

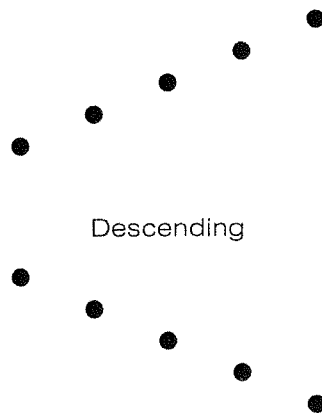
Chapter 4

Orientation to the Major Scale

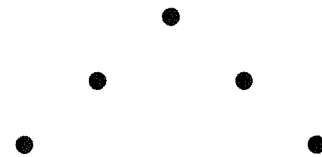
CHAPTER OVERVIEW

In this chapter we will be studying another basic element of music—melody. A **melody** is a succession of notes of variable sounds (pitches) and recognized shape. Pitches in a melody may move up or down or remain the same. Melodies may move by **skips** or **steps**. This gives a melody its **shape**, or musical **contour**. There are four types of contours:

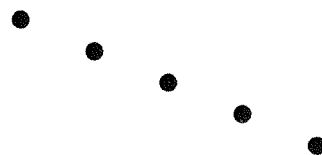
Ascending



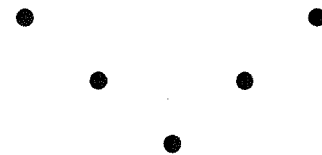
Ascending and Descending



Descending



Descending and Ascending



Pitch is the frequency (high or low) of the individual notes. Pitch is indicated by the placement of notes on a staff. The subjective sense of pitch is closely correlated with frequency. The measurement of frequency is in



cycles per second, or hertz [Hz]. Frequency is a ratio scale of measurement: each time pitch goes up by an octave, the frequency is doubled. The present international standard pitch A (above middle C) is equal to 440 Hz.

In this chapter you will begin to notate, to read music with solfège syllables, and to compose with the basic building blocks of melody. These basic building blocks form scales. **Scales** are a series of ascending or descending notes that we use to define various pitch collections of notes. These scales are found in all types of Western music. Although the melodies in this book look simple and perhaps not interesting for detailed study, you will discover that they contain the musical principles from which larger, more complex compositions develop. You will learn how the basic building blocks in music, called *motives*, are contained in phrases, and how phrases create large sections in music. These motives can be rhythmic and melodic. This melodic hierarchy is fundamental to music.

4.1 Major Pentachord Scales and Melodies

Much music grows from a system of related collections of pitches called *scales*. A scale is a sequence of notes ascending or descending stepwise. There are a variety of scales used in different cultures. In order to understand these scales, we will be studying repertoire built on smaller scale types: pentachord scales (five-note sections of a diatonic scale) and hexachord scales (six-note sections of a diatonic scale). These scales are tonal, and this means that specific hierarchical pitch relationships are based on a primary note called the **tonic**.

Sing, Memorize, and Analyze



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Internalizing Music

1. Listen to “Hungarian Canon No. 1” on Track 10. Memorize the song.
2. Sing “Hungarian Canon No. 1” while you clap the melodic contour. Clapping the melodic contour allows you to internalize the shape and direction of the phrase.
3. Pair off in the class. Facing your partner, sing “Hungarian Canon No. 1” and clap the melodic contour.

Analyzing What You Hear

1. Sing “Hungarian Canon No. 1” with rhythm syllables.
2. Sing the lowest pitch in the song.
3. Sing the highest pitch in the song.
4. Sing the beginning note of the song.
5. Sing the range of notes from the lowest note to the highest note.
6. Sing the range of notes from the highest note to the lowest note.

Constructing a Melodic Representation from Memory

1. As you sing “Hungarian Canon No. 1,” draw a representation indicating the pitches in each phrase.
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 “Hungarian Canon No. 1” with solfège syllables. **Solfège syllables** are a means for figuring out the relationships between the notes we hear. There are many solfège reading systems. We use the moveable *do* system. It is important to remember that solfège syllables identify the pitches we hear as well as help us to read music.

