

Chapter 4

Rhythm¹

Rhythm, melody², harmony³, timbre⁴, and texture⁵ are the essential aspects of a musical performance. They are often called the basic elements of music. The main purpose of music theory is to describe various pieces of music in terms of their similarities and differences in these elements, and music is usually grouped into genres based on similarities in all or most elements. It's useful, therefore, to be familiar with the terms commonly used to describe each element. Because harmony is the most highly developed aspect of Western music⁶, music theory tends to focus almost exclusively on melody and harmony. Music does not have to have harmony, however, and some music doesn't even have melody. So perhaps the other three elements can be considered the most basic components of music.

Music cannot happen without time. The placement of the sounds in time is the rhythm of a piece of music. Because music must be heard over a period of time, rhythm is one of the most basic elements of music. In some pieces of music, the rhythm is simply a "placement in time" that cannot be assigned a beat (Section 5.1: Beats and Measures) or meter (Chapter 8), but most rhythm terms concern more familiar types of music with a steady beat. See Meter (Chapter 8) for more on how such music is organized, and Duration (Chapter 1) and Time Signature (Chapter 5) for more on how to read and write rhythms. See Simple Rhythm Activities⁷ for easy ways to encourage children to explore rhythm.

Rhythm Terms

- **Rhythm** - The term "rhythm" has more than one meaning. It can mean the basic, repetitive pulse of the music, or a rhythmic pattern that is repeated throughout the music (as in "feel the rhythm"). It can also refer to the pattern in time of a single small group of notes (as in "play this rhythm for me").
- **Beat** - Beat also has more than one meaning, but always refers to music with a steady pulse. It may refer to the pulse itself (as in "play this note on beat two of the measure (Section 5.1: Beats and Measures)"). **On the beat** or **on the downbeat** refer to the moment when the pulse is strongest. **Off the beat** is in between pulses, and the **upbeat** is exactly halfway between pulses. **Beat** may also refer to a specific repetitive rhythmic pattern that maintains the pulse (as in "it has a Latin beat"). Note that once a strong feeling of having a beat is established, it is not necessary for something to happen on every beat; a beat can still be "felt" even if it is not specifically heard.
- **Measure or bar** - Beats are grouped into measures or bars. The first beat is usually the strongest, and in most music, most of the bars have the same number of beats. This sets up an underlying pattern in the pulse of the music: for example, strong-weak-strong-weak-strong-weak, or strong-weak-weak-strong-weak-weak. (See Meter (Chapter 8).)

¹This content is available online at <<http://cnx.org/content/m11646/1.8/>>.

²"Melody" <<http://cnx.org/content/m11647/latest/>>

³"Harmony" <<http://cnx.org/content/m11654/latest/>>

⁴"Timbre: The Color of Music" <<http://cnx.org/content/m11059/latest/>>

⁵"The Textures of Music" <<http://cnx.org/content/m11645/latest/>>

⁶"What Kind of Music is That?" <<http://cnx.org/content/m11421/latest/>>

⁷"Simple Rhythm Activities" <<http://cnx.org/content/m14258/latest/>>

- **Rhythm Section** - The rhythm section of a band is the group of instruments that usually provide the background rhythm and chords. The rhythm section almost always includes a percussionist (usually on a drum set) and a bass player (usually playing a plucked string bass of some kind). It may also include a piano and/or other keyboard players, more percussionists, and one or more guitar players or other strummed or plucked strings. Vocalists, wind instruments, and bowed strings are usually not part of the rhythm section.
- **Syncopation** - Syncopation occurs when a strong note happens either on a weak beat or off the beat. See Syncopation⁸.

⁸"Syncopation" <<http://cnx.org/content/m11644/latest/>>

Chapter 5

Time Signature¹

In common notation², the **time signature** appears at the beginning of a piece of music, right after the key signature³. Unlike the key signature, which is on every staff⁴, the time signature will not appear again in the music unless the meter changes. The meter (Chapter 8) of a piece is a repetitive rhythmic pulse that underlies the music. The time signature is the symbol that tells you what meter is being used in a piece of music and what types of note (Chapter 1) are being used to write it out.

