Missouri State University
Department of Music

Music Fundamentals Primer

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Music Fundamentals Primer
Lesson 1 – Clefs and Pitch Notation

The notation of pitch has evolved over the centuries into our modern system that employs a five-line staff and various clefs. The use of different clefs allows us to notate a wide range of pitches from very low piano, tuba, or bass notes to very high piano, flute, or soprano notes. The two most common clefs are treble and bass, which must be mastered before the study of music can really begin.

Eventually, you must know by memory all of the note names associated with the lines and spaces of both of these clefs. As an aid in learning these, it is suggested that you memorize two or three “anchor notes” then count up or down from there. For example, memorize the middle line and the top and bottom lines, and count by letter name up or down to find the pitch. Notes outside of the range of the clefs can be accommodated with ledger lines, which are drawn above or below the staff only when needed for a high or low note.

Accidentals are applied to notes to raise or lower natural, or “white key” pitches. A flat (♭) lowers the pitch by one half step, while a sharp (♯) raises the pitch by one half step. The natural symbol (♮) is used to cancel an accidental that has been previously applied. When accidentals appear on a staff, they are placed on the same line or space of the note they affect. They are also placed immediately to the left of the note-head that is affected. However, when we say the note-name, or write it as a letter name, the accidental comes after the pitch.
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Exercises for Lesson 1

I. Label each pitch by letter name.

II. Notate the pitches on the staff (any octave is OK).
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Lesson 2 – Scales and Key Signatures

A **scale** is a collection of pitches that is used in a particular section of music. For convenience, scales are typically written as ascending seconds (whole steps and half steps) from a low note to a high note that shares the same letter name and is one octave higher. Basic diatonic scales have seven different pitches before returning to the duplicate octave. Unfortunately for musicians, our notation system gives the false impression that all lines and spaces on the staff are equal in distance. Because this is a false impression, it is critical to learn which adjacent pitches are separated by whole steps, and which are separated by half steps. Using a piano keyboard as a visual aid, it is easy to see where these whole and half steps lie between white-key (unaltered) pitches.

![Piano Keyboard Diagram](image)

The major scale is a particular arrangement of whole and half steps, and can most easily be remembered as the white notes from C to C. One easy way to think of a major scale is as two identical four-note segments (tetrachords) that are separated by a whole step. WWH W WWH

Major scales can be transposed to begin on any pitch, but they retain this whole and half step pattern through the application of accidentals.

**B major**

![B Major](image)

**Key signatures** are a notational convenience which allow music to be written without the clutter of accidentals that must be applied to every occurrence of a pitch class in a scale. The number and order of sharps and flats in each key signature must be memorized. The order of sharps in key signatures is always FCGDAEB. The order of flats is always BEADGCF. Notice that these are the reverse of each other. There are mnemonic devices that can aid in memorization, but eventually these must actually be memorized. One device for sharps is “Fat Charlie Goes Down And Eats Breakfast.” One for flats is “Big Elephants After Death Get Cold Feet.”
Major Key Signatures

C G D A E B F# C#

C F Bb Eb Ab Db Gb Cb

Minor Key Signatures

a e b f# c# g# d# a#

a d g c f bb eb ab
There are methods for identifying key signatures before they are memorized. The method illustrated here relies on the student’s knowledge of intervals, which will be covered in the next lesson. The method does not work for two major keys (C and F) and one minor key (a), which are easily memorized.

- For major keys with sharps: Count up a minor 2nd (one half step) 1 from the last sharp in the signature, and that is the name of the key.
- For major keys with flats: The second-to-last flat is the name of the key. Also, if you count down a perfect 4th (five half steps) from the last flat, that is the name of the key.
- For minor keys with sharps: Count down a major 2nd (two half steps) from the last sharp in the signature, and that is the name of the key. Also, the third-to-last sharp is the name of the key.
- For minor keys with flats: Count up a major 3rd (four half steps) from the last flat in the signature, and that is the name of the key.

A method for writing key signatures is illustrated below. Notice the placement of sharps and flats in the printed key signatures from the previous example. flats and sharps must be written in the correct order, and in the correct octave on the treble and bass staves. Again, the keys of C major, F major, and a minor must be memorized, as this method does not apply in those cases.

