Basics

Pitch Names
There are seven letter names in the musical alphabet: A B C D E F G. These correspond to another system of pitchmaking called soffëge.
C D E F G A B
do re mi fa so la ti (or sil)

Staff
Notes indicating specific pitches are written on the lines and spaces of a five-line staff. Barlines divide the staff into equal metrical units called measures.

Clef
A clef appears at the beginning of each staff of music. The treble clef is also known as the “G clef” because it circles the line on which G above middle C is written.

The bass clef is also known as the “F clef” because it designates the line on which F below middle C is written.

The treble and bass staves braced together are called the grand staff.

The various C clefs are so named because they designate middle C wherever they are placed. The reason for the variable position of this clef is to accommodate different vocal ranges.

Leger Lines
Notes which occur above or below the staff are written on leger lines, small additional lines with the same line-space alternation.

Accidentals
There are twelve available tones within the octave in the western music system. These are derived by the use of accidentals, symbols which alter the pitch of one of the seven given letter-names.
A flat (♭) lowers the pitch by one half-step.
A sharp (♯) raises the pitch by one half-step.
A natural (♮) cancels any previous accidental, returning the pitch to its unaltered state.
A double flat (♭♭) or double sharp (♯♯) alters the pitch by two half-steps (one whole-step).

Enharmonics
Two notes which sound the same but are spelled differently are enharmonic:
A♯/B♭ F♯/E

Steps
The half-step (semitone) is the smallest intervallic unit in western music. Two half-steps give us a whole step (tone).

Scales
A scale is any consecutive arrangement of pitches.

Chromatic Scale
All twelve tones arranged in consecutive upward or downward half-step order are known as the chromatic scale. Usually sharps are used ascending, flats descending.

Diatonic Scales
A diatonic scale is an arrangement of consecutive half- and whole-steps in alphabetical sequence, using all seven letter-names. The particular pattern steps determines the type of scale and remains consistent from octave to octave. There are two diatonic scales in common use: major and minor.

Major Scale
A major scale is a series of eight tones (the eighth being the octave repetition of the first) in which the pattern of half- and whole-steps is as follows:

<table>
<thead>
<tr>
<th>C Major scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7 8</td>
</tr>
</tbody>
</table>

Regardless of what tone the scale begins on, the pattern of half- and whole-steps is always the same.

Minor Scale
A minor scale is a series of eight tones which is characterized by the consistent appearance of a half-step between the second and third degrees. There are three forms of the minor scale.

The natural minor (pure minor):

<table>
<thead>
<tr>
<th>The harmonic minor scale is similar to the natural minor except that the seventh degree is raised, resulting in a 1½-step gap between the sixth and seventh degrees, and a half-step between the seventh and eighth scale degrees.</th>
</tr>
</thead>
<tbody>
<tr>
<td>The melodic minor scale has two forms: ascending and descending. The ascending form contains raised sixth and seventh degrees.</td>
</tr>
<tr>
<td>The descending form of the melodic minor scale is the same as the natural minor.</td>
</tr>
</tbody>
</table>

Modes
The precursor of the major and minor diatonic scales was a system of seven modes which originated in ancient Greece. Still in use today (mostly in folk and modern music) the modes are derived by beginning an octave scale on each degree of a C Major scale. The seven modes and their half- and whole-step patterns are as follows.
Modes

Ionian
\[ \begin{array}{c}
1 & 1 & \frac{5}{4} & 1 & 1 & 1 \\
\end{array} \]

Dorian
\[ \begin{array}{c}
1 & \frac{5}{4} & 1 & 1 & 1 & 1 \\
\end{array} \]

Phrygian
\[ \begin{array}{c}
\frac{5}{4} & 1 & 1 & 1 & 1 \\
\end{array} \]

Lydian
\[ \begin{array}{c}
\frac{5}{4} & 1 & 1 & 1 & 1 \\
\end{array} \]

Mixolydian
\[ \begin{array}{c}
\frac{5}{4} & 1 & 1 & \frac{5}{4} & 1 \\
\end{array} \]

Aeolian
\[ \begin{array}{c}
1 & \frac{5}{4} & 1 & 1 & \frac{5}{4} & 1 \\
\end{array} \]

