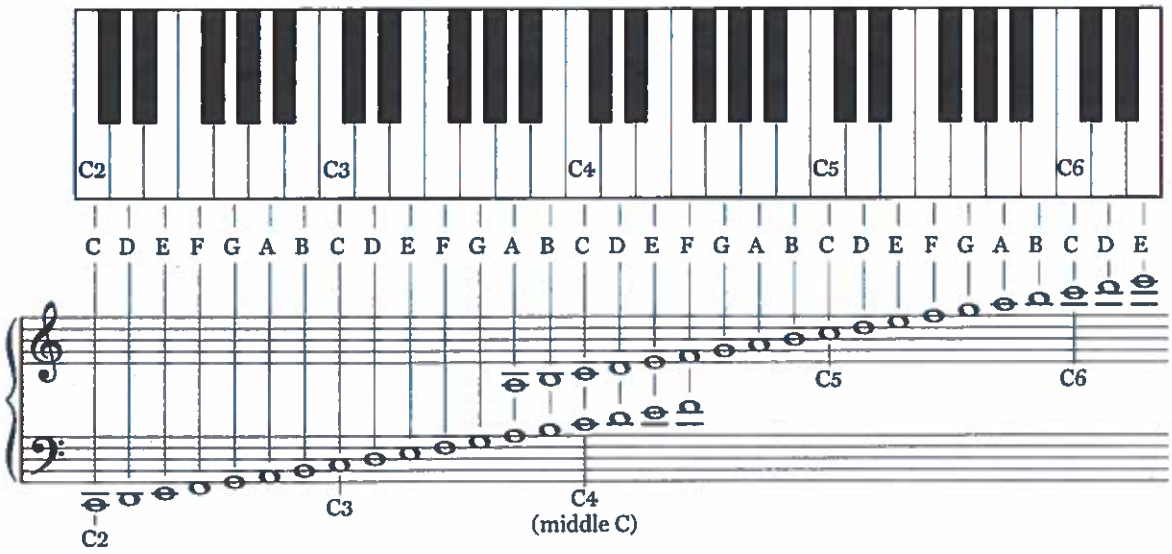
Listen to the beginning of Joplin's rag "Solace," given in Example 1.8. Like most piano music, this work is notated on a **grand staff**—two staves, one in treble clef and one in bass clef, connected by a curly brace. The shaded pitches in the example are written with ledger lines. Read ledger lines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

EXAMPLE 1.8: Joplin, "Solace," mm. 1–4



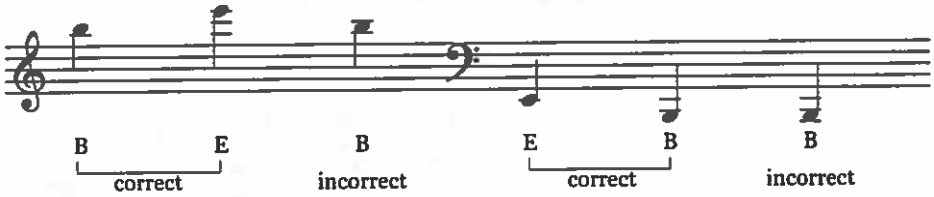
Example 1.9 consists of over four octaves of pitches, including ledger lines, on a grand staff and keyboard.

EXAMPLE 1.9: Pitches on a grand staff and keyboard



Notes higher than the staff might have ledger lines drawn through them or below them, but never above them; notes below the staff might have ledger lines through them or above them, but never below. Draw ledger lines the same distance apart as staff lines, as in Example 1.10.

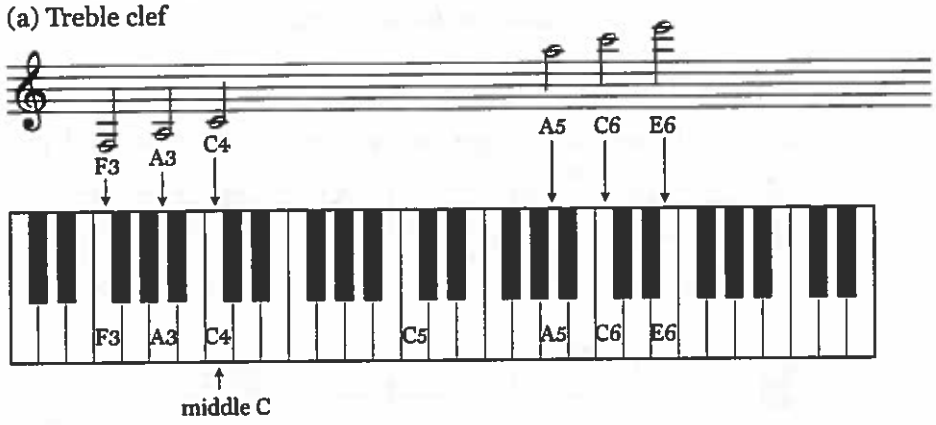
EXAMPLE 1.10: Correct and incorrect ledger lines



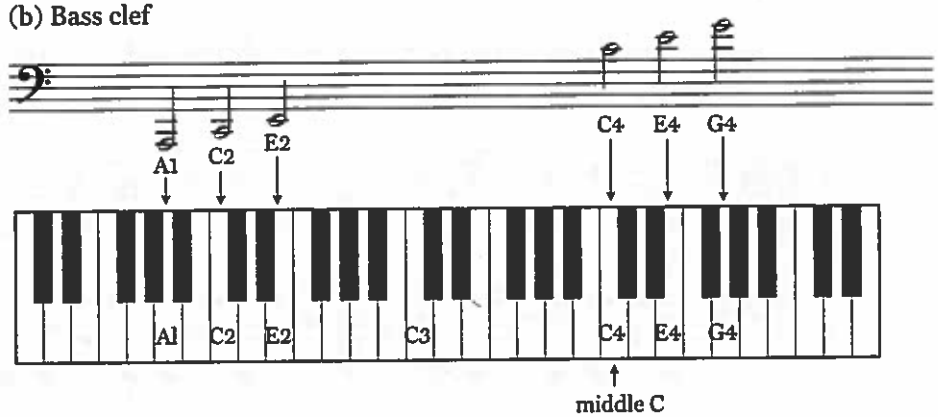
Memorize landmark pitches above and below the staves to help you read ledger lines quickly. Example 1.11 gives the first three lines above and below each staff.