- For major keys: Count down a minor 2nd (one half step) 2 from the name of the key. If that note is a sharp, the key signature will be sharps. Write sharps (in order) until you reach that note. If that note is not a sharp, write flats until you reach the name of the key, then write one more.
- For minor keys: If the name of the key contains a sharp, or if the name is e or b, count up a major 2nd (two half steps) from the name of the key and write sharps until you reach that note. For all others, count down a major 3rd (four half steps), and write flats until you reach that note.

A second method for writing minor key signatures is to first memorize all of the major signatures, then figure the minor key signature for the same note name by adding three flats to the major signature. Note that adding flats is the same as taking away sharps. For example, if you know the key signature for F major is one flat, you can determine the signature for f minor by adding three flats, giving you four flats. Another example is adding three flats to the two sharps for D major, giving you one flat for the signature of d minor.

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1 A minor second must have a different letter name from the original. For example, one half step above C could be spelled as either C♯ or D♭. The minor second above C is D♭, because it has a different letter name.

2 One half step below E could be spelled as either E♭ or D♯. The minor second below E is D♯, because it has a different letter name.
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Exercises for Lesson 2 (A)

I. Identify both the major AND minor keys represented by the given signature.

II. Write the specified MAJOR key signatures.

III. Write the specified MINOR key signatures.
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Exercises for Lesson 2 (B)

I. Identify both the major AND minor keys represented by the given signature.

II. Write the specified MAJOR key signatures.

III. Write the specified MINOR key signatures.
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Lesson 3 – Intervals

An interval is the distance between two pitches. This distance is measured by 1) quantity, or the number of lines and spaces (or letter names) between pitches, and 2) quality, or the precise distance, given that the distances between some lines and spaces are “smaller” than others. To determine the quantity of an interval, simply count lines and spaces, or letter names, between the pitches. You must be sure to include the starting pitch and the ending pitch in your count. For example, the distance from E up to B is E-F-G-A-B, or five. The interval between E and B is a fifth. The interval between B and F (B-C-D-E-F) is also a fifth. However, if you count the number of half steps that these two fifths contain, you will see (and hear) that they are different. The fifth from E up to B has seven half steps (F, F♯, G, G♯, A, A♯, B), while the fifth from B up to F has only six half steps (C, C♯, D, D♯, E, F). Therefore, we must distinguish the difference by labeling the qualities of the two fifths. There are several ways to determine the quality of an interval. For now, we will use the most direct way, by counting the number of half steps each interval contains. Eventually, you will need to be able to spell and recognize intervals without pausing to count.

Intervals are divided into two main categories, perfect and imperfect. The perfect intervals are unisons, octaves, fourths, and fifths. Imperfect intervals are seconds, sevenths, thirds, and sixths. The quality of an interval in the perfect category can only be diminished, perfect, or augmented (i.e. there is no such thing as a “major fifth”). If an interval is one half-step smaller than perfect, it is diminished. If an interval is one half-step larger than perfect it is augmented.

The quality of an imperfect interval can only be diminished, minor, major, or augmented (i.e. there is no such thing as a “perfect third”). Minor intervals are one half-step larger than diminished, major are one half-step larger than minor, and augmented are one half-step larger than major. Just as pitches can be spelled several different ways, intervals can be spelled differently as well. For example, a minor third contains the same number of half steps as an augmented second (3).

<table>
<thead>
<tr>
<th>Interval Name</th>
<th>Number of half steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>perfect unison (P1)</td>
<td>0</td>
</tr>
<tr>
<td>minor second (m2)</td>
<td>1</td>
</tr>
<tr>
<td>major second (M2)</td>
<td>2</td>
</tr>
<tr>
<td>minor third (m3)</td>
<td>3</td>
</tr>
<tr>
<td>major third (M3)</td>
<td>4</td>
</tr>
<tr>
<td>perfect fourth (P4)</td>
<td>5</td>
</tr>
<tr>
<td>augmented fourth (A4)</td>
<td>6</td>
</tr>
<tr>
<td>diminished fifth (d5)</td>
<td>6</td>
</tr>
<tr>
<td>perfect fifth (P5)</td>
<td>7</td>
</tr>
<tr>
<td>minor sixth (m6)</td>
<td>8</td>
</tr>
<tr>
<td>major sixth (M6)</td>
<td>9</td>
</tr>
<tr>
<td>minor seventh (m7)</td>
<td>10</td>
</tr>
<tr>
<td>major seventh (M7)</td>
<td>11</td>
</tr>
<tr>
<td>perfect octave (P8)</td>
<td>12</td>
</tr>
</tbody>
</table>
Music Fundamentals Primer
Exercises for Lesson 3 (A)

I. Identify the intervals by quality and quantity.
   Use d, m, M, and P to label quality, and a number to label quantity.
   Be sure to clearly distinguish between capital M (for major) and lower-case m (for minor).

