

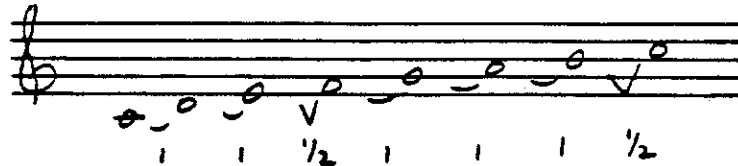
UNIT 2: SCALES, MODES, AND KEY SIGNATURES

A scale is a sequence of ascending and descending pitches. Western music has used scales as a basis of melodic and harmonic construction either in the form of MODES or in later derivations known as MAJOR and MINOR scales. In addition, the chromatic scale, whole tone scale, and pentatonic scale are commonly considered as a basis for musical composition. Other scales can be constructed and many Eastern cultures and Western composers have used scales which are variations of those listed above.

A. MAJOR SCALE

This scale consists of seven different pitches following the pattern of whole and half steps as illustrated in Example 2.1.

Example 2.1 - C Major Scale



The name of the scale is determined by the first note. When constructing a scale, (1) begin with the note which corresponds to the name of the scale, (2) write the notes without accidentals being careful not to omit any letter names, (3) determine the pattern of whole and half steps, and (4) add the appropriate accidentals. The steps outlined are illustrated in Example 2.2.

Example 2.2

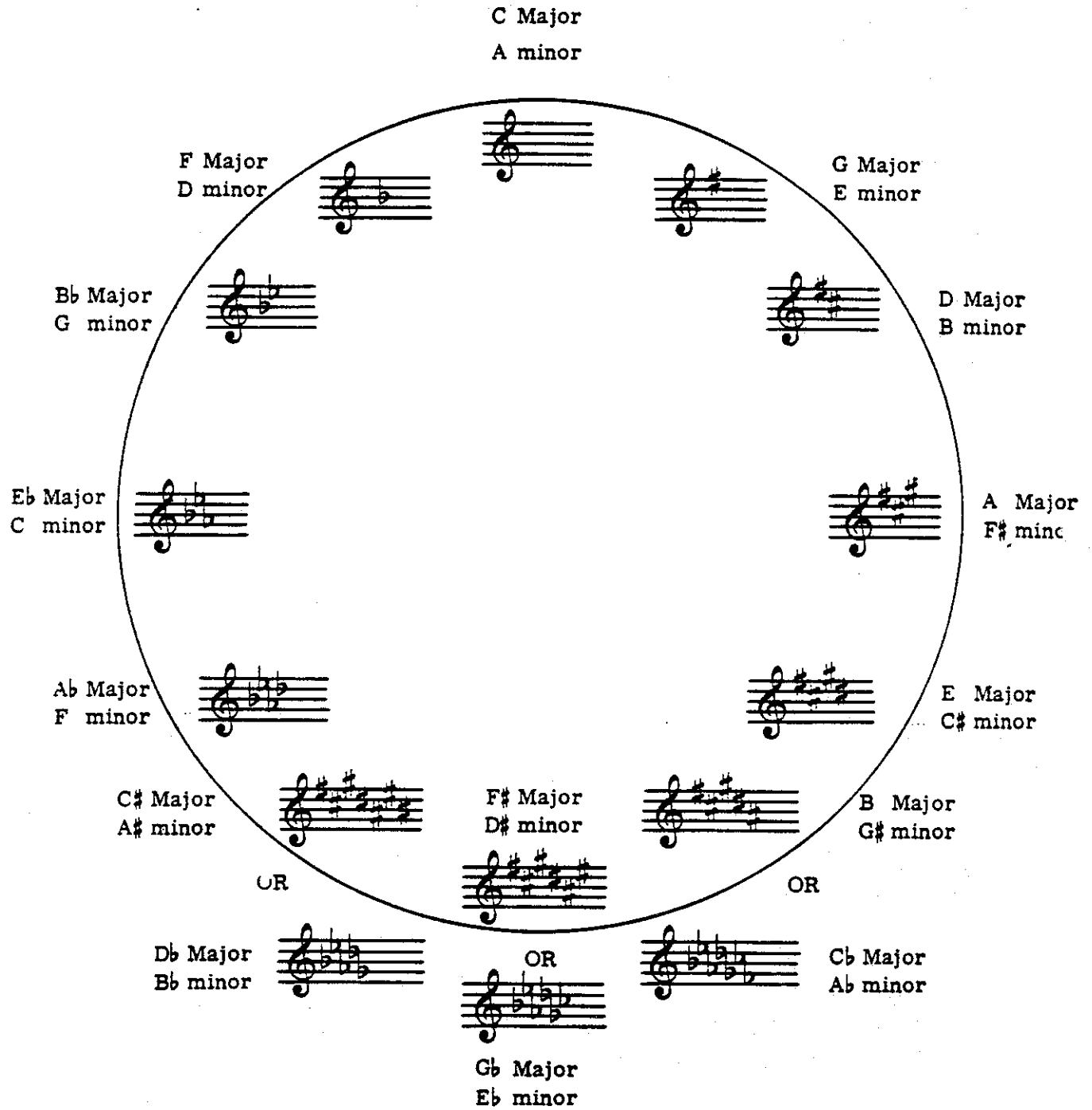
Directions: Write the B Major Scale.



