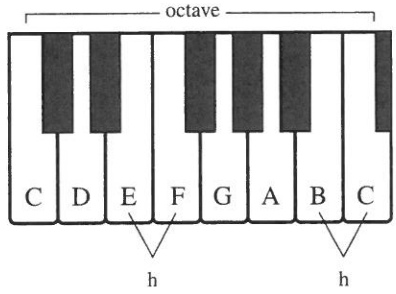
The Major Scale

In this chapter, you will learn about major and minor scales, the scales that form the basis of tonal music. However, there are many other kinds of scales, some of which are covered in Chapter 26. (p. 463)

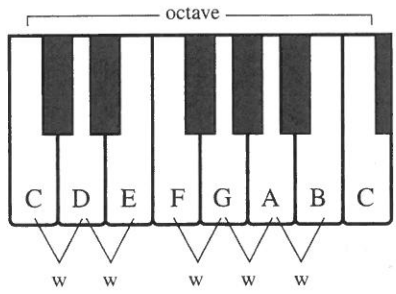
The **major scale** is a specific pattern of small steps (called half steps) and larger ones (called whole steps) encompassing an octave. A **half step** is the distance from a key on the piano to the very next key, white or black. Using only the white keys on the piano keyboard, there are two half steps in each octave, indicated by the letter "h" in Example 1-7.

Example 1-7



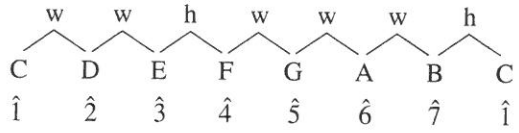
A **whole step** skips the very next key and goes instead to the following one. Using only the white keys on the piano keyboard, there are five whole steps in each octave, indicated by the letter "w" in Example 1-8.

Example 1-8

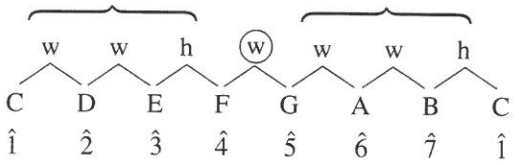


The major-scale pattern of whole and half steps is the same as that found on the white keys from any C up to the next C. In the next diagram, the numbers with carets above them ($\hat{1}$, $\hat{2}$, etc.) are scale degree numbers for the C major scale.*

* Throughout this book we will refer to major scales with uppercase letters—for example, A major or A—and minor scales with lowercase letters—for example, a minor or a.



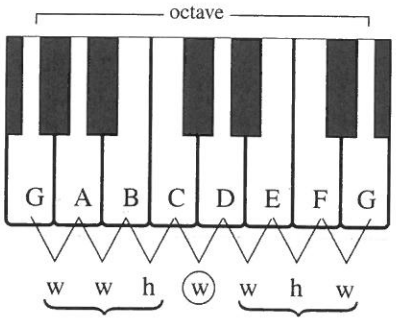
You can see from this diagram that half steps in the major scale occur only between scale degrees $\hat{3}$ and $\hat{4}$ and $\hat{7}$ and $\hat{1}$. Notice also that the major scale can be thought of as two identical, four-note patterns separated by a whole step. These four-note patterns are called **tetrachords.**



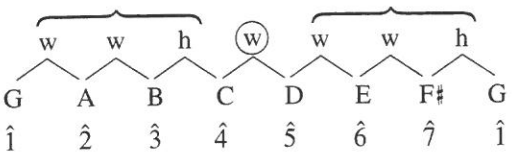
If we examine the steps on the white keys of a G-to-G octave, as in Example 1-9, we do not find the same pattern of whole and half steps that occurred in the C-to-C octave. To play a G major scale, we would need to skip the F key and play the black key that is between F and G. We will label that key with an **accidental,** a symbol that raises or lowers a pitch by a half or whole step. All the possible accidentals are listed in the following table.

Symbol	Name	Effect
𝄪	Double sharp	Raise a whole step
♯	Sharp	Raise a half step
♮	Natural	Cancel a previous accidental
♭	Flat	Lower a half step
𝄫	Double flat	Lower a whole step

Example 1-9



We can make our G scale conform to the major-scale pattern by adding one accidental, in this case a sharp.



It is important to understand that major and minor scales always use all the letter names of the musical alphabet. It would not be correct to substitute a G♭ for the F♯ in a G major scale.

The scale is written on the staff in Example 1-10.