These are the solfège syllables for “Hungarian Canon No. 1.” Notice that the pitches in this melody move mostly by steps. There are only a few skips.

Hungarian Canon No. 1

Phrase 1: *d r m f m r m*

Phrase 2: *d r m f s s*

Phrase 3: *s m s f m r m*

Phrase 4: *d r m r d d*

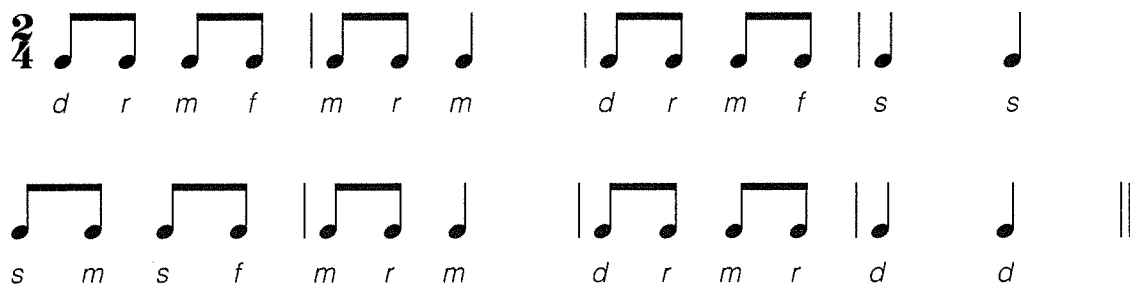
Some musicians have the ability to identify any note heard or to sing any note on demand without a pitch reference; this faculty is known as “perfect pitch.” Other musicians have the ability to identify notes heard or to sing any note on demand when given the name of the starting pitch. This is called “relative pitch.” Solfège syllables will develop your relative pitch ability. Solfège syllables have been used for centuries by beginners and professionals to teach and to learn to sing and play music.

Solfège Inventory

The **solfège inventory** is a list of the solfège syllables written in ascending order. We can circle or bold the final note of the piece of music. As mentioned earlier, there are many types of scales. A **major pentachord scale** is a series of five adjacent tones (*do-re-mi-fa-so*) with a half step occurring between the third and fourth degrees. The solfège inventory for the *do* pentachord scale is *do-re-mi-fa-so*. We can use an abbreviated form of these written syllables: *d-r-m-f-s*. Such abbreviations make it easier to notate a melody. We will use the full name of the solfège syllable to describe a scale. For example, *do* pentachord scale. Note that solfège syllables will be written in lowercase, while letter names will be written in uppercase.

Notating What You Hear with Solfège Syllables

We can write “Hungarian Canon No. 1” in rhythm notation with solfège syllables.



When we write the pitches of “Hungarian Canon No. 1” in ascending order, we discover that there are five adjacent pitches. We can label these pitches with solfège syllables *do-re-mi-fa-so*, or scale degree numbers $\hat{1}$ – $\hat{2}$ – $\hat{3}$ – $\hat{4}$ – $\hat{5}$ respectively. These numbers represent the first five pitches of the major pentachord scale. We can call this an ordered collection of pitches.

Solfège Syllable	Scale Degree Number
<i>s</i>	$\hat{5}$
<i>f</i>	$\hat{4}$
<i>m</i>	$\hat{3}$
<i>r</i>	$\hat{2}$
<i>d</i>	$\hat{1}$

Notating What You Hear on the Staff

We can write the “Hungarian Canon No. 1” on the staff beginning on C as follows:

Hungarian Canon No. 1



Listening



The following listening examples include subsets of the major pentachord scale. Can you sing the theme using solfège syllables? Can you write the themes of some of these examples using staff notation or stick notation with solfège syllables?

Subsets of the Pentachord Scale: *m–r–d*

“Carillon” from *L'Arlésienne Suite No. 1* by Georges Bizet (1838–1875).

