

UNIT 12

THE MODES

In Unit 10 we learned about major and minor modes, examining the relative and parallel relationships between the two. This Unit will expand the world of modes to include four more, for a total of six.

Key Signatures, Diatonic Collections, and Tonics

What key signature is this?



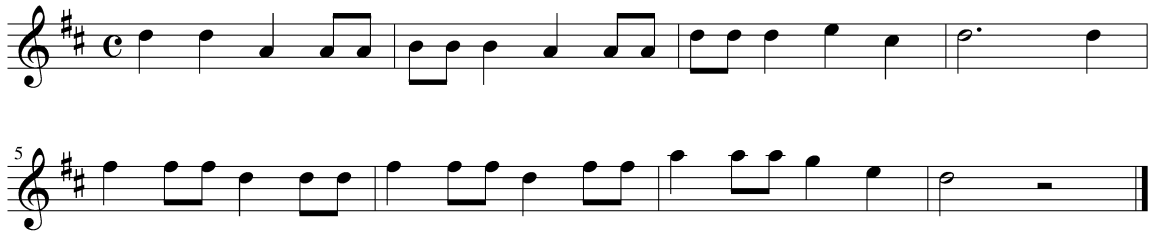
If you responded “D major,” that’s one possible answer. If you responded “B minor,” that’s another. But — even though we often ask this kind of question in casual conversation (even sometimes in music theory classes) — there is an inherent problem with the question itself.

When we are asked “What key signature is this?” about a key signature without any music following it, we don’t really have enough information to answer the question properly. Any key signature alone, without music, only tells us which pitches should be played as naturals and which should be played as sharps or flats. It does not tell us which of these pitches will serve as tonic — an essential factor in determining key. The “key” signature above tells us only to play all pitches natural except for F and C, which should be sharp. In other words, it defines a diatonic collection — in this case, the 2-sharp collection — but not a tonic, and therefore not a key.

So let’s pose the same question with more information: What key signature is this?

For this reason, some musicians consider the term “key signature” to be a terminological miscue. We could clarify things by eliminating the word “key” and referring only to “pitch” signatures or “collection” signatures. But the term “key signature” is in widespread use and — although the signature alone does not determine a key — most English-speaking musicians use this term nonetheless.

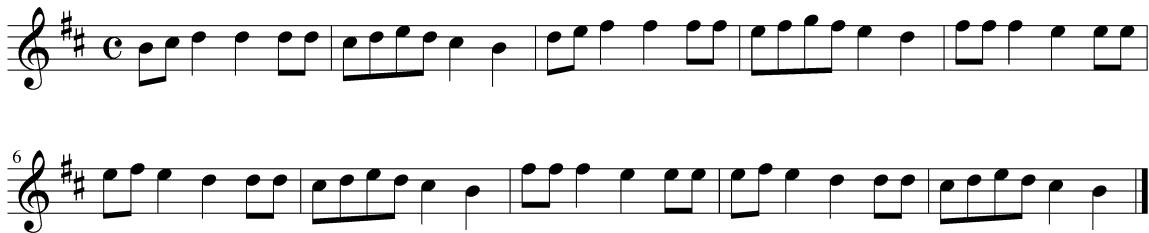
“Old King Cole,” English folk song



This time, we are able to answer the question because we have two essential pieces of information: (1) the diatonic collection, and (2) the tonic. You can see and hear that the tonic in this passage is D. The diatonic collection (as given by the key signature) is 2 sharps. We know that a tonic of D in the 2-sharp collection yields the key of D major.

Here's the same question again, but with some different music: What key signature is this?

National Anthem of Slovakia



Once again, we are able to answer the question because we know both the collection and the tonic. In this case, the 2-sharp collection and a tonic of B yield B minor.