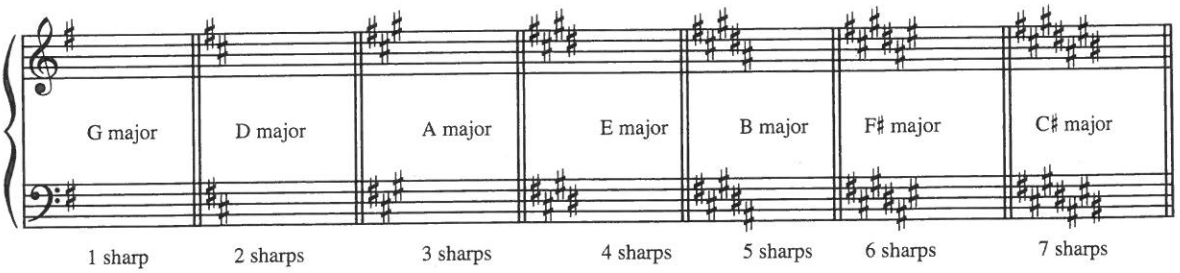
Example 1-10

Notice that when we write or say the names of notes and accidentals, we put the accidental last (as in F♯ or F sharp), but in staff notation the accidental always *precedes* the note that it modifies (as in Ex. 1-10).

The Major Key Signatures

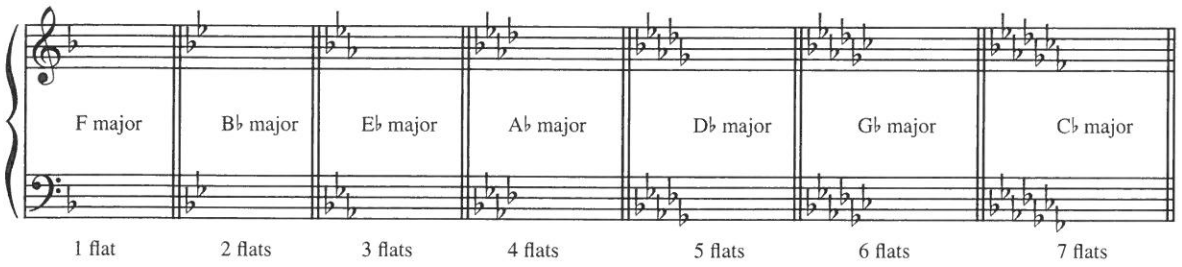
One way to learn the major scales is by means of the pattern of whole and half steps discussed in the previous section. Another is by memorizing the key signatures associated with the various scales. The term **key** is used in music to identify the first degree of a scale. For instance, the key of G major refers to the major scale that begins on G. A **key signature** is a pattern of sharps or flats that appears at the beginning of a staff and indicates that certain notes are to be consistently raised or lowered. There are seven key signatures using sharps. In each case, the name of the major key can be found by going up a half step from the last sharp (Ex. 1-11).

Example 1-11



There are also seven key signatures using flats. Except for the key of F major, the name of the major key is the same as the name of the next-to-last flat (Ex. 1-12).

Example 1-12



You may have noticed that there are three pairs of major keys that would sound exactly the same—that is, they would be played on the very same keys of the piano keyboard.

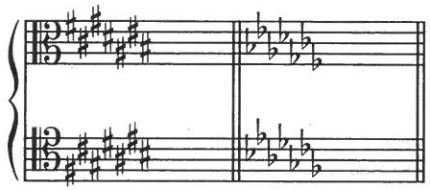
B major = C♭ major
F♯ major = G♭ major
C♯ major = D♭ major

Notes that have the same pitch but that are spelled differently, like E and F♭, are said to be **enharmonic** (or **enharmonically equivalent**). Keys can be enharmonic as well, such as the three pairs of keys shown above. If two major keys are not enharmonic, then they are transpositions of each other. To **transpose** means to write or play music in some key other than the original.

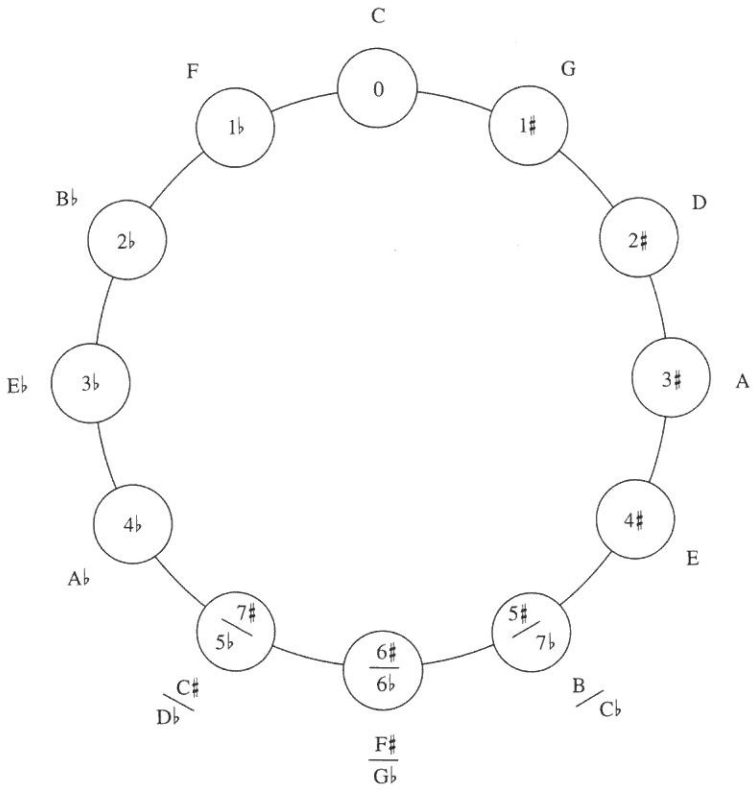
The key signatures in Examples 1-11 and 1-12 must be memorized—not only the number of accidentals involved but also their order and placement on the staff. Notice that the pattern of placing the sharps on the staff changes at the fifth sharp for both the treble and the bass clefs. Try saying aloud the order of accidentals for sharps (FCGDAEB) and for flats (BEADGCF) until you feel confident with them.