Major Pentachord

Mikrokosmos Vol. 1, Nos. 1, 2, 6, 17, 26; vol. 3, nos. 74 and 86 by Béla Bartók (1882–1945).

“Slovakian Song,” Vol. 1, No. 5, from *44 Duets for Two Violins* by Béla Bartók (1882–1945).

“Matchmaking Song,” Vol. 1, No. 1, from *44 Duets for Two Violins* by Béla Bartók (1882–1945).

“Play Song,” Vol. 1, No. 9, from *44 Duets for Two Violins* by Béla Bartók (1882–1945).

“Pillow Dance,” *For Children* Vol. 1, No. 4, by Béla Bartók (1882–1945) (London, New York and Berlin: Boosey & Hawkes 2003).

For Children Vol. 2, No. 1, by Béla Bartók (1882–1945) (London, New York and Berlin: Boosey & Hawkes 2003).

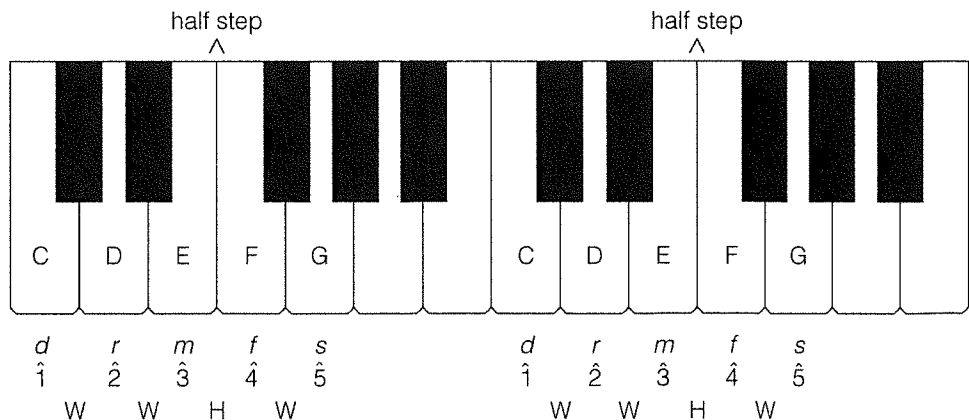
“Round Dance,” *For Children* Vol. 2, No. 6, by Béla Bartók (1882–1945) (London, New York and Berlin: Boosey & Hawkes 2003).

“The Five Fingers: Eight Very Easy Melodies on Five Notes” by Igor Stravinsky (1882–1971).

4.2 Determining the Intervals Between Notes of the Pentachord Scale

The distance between one pitch and another is called an **interval**. Intervals are identified by their size and quality. The intervals between *d* and *r*, *r* and *m*, *f* and *s* are whole steps. Since all of these intervals span two notes, we can refer to them as intervals of a *second*; the size of these intervals is a *second*. The quality of these intervals, or the number of half steps they contain, is not the same. There are two half steps between *d* and *r*, *f* and *s*, and *m* to *f* is one half step. We can refer to intervals of a second that contain two half steps as **major seconds (M2)** and intervals of a second that contain one half step as **minor seconds (m2)**.

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



Look at the whole-step (W) and half-step (H) pattern of the C major pentachord scale on the staff.



The first degree of the scale is called the *tonic* note or *keynote*. There is a half step between the third and fourth degrees of the scale. There is a whole step between all other degrees of the scale (one and two, two and three, four and five).

4.3 Writing a Major Pentachord Scale and Melody Using Accidentals

There are several things to consider when you begin to write pitches on the staff. Consider the placement of stems. Pitches that are written below the third line of the staff have their stems pointing up and to the right of the note head, and pitches written above the third line have their stems pointing down and to the left of the note head.



Stems of notes on the third line can be written either up or down.