EXAMPLE 1.11: Landmark ledger-line pitches

(a) Treble clef

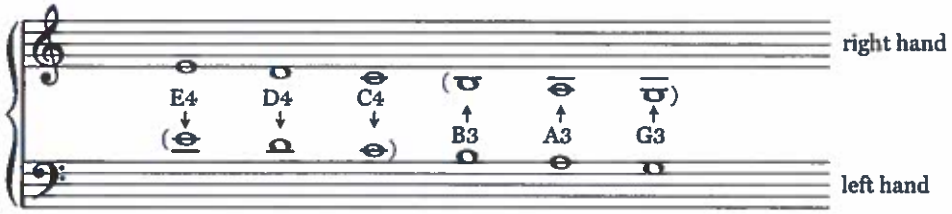


(b) Bass clef



Pitches near middle C may be written between the two staves of the grand staff, as in Example 1.12 (arrows point to the equivalent ledger-line pitches in the other clef). 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 1.12: Ledger lines between staves on the grand staff



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").

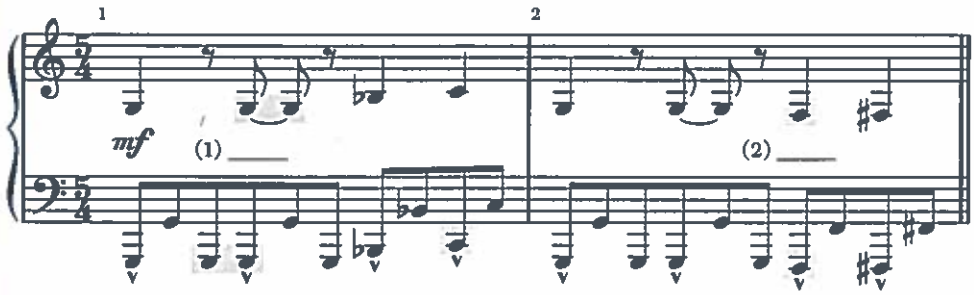
Try it #7

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

(1) G♯4 (2) ____ (3) ____ (4) ____ (5) ____ (6) ____ (7) ____ (8) ____

(1) ____ (2) ____ (3) ____ (4) ____ (5) ____ (6) ____ (7) ____ (8) ____

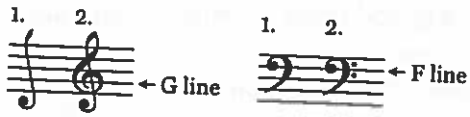
B. Write the name and octave number of each shaded pitch in the blank provided.
Lalo Schifrin, Theme from *Mission Impossible*, mm. 1–2



Writing Pitches on a Score

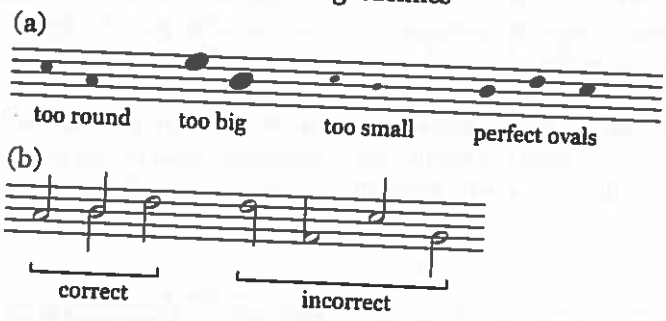
Though computer software programs for music notation are becoming more widespread, it is also important to know how to notate music correctly by hand. Draw a treble clef with a single continuous curved line, or in two strokes (Example 1.13): (1) draw a wavy line from top to bottom, like an elongated 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 on the staff, make them oval-shaped rather than round. These ovals should not be so large that it is hard to tell whether they sit on a line or space. Most notes have thin vertical lines, called **stems**, that extend above or below the note head (♩ 𝅗𝅥). Usually, 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 of the note head (see Example 1.14). Stems attached to notes *on* the middle line may go up or down, depending on the surrounding notes (see Chapter 2); if the note appears alone, its stem goes down. The length of a stem from top to bottom spans about an octave. Practice drawing notes with stems on the lines and spaces of the staff until you can draw them fluently.

Example 1.14: Notation guidelines



Dynamic Markings

Look again at the Clarke excerpt in Example 1.1. 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.

The ***f*** stands for *forte*, a loud dynamic marking; *piano* (abbreviated ***p***) is a soft dynamic marking. Other familiar markings are ***mp*** (for *mezzo piano*) and ***mf*** (for *mezzo forte*): *mezzo* means "half," thus indicating "half as soft" and "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. When performing, pay careful attention to these markings in the score. They will contribute greatly to shaping a musical and sensitive performance.

FIGURE 1.8: Dynamic indications from soft to loud

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

softest ← medium → loudest

Did You Know?

In the Middle Ages (from about 800 to 1430) and the Renaissance (roughly 1430 to 1600), musical relationships were understood in terms of a musical structure called a hexachord ("hexa-" means "six"), built in a standard pattern of whole and half steps: W-W-H-W-W. Accidentals were invented when musicians needed to transpose this hexachord's pattern of whole and half steps. The first accidental to be introduced was B♭ (with the rounded flat symbol), which allowed the hexachord on C (C–D–E–F–G–A) to begin on F (F– G–A–B♭–C–D) with the same whole- and half-step pattern.

Musicians called the hexachord beginning with C the "natural" hexachord, and the one beginning on F the "soft" hexachord. The pattern on G (G–A–B–C–D–E) was dubbed the "hard" hexachord. If a song moved from the soft to the hard hexachord, composers needed to show that B♮, not B♭, was to be played. They wrote the letter "h" to indicate B♮ (a usage that continues today in German-speaking countries), but over the years this symbol evolved into both the natural sign andthe sharp sign. After the flat and natural signs had been in use for some time to indicate B♭ and B♮, they came to be linked with other letter names as well.

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

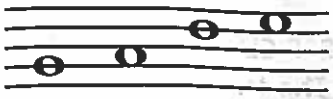
1. How do the staff and clefs work together to identify pitches?
2. Starting on D, count backward for two octaves in the musical alphabet. Count forward in thirds for two octaves, starting on G.
3. What's the difference between a pitch and a pitch class?
4. What is the function of (a) C-clefs, (b) accidentals, (c) ledger lines?
5. How do the piano's white and black keys help you determine whole and half steps?
6. On a keyboard, what special relationship do B and C have? E and F?
7. Give two guidelines for notating ledger lines.
8. How are octave numbers assigned? What is the octave number for middle C?
9. Pick a melody from music in your repertoire. Identify all its pitches by octave number, and locate at least two pitches notated on ledger lines.

The Staff, Notes and Pitches

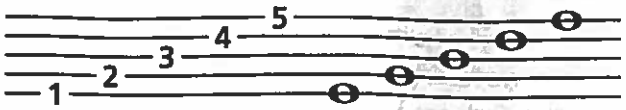
Music is written on a STAFF of five lines and the four spaces between.