II. Write the intervals ABOVE the given pitches. DO NOT CHANGE THE GIVEN NOTE!
Music Fundamentals Primer
Exercises for Lesson 3 (B)

I. Identify the intervals by quality and quantity.
   Use d, m, M, and P to label quality, and a number to label quantity.
   Be sure to clearly distinguish between capital M (for major) and lower-case m (for minor).

II. Write the intervals ABOVE the given pitches. DO NOT CHANGE THE GIVEN NOTE!
A **triad** is a group of three notes that sound at the same time. In much tonal music, chords are built by stacking thirds on top of each other, creating what is known as **tertian** harmony. A tertian triad is a chord with three notes that is built with thirds. Even when a chord is spread out over several octaves and/or re-voiced so that the notes appear in a different order, we still hear these as equivalent.

When determining how to name a chord, the first step is to stack it in thirds in its most compact form. The most compact form will always be thirds and within one octave. Once this compact form is determined, the notes are identified as **root** (lowest), **third** (middle), and **fifth** (highest). The following example is a guide through the process of determining which note is which in several chords.

The first step is to identify the pitches in the chord. In the first, from bottom to top, we have F, B₃, and D. There are three possible arrangements of these three notes within a single octave (shown in step 2). The one arrangement in which all of the adjacent intervals are thirds is the most compact form, which is called “root position” (marked with the asterisk). Once root position is found, we can identify the root at B₃, the third as D, and the fifth as F. In the second example, F is the root, A is the third, and C is the fifth.

There are four possible qualities for a triad: diminished, minor, major, or augmented. The quality of a triad is defined by the quality of the thirds (major or minor) that make up the chord. If both thirds are minor, the triad is **diminished**. If the bottom third is minor and the top is major, the triad is **minor**. If the bottom third is major and the top is minor, the triad is **major**. Finally, a triad that has both major thirds is **augmented**. These qualities are abbreviated as o, m, M, and +, respectively.
I. Spell the triads in root position (root, third, fifth).

II. Identify the quality of the triads. o, m, M, or +

III. Notate the triads above the given ROOT. DON’T CHANGE THE GIVEN NOTE!
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Lesson 5 – Rhythm

Below are listed common note and rest values. Each successive value is worth exactly half of the preceding value.

If a duration that is not divisible by two is to be notated, a dot or a tie is used. A dot increases the value of a note by one half the original value. Therefore, a dotted quarter note equals three eighth notes, rather than the two that a quarter note equals. A tie can be used to express a duration that cannot divide into either two or three smaller values. For example, a whole note tied to a quarter note is the same duration as five quarter notes. This duration cannot be expressed with a single note value or a dotted note value. Ties can also be used to extend a duration across a barline.
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Exercises for Lesson 5

1. Determine the number of notes or rests that are equivalent to the given value.

\[
\begin{align*}
\text{\( \cdot \)} &= ___ \text{\( \cdot \)} \\
\text{\( \text{-} \)} &= ___ \text{\( \cdot \)} \\
\text{\( \text{\( \uparrow \)} \text{\( \downarrow \)} \)} &= ___ \text{\( \cdot \)} \\
\text{\( \text{\( \uparrow \)} \text{\( \downarrow \)} \text{\( \uparrow \)} \text{\( \downarrow \)} \)} &= ___ \text{\( \cdot \)}
\end{align*}
\]
Music Fundamentals Primer
Lesson 6 – Meter

Time in music is organized by regular pulses, which are grouped together and divided. The grouping together of these pulses, or beats, results in meter. The way in which the beat is divided distinguishes the meter type.

The most common groupings of beats are into twos (duple), threes (triple), and fours (quadruple). In musical notation, groupings of beats are marked by measures, or bars, with barlines indicating where one grouping ends and another begins. The number of beats in a measure will typically be two, three, or four.

Beats themselves can be divided into two or three equal parts. These divisions are classified as simple (two equal parts), and compound (three equal parts). The way in which a beat is divided determines how a meter is indicated by its meter signature (or time signature).