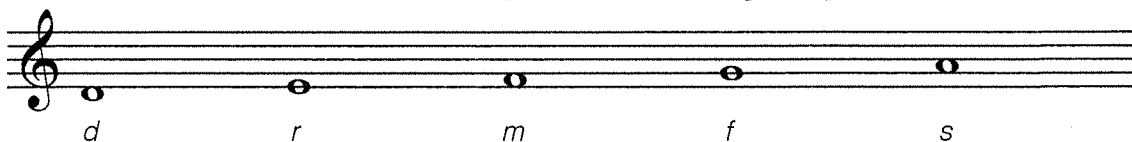
Writing a Major Pentachord Scale Using Accidentals

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

1. Write the solfège syllables *d-r-m-f-s* beneath the staff for the major pentachord scale.



2. Place a note on the staff above each solfège syllable. For a major pentachord scale we use five adjacent notes; therefore, the pitches should also be adjacent on the staff. The first procedure is to remember the sequential alphabetical spelling of scales and then simply put the notes in order. For example, if the tonic note is C, write C–D–E–F–G, or if the tonic note is D, write D–E–F–G–A. We will write this major pentachord scale beginning on D.



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



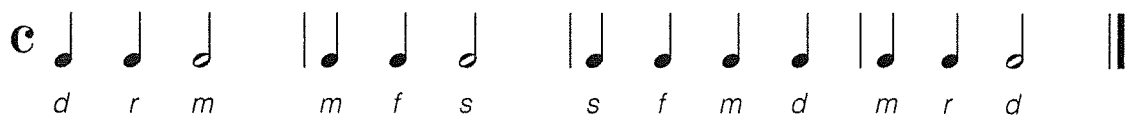
4. Check the intervallic relationship between the solfège syllables and the pitch names to insure the correct intervallic distance between the notes. In this case, we have to raise the F to an F-sharp to make the distance between *r* and *m* a whole step. That's the only alteration we need to make in the D major pentachord scale.



Writing a Major Pentachord Melody Using Accidentals

The following is a procedure for writing any major pentachord melody on the staff using accidentals. For an example, we will write “Lady Come” in the key of D major in treble clef. Music based on a particular scale is said to be in the key of that scale. If music is built on the C major pentachord scale, then the work is in the key of C major and the tonic of the music is C.

“Lady Come” written in rhythm notation with solfège syllables:

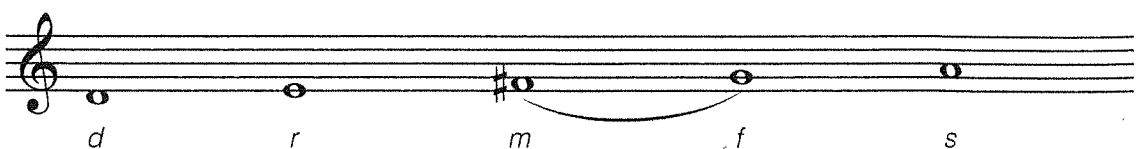


Notice that the second motive (measure two) is a transformation of motive one transposed. We call this a **sequence**. A sequence has the same rhythmic and melodic pattern, but it begins on a different note.

1. Write the D major pentachord scale on the staff using accidentals.



2. Write the solfège syllables below the scale.



3. Write “Lady Come” on the staff by associating the solfège syllables with note names in the D major pentachord.



4.4 Major Hexachord Scales and Melodies

Sing, Memorize, and Analyze



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Internalizing Music

1. Listen to “Twinkle, Twinkle, Little Star” on Track 11. Memorize the song.
2. Sing “Twinkle, Twinkle, Little Star” while you clap the melodic contour.
3. Stand and face a partner. Sing “Twinkle, Twinkle, Little Star” while you both clap the melodic contour.

Analyzing What You Hear

1. Sing “Twinkle, Twinkle, Little Star” with rhythm syllables.
2. Pair off in the class. Facing your partner, sing “Twinkle, Twinkle, Little Star” and clap the melodic contour.
3. Sing with rhythm names while clapping and showing the melodic contour.
4. Sing the lowest pitches in the song.
5. Sing the highest pitches in the song.
6. Sing the range of notes from the lowest note to the highest note.
7. Sing the range of notes from the highest note to the lowest note.