But here's the question one more time, with still more different music:

“The Rocky Road to Dublin,” Irish folk song, chorus



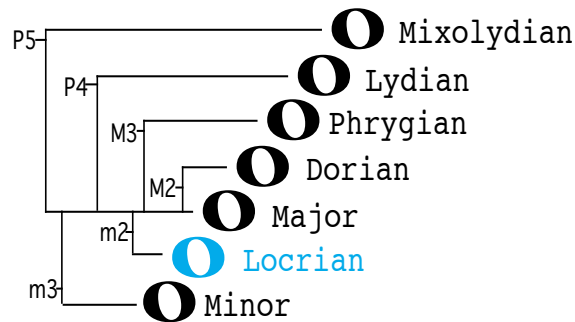
If you were careful to observe the diatonic collection on the one hand and the tonic on the other, you noticed that — while the key signature indicates the 2-sharp

diatonic collection — the tonic is neither D nor B; instead, it is E.² The mode of this passage is neither major nor minor. This passage is in the Dorian mode.

Just as the minor-mode tonic is a minor third below the major-mode tonic in the same diatonic collection (or “key” signature), the Dorian’s tonic is a *major second above* the major tonic. (Look back at these relationships in the 2-sharp collection in the three melodies above).

Relative Modes

In fact, there is a complex of modes — each with its own name — related to one another by specific intervallic distances within any diatonic collection. The following figure shows all the modes in any given diatonic collection, along with the intervallic distance from the major mode to each of the other modes:



For music of the common practice period and beyond, we usually use “major” (not “Ionian”) and “minor” (not “Aeolian”), as in the figure above.³ In scalar structure, Ionian is identical with the major scale, and Aeolian is identical with the natural minor scale, so you should review the major and natural minor scales as you learn the other modes in this chapter. In addition, notice that the Locrian mode has been dimmed in this figure. Due to its extreme rarity, we will not cover Locrian mode in any detail in this text.

This complex of modes can be moved into any diatonic collection. Let’s begin with the no-sharp/no-flat collection, in which the **major mode** tonic falls on **C** whereas the **minor mode** tonic falls on **A**. In addition to those two tonics, other diatonic

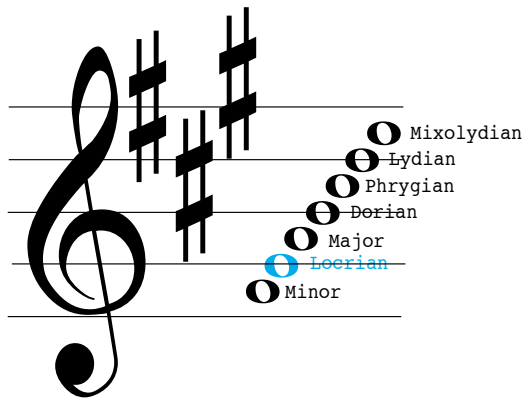
² Many musicians refrain from using the term “tonic” when referring to modal music. In particular, when discussing Medieval and Renaissance music, the term “final” is preferable because that is the term used by the musicians who made that music. However — for simplicity’s sake — this manual applies the term “tonic” to both tonal and modal music in all contexts.

³ Medieval and Renaissance music does not behave in the functional ways we associate with major and minor keys and is therefore more appropriately labeled with these old modal names.

“The Bonny Labouring Boy,” English folk song, mm. 1-4



In changing the diatonic collection (either with a key signature or accidentals), major, minor, and all the other modes move in lock step to new locations, yet they retain their positions relative to one another. Note what happens to all the relative modes when we change to the three-sharp diatonic collection:

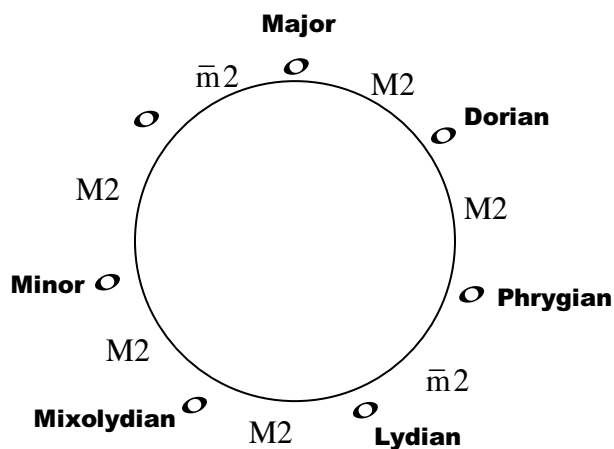


Just as you can calculate a relative minor key signature or tonic by referring to its relative major, you can calculate modal signatures and finals. The complex of keys and modes can be transposed to any of fifteen different diatonic collections through the use of key signatures. As long as you remember the distances between the major tonic and the various relative modal finals, you’ll be able to calculate the transposed modes and their corresponding “key” signatures.⁴