Key signatures are written in much the same way using the alto and tenor clefs as they are for treble and bass. The only exception is the placement of sharps in the tenor clef, as you can see in Example 1-13.

Example 1-13



Some people find it easier to memorize key signatures if they visualize a **circle of fifths,** which is a diagram somewhat like the face of a clock. Reading clockwise around the circle of fifths on the following page, you will see that each new key begins on $\hat{5}$ (the fifth scale degree) of the previous key. If you go counterclockwise, each new key begins on $\hat{4}$ of the previous one.



CHECKPOINT

1. Does G3 lie below or above middle C?
2. How is a double sharp notated?
3. Half steps in the major scale occur between scale degrees _____ and _____ as well as between scale degrees _____ and _____.
4. The major scale consists of two identical four-note patterns called _____.
5. What relationship can you see between the order of sharps and the order of flats?
6. Name the 15 major keys.

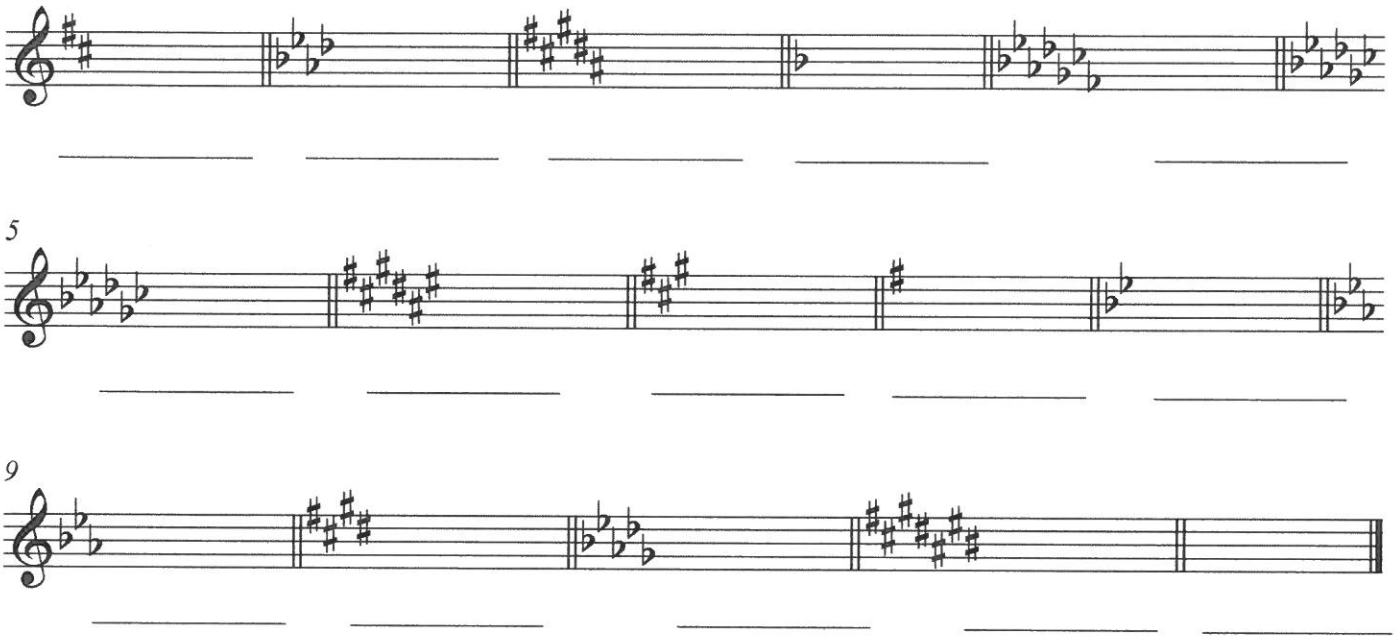
Self-Test 1-2

(Answers appear in Appendix D.) (p. 564)

A. Notate the specified scales using accidentals, *not* key signatures. Show the placement of whole and half steps, as in the example.

Key Signatures

I. Write the major key for each key signature



II. Write the number of sharps or flats for each major key (3#, 2b, etc.).

	D	Eb	F	E
answer:				
	Bb	C#	A	Gb
answer:				
	Db	C	G	F#
answer:				
	Ab	B	Gb	
answer:				

Writing Key Signatures

Write the following key signatures in the appropriate clef.