The STAFF

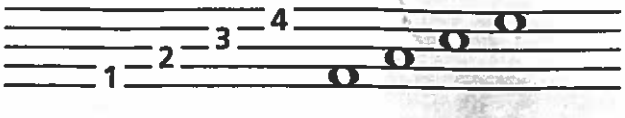
Music NOTES are oval-shaped symbols that are placed *on* the lines and *in* the spaces. They represent musical sounds, called PITCHES.



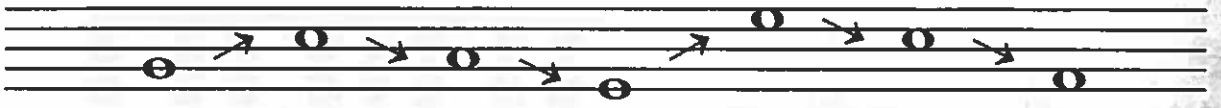
The lines of the staff are numbered from bottom to top.



The spaces between the lines are also numbered from bottom to top.



If the notes appear *higher* on the staff, they sound *higher* in pitch.
If the notes appear *lower* on the staff, they sound *lower* in pitch.

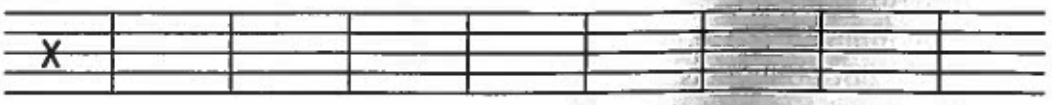


Higher *Lower* *Lower* *Higher* *Lower* *Lower*

Exercises

1 Draw a staff by connecting the dots. Use a ruler or straight edge. Number the lines, then the spaces from low to high.

2 On the staff, mark an **X** in the following locations:

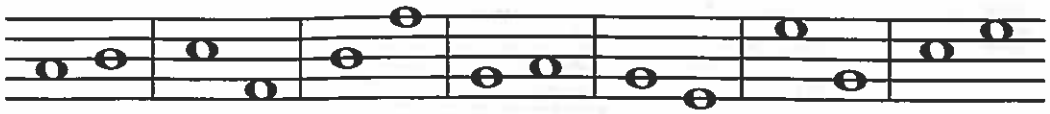


Line 3 *Space 2* *Line 1* *Space 4* *Line 5* *Space 1* *Line 4* *Space 3* *Line 2*

3 Write notes like this ○ on the following lines and spaces:

Space 4 *Line 1* *Space 2* *Line 3* *Space 1* *Line 5* *Space 3* *Line 2* *Line 4*

4 Indicate whether the 2nd note is higher or lower than the 1st note by using an H (higher) or L (lower)



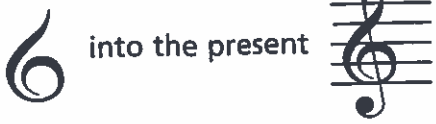
H ___ ___ ___ ___ ___ ___

Treble Clef and Staff

Music notes are named after the first seven letters of the alphabet, from A to G. By their position on the staff, they can represent the entire range of musical sound.

CLEF signs help to organize the staff so notes can easily be read.

The TREBLE CLEF is used for notes in the higher pitch ranges. The treble (or G) clef has evolved from a stylized letter G:

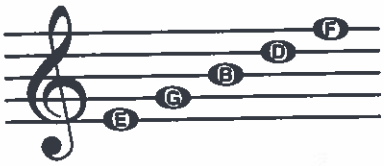


The curl of the treble clef circles the line on which the note G is placed. This G is above MIDDLE C (the C nearest the middle of the keyboard).

The TREBLE STAFF

In the treble staff, the names of the notes on the lines from bottom to top are E, G, B, D, F.

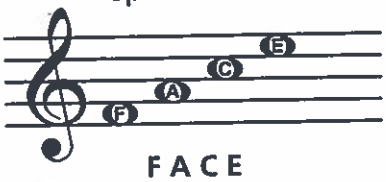
Line Notes



Every Good Boy Does Fine

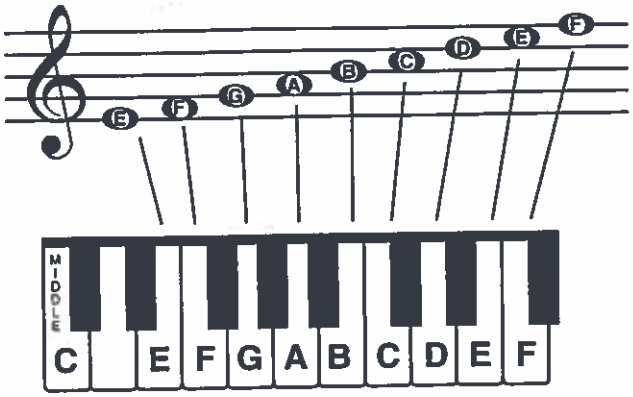
The names of the notes in the spaces from bottom to top spell FACE.

Space Notes



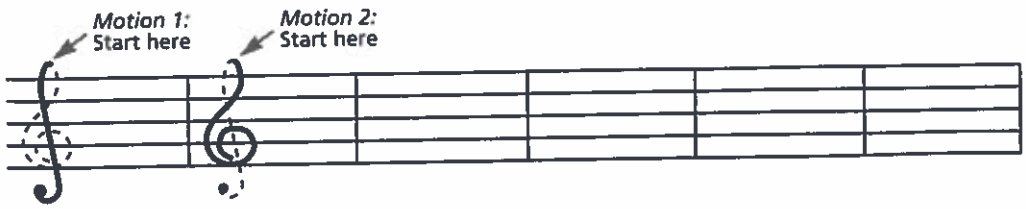
F A C E

All the notes of the TREBLE STAFF:

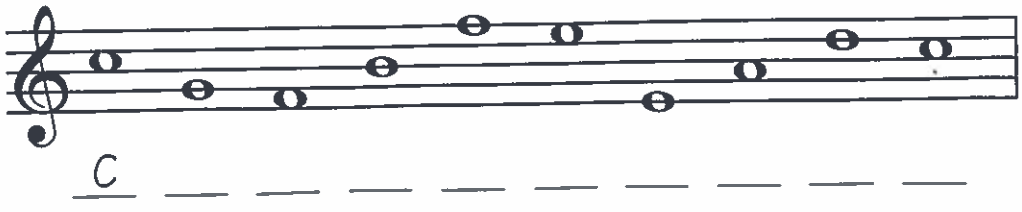


Exercises

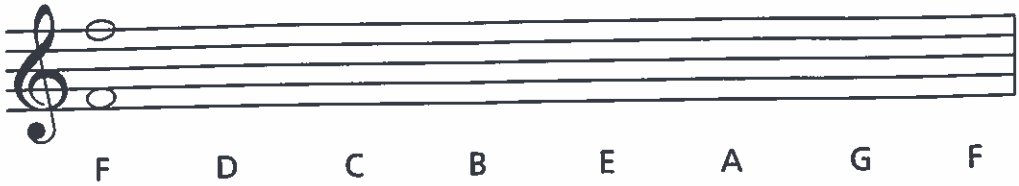
1 The treble clef is written in two motions. Trace along the dotted lines as indicated, then draw four more.