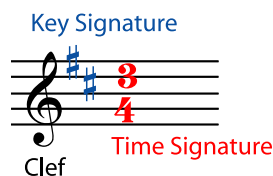


Figure 5.1: The time signature appears at the beginning of the piece of music, right after the clef symbol and key signature.

5.1 Beats and Measures

Music happens over a period of time, so a very common way to organize music is to divide that time into short periods of the same length, using audible pulses called **beats**. Each pulse is a **beat**, and the regular, predictable pulse of a piece of music is **the beat**. The beat is created when the musicians do things (like hit a drum, strum a guitar, or start singing a word) at very regular intervals. This creates an audible, predictable pulse that helps the musicians to coordinate what they are doing so that they sound good together. The predictability and audibility of the beat also allows others to join in. As soon as listeners can "feel the beat," they can clap hands, snap fingers, tap their feet, nod their heads, march, dance, or sing along "in time" with the music (in other words, coordinated with the musicians). Anything that happens during the audible pulse (a clap or drum hit, for example), as well as anything that starts during a pulse (such as a sung word, or a note on a flute or violin) is said to be **on the beat**. Of course, things can happen in between the beats,

¹This content is available online at <<http://cnx.org/content/m10956/2.15/>>.

²"The Staff" <<http://cnx.org/content/m10880/latest/>>

³"Key Signature" <<http://cnx.org/content/m10881/latest/>>

⁴"The Staff" <<http://cnx.org/content/m10880/latest/>>

too, but the timing for those is also coordinated using the beats; for example, a note might begin at exactly the halfway point between two beats.

NOTE: Not all music has beats and a time signature. In music with a **free** rhythm or meter, there is no time signature, and no regular pulse to the music; the musicians are free to play or sing a note at whatever time they feel is best. Other pieces may have a written time signature, to help the musicians keep track of time, but the musical events in the piece do not give it an audible beat.

Example 5.1

Listen to excerpts A, B, C and D. Can you clap your hands, tap your feet, or otherwise move "to the beat"? Is there a piece in which it is easier or harder to feel the beat?

- A⁵
- B⁶
- C⁷
- D⁸

When music is organized into beats, it makes sense to write it down that way. In common notation⁹, the composer assigns a particular kind of note to be one beat long. For example, if "a quarter note gets a beat," then playing many quarter notes in a row would mean playing a new note on every beat. The quarter note is most likely to play this role, but any type of note (Chapter 1) can get the "this is one beat" designation.

In most metered music, some of the beats are stronger (louder, more powerful, more noticeable, or busier), than others, and there is a regular pattern of stronger and weaker beats, for example, strong-weak-weak-strong-weak-weak, or strong-weak-strong-weak. So the beats are organized even further by grouping them into **bars**, or **measures**. (The two words mean the same thing.) For example, for music with a beat pattern of strong-weak-weak-strong-weak-weak, or 1-2-3-1-2-3, a measure would have three beats in it. The **time signature** tells you two things: how many beats there are in each measure, and what type of note (Chapter 1) gets a beat.

Reading the Time Signature

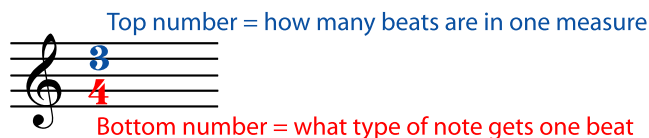


Figure 5.2: This time signature means that there are three quarter notes (or any combination of notes that equals three quarter notes) in every measure. A piece with this time signature would be "in three four time" or just "in three four".

Exercise 5.1

(Solution on p. 27.)

Listen again to the music in Example 5.1. Instead of clapping, count each beat. Decide whether the music has 2, 3, or 4 beats per measure. In other words, does it feel more natural to count 1-2-1-2, 1-2-3-1-2-3, or 1-2-3-4-1-2-3-4?

