5.1 Major Diatonic Scales and Melodies

Sing, Memorize, and Analyze

13

Internalizing Music

1. Listen to "Alleluia" on Track 13. Memorize the song.
2. Sing "Alleluia" and keep the beat.
3. Sing "Alleluia" and clap the rhythm.
4. Pair off in the class. Facing your partner, sing "Alleluia" and clap the melodic contour.
5. Sing with rhythm names while clapping and showing the melodic contour.

Analyzing What You Hear

1. Sing the lowest note in the song.
2. Sing the highest note in the song.
3. Sing the beginning note of the song.
4. Sing the final note of the song.
5. Sing all the notes in the song from lowest to highest.
6. Sing all the notes in the song from the highest to the lowest.

Constructing a Melodic Representation from Memory

1. As you sing "Alleluia," draw a representation indicating the contour and pitches.
2. As you point to your representation, sing the melody with rhythm syllables.

Music Theory

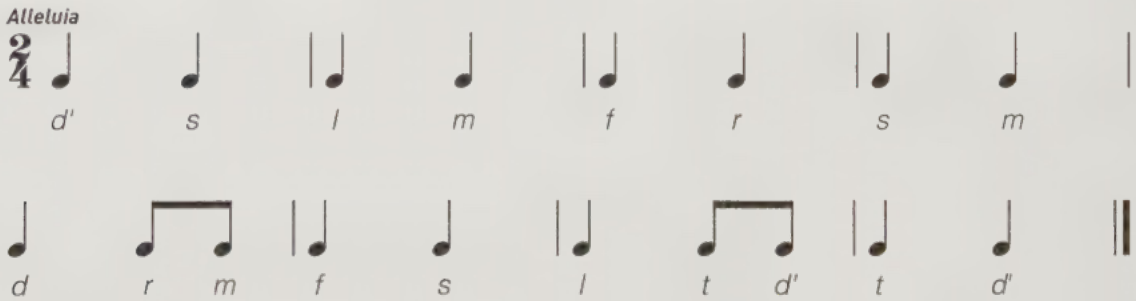
Describing What You Hear with Solfège Syllables

We can describe the pitches in "Alleluia" with solfège syllables:

Note that the pitch high *d'* is marked with a superscript (*d'*). Notes below *d* are marked with a subscript (*d,*). When we arrange the pitches of "Alleluia" in ascending order, we discover that there are seven adjacent pitches. From *d* to high *d* is an interval of an octave.

Notating What You Hear with Solfège Syllables

We can write "Alleluia" in rhythm notation with solfège syllables.



This piece of music is based on the major scale. A **major scale** is a series of eight adjacent pitches that uses successive letter names; half steps occur between the third and fourth degrees and seventh and first degrees of the scale. All other steps are whole steps. It is this pattern of half (m2) and whole steps (M2) that gives the major scale its particular configuration. We can find notes of the major pentachord scale, major hexachord scale, and major pentatonic scale in the major scale. The first note of the major scale is called the **tonic**, and this is the note that all of the other notes of the scale are related to.

Associating Solfège Syllables with Scale Degree Numbers

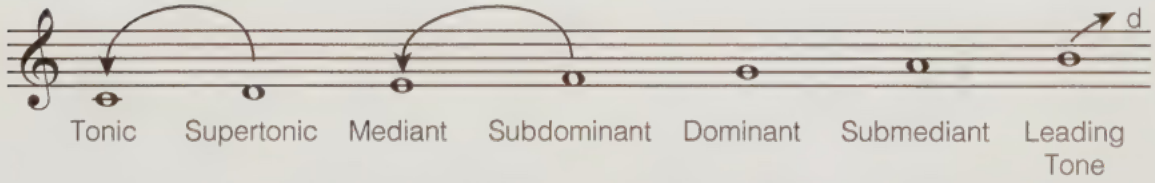
The following chart indicates how solfège syllables may be identified with **scale degree numbers**.

Solfège Syllable	Scale Degree Number
d'	$\hat{1}$
t	$\hat{7}$
l	$\hat{6}$
s	$\hat{5}$
f	$\hat{4}$
m	$\hat{3}$
r	$\hat{2}$
d	$\hat{1}$

Associating Scale Degree Numbers with Scale Degree Names

The scale degree numbers may also be identified with **scale degree names**. Each scale degree can be identified with a name that reflects its position in the scale. The tonic is sometimes referred to as the "home note." The tonic is the most important scale degree, followed by the fifth, the dominant. The subdominant is termed such because it is five notes, or degrees, below the tonic. The mediant lies halfway between the tonic and dominant. The second degree, supertonic (*super* in Latin means "above"), is above the tonic note. The leading tone leads to the tonic. The submediant is a third below the tonic note.