2 Write the letter names of the following notes. Use capital letters.



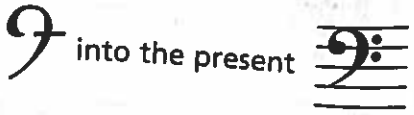
3 Write the notes on the staff indicated by the letters. If the notes can be written in two places, write one above the other.



F D C B E A G F

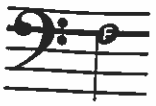
Bass Clef and Staff

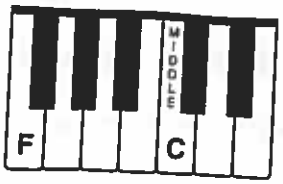
The BASS CLEF (pronounced "base") is used for notes in the lower pitch ranges. The bass (or F) clef has evolved from a stylized letter F:



The two dots of the bass clef surround the line on which the note F is placed. This F is below middle C.

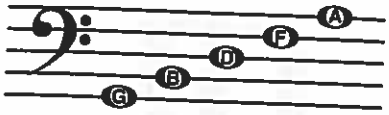
The BASS STAFF





In the bass staff, the names of the notes on the lines from bottom to top are G, B, D, F, A.

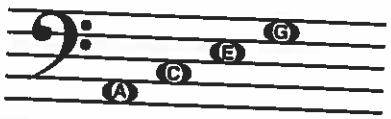
Line Notes



Good Boys Do Fine Always

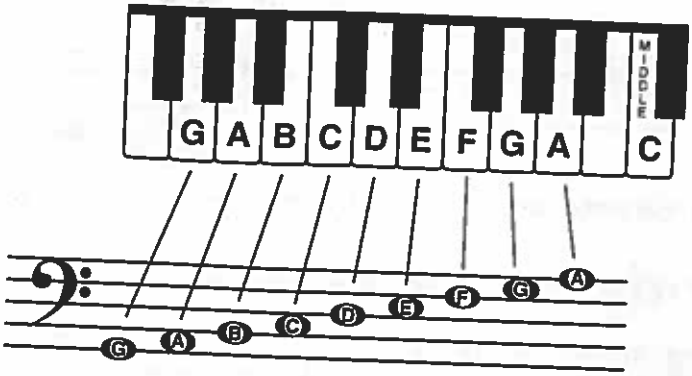
The names of the notes in the spaces from bottom to top are A, C, E, G.

Space Notes



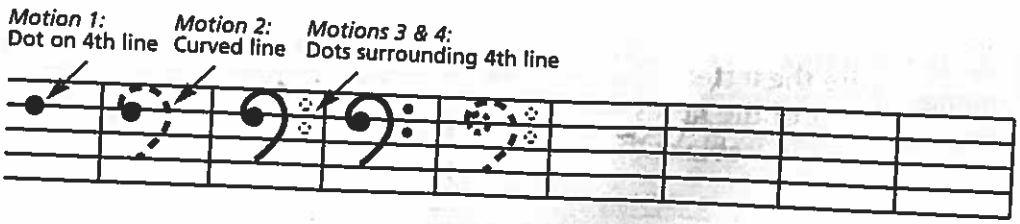
All Cows Eat Grass

All the notes of the BASS STAFF:

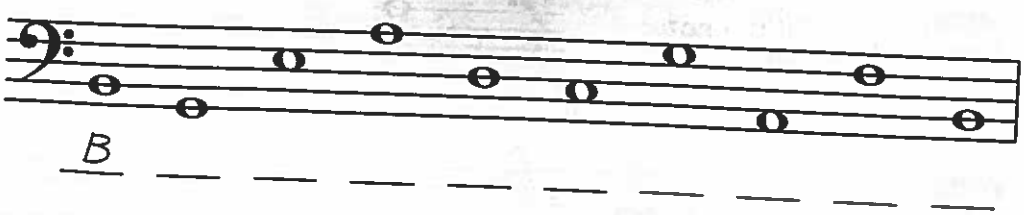


Exercises

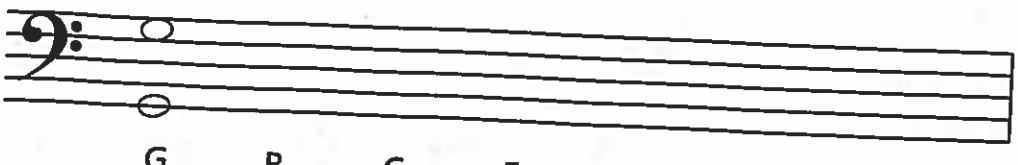
1 The bass clef is written in four motions. Trace along the dotted lines as indicated, then draw four more.



2 Write the letter names of the following notes.



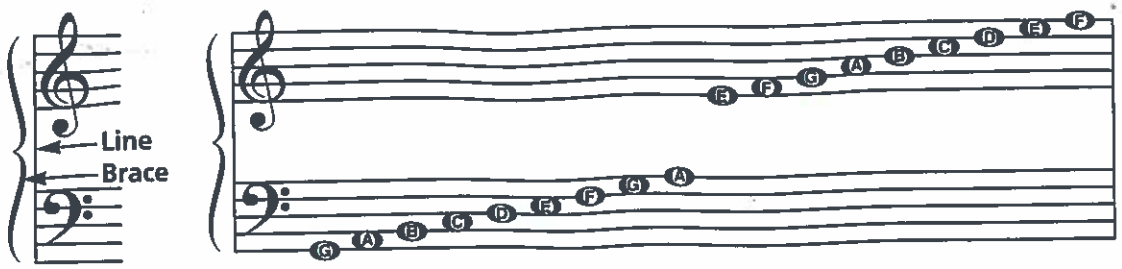
3 Write the notes on the staff indicated by the letters. If the notes can be written in two places, write one above the other.