⁵See the file at <<http://cnx.org/content/m10956/latest/Tanz.mp3>>

⁶See the file at <<http://cnx.org/content/m10956/latest/EasyWinners.MID>>

⁷See the file at <<http://cnx.org/content/m10956/latest/Jetztkommt.MID>>


⁸See the file at <<http://cnx.org/content/m10956/latest/Greensleaves.mp3>>

⁹"The Staff" <<http://cnx.org/content/m10880/latest/>>

5.2 Reading Time Signatures

Most time signatures contain two numbers. The top number tells you how many beats there are in a measure. The bottom number tells you what kind of note gets a beat.

4 beats in a measure



4 quarters = 2 halves = 1 whole = 2 quarters + four eighths = and so on

A quarter note gets one beat

Figure 5.3: In "four four" time, there are four beats in a measure and a quarter note gets a beat. In order to keep the meter going steadily, every measure must have a combination of notes and rests that is equivalent to four quarter notes.

You may have noticed that the time signature looks a little like a fraction in arithmetic. Filling up measures feels a little like finding equivalent fractions¹⁰, too. In "four four time", for example, there are four beats in a measure and a quarter note gets one beat. So four quarter notes would fill up one measure. But so would any other combination of notes and rests (Chapter 2) that equals four quarters: one whole, two halves, one half plus two quarters, a half note and a half rest, and so on.

Example 5.2

If the time signature is three eight, any combination of notes that adds up to three eighths will fill a measure. Remember that a dot (Chapter 3) is worth an extra half of the note it follows. Listen¹¹ to the rhythms in Figure 5.4.



3 eighths = 6 sixteenths = 1 quarter + 1 eighth = dotted quarter = 2 eighths + 2 sixteenths

Figure 5.4: If the time signature is three eight, a measure may be filled with any combination of notes and rests that adds up to three eighths.

Exercise 5.2

(Solution on p. 27.)

Write each of the time signatures below (with a clef symbol) at the beginning of a staff. Write at least four measures of music in each time signature. Fill each measure with a different combination

¹⁰"Fractions, Multiples, Beats, and Measures" <<http://cnx.org/content/m11807/latest/>>

¹¹See the file at <<http://cnx.org/content/m10956/latest/timesig1.MID>>

of note lengths. Use at least one dotted note on each staff. If you need some staff paper, you can download this PDF file¹².

1. Two four time
2. Three eight time
3. Six four time

A few time signatures don't have to be written as numbers. Four four time is used so much that it is often called **common time**, written as a bold "C". When both fours are "cut" in half to twos, you have **cut time**, written as a "C" cut by a vertical slash.

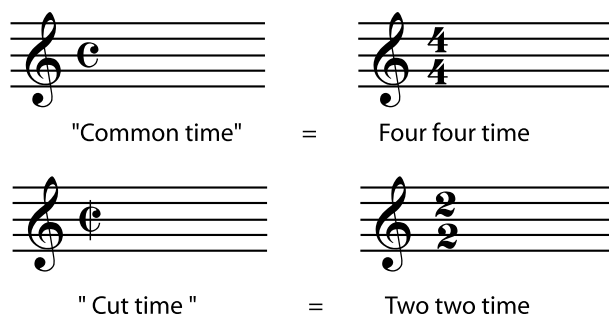


Figure 5.5

5.3 Counting and Conducting

You may have already noticed that a measure in four four time looks the same as a measure in two two. After all, in arithmetic, four quarters adds up to the same thing as two halves. For that matter, why not call the time signature "one one" or "eight eight"?