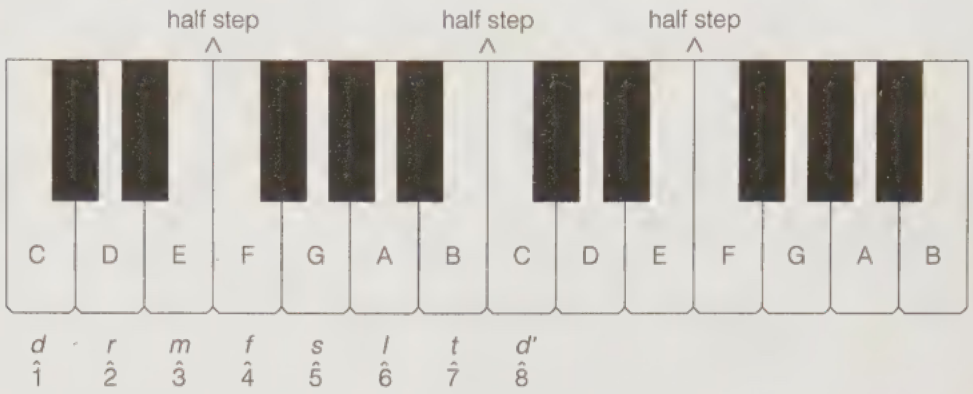
Scale Number	Scale Degree Name
$\hat{1}$	Tonic
$\hat{2}$	Supertonic
$\hat{3}$	Mediant
$\hat{4}$	Subdominant
$\hat{5}$	Dominant
$\hat{6}$	Submediant
$\hat{7}$	Leading Tone



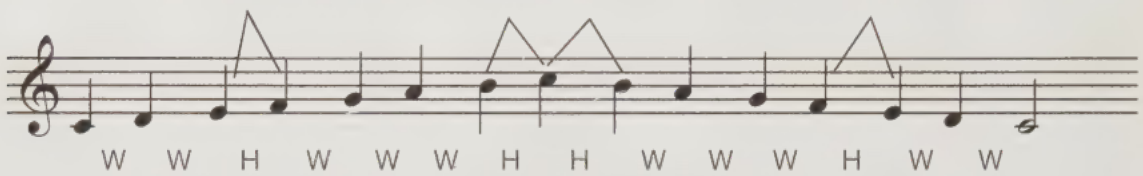
It is important to note that all of the pitches of a scale are related to each other. For example, the tonic note is a stable note, but a note like the leading tone has a tendency to move toward the tonic note and the subdominant note has a tendency to move toward the mediant note. Notes that have an attraction for others are referred to as *tendency tones*.

5.2 Determining the Intervals Between Notes of the Major Scale

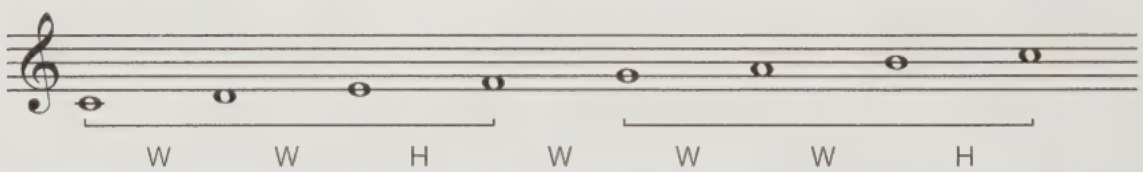
The following chart shows the whole- and half-step relationships of the C major scale on the keyboard. Look at the whole-step (W) and half-step (H) pattern of the scale.



The following chart shows the whole- and half-step relationships of the C major scale on the staff. Look at the whole-step (W) and half-step (H) pattern.



Note that the major scale is made up of two *tetrachords* (a tetrachord is four adjacent notes).

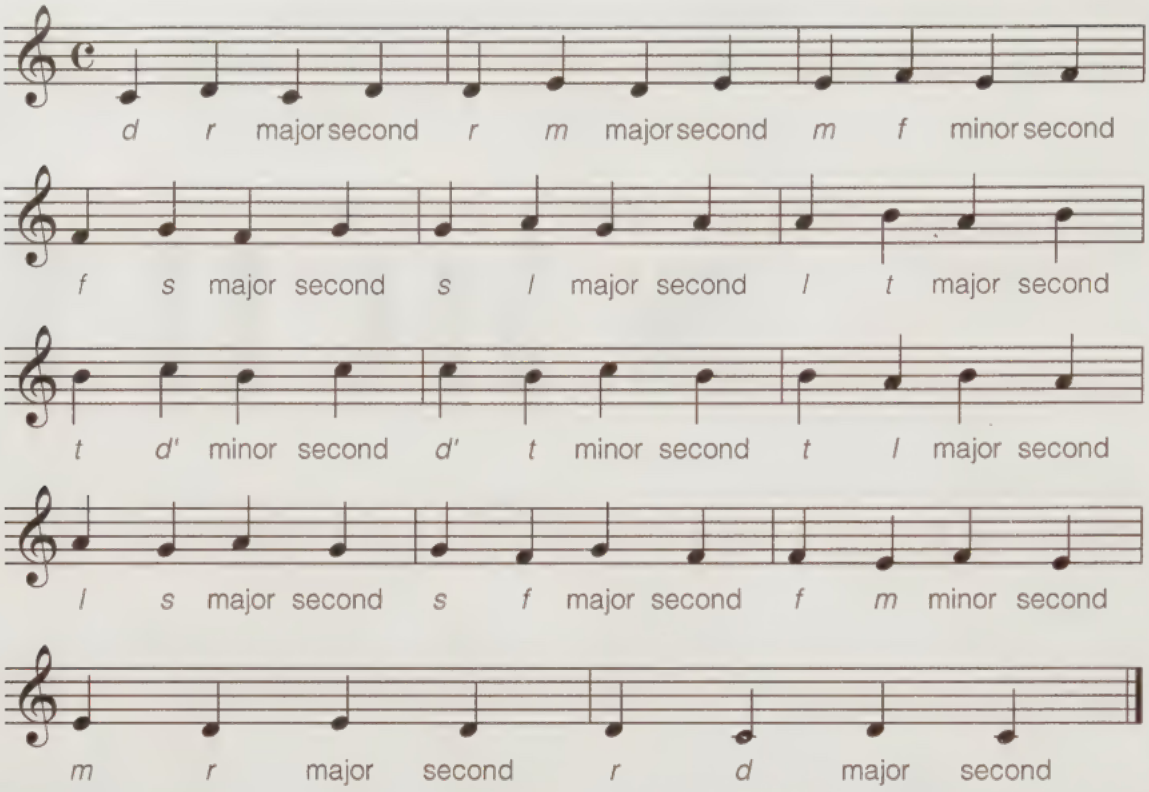


Note also that this pattern of whole and half steps that results in a major scale can begin on any note. This necessitates the use of sharps or flats to maintain the whole- and half-step relationships.