The Diatonic Circle

It can be helpful to think of the diatonic collection as a circle, with each of its seven pitch classes separated by successive major and minor seconds, like this:

⁴Not only is term “key signature” problematic because a key signature determines only diatonic collection (not tonic or final), but it can also provide pitches for modes as well as for keys.

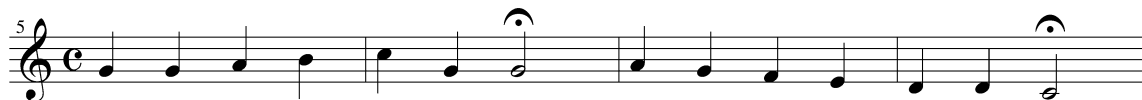


Pick one of the “notes” labeled with a mode name as a starting point on the circle, and read the intervals in succession clockwise around the circle (ignoring the rest of the mode-name labels). This will yield the interval pattern of that mode’s scale. For example, if you start with the note labeled “Dorian,” the intervals will be M2 – m̄2 – M2 – M2 – M2 – m̄2 – M2: the successive intervals in the Dorian scale. In this way, you can see that relative modes are simply *cyclic permutations* of any one diatonic collection.

Parallel Modes

Whereas relative modes share the same key signature, we can also compare modes that share the same tonic or final:

J. S. Bach, Chorale No. 239, “Den Vater dort oben,” mm. 5-8



“Hajtkák a fekete kecskét,” Hungarian folk song, mm. 1-6



The first excerpt above has a tonic of C, and uses no sharps or flats — it is in C major. The second excerpt has a final of C, but uses the one-flat collection — it is in C Mixolydian. These melodies use different diatonic collections, but they share the same tonic or final. Such modes are called **PARALLEL MODES**.

PARALLEL MODES share the same tonic or final, but not the same diatonic collection.

It is helpful to compare scale degrees in parallel modes (just as we did with parallel major and minor keys). Comparing the parallel major and Mixolydian modes

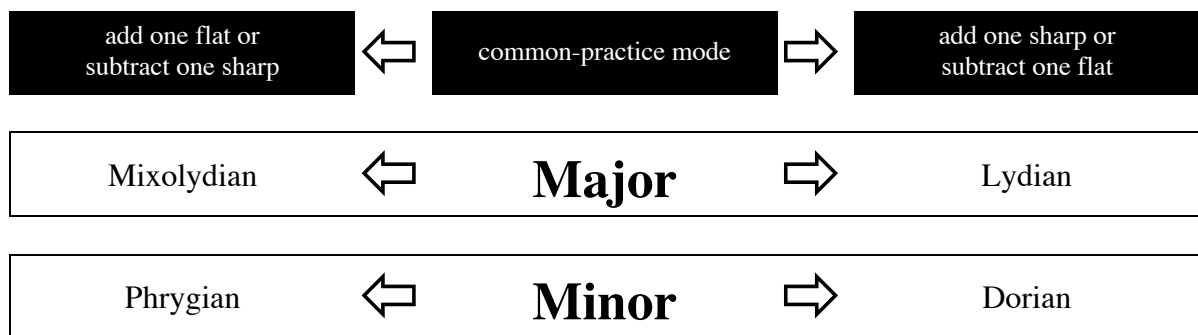
above, we see that scale degrees $\hat{1}$, $\hat{2}$, $\hat{3}$, $\hat{4}$, $\hat{5}$, and $\hat{6}$ (C, D, E, F, G, and A) are the same in both modes, but scale degree $\hat{7}$ is a half-step lower in the Mixolydian mode (B \flat) when compared to the major mode (B \natural). This difference in the seventh scale degree is true of all parallel major and Mixolydian scales.