G B C F E A D G

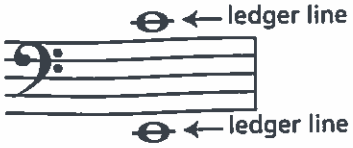
The Grand Staff

When the bass and treble staffs are connected by a brace and a line, they combine to form the GRAND STAFF.

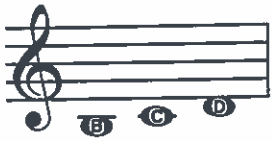


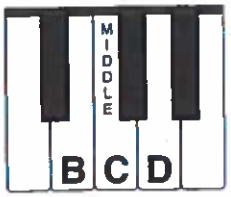
Ledger Lines — The Middle Notes

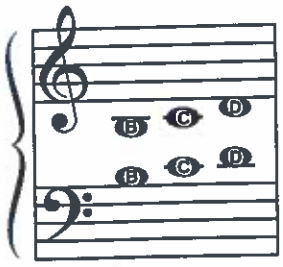
LEDGER LINES are short lines which are added to extend the range of the staff when the notes are too low or too high to be written on the staff.



The notes in the middle range of the grand staff are B, C and D.
They can be written on ledger lines in both the bass and treble staffs.





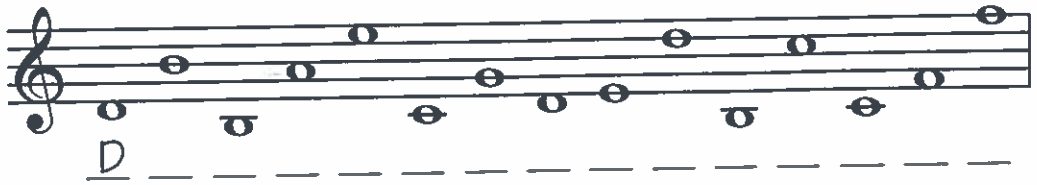


These notes are written differently but sound the same.

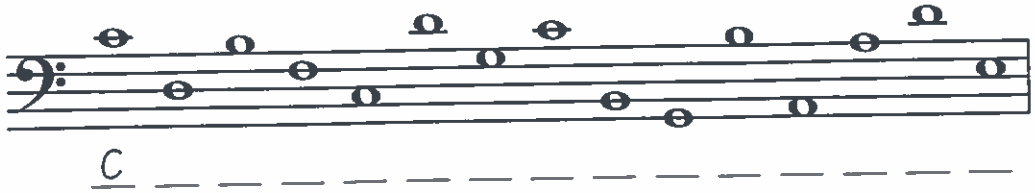
Exercises

1 Trace these three braces. Then, using the staffs provided, draw the grand staff three times. Include the brace, line and both clef signs.

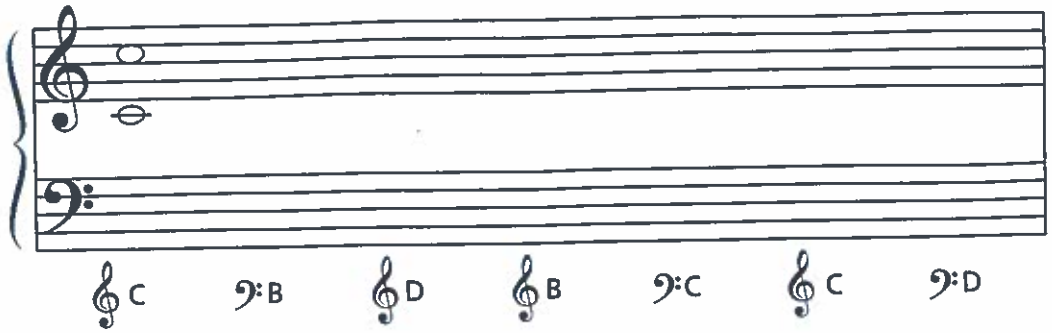
2 Write the letter names of the notes from the treble staff.



3 Write the letter names of the notes from the bass staff.



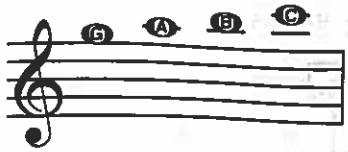
4 Write the notes indicated by the clefs and letter names in two places on the grand staff. Add ledger lines where necessary.



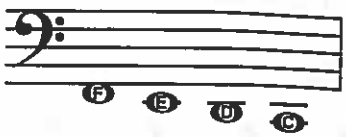
Ledger Lines

Low and High Notes

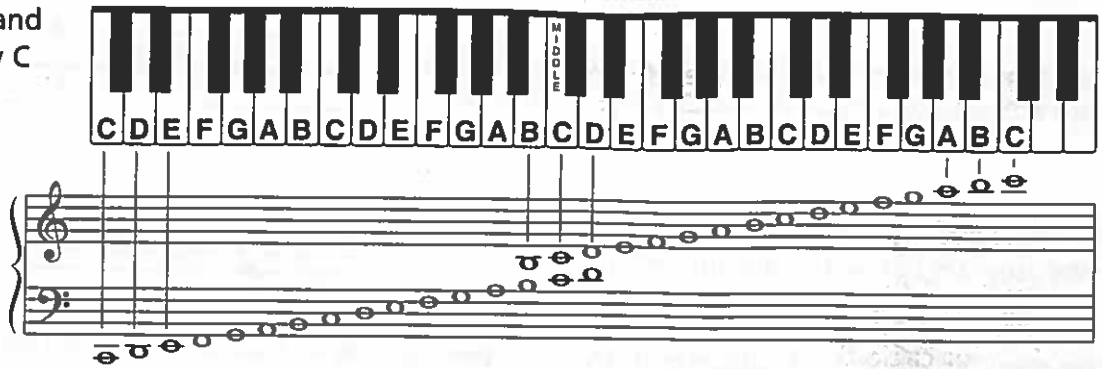
More than one ledger line may be added to extend the lower and upper ranges of the grand staff. The next higher notes of the treble staff are G, A, B and C.



The next lower notes of the bass staff are F, E, D and C.