Note the intervals between *d* and *r*, *r* and *m*, *f* and *s*, *s* and *l*, and *l* and *t* are whole steps. The distance between *t* and *d'* and between *m* and *f* is a half step. We can refer to whole steps as major seconds (M2) and half steps as minor seconds (m2). The following chart is a summary of the major and minor seconds in the major scale.

Whole Steps Major 2	Half Steps Minor 2
d–r	
r–m	*m–f*
f–s	
s–l	
l–t	*t–d'*

Practice singing the intervals between each note of the major scale.

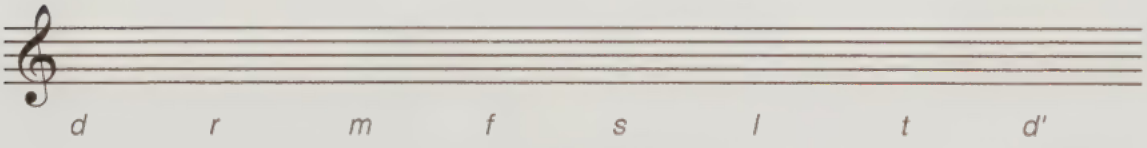


5.3 Writing a Major Scale and Melodies Using Accidentals

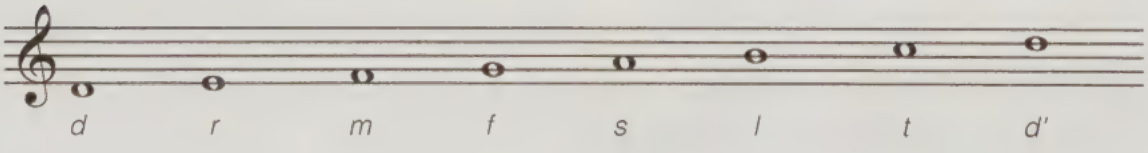
Writing a Major Scale on the Staff Using Accidentals

The following is a procedure for writing any major scale on the staff using accidentals. We will write this example as a D major scale in the treble clef.

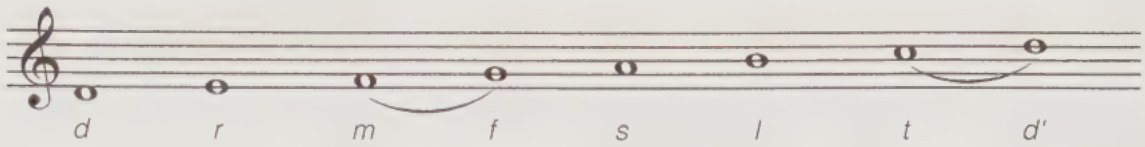
1. Write the solfège syllables *d* – *r* – *m* – *f* – *s* – *l* – *t* – *d'* beneath the staff for the major scale.



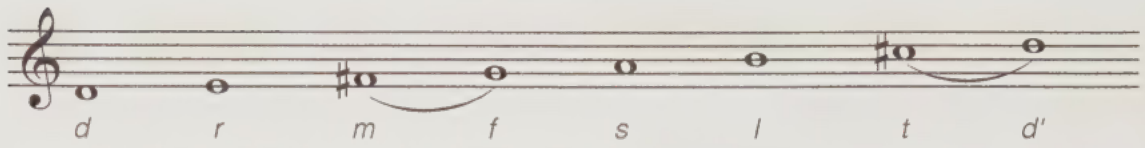
2. Place a note on the staff above each solfège syllable. For a major scale melody we use eight adjacent notes; therefore, the notes should also be adjacent on the staff. For example, if the tonic note is C, write C–D–E–F–G–A–B–C, or if the tonic note is D, write D–E–F–G–A–B–C–D.



3. Mark the half step between scale degrees three and four and seven and eight and their corresponding pitches on the staff. Remember that the intervals between the other degrees will be whole steps.



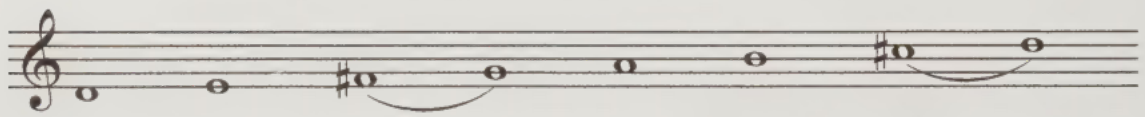
4. Check the intervallic relationship between the solfège syllables and the pitch names to insure the correct intervallic distance between the notes. If necessary, correct the intervals by using sharps or flats.