Locrian
\[ \begin{array}{c}
\frac{5}{4} & 1 & 1 & \frac{5}{4} & 1 & 1 \\
\end{array} \]

Scale Degree Names

1. tonic (determines the key or tonality)
2. supertonic ("super" = above)
3. mediant (midway between tonic and dominant)
4. subdominant ("sub" = below)
5. dominant (second only to tonic in importance)
6. submediant (midway between tonic and subdominant)
7. leading tone (back to tonic)

Scale degrees in C Major
\[ \begin{array}{c}
I & II & III & IV & V \\
\end{array} \]

   tonic    supertonic    mediant    subdominant    dominant

\[ \begin{array}{c}
VI & VII & I \\
\end{array} \]

   submediant    leading tone    tonic

Whole-Tone Scale
A scale made up of only six members at whole-step intervals is called a whole-tone scale. There are only two possible whole-tone scales: on C and C♯:

   C   D   E   F   G   A

   1   1   1   1   1   1

Pentatonic Scales
Any scale consisting of only five members is called pentatonic (from the Greek “penta” meaning five). There are two types: tonal and semitonal. The tonal pentatonic scale contains no half-steps, only intervals of a whole-step or larger.

major
\[ \begin{array}{c}
1 & 1 & \frac{5}{4} & 1 & 1 & 1 \\
\end{array} \]

minor
\[ \begin{array}{c}
1 & 1 & \frac{5}{4} & 1 & 1 & 1 \\
\end{array} \]

The semitonal pentatonic scale contains half-steps.

major
\[ \begin{array}{c}
1 & 1 & \frac{5}{4} & 1 & \frac{5}{4} & 1 \\
\end{array} \]

minor
\[ \begin{array}{c}
1 & 1 & \frac{5}{4} & 1 & \frac{5}{4} & 1 \\
\end{array} \]

Major Keys

Keys requiring sharps are found in intervals of consecutive upward fifths. Each successive sharp key adds another sharp to the key signature. This new sharp is always the leading tone of the new key.

Keys requiring flats are found in intervals of consecutive downward fifths. Each successive flat key adds another flat to the key signature. This new flat is always the subdominant of the new key.

The major keys and their sharps and flats are as follows.

<table>
<thead>
<tr>
<th>Key</th>
<th>Symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>&quot;C&quot;</td>
</tr>
<tr>
<td>G</td>
<td>&quot;G&quot;</td>
</tr>
<tr>
<td>D</td>
<td>&quot;D&quot;</td>
</tr>
<tr>
<td>A</td>
<td>&quot;A&quot;</td>
</tr>
<tr>
<td>E</td>
<td>&quot;E&quot;</td>
</tr>
<tr>
<td>B</td>
<td>&quot;B&quot;</td>
</tr>
<tr>
<td>F♯</td>
<td>&quot;F♯&quot;</td>
</tr>
<tr>
<td>C♯</td>
<td>&quot;C♯&quot;</td>
</tr>
</tbody>
</table>

Minor Keys

A minor key has the same key signature as the major key which lies a minor third above it. For example, A minor has the same key signature as C Major (no sharps or flats).

The minor keys and their sharps and flats are as follows.

<table>
<thead>
<tr>
<th>Key</th>
<th>Symbols</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&quot;A&quot;</td>
</tr>
<tr>
<td>E</td>
<td>&quot;E&quot;</td>
</tr>
<tr>
<td>B</td>
<td>&quot;B&quot;</td>
</tr>
<tr>
<td>F♯</td>
<td>&quot;F♯&quot;</td>
</tr>
<tr>
<td>C♯</td>
<td>&quot;C♯&quot;</td>
</tr>
<tr>
<td>G</td>
<td>&quot;G&quot;</td>
</tr>
<tr>
<td>D</td>
<td>&quot;D&quot;</td>
</tr>
<tr>
<td>E♭</td>
<td>&quot;E♭&quot;</td>
</tr>
<tr>
<td>A♭</td>
<td>&quot;A♭&quot;</td>
</tr>
</tbody>
</table>
Relative Keys
A major key and a minor key which have the same key signature are known as relative keys. For example, A minor is the relative minor of C Major, and C Major is the relative major of A minor.

Parallel Keys
A major key and a minor key which have the same letter name are known as parallel keys. For example, G Major is the parallel key of G minor.