Modal Types

Musicians classify modes according to the quality of the interval formed between the tonic or final and third scale degree. This creates two broad categories of modes: those with a *major* third above their tonic or final, and those with a *minor* third. We shall refer to the first as “major-type” modes, and the second as “minor-type” modes:

Major-type	Minor-type
Major	Minor
Lydian	Dorian
Mixolydian	Phrygian

One way of viewing these categories is with one common-practice mode — major or minor — at the center of each, with the other two parallel category members radiating outward in two opposite directions in the circle of fifths (adding or subtracting one sharp or flat in each direction; review the circle-of-fifths arrangement of the key signatures in Unit 6):



These relationships can be shown with specific examples. Here are the three major-type modes that share C as tonic or final (with major in the middle):

C Lydian

C major

C Mixolydian

And here are the three minor-type modes that share A as tonic or final (with minor in the middle):

A Dorian

A minor

A Phrygian

We can also identify the specific scale-degree changes between the common-practice modes and each of their parallel category members:

MAJOR-TYPE MODES

Lydian is like the major mode with a **raised** 4̂

Mixolydian is like the major mode with a **lowered** 7̂

MINOR-TYPE MODES

Dorian is like the minor mode with a **raised** 6̂


Phrygian is like the minor mode with a **lowered** 2̂

Modes Notated With Accidentals

The idea of labeling a mode as either major-type or minor-type has led some musicians to a special way of notating modal music. This method begins by notating the key signature of the mode's corresponding major or minor key. The alterations necessary for that particular mode (raised $\hat{4}$, lowered, $\hat{7}$, etc.) are then made using accidentals.

For example, a Mixolydian melody can be written using a major-mode key signature and then constantly lowering all seventh scale degrees with accidentals, as Bartók does in the following excerpt:

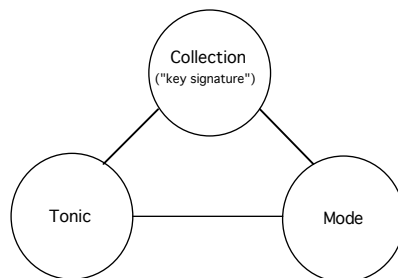
Allegro moderato. (♩ = 60) Béla Bartók, *First Term at the Piano*, No. 16, "Peasant's Dance" (1913)



Note that the pitch F always appears as F-natural in this melody; there are no F-sharps. Nonetheless, Bartók writes a one-sharp signature (suggesting G major as the referential common-practice mode) and writes in F-naturals throughout.

Mode Identification and Construction Tasks

There are three factors at work in all this: collection ("key" signature), tonic, and mode:



If you know any two of these factors, you can always deduce the third. There will be three types of situations in which you will know two of these factors and want to deduce the third:

(I) Knowing Collection and Tonic, Deduce the Mode

This is applicable to such circumstances as reading a key signature or seeing a diatonic collection for a passage and determining the tonic. You must then deduce the mode on the basis of these other two factors.

If you know the collection and tonic, you have enough information to name the mode. For example, consider the following musical excerpt:

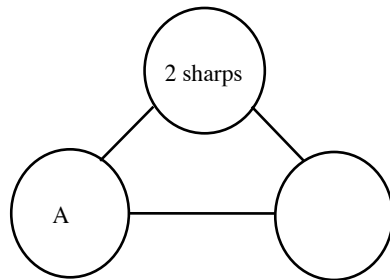
“The Months of the Year,” British folk song, mm. 1-8

The image shows two staves of musical notation in bass clef with a key signature of two sharps (F# and C#) and a common time signature (C). The first staff contains measures 1 through 4, and the second staff contains measures 5 through 8. The melody consists of quarter and eighth notes, with a final half note in measure 8.

You must use the same methods of analysis you developed in Unit 10 when we learned about determining if music is in the major or minor mode. But now — since any given key signature or collection could accommodate *six* different modes — you must be especially careful to examine the music closely in order to determine the tonic.

In the excerpt above, note that the pitches A and E are featured prominently on many downbeats and at the beginning and the end of the passage. This creates a dominant-tonic relationship between the two, which makes A feel like the tonic.