Drill 2.1

Write the scales: A, C#, D, Bb, and Gb Major.

CIRCLE OF KEYS



Order of Sharps - F C G D, A E B.

Order of Flats - B E A D, G C F.

Drill 2.4

Write the scales listed in Drill 2.3 in the harmonic form.

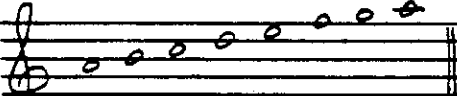
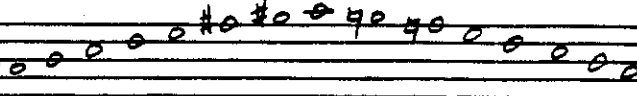
3. Melodic Minor

The melodic minor scale differs from the pure and harmonic in that it has one set of pitches ascending and another descending. It is derived from the pure form and alterations are as follows:

- a. ascending - raise the 6th and 7th scale steps by \sharp step
- b. descending - lower the 6th and 7th scale step by \flat step, thereby returning to the pure form.

Remember that these accidentals do not appear in the key signature.

Example 2.7

Natural Minor	Melodic Minor
	

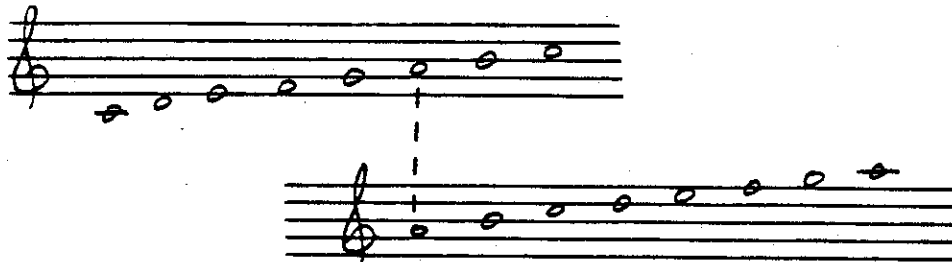
Drill 2.5

Write the three forms of the minor scale (pure or natural, harmonic, melodic - ascending and descending) on the treble and bass staves beginning on the following notes: A, B, C, D, E, F, G, C#, D#, F#, G#, A#, Bb, Ab. After you have written the three forms, play them on an instrument in order to distinguish their different sound qualities.

4. Relative and Parallel Keys

The minor keys, shown on the Circle of Keys chart on page 8, are the relative minors, which have the same key signature as their relative majors. Every major key has a relative minor key. The minor key begins on the sixth scale step of the major and proceeds up an octave. This is illustrated in Example 2.8.