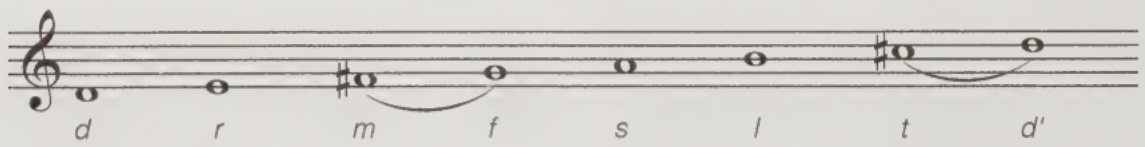
Writing a Major Melody on the Staff Using Accidentals

The following is a procedure for writing any major melody on the staff using accidentals. For an example, we will write "Alleluia" in the key of D major in treble clef using accidentals. Music based on a particular scale is said to be in the key of that scale. If music is built on the C major scale, the piece is in the key of C major and the tonic note of the music is C.

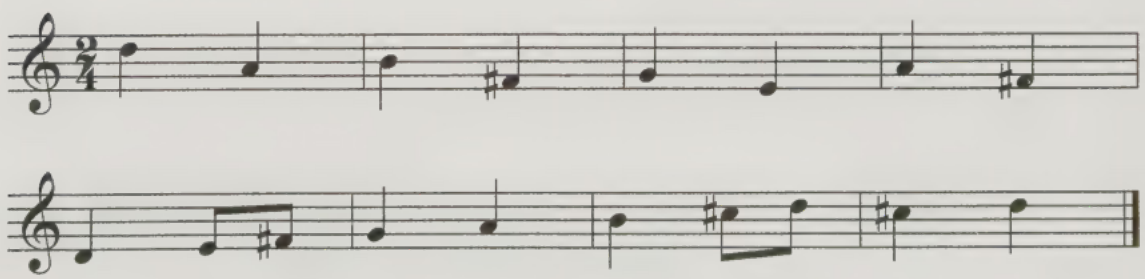
1. Write the D major scale on the staff using accidentals and mark the half steps.



2. Write the solfège syllables below the scale.



3. Write "Alleluia" on the staff by associating the solfège syllables with note names in the key of D major. "Alleluia" D = *d*. Note the placement of accidentals.



We can say that "Alleluia" is written in the key of D major as it uses the notes of the D major scale. The tonic of this piece is D.

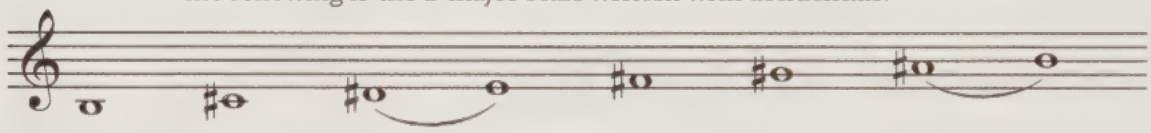
5.4 Key Signatures

The **key signature** is a group of sharps or flats placed at the beginning of a composition (or after the clef) or during a composition (normally after a double bar) to indicate the key of the music that follows. By their positions on the staff, the signs show which notes are to be consistently sharped or flatted throughout in all octaves, thus establishing the prevailing **tonality** of the music. Reading a piece of music becomes much easier when we know what the key signature is, as it helps us organize the use of accidentals in tonal music.

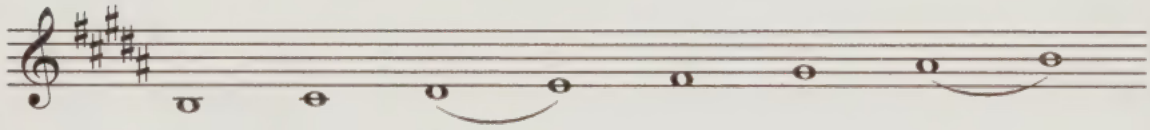
How Key Signatures Facilitate Music Reading and Writing

Consider playing a B major scale from notation using accidentals or using a key signature. While the accidentals written in the music serve as a reminder, the score is clearer when a key signature is used. The same applies to a piece of music.

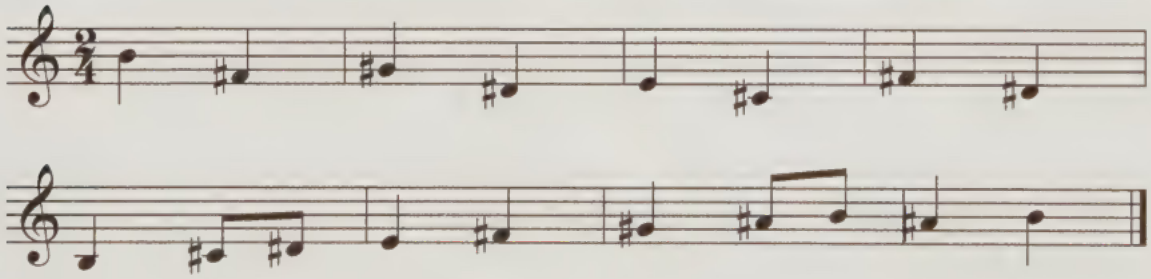
The following is the B major scale written with accidentals.