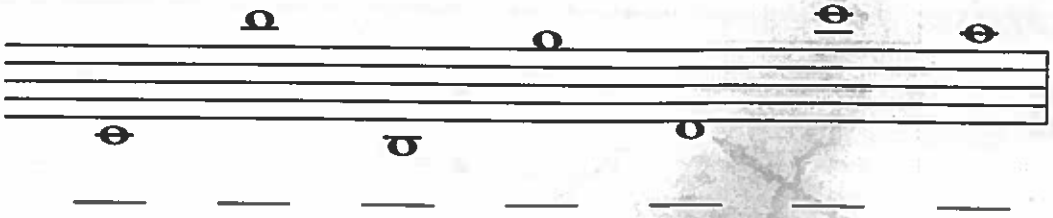


All the notes on the grand staff from bass clef Low C to treble clef High C:

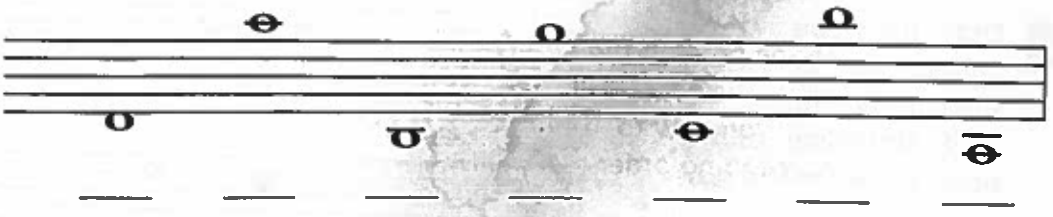


Exercises

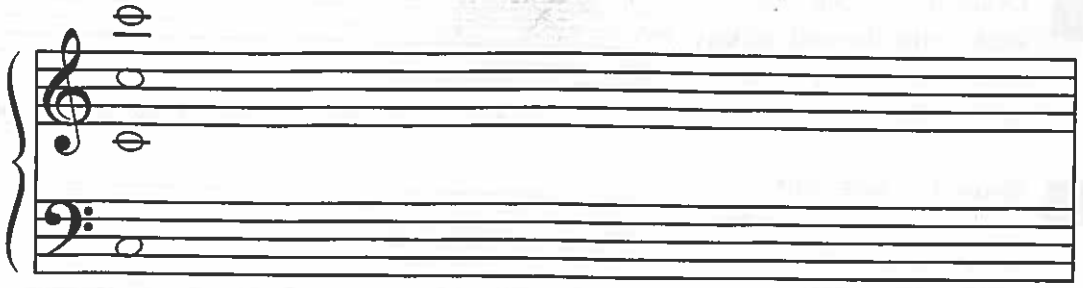
1 Draw a treble clef and name the notes.



2 Draw a bass clef and name the notes.



3 Write each of the indicated notes in four places on the grand staff.



C D E F G A B

Note Values

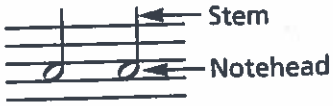
While the placement of notes on the staff indicates the pitch, the duration of the note (how long the note is held) is determined by the note value.

A WHOLE NOTE is drawn as an open oval.

Whole Note

Two HALF NOTES equal the duration of one whole note.

Half Notes



Four QUARTER NOTES equal the duration of one whole note.

Quarter Notes

1 Whole note = 2 Half notes = 4 Quarter notes

1 Half note = 2 Quarter notes

Stems extend *downward* on the left side when the note appears *on or above* the 3rd line of the staff.

Stems extend *upward* on the right side when the note appears *below* the 3rd line of the staff.

The stem length should continue to the space or line with the same letter name, above or below.

Stem extends to F above.

Stem extends to F below.

Exercises

1 Fill in the blanks with the correct number:

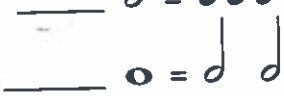
a. 4 

b. ____ 

c. ____ 

d. ____ 

e. ____ 

f. ____ 

2 Draw the stems in the correct direction with the correct length. Write the names of the notes between the staff.

3 Draw the treble clef and write the indicated notes. Use only notes within the staff.

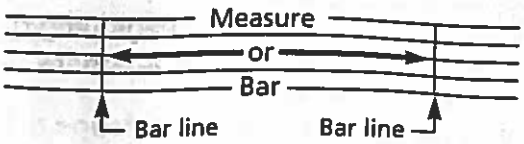
C *whole* A *quarter* E *half* F *whole* B *quarter* D *quarter* G *half*

4 Draw the bass clef and write the indicated notes. Use only notes within the staff.

E *half* D *quarter* A *whole* C *quarter* F *half* B *whole* G *half*

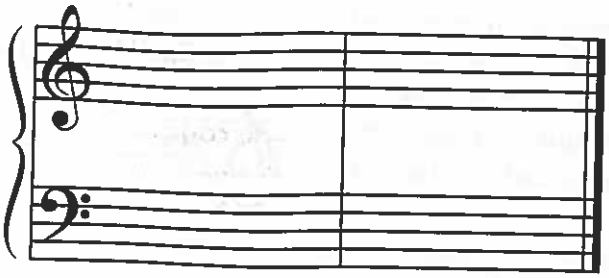
Measure, Bar Line and Double Bar

Music is divided into equal parts by BAR LINES. The area between the two bar lines is called a MEASURE or BAR.



A DOUBLE BAR is written at the end of a piece of music. It is made up of one thin and one thick line, with the thick line always on the outside.

On a grand staff, the bar lines and double bar pass through the entire staff.



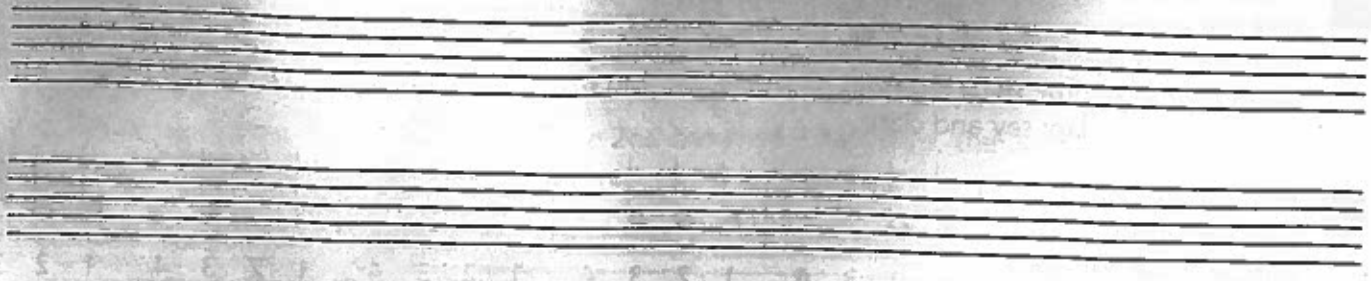
Exercises

1 Divide the staff below into 4 measures with a double bar at the end. A single staff does not begin with a bar line.

2 Draw a treble clef. Divide the staff below into 4 measures with a double bar at the end. Write any whole note in each measure. Name the notes on the lines below the staff.