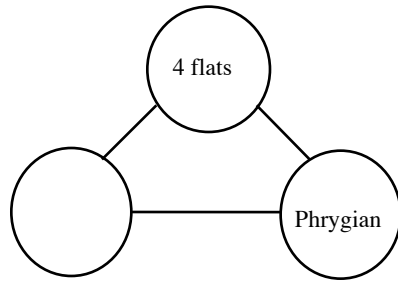
So now you have the two factors you need to determine the mode: The collection in this passage is two sharps and the tonic is A. Refer back to the information and figures above and try to fill in the missing factor (the mode) in the following diagram:



(II) Knowing Collection and Mode, Deduce the Tonic

This is applicable to such circumstances as hearing music in a particular mode and being asked to write it down using a given key signature. You must then deduce the tonic on the basis of these other two factors.

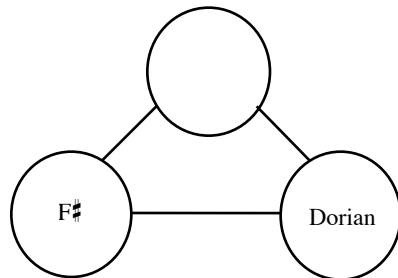
If you know the tonic and collection, you have enough information to name the mode. For example, imagine that you heard a melody in the Phrygian mode and were asked to write it down using a signature of four flats. You would need to solve the following:



(III) Knowing Tonic and Mode, Deduce the Collection

This is applicable to such circumstances as hearing music in a particular mode and being given (or hearing) a specific tonic. You must then deduce the collection on the basis of these other two factors.

If you know the tonic and collection, you have enough information to name the mode. For example, if you hear music with a tonic of F# in the Dorian mode, then what would the “key” signature be?



Pentatonic

Some music uses a five-pitch-class collection rather than the seven pitch classes used in the modes we've discussed so far. For example, note how the following excerpt uses five unique pitch classes (C–D–E–G–A, with C repeated at the upper octave):

Ruhige, nicht zu langsame Bewegung. Engelbert Humperdinck, *Hänsel und Gretel*, Prelude, mm. 1-4 (1893)

In the broadest sense, the term **PENTATONIC** can refer to any five-pitch collection, but we often reserve the term to apply only to one special kind of collection containing five pitches (of which the excerpt above is an example).⁵ One of the easiest ways to think about this particular pentatonic scale is to imagine a pentatonic collection as a subset of a diatonic collection — as one of the diatonic scales missing two pitches:⁶

The term **PENTATONIC** can refer to any five-pitch collection, but we usually reserve the term to refer to a collection with the following interval pattern: M2–M2–m3–M2–m3.

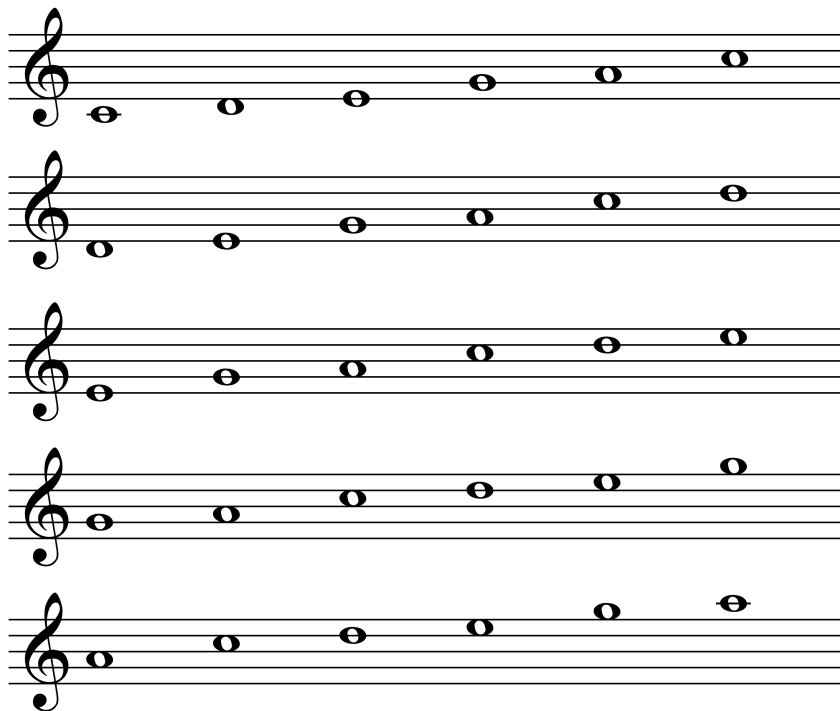
Note that the pentatonic scale above contains only five unique pitch classes; C is repeated at the octave. The interval pattern for this particular pentatonic scale is M2 – M2 – $\bar{m}3$ – M2 – $\bar{m}3$.