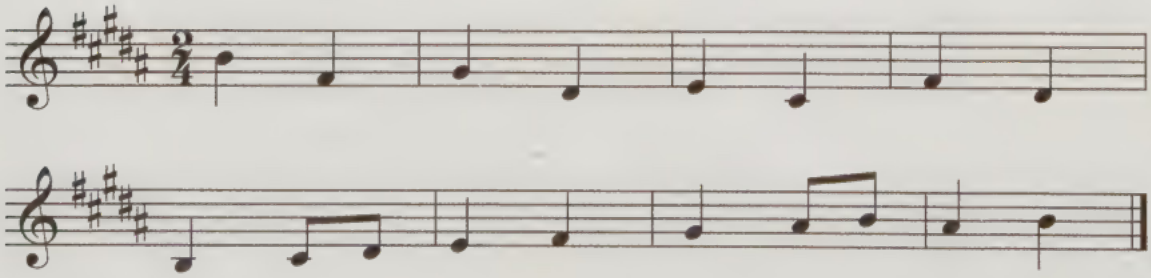
This is the B major scale written with a key signature.



The following is "Alleluia" written without a key signature.

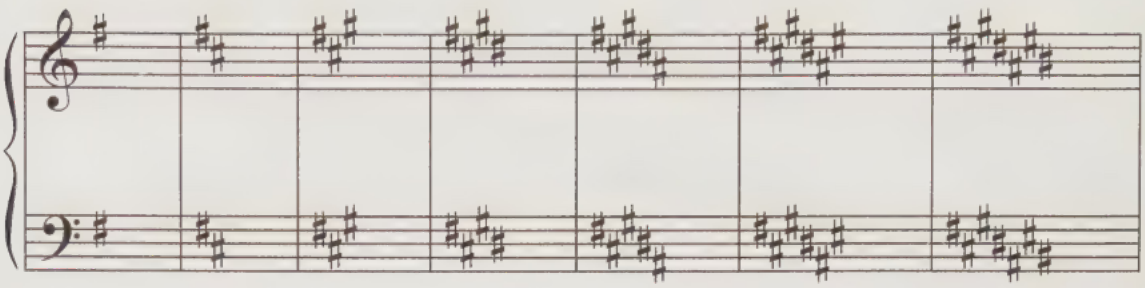


The following is "Alleluia" with a key signature.



Major Key Signatures Using Sharps

The placement of sharps in a key signature follows a definite order. We must adhere to the order of sharps to maintain the same pattern as we progress through the keys.



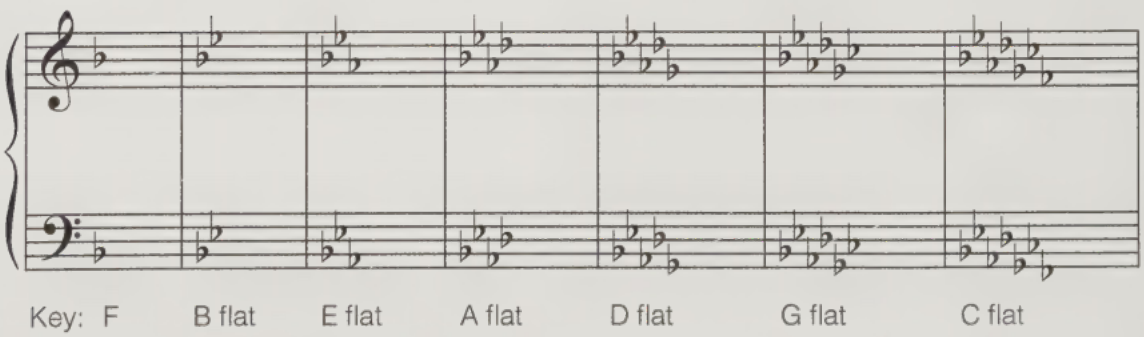
The key of G major has 1 sharp—F♯.
The key of D major has 2 sharps—F♯, C♯.
The key of A major has 3 sharps—F♯, C♯, G♯.
The key of E major has 4 sharps—F♯, C♯, G♯, D♯.
The key of B major has 5 sharps—F♯, C♯, G♯, D♯, A♯.
The key of F-sharp major has 6 sharps—F♯, C♯, G♯, D♯, A♯, E♯.
The key of C-sharp major has 7 sharps—F♯, C♯, G♯, D♯, A♯, E♯, B♯.

Note that the last sharp in the key signature is the seventh degree of the major scale and is a half step below the tonic note. In the following example, G-sharp is the last sharp and the seventh degree of the scale, thus the tonic note is A. Therefore, A major has a key signature of three sharps. The following mnemonic device will help you remember the order of sharps:

Fat Cats Go Down Alleys Eating Bananas.

Major Key Signatures Using Flats

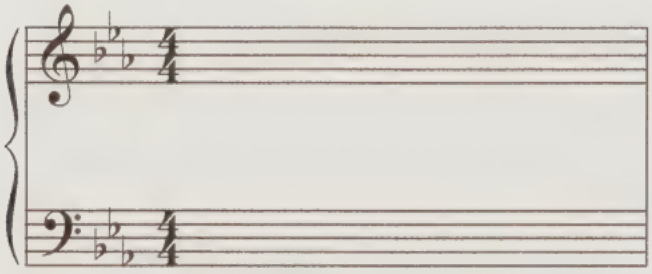
The placement of flats in a key signature follows a definite order. We must adhere to the order of flats to maintain the same pattern as we progress through the keys.



The key of F major has 1 flat—B♭.
The key of B-flat major has 2 flats—B♭, E♭.
The key of E-flat major has 3 flats—B♭, E♭, A♭.
The key of A-flat major has 4 flats—B♭, E♭, A♭, D♭.