Enharmonic Keys
Two keys which sound the same but are spelled differently are termed enharmonic. There are three such pairs of enharmonic major keys.

<table>
<thead>
<tr>
<th>Enharmonic major</th>
<th>Enharmonic minor</th>
</tr>
</thead>
<tbody>
<tr>
<td>C / D♭</td>
<td>B♭ / A♯</td>
</tr>
<tr>
<td>F♯ / G♭</td>
<td>E♭ / D♯</td>
</tr>
<tr>
<td>B / C♭</td>
<td>A♭ / G♯</td>
</tr>
</tbody>
</table>

Circle of Fifths
All the keys and their enharmonic relationships can be shown on the circle of fifths, an arrangement of the twelve keys so that the number of sharps in the key signature increases clockwise, and the number of flats counterclockwise.

Intervals
An interval is the distance between two pitches. It is labelled according to the number of letter names it encompasses, counting both the first and last. For example, from C up to G is a “fifth” because it encompasses five letter names: C D E F G.

Intervals on C

<table>
<thead>
<tr>
<th>prime</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
<th>octave</th>
</tr>
</thead>
<tbody>
<tr>
<td>(unison)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A melodic interval occurs sequentially while a harmonic interval occurs simultaneously.

<table>
<thead>
<tr>
<th>melodic interval</th>
<th>harmonic interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>5th</td>
<td>5th</td>
</tr>
</tbody>
</table>

Interval Quality
Intervals can be perfect, major, minor, augmented, or diminished. The quality of an interval is determined by comparing the upper pitch to the major scale constructed on the lower pitch. If the upper pitch is within the major scale built on the lower pitch and it is a prime (unison), fourth, fifth, or octave, the interval is called perfect (P).

Perfect intervals in C Major

<table>
<thead>
<tr>
<th>P prime P octave P 5th</th>
<th>P 4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>(unison)</td>
<td></td>
</tr>
</tbody>
</table>

If the upper pitch is within the major scale built on the lower pitch and it is a second, third, sixth, or seventh, the interval is called major (M).

Major intervals in C Major

| M2nd | M3rd | M6th | M7th |

If the upper pitch is not within the major scale built on the lower pitch, the following rules apply:

A major interval contracted a half-step is called minor (m).

| M3rd m3rd | M5th m5th |

A major or perfect interval expanded a half-step is called augmented (aug).

| M5th m5th | P5th m5th |

A minor or perfect interval contracted a half-step is called diminished (dim).

| M5th dim3rd | P5th dim5th |

Compound intervals are those which extend above the octave. Their qualities are the same as those of corresponding simple intervals (without the octave addition). For example, a minor ninth = octave + minor second; a major ninth = octave + major second, etc.

| M9th | M10th |

Interval Spelling
Regardless of the actual sound of an interval, it is always labelled according to the number of letter names it spans. For example, from C♯ to Eb is an augmented sixth although it sounds the same as the minor seventh C♯ to D♭. Similarly, from C♯ up to D♭ is a diminished second although it sounds the same as the perfect prime C♯ / C♯.

Aug 6th | P prime |

Interval Inversions
When the top member of an interval is displaced to the octave below the bottom member (or vice versa), the interval is said to be inverted. The total number of the original interval (simple) and its inversion is always 9. For example, the inversion of a third is a sixth; the inversion of a fourth is a fifth, etc. The quality is inverted as well, so that the inversion is the opposite quality. For example, a major third becomes a minor sixth; a diminished seventh becomes an augmented second, etc.

Note: The inversion of a perfect interval is always another perfect interval.

Inversions

| M3rd | m6th | m2nd | M7th | P4th | P5th | dim3rd | aug6th |

Tritone
The augmented fourth (or diminished fifth) is called the tritone because it encompasses three whole-steps. In medieval music this interval was termed diabolus in musica (Latin, “the devil in music”) because its extreme dissonance tended to destroy an established tonal focus.

| M7th | m2nd | M5th |

1 1 1 tritone (aug 4th/dim 5th)
Time

Rhythm
Rhythm is the grouping of strong and weak beats, encompassing the elements of pulse, accent, and subdivision.