⁵ There are many cultures around the world that use five-note scales. Some of these scales use very different intervals between the pitches compared to the one we'll discuss here (for example, the Japanese *in* and the Korean *kyemyonjo* scales). There are also many cultures that use scales based on other numbers of pitches (not five or seven). The technical name for the pentatonic collection we'll investigate here is the *anhemitonic pentatonic collection*. This kind of pentatonic scale does seem to appear in a variety of cultures around the world, including some in West Africa, China, and the British Isles. No one knows if there's a common thread among these cultures, or — if such a thread exists — whether it's cultural (rooted deep in human history), psychological (rooted in how we think about and respond to pitch), physical (rooted in how objects vibrate), or something else.

⁶ Although it's convenient to think of a pentatonic scale as an “incomplete” or “gapped” diatonic scale, in many musics and cultures it stands on its own without reference to any larger collection.

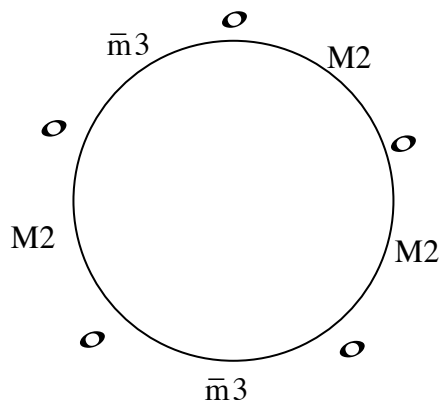
Some other examples of this kind of pentatonicism include the melody (both whistled and sung) of the song “Young Folks” by Peter Bjorn and John (<http://youtu.be/OIRE6iw-ws4>; wait through the advertisement and close your eyes if the video annoys you), and the melody for the song “Amazing Grace” (for example: <http://www.youtube.com/watch?v=4LtMXyrTXqU> [warning: bagpipes!] or <http://www.youtube.com/watch?v=Or8SNSzoBC4> [warning: wind noise]).

But in the same way that various members of the diatonic collection can serve as tonics or finals, various members of the pentatonic collection can serve as finals, creating different pentatonic scales or modes. So, for example, all of the following are pentatonic scales using the same pitch classes, but each begins (and ends) on a different pitch as its final:

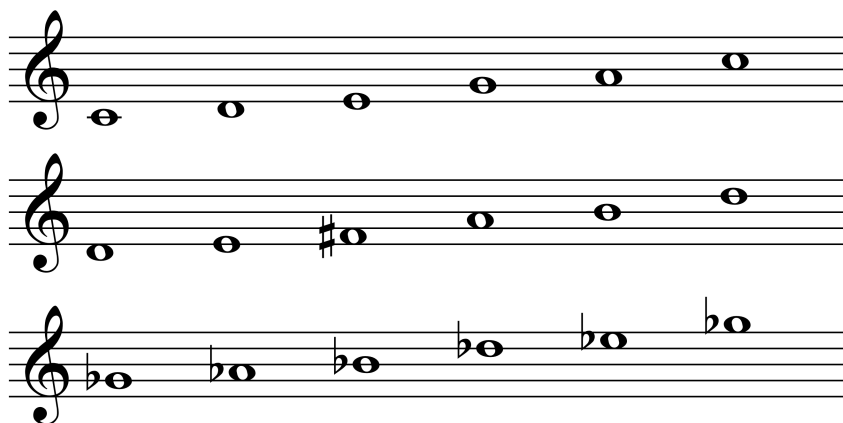


The first of these is sometimes called the “major pentatonic” scale and the last is sometimes called the “minor pentatonic,” but the others have not gained any widely used common names (although you might see a variety of names like “blues minor,” “Egyptian,” and so on).