The key of D-flat major has 5 flats—B♭, E♭, A♭, D♭, G♭.
The key of G-flat major has 6 flats—B♭, E♭, A♭, D♭, G♭, C♭.
The key of C-flat major has 7 flats—B♭, E♭, A♭, D♭, G♭, C♭, F♭.

Note that the last flat in the key signature is the fourth degree of the major scale. To identify the major key using flat key signatures remember that the key is always the next to the last flat, the exception being F major, which has just one flat, B-flat. For example, in the following key signature the next to the last flat is E-flat; the key of E-flat has three flats in the key signature.

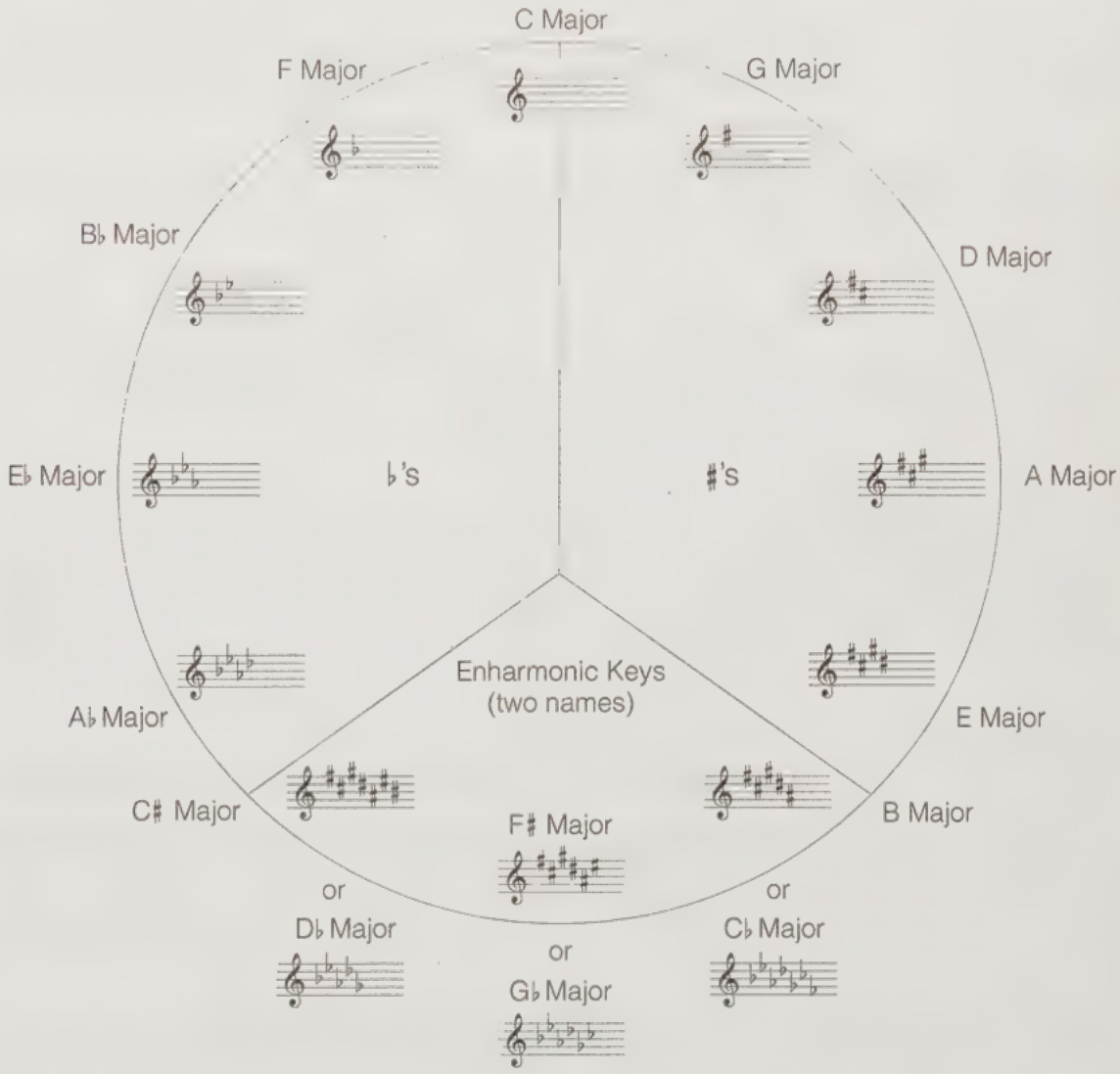


The Circle of Fifths

The order of the sharp and flat key signatures can be shown using a circle. This is a graphic representation of keynotes with their signatures. C is at the top of the circle, from where the notes progress clockwise in ascending fifths. Sharp keys progress around the circle in a clockwise direction and flat keys in a counterclockwise direction.

The Circle of Fifths and Enharmonic Keys

At the bottom of the circle of fifths, the note F-sharp is called also by its enharmonic name G-flat, and the same happens with the next note, C-sharp/D-flat; the notes on the return to C are then called by their flat names. Although the F-sharp scale is written differently from the G-flat scale, they sound the same when performed on the keyboard.