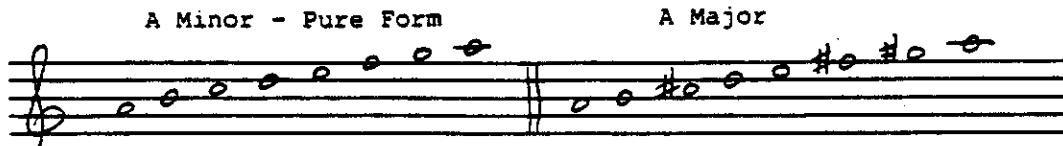
Example 2.8



Therefore the relative major and minor scales have the same key signature but begin on different pitches.

The parallel keys are major and minor scales which begin on the same pitch but have different key signatures. Therefore A minor and A major are parallel keys.

Example 2.9



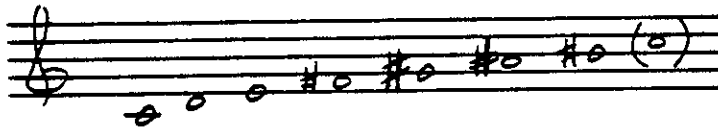
Drill 2.6

Write the scales: Parallel major of G minor
 Parallel minor (harmonic form) of E major
 Parallel minor (pure form) of Ab major
 Relative minor (harmonic form) of Eb major
 Relative minor (melodic form) of D major
 Relative major of F# minor

D. WHOLE TONE SCALE

The whole tone scale is a six note scale consisting entirely of whole steps.

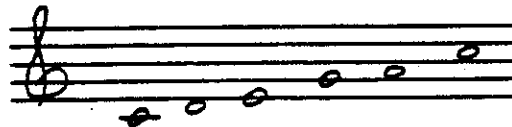
Example 2.10



E. PENTATONIC SCALE

The pentatonic scale is a five note scale most easily seen by playing the black notes on the keyboard: Gb Ab Bb Db Eb Gb. These intervals can be transposed to other positions on the piano.

Example 2.11



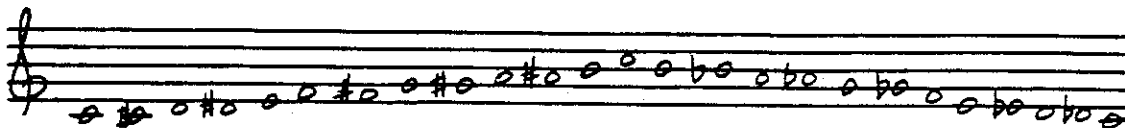
This is also called a "gapped" scale because of the two letter names which are omitted.

For further information see "Pentatonic Scale" in the Harvard Dictionary of Music. Variations of this scale system are discussed.

F. CHROMATIC SCALE

The chromatic scale is a twelve tone scale consisting of all half steps. When writing the scale use sharps in the ascending scale and use flats in the descending scale.

Example 2.12



G. SCALE DEGREE NAMES

Each pitch of a seven note diatonic scale has a name which pertains to its function. These names are applied to major keys and to all three forms of the minor.

<u>Scale Degree</u>	<u>Name</u>	<u>Where Found</u>
1	Tonic	tonal center
2	Supertonic	one step above tonic
3	Mediant	midway between tonic and dominant
4	Subdominant	the lower dominant: 5th below tonic
5	Dominant	5th above tonic, next in importance to tonic
6	Submediant	lower mediant, halfway between tonic and lower dominant
7	Leading Tone	half step below tonic, leads strongly to tonic
7	Sub-tonic	whole step below tonic

Drill 2.7

Fill in the blank with the letter name of the correct pitch:

- The supertonic in the C major scale is _____.
- The leading tone in the B major scale is _____.
- The dominant in the A minor scale is _____.
- The mediant in the Gb major scale is _____.
- The submediant in the Eb major scale is _____.
- The subdominant in the F# minor scale is _____.
- The subtonic in the E pure minor scale is _____.
- The tonic in the G minor scale is _____.