In this way, the pentatonic collection is similar to the diatonic collection in that it may undergo cyclic permutations which yield different modes. We can represent this as a circle, similar to the way we did with the diatonic modes. Start in a different place and you create a different pentatonic mode:



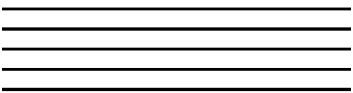
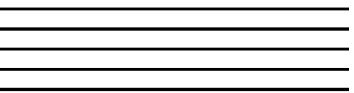
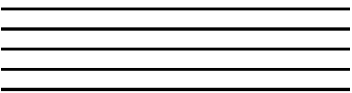
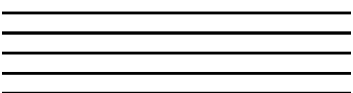
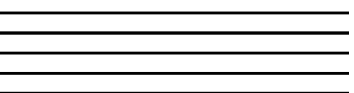
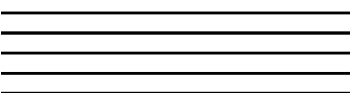
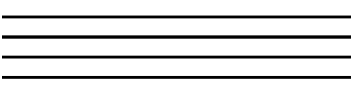
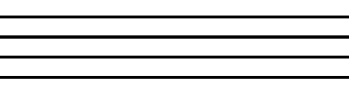
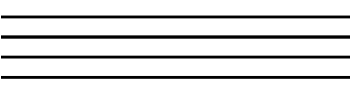
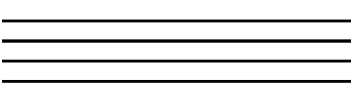
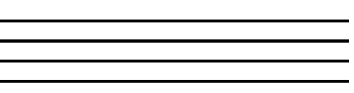
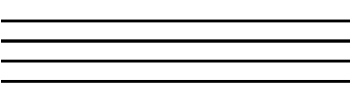
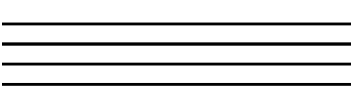
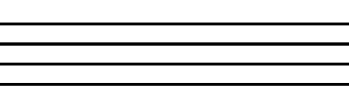
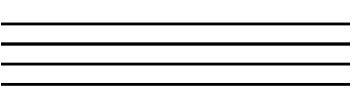
Finally, note that — just like diatonic scales — pentatonic scales may be transposed to begin on various pitches, as well. For example:



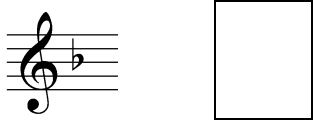
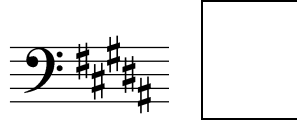
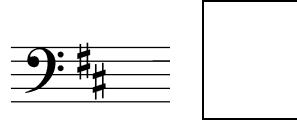
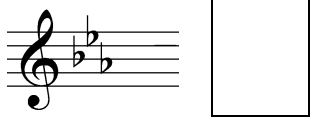
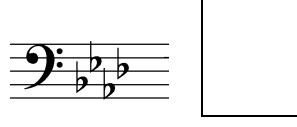

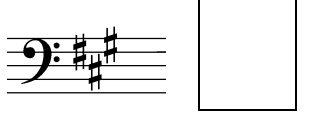
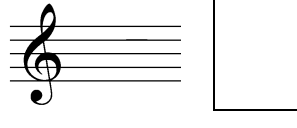

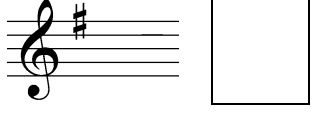


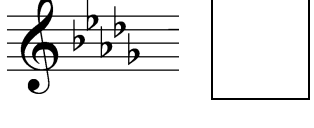
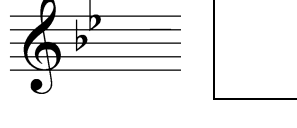

All three of those are transpositions of the same major pentatonic scale (M2 – M2 – m3 – M2 – m3).