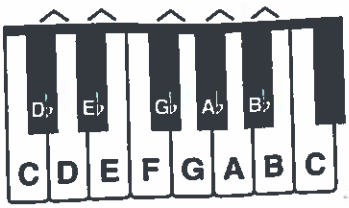
3 Draw a bass clef. Divide the staff below into 4 measures with a double bar at the end. Write any 4 quarter notes (alternate stem direction) in each measure. Name the notes on the lines below the staff.

4 Draw a grand staff. Divide the staff below into 4 measures with a double bar at the end. Write any two half notes in each measure (alternate stem direction and staffs). Name the notes on the lines below the staff. Begin with a bar line (before the clef signs) when there is a grand staff.



Flats

The FLAT sign (♭) before a note lowers the pitch of that note. On the keyboard, play the next key to the left, whether black or white.



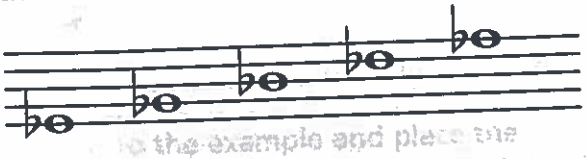
When speaking of flatted notes, the word "flat" comes after the letter name, as in **A flat**. However, in written music, the flat sign comes before the note.

A flat

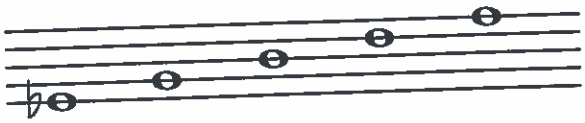
To draw a flat sign, first draw a vertical line:

then add the heavier curved line:

When a flat sign is attached to a line note, the flat is centered on the line.



Add flat signs to the line notes below.

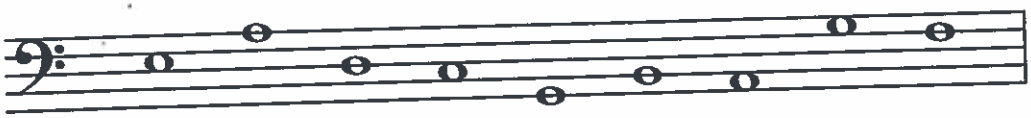


When a flat sign is attached to a space note, the flat is centered in the space.

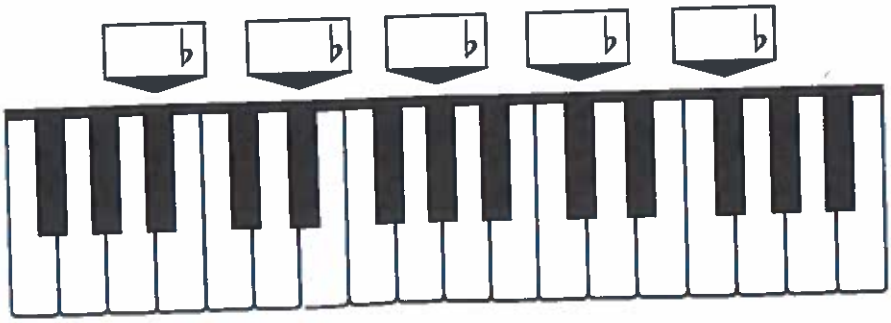
Add flat signs to the space notes below.

Exercises

1 In the example, write flat signs before each note, then name the notes.



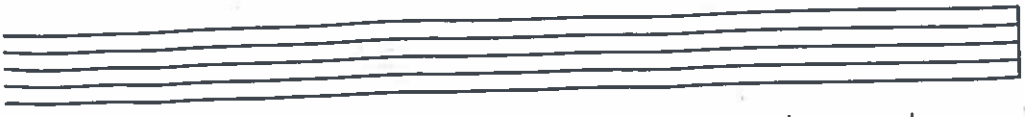
2 Write the names of the piano keys in the boxes.



3 Write a treble clef and the notes indicated on the staff using half notes.

G♭ D♭ C♭ A♭ E♭ B♭ F♭

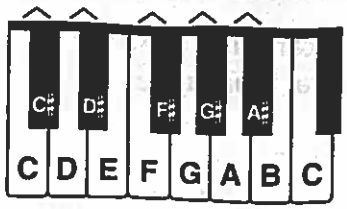
4 Write a bass clef and the notes indicated on the staff using quarter notes.



E♭ C♭ F♭ A♭ D♭ B♭ G♭

Sharps

The SHARP sign (♯) before a note raises the pitch of that note. On the keyboard, play the next key to the right, whether black or white.

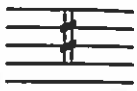


When speaking of sharped notes, the word "sharp" comes after the letter name, as in **C sharp**. However, in written music, the sharp sign comes before the note.

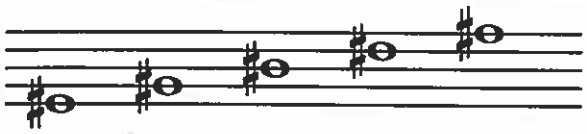
C sharp

To draw a sharp sign, first draw two vertical lines:

then add the heavier slanting lines:



When a sharp sign is attached to a line note, the sharp is centered on the line.



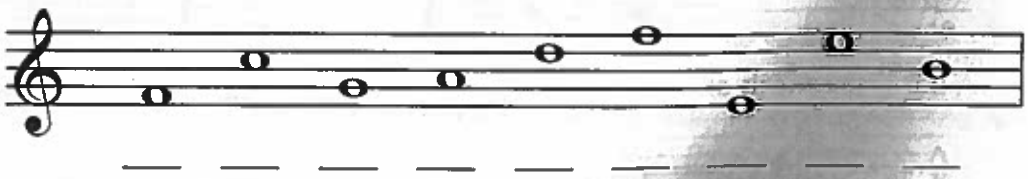
Add sharp signs to the line notes below.

When a sharp sign is attached to a space note, the sharp is centered in the space.

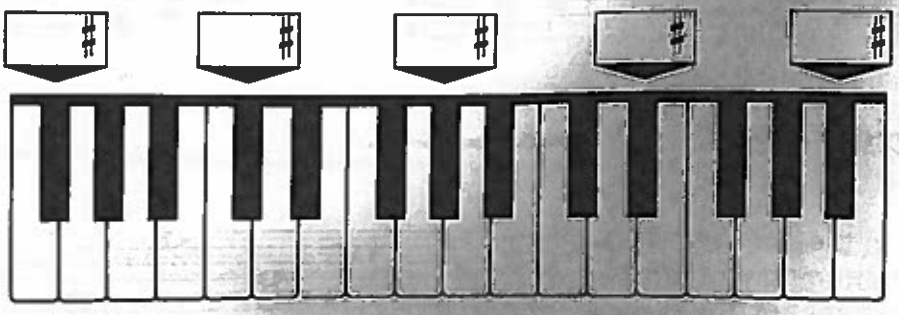
Add sharp signs to the space notes below.