Constructing a Melodic Representation from Memory

1. As you sing “Twinkle, Twinkle, Little Star,” draw a representation of the pitches in each phrase.
2. As you point to your representation, sing the melody with rhythm syllables.

Music Theory

Describing What You Hear with Syllables

We can describe the pitches in “Twinkle, Twinkle, Little Star” with solfège syllables. Notice that the melodic movement of phrases one and five begins with a leap, but the rest of this melody moves mostly in steps.

Twinkle, Twinkle, Little Star

Phrase 1: *d d s s l l s*

Phrase 2: *f f m m r r d*

Phrase 3: *s s f f m m r*

Phrase 4: *s s f f m m r*

Phrase 5: *d d s s l l s*

Phrase 6: *f f m m r r d*

La will be represented by the solfège syllable *l*. When we arrange the pitches of “Twinkle, Twinkle, Little Star” in ascending order, we discover that there are six adjacent pitches or scale degrees. We can label these pitches with solfège syllables *d-r-m-f-s-l* or numbers $\hat{1}$ - $\hat{2}$ - $\hat{3}$ - $\hat{4}$ - $\hat{5}$ - $\hat{6}$ respectively. We refer to this collection of notes as a **major hexachord scale**. The solfège inventory is *d-r-m-f-s-l*.

Notating What You Hear with Solfège Syllables

We can write “Twinkle, Twinkle, Little Star” in rhythm notation with solfège syllables.

2/4

d d s s l l s f f m m r r d

s s f f m m r s s f f m m r

d d s s l l s f f m m r r d

The following figure shows the connection between the solfège syllables and scale degree numbers.

Solfège Syllable	Scale Degree Number
<i>l</i>	$\hat{6}$
<i>s</i>	$\hat{5}$
<i>f</i>	$\hat{4}$
<i>m</i>	$\hat{3}$
<i>r</i>	$\hat{2}$
<i>d</i>	$\hat{1}$

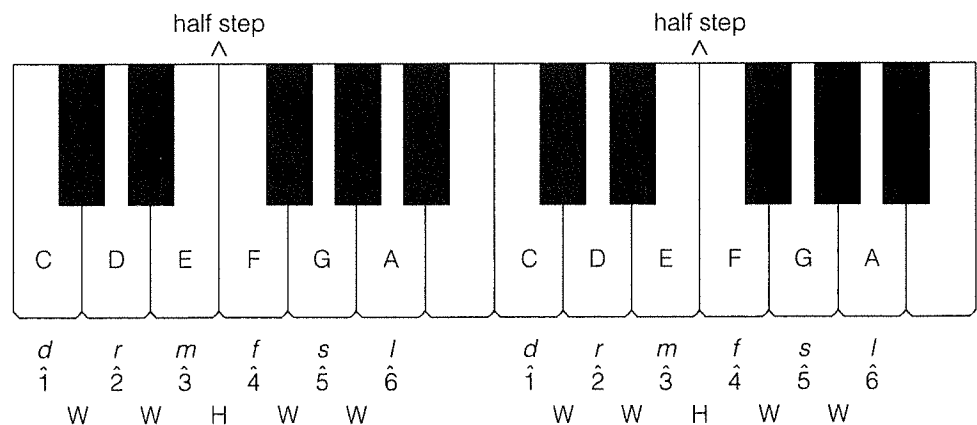
Notating What You Hear on the Staff

We can write “Twinkle, Twinkle, Little Star” on the staff beginning on C as follows:



4.5 Determining the Size and Quality of Intervals Between the Notes of the Major Hexachord Scale

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



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



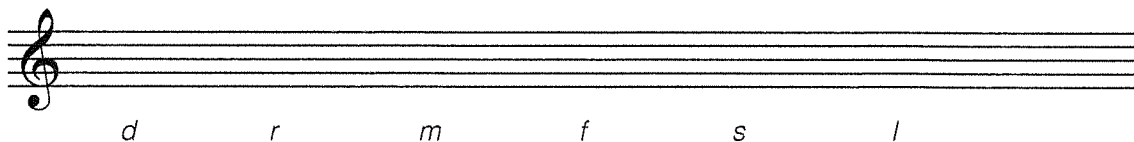
The first degree of the scale is called the tonic note or keynote. There is a half step between the third and fourth degree of the scale. There is a whole step between all other degrees of the scale (one and two, two and three, four and five, five and six).