Dots
A dot beside a notehead lengthens the duration of the note by half its original value. (A second dot adds half the time of the first dot.)

\[ \uparrow \quad \uparrow \quad \uparrow \quad \uparrow \]

Time Signature
The time signature which appears beside the clef at the beginning of each piece or movement of music indicates the metre of the piece.

* top number = number of beats in each measure
* bottom number = note value which is the beat-unit

Thus a \( \frac{3}{4} \) time signature means there are three quarter-note beats per measure. Other time signature notations are as follows.

**C = \( \frac{4}{4} \)** (or “common time”)

**G = \( \frac{2}{3} \)** or alla breve (or “cut time”)

Metre
Metre is the regular grouping of beats into measures. There are two types of simple metre,

**duple** — groups of 2 or multiples of 2 (\( \frac{2}{2} \), \( \frac{2}{4} \), \( \frac{4}{4} \), etc.)

**triple** — groups of 3 (\( \frac{3}{2} \), \( \frac{3}{4} \), \( \frac{3}{8} \), etc.)

Compound Metre
Whereas the beats in simple metre are values subdivisible by two, the beats in compound metre are dotted values subdivisible by three.

**compound duple** — groups of 2 (or multiples of 2) dotted values, subdivisible by \( \frac{6}{4} \), \( \frac{6}{8} \), etc.

**compound triple** — groups of 3 dotted values (\( \frac{9}{4} \), \( \frac{9}{8} \), etc.)

Composite Metre
Irregular groupings containing a mixture of a duple and triple metres are called composite (or added) metres. For example,

\( \frac{5}{4} \) or \( \frac{5}{8} \), \( \frac{7}{8} \) or \( \frac{7}{8} \), etc. Composite metres may also appear with alternative time-signatures.

**Triplets**
Three notes of equal duration which take up the same total time as two notes of the same written value constitute a triplet. This is indicated with a \( \uparrow \) over the triplet figure.

**Tempo**
The rate of speed of the music (whatever the metre) is called the tempo. There is usually a tempo indication at the beginning of each piece; traditionally in Italian but sometimes in German, French, or English.

Often there is a metronome marking instead of (or along with) the tempo indication. A metronome marking of \( \frac{60}{8} \) means that one tick = one second. Therefore, a marking of \( \frac{120}{4} \) means that each quarter-note beat is represented by a half-second tick. Some standard tempo markings with their metronomical equivalents follow:

Largo 40-60 Adagio 66-76 Moderato 108-120 Presto 168-200

Larghetto 60-66 Andante 76-108 Allegro 120-188 Prestissimo 200-208

Notation

**Stems**
Stems extend upward from the right side of the notehead for notes on the middle line of the staff and below. Stems extend downward from the left side of the notehead for notes on the middle line of the staff or above.

**Flags**
Flags always appear to the right of the stem.

**Beams**
All notes belonging to a beat are beamed together, regardless of individual value.

**Phrases/Stabs/Ties**
A long curved line over a number of notes indicates a phrase.

A curved line between two notes (or sometimes three) of different pitch is a slur (actually a smaller phrasing indication).

A curved line between two notes of the same pitch is a tie. The second note does not receive a new attack—its duration is added to that of the first.

**Double Bars**
A light double bar indicates the end of a section within a piece; a heavy double bar indicates the end of a piece or movement.

**Repeat Signs**
A dotted double bar means to repeat what appears between the beginning of the piece and the repeat sign. Two dotted double bars mean to repeat the passage between the two signs.

**First and Second Endings**
The first ending is played the first time through the passage; when the passage is repeated the first ending is skipped and the second ending is played instead.

**Da Capo**
A simple D.C. or Da Capo means to repeat the section from the beginning. Da Capo al Fine (D.C. al Fine) means to return to the beginning of the piece and play to the indicated end (Fine). When playing a D.C., repeats are not taken and first endings are skipped.

**Dal Segno**
A simple D.S. or Dal Segno means to repeat from the sign (\( \uparrow \uparrow \) ). Dal Segno al Fine (D.S. al Fine) means to return to the sign (\( \uparrow \uparrow \) ) and play to the indicated end (Fine). When playing a D.S., repeats are not taken and first endings are skipped.

**D.S. Al Coda**
A D.S. Al Coda means to repeat from the sign (\( \uparrow \uparrow \) ), play to the Coda sign (\( \uparrow \uparrow \)), and skip from that point to the Coda.