H. MODES

In music the term MODE is used generally in two ways. One usage deals with references to the modality of the major or minor scale system. In this respect a piece of music is considered to be either in the major mode or

in the minor mode. This usage is derived from scale systems known as church modes which took their names from even earlier Greek musical scales or modes. Since our present day major scale and present day pure minor scale systems are direct descendents of the church modes, musicians still refer to their specific tonal differences in terms of their modality.

The second usage of the term MODE is in direct reference to a scale in the Church Mode system. Five church modes developed in the Christian Church during the Middle Ages, and they became the basis for musical composition. They were: Dorian, Phrygian, Lydian, Mixolydian, and Locrian. Two others, the Ionian and Aeolian Mode, were added during the Renaissance.

Just as the Major and minor scales have different patterns of whole and half steps, so the church modes are distinguished from each other by an even greater variety of whole and half step patterns. Another point of comparison between major/minor and the mode system is in reference to the starting pitch. Major and minor scales begin on the TONIC, whereas the church modes begin on a note called the FINAL.

An easy way to understand the differences in the modes is to play them on the keyboard using only white keys. Begin on D. Play from D to the next octave D using only the white notes. This scale whose half steps fall between 2-3 and 6-7 is the Dorian mode. Following the same procedure but beginning on E as the final, you will have played the Phrygian mode. Continue in the same manner beginning on successive white keys and you will play the modes summarized in the following chart.

<u>Pitches Used</u>	<u>Name of Mode</u>	<u>Position of Half Steps</u>
D to D	Dorian	2-3, 6-7
E to E	Phrygian	1-2, 5-6
F to F	Lydian	4-5, 7-8
G to G	Mixolydian	3-4, 6-7
A to A	Aeolian	2-3, 5-6
* B to B	Locrian	1-2, 4-5
C to C	Ionian	3-4, 7-8

Note that "A to A" is the same as the pure minor scale and "C to C" is the same as the major scale. Be aware also that each mode has a different relationship of half and whole steps, thereby making it possible for a composer of the medieval period to use any mode, and transpose it to a higher or lower starting pitch. In so doing, the composition was placed in the desired tessitura while still maintaining the desired tonal quality of that particular mode. This practice is similar to present day use of the major or minor scales starting at any pitch level. Composers of that day used specific modes for their particular tonal characteristics just as composers of today use the varying qualities of the major and minor scales to achieve the desired effect.

Finally, the use of modes is not just a practice of the past. Rather they were used by nineteenth century composers, impressionistic composers such as Debussy and by popular and jazz composers of our time.

* Theoretical; this mode was considered defective due to the presence of the tritone (dim. fifth or aug. fourth) between the first and fifth degrees.

There are two methods which can be used to determine the mode of a composition. The first one is outlined as follows: a) determine the final or tonal center of the piece, b) extract all the diatonic pitches used in the piece and write in scale form, c) identify the mode from the position of the half and whole steps. This method requires you to memorize the position of half steps for each mode.

The second method relates the final of the mode to the major key signature. For instance, the Dorian mode will always come to rest on the second scale step of a major key. Therefore with a C major key signature, the Dorian mode is D E F G A B C D. The Phrygian mode rests on the third step of a major key. Therefore with a C major key signature the Phrygian mode is E F G A B C D E. With this method it is necessary to memorize the order of the modes in the chart on page 13 and relate the finals (tonics) to the key signature of C major. As the major key signature changes, so the finals of each mode will change. However, the order of the modes will remain the same. Example 2.13 illustrates the different finals of the Dorian, Phrygian, Lydian and Mixolydian modes as the key signature changes.

Example 2.13

- 1 Final of the Dorian Mode
- 2 Final of the Phrygian Mode
- 3 Final of the Lydian Mode
- 4 Final of the Mixolydian Mode

Drill 2.8

Identify the modes of the melodies. Follow the procedure:

1. In these melodies the final of the scale is determined by the first and last notes.
2. Write the scale from the pitches used. Remember the accidentals in the key signature.
3. Determine the mode by either method described in the preceding paragraph.