If the top number of a meter signature is 2, 3, or 4, the meter is almost always simple. In simple meters, the beat is divided into two parts, and the top number of the meter signature indicates the number of beats in each measure. The bottom number indicates which note value receives one beat. For example, the meter signature $\frac{3}{4}$ indicates three beats in each measure, with the quarter note receiving one beat.

By contrast, in compound meters, the beat is divided into three parts and the top number of the meter signature does not indicate the number of beats in the bar. If the top number of a meter signature is 6, 9, or 12, the meter is almost always compound. Exceptions to this rule can be found when the tempo is extremely slow or extremely fast. The top number in compound meters indicates the number of divisions in each measure. The bottom number indicates which note value receives one division. In order to determine the number of beats in a measure of compound time, the top number in the meter signature is divided by three. To determine which note value receives one beat, three divisions are added together. This note value will always be a dotted note. For example, the meter signature $\frac{9}{8}$ indicates six divisions in each measure, with the eighth note receiving one division. Six divided by three yields two beats per measure. Three eighth notes added together gives a dotted quarter note as the unit of beat. A measure of $\frac{9}{8}$ has two beats, each lasting one dotted quarter note.
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Exercises for Lesson 6

I. Indicate the number of beats per measure for each meter signature.

\[ \frac{4}{2} \] has _____ beats per measure.

\[ \frac{6}{8} \] has _____ beats per measure.

\[ \frac{2}{4} \] has _____ beats per measure.

\[ \frac{4}{8} \] has _____ beats per measure.

\[ \frac{12}{16} \] has _____ beats per measure.

\[ \frac{9}{8} \] has _____ beats per measure.

\[ \frac{12}{4} \] has _____ beats per measure.

\[ \frac{2}{2} \] has _____ beats per measure.

\[ \frac{2}{4} \] has _____ beats per measure.

\[ \frac{3}{4} \] has _____ beats per measure.

\[ \frac{6}{4} \] has _____ beats per measure.

II. Label the meter type for the given meter signature as A) simple or compound, and B) duple, triple, or quadruple.

\[ \frac{9}{16} \] A) compound  B) triple_____

\[ \frac{4}{4} \] A) _________  B) _________

\[ \frac{6}{8} \] A) _________  B) _________

\[ \frac{2}{2} \] A) _________  B) _________

\[ \frac{2}{4} \] A) _________  B) _________

\[ \frac{12}{4} \] A) _________  B) _________

\[ \frac{3}{2} \] A) _________  B) _________

\[ \frac{4}{8} \] A) _________  B) _________

\[ \frac{6}{4} \] A) _________  B) _________

\[ \frac{9}{8} \] A) _________  B) _________
NAME: ________________________________________  Audition Instrument/Voice: ______________________

Are you planning to enroll as a music major? ______     music minor ______     neither ______

I. Clefs
A. Identify the pitches by letter name.

B. Notate the pitches on the staff. (Any octave is OK.)

II. Key Signatures
A. Identify the major AND minor keys indicated by the key signatures.

B. Notate the key signatures for the indicated MAJOR keys.

III. Intervals
A. Identify the intervals by quality (maj=major; min-minor; per=perfect) AND quantity (2nd, 3rd, 4th, 5th, 6th, 7th)
B. Notate the interval ABOVE the given note.

![interval_notation]

IV. Triads
A. Identify the triads by quality. (maj = major; min = minor; dim = diminished; aug = augmented)

![triad_notation]

B. Notate the triad ABOVE the given ROOT.

![triad_root_notation]

V. Rhythm and Meter (10 pts.)
A. Fill in the blanks.

ex.) \( \frac{3}{4} = 2 \) 1) \( \frac{3}{4} = \quad \) 2) \( \frac{5}{8} = \quad \) 3) \( \frac{7}{8} = \quad \) 4) \( \frac{1}{2} \) (half rest) = \( \quad \) 5) \( \frac{3}{8} = \quad \)

B. Indicate the number of BEATS in each measure for the given meter signatures at a moderate tempo. How many beats would be conducted?

ex.) \( \frac{6}{8} \) has 2 beats per measure

1) \( \frac{3}{4} \) has ____ beats per measure

2) \( \frac{9}{16} \) has ____ beats per measure

3) \( \frac{5}{8} \) has ____ beats per measure

4) \( \frac{12}{8} \) has ____ beats per measure

5) \( \frac{3}{4} \) has ____ beats per measure