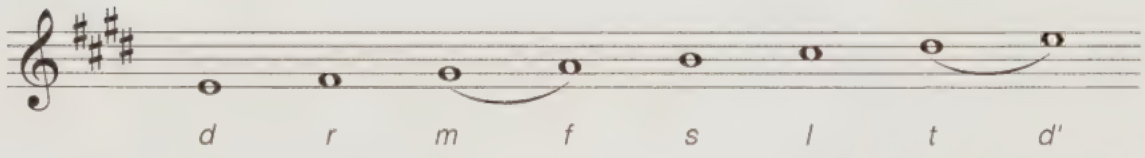
5.5 Writing Major Scales and Melodies Using a Key Signature

Writing a Major Scale Using a Key Signature

The following is a procedure for writing any scale with a key signature. We will write this example as an E major scale in the treble clef.

1. Put the key signature after the treble clef. Write the solfège syllables *d – r – m – f – s – l – t – d'* beneath the staff for the E major scale.

2. Place a note on the staff above each solfège syllable. Remember for a major scale we use eight adjacent notes. The tonic note is E; write E–F–G–A–B–C–D–E. Mark the half steps between the third and fourth degrees and the seventh and eighth degrees.

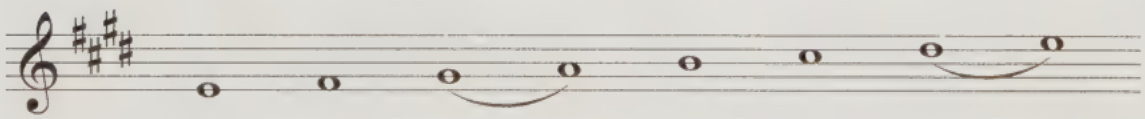


It is clearly evident that writing a scale using a key signature is an easier task than marking each note that is sharp or flat.

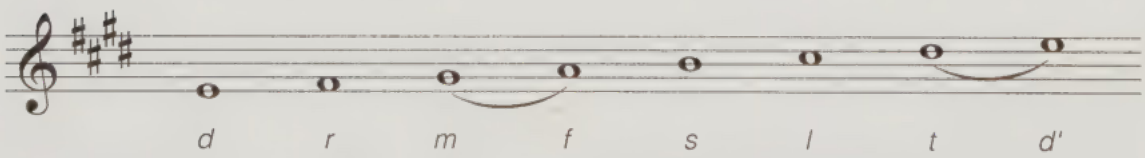
Writing a Major Melody Using a Key Signature

The following is a sample procedure for writing a major melody on the staff with a key signature.

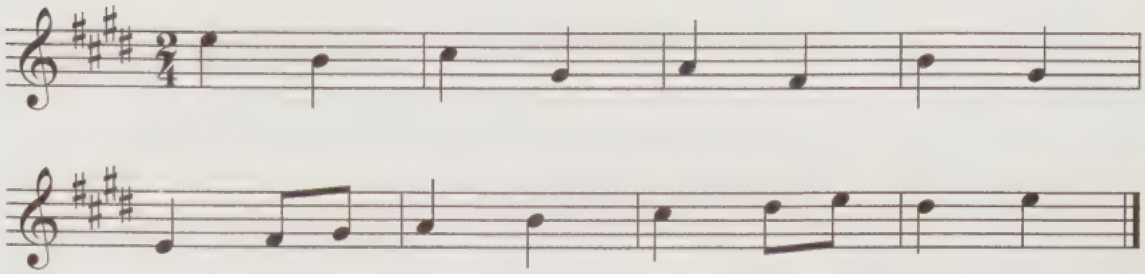
1. Determine the key and write the scale of the melody on the staff. Mark the half steps.



2. Write the solfège syllables below the scale.



3. Associate the solfège syllables with the notes of the melody. Write the melody on the staff.

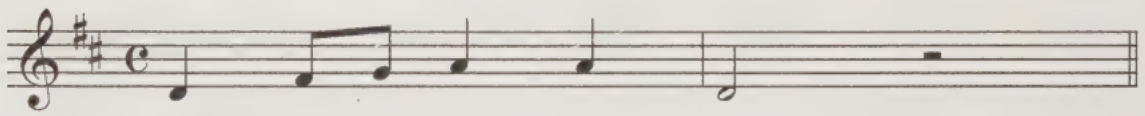


We can say that "Alleluia" is written in the key of E major, as it uses the notes of the E major scale. The tonic of this piece is E.

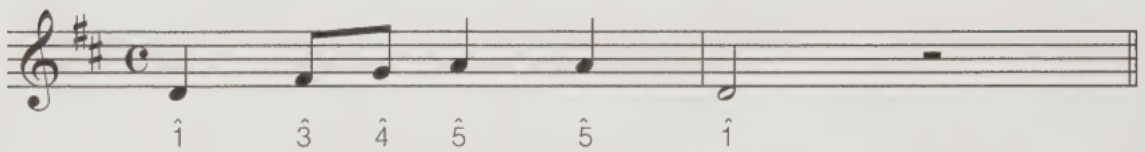
5.6 Transposition

In Chapter 4 we learned to transpose major pentachord and hexachord melodies. In this chapter we will learn to transpose major melodies into different keys. We can use the following process.

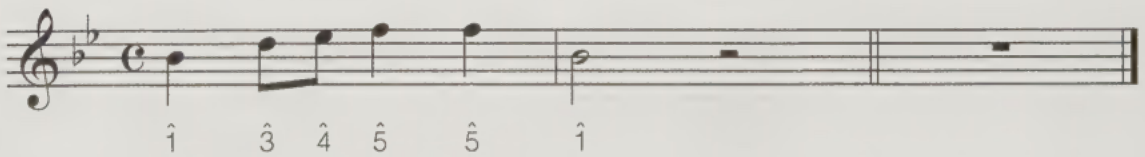
For example:
The following melody is written in D major. Let's transpose it to B-flat major.