Exercises

(A) Write the following modal “key” signatures in the indicated clefs (be sure to write both the clef and key signature for each):

<p>(1) E Dorian; treble clef</p> 	<p>(2) C Phrygian; bass clef</p> 	<p>(3) A Lydian; bass clef</p> 
<p>(4) B Mixolydian; bass clef</p> 	<p>(5) C\sharp Phrygian; treble clef</p> 	<p>(6) E\flat Dorian; treble clef</p> 
<p>(7) E\flat Lydian; treble clef</p> 	<p>(8) E minor; bass clef</p> 	<p>(9) D\sharp Phrygian; treble clef</p> 
<p>(10) B\flat Dorian; bass clef</p> 	<p>(11) G\sharp Dorian; treble clef</p> 	<p>(12) G Mixolydian; bass clef</p> 
<p>(13) A\flat major; bass clef</p> 	<p>(14) F\sharp Mixolydian; bass clef</p> 	<p>(15) F\sharp Lydian; treble clef</p> 

(B) Identify the following modal “key” signatures by writing the tonic in the box to the right of each. Be sure to observe the mode indicated for each:

(1) Dorian 	(2) Phrygian 	(3) Lydian 
(4) Mixolydian 	(5) Phrygian 	(6) Mixolydian 
(7) Dorian 	(8) Lydian 	(9) Dorian 
(10) Phrygian 	(11) Lydian 	(12) Mixolydian 
(13) Major 	(14) Mixolydian 	(15) Minor 

(C) Identify the tonic and mode of each of the following excerpts. Express your answer in the form of the tonic pitch followed by the mode name (for example, “B Phrygian”; “G Lydian”; “D major”).

(1)

Calmo, $\text{♩} = 80$ Béla Bartók, *Mikrokosmos*, No. 34, mm. 1-9 (1939)

(2)

Michel Behaim, Meistersinger song, "Gekronte Weise," mm. 14-22

14

18

(3)

"Nous Avons Trois Bell' Filles," French folk song

5

(4)

Vincenzo Bellini, *Norma*, Act I, "Ah! bello a me ritorna," mm. 30-42 (1831)

Allegro

30

Sei len - to, di, sei len - to o gior - no di ven - det - ta; ma i - ra - to il Dio t'af -

36

fret - ta che il Te - bro con - dan - nò, ma i - ra - to il Dio t'af - fret - ta che il Te - bro con - dan - nò.

(5)

Tempo di marcia, $\text{♩} = 106$

Béla Bartók, *Mikrokosmos*, No. 55, "Triplets in Lydian Mode," mm. 1-8 (1939)

f

3

3

3

(6)

Allegretto spiritoso

Ludwig van Beethoven, *Twelve Scottish Songs*,
WoO 156, No. 6, "Highland Harry," mm. 8-15 (1815)

My Harry was a gal-lant gay, Fu' state-ly strade he on the plain; But
now he's ban-ish'd far a-wa, I'll nev-er see him back a-gain.

(7)

Arnaut Daniel, Troubadour song "Lo ferm voler qu'el cor," mm. 1-7 (late 12th century)

(8)

Peter Ilich Tchaikovsky, *Symphony No. 1, Op. 13*
("Winter Daydreams"), mmt. 4, mm. 17-21 (1874)

Andante lugubre (♩ = 76)

p espr.

(9)

"The Cunning Cobbler," British folk song

(10)

“Le Noël des Oiseaux,” French folk song

The image shows two staves of musical notation in bass clef, 2/4 time signature, and one flat (B-flat). The first staff contains 10 measures of music. The second staff begins with a measure rest labeled '5' and contains 5 measures of music, ending with a double bar line. The notes in the first staff are: G2, A2, B2, C3, D3, E3, F3, G3, A3, B3. The notes in the second staff are: G2, A2, B2, C3, D3, E3, F3, G3, A3, B3.