4.6 Writing a Major Hexachord Scale and Melody Using Accidentals

Writing a Major Hexachord Scale Using Accidentals

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

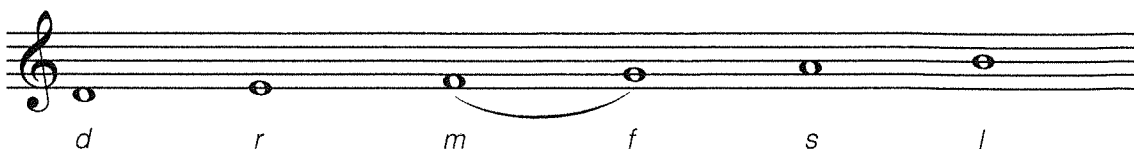
1. Write the solfège syllables *d-r-m-f-s-l* beneath the staff for the major hexachord scale.



2. Place a note on the staff above each solfège syllable. For a major hexachord scale we use six adjacent notes; therefore, the pitches should also be adjacent on the staff. The first procedure is to remember the sequential alphabetical spelling of scales, then simply put the notes in order. For example, if the tonic note is C, write C-D-E-F-G-A, or if the tonic note is D, write D-E-F-G-A-B. We will write this major hexachord scale beginning on D.



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



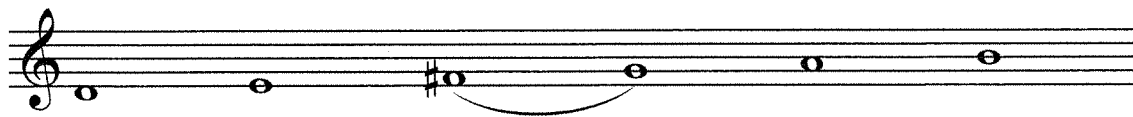
Check the intervallic relationship between the solfège syllables and the pitch names to insure the correct intervallic distance between the notes. In this case, we have to raise the F to an F-sharp to make the distance between *r* and *m* a whole step. That's the only alteration we need to make in the D major hexachord scale.



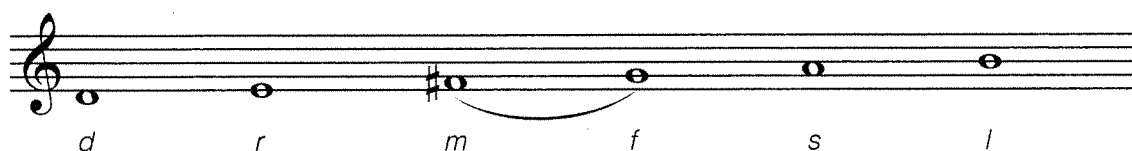
Writing a Major Hexachord Melody Using Accidentals

The following is a procedure for writing any major hexachord melody on the staff using accidentals. For an example we will write "Twinkle, Twinkle, Little Star" in the key of D major hexachord in treble clef using accidentals. Remember, 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, then the work is in the key of C major and the tonic of the music is C. We will write "Twinkle, Twinkle, Little Star" on the staff in the key of D.

1. Write the D major hexachord scale on the staff using accidentals.



2. Write the solfège syllables below the scale.



3. Write "Twinkle, Twinkle, Little Star" on the staff by associating the solfège syllables with note names in the key of D major. Note the placement of accidentals.



We can say that “Twinkle, Twinkle, Little Star” 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.