Exercises

1 In the example, write sharp signs before each note, then name the notes.

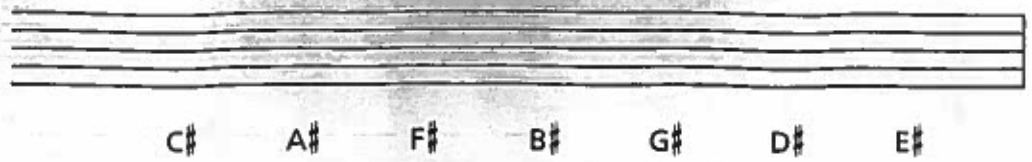


2 Write the names of the piano keys in the boxes.



3 Write a treble clef and the notes indicated on the staff using single 8th notes.

4 Write a bass clef and the notes indicated on the staff using dotted half notes.



Naturals

The NATURAL sign (♮) before a note cancels a previous sharp or flat.
On the keyboard, a note after a natural is *always* a white key.

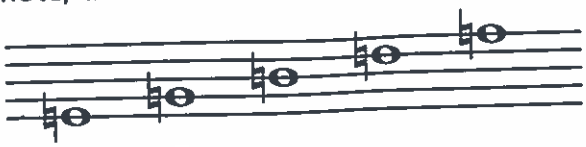
When speaking of natural notes, the word "natural" comes after the letter name, as in **B natural**. However, in written music, the natural sign comes before the note.

B natural

To draw a natural sign, first draw the left half:

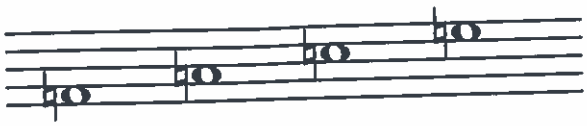
then draw the right half:

When a natural sign is attached to a line note, the natural is centered on the line.



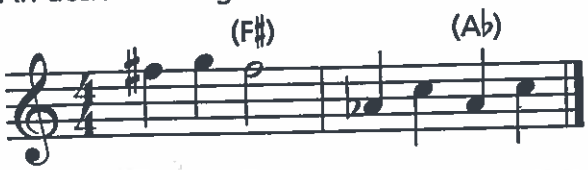
Add natural signs to the line notes below.

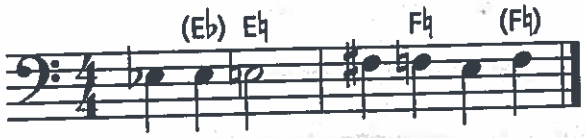
When a natural sign is attached to a space note, the natural is centered in the space.



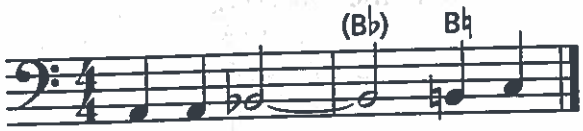
Add natural signs to the space notes below.

When ♭, ♯ or ♮ signs appear within a musical piece, they are called ACCIDENTALS.
An accidental sign affects the notes written on the same line or space following it *for that measure only.*





A bar line cancels all accidentals in the previous measure, except if a note is tied across the bar line.



Exercises

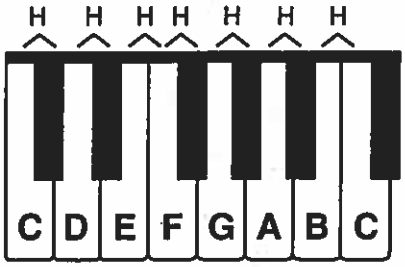
1 In the example, write natural signs before each note, then name the notes.

2 Write the names of the notes on the lines below the staff.

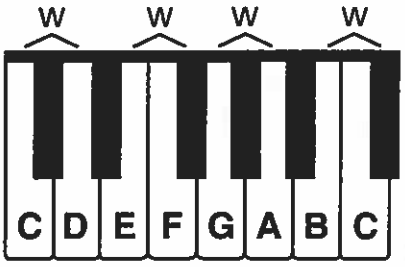
Circus March (from "Entry of the Gladiators") Julius Fučik (1872–1916)

Whole Steps, Half Steps and Enharmonic Notes

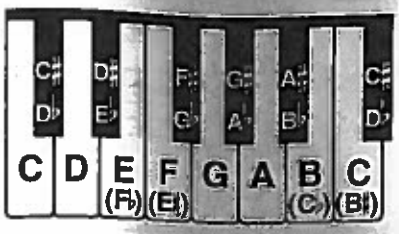
The distance from any key on the keyboard to the very next key above or below, whether black or white, is a HALF STEP (H).



The distance from any key to two keys above or below, is a WHOLE STEP (W).



The key a half step up from C is C♯. This key is also a half step down from D, and is also known as D♭.



Many notes sound the same but are written differently. These notes are called ENHARMONIC NOTES.

Exercises

1 The enharmonic note for F♭ is _____. The enharmonic note for E♯ is _____.

The enharmonic note for C♭ is _____. The enharmonic note for B♯ is _____.

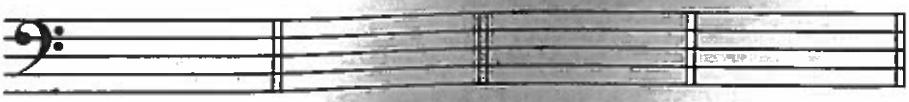
2 Write the 2 indicated enharmonic notes on the staff and name the notes in the spaces below:

a. one half step above G
b. one half step below F
c. one half step below B
d. one half step above D

a. ___ ___ b. ___ ___ c. ___ ___ d. ___ ___

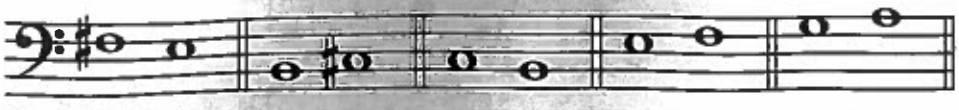
3 Write the indicated notes on the staff and the name of the note in the spaces below. If there are enharmonic notes, write both.

a. one whole step above G♯
b. one whole step below F
c. one whole step below A
d. one whole step above E



a. ___ ___ b. ___ ___ c. ___ d. ___ ___

4 Name the notes and indicate whether the distance between each pair of notes is a whole step (W) or a half step (H).



F♯ E ___ ___ ___ ___ ___ ___ ___ ___

W ___ ___ ___ ___