1. Write solfège syllables or scale degree numbers under the melody to be transposed.



2. Add the new key signature and write the melody in the new key. Note that the solfège and scale degree numbers are the same in the original melody and the transposition.

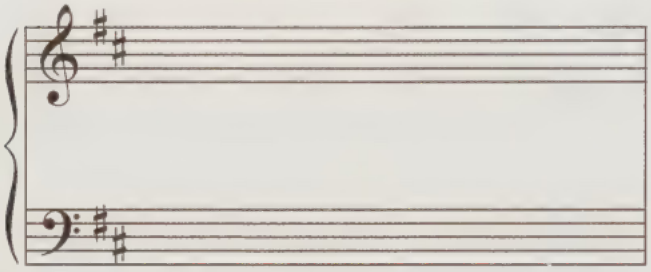


5.7 Identifying the Key of a Major Scale or Composition from a Given Key Signature

Procedure for Identifying Major Sharp Key Signatures

1. Identify the last sharp in the key signature. This sharp is the solfège syllable *ti*.
2. Identify the solfège syllable *do* (one half step above *ti*). This note, *do*, represents the scale that has the given key signature.

Identify the scale having the following key signature.

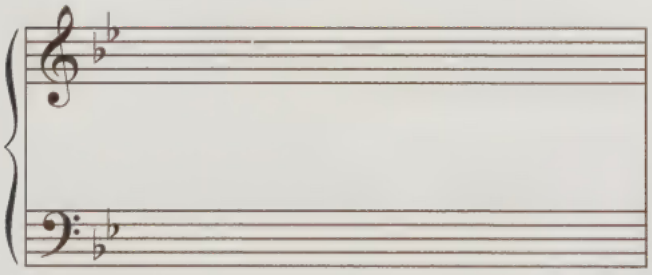


The last sharp in the key signature is C-sharp. This C-sharp is the solfège syllable *ti*. If C-sharp is *ti*, then *do* is D. This note, D (*do*), is the major scale that has the above key signature.

Procedure for Identifying Major Flat Key Signatures

1. Identify the last flat in the key signature. This flat is the solfège syllable *fa*.
2. Identify the solfège syllable *do* (the note *do* is five half steps or four scale steps, or degrees, below *fa*). This note, *do*, represents the scale that has the given key signature.

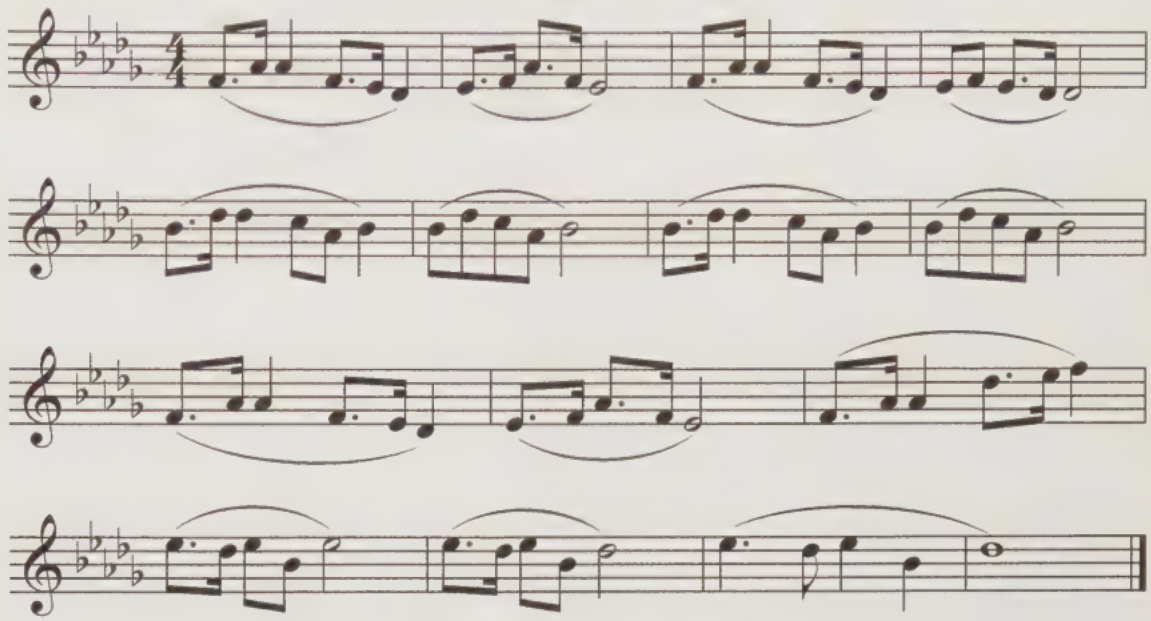
Identify the scale having the following key signature.



The last flat in the key signature is E-flat. This flat is the solfège syllable *fa*. B-flat is the solfège syllable *do*. This note, B-flat (*do*), is the scale that has the given key signature.

Dvořák wrote the *New World* Symphony while visiting America in 1892. The slow movement begins with six measures of soft chords played by the brass and strings. Sing the following theme with solfège syllables before listening to a recording.

"Largo" from the New World Symphony (thematic reduction) **Antonín Dvořák (1841–1904)**



Key Terms and Concepts

Major Scale
Tonic
Scale Degree Numbers
Scale Degree Names
Key Signatures
Tonality
Circle of Fifths