¹²See the file at <<http://cnx.org/content/m10956/latest/staffpaper1.pdf>>

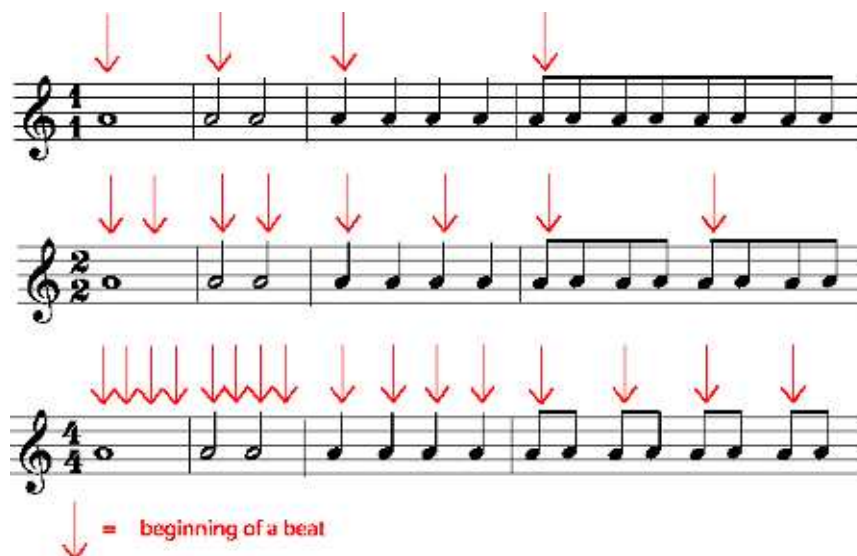


Figure 5.6: Measures in all of these meters look the same, but feel different. The difference is how many downbeats there are in a measure.

Or why not write two two as two four, giving quarter notes the beat instead of half notes? The music would look very different, but it would sound the same, as long as you made the beats the same speed. The music in each of the staves in Figure 5.7 would sound like this¹³.

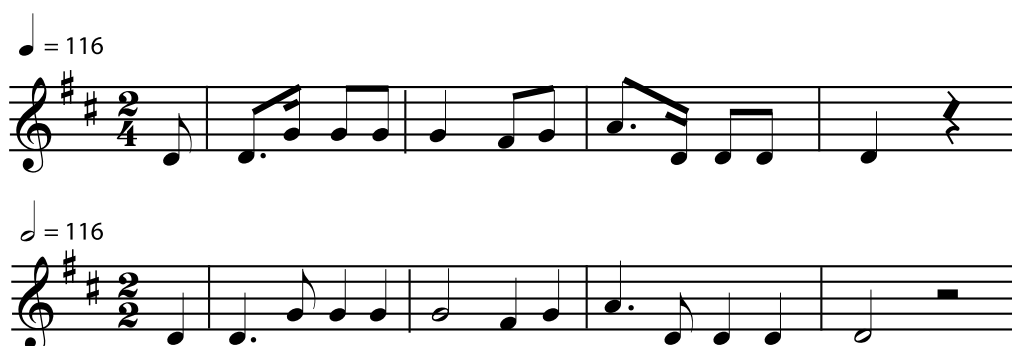


Figure 5.7: The music in each of these staves should sound exactly alike.

So why is one time signature chosen rather than another? The composer will normally choose a time signature that makes the music easy to read and also easy to count and conduct¹⁴. Does the music feel like

¹³See the file at <<http://cnx.org/content/m10956/latest/14k.mid>>

¹⁴"Conducting" <<http://cnx.org/content/m12404/latest/>>

it has four beats in every measure, or does it go by so quickly that you only have time to tap your foot twice in a measure?

A common exception to this rule of thumb is six eight time, and the other time signatures (for example nine eight and twelve eight) that are used to write compound meters (Chapter 8). A piece in six eight might have six beats in every measure, with an eighth note getting a beat. But it is more likely that the conductor (or a tapping foot) will give only two beats per measure, with a dotted quarter (or three eighth notes) getting one beat. In the same way, three eight may only have one beat per measure; nine eight, three beats per measure; and twelve eight, four beats per measure. Why the exceptions? Since beats normally get divided into halves and quarters, this is the easiest way for composers to write beats that are divided into thirds.

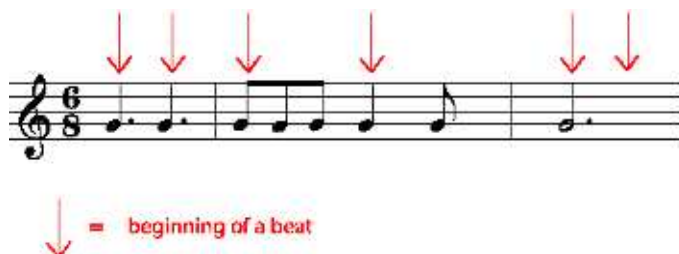


Figure 5.8: In six eight time, a dotted quarter usually gets one beat. This is the easiest way to write beats that are evenly divided into three rather than two.
