

# Musical Tempos & Heartbeats

In music, tempo tells us the speed at which a song is played. Tempo helps express the mood and theme of a piece of music. Music with a fast tempo can illustrate excitement, energy, urgency, anxiety, or joy. Music with a slow tempo might illustrate calmness, sadness, thoughtfulness, or laziness. But why do we associate slow and fast tempos with these sensations? Our internal tempo, the human heart rate, might help us understand this relationship. When we are active, anxious, and using more energy, our heart beats faster. When we are resting, relaxed, and using less energy, our heart beats slower. Tempo is like a musical embodiment of our own biological rhythms.

Use this worksheet to record your heart rate after different activities.

To record your heart rate, set a timer for fifteen seconds, and then take your pulse at either your neck or wrist. Count the amount of beats you feel in fifteen seconds. Multiply this number by four to get your bpm (beats per minute). This number is your heart rate.

1. Take your resting heart rate when you are relaxed, or after waking up from sleep

2. Take your active heart rate after exercising: running, dancing, skipping, playing a game, etc.

***My resting heart rate is...***

\_\_\_\_\_ bpm

***My active heart rate is...***

\_\_\_\_\_ bpm

3. Record your heart beat for three other different types of different activities

***After I \_\_\_\_\_,***  
***my heart rate was***

\_\_\_\_\_ bpm

***After I \_\_\_\_\_,***  
***my heart rate was***

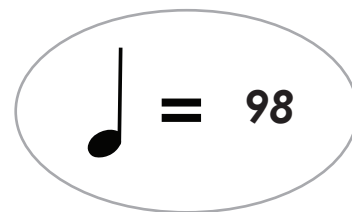
\_\_\_\_\_ bpm

***After I \_\_\_\_\_,***  
***my heart rate was***

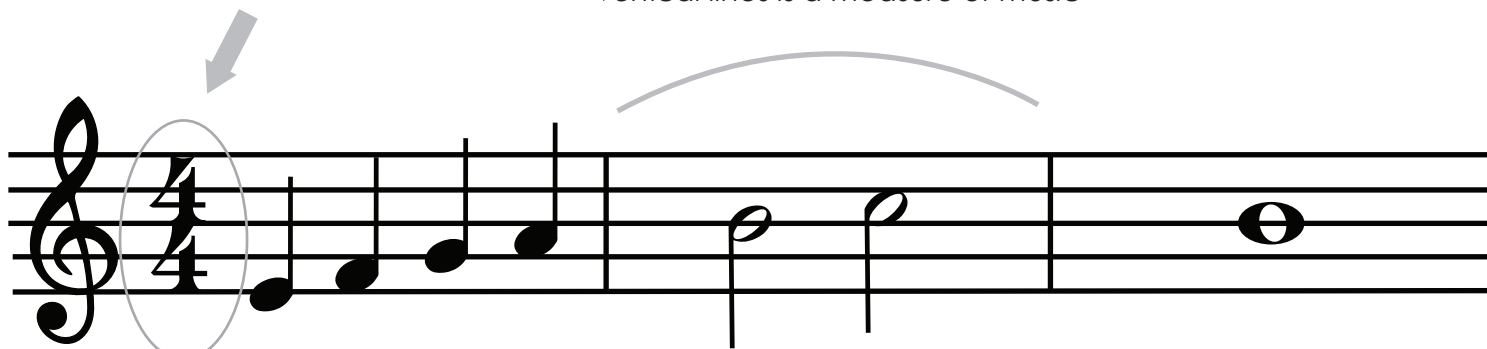
\_\_\_\_\_ bpm

This is a **time signature**. The top number tells us the amount of beats in a measure. The bottom number tells us the note value of every beat. This 4/4 time signature means there are four beats in every measure, and each beat has the value of a quarter note. Thus, four quarter notes fit in every measure.

This notation tells us the **tempo** of the song. The song is played at the speed of 98 beats per minute, where every quarter note represents a beat.



the space between each set of vertical lines is a measure of music



4 quarter notes per measure

2 half notes per measure

1 whole note per measure



This is a **quarter note**. It has a filled-in note head and a stem. It is one quarter the duration of a whole note.

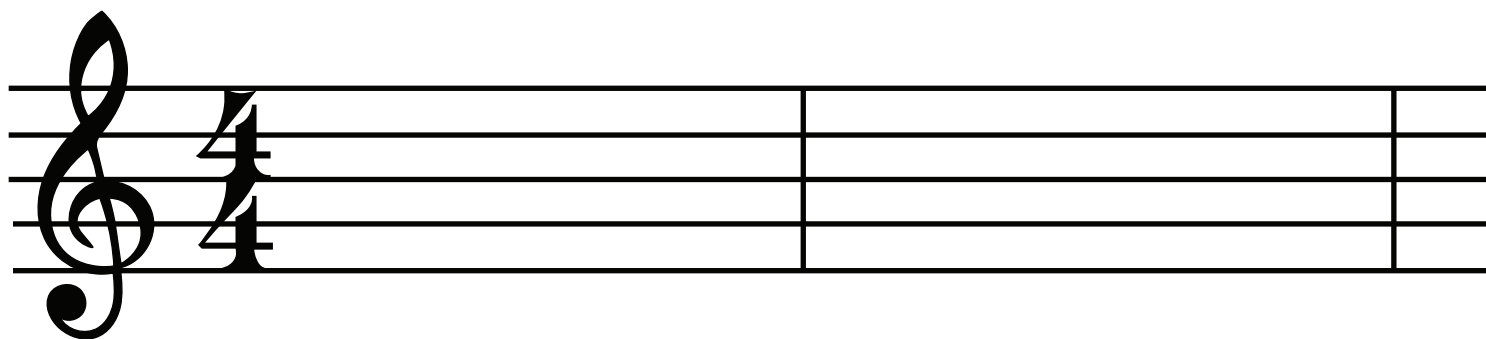


This is a **half note**. It has an empty note head and a stem. It is one half the duration of a whole note.



This is a **whole note**. It has an empty note head and no stem. In 4/4 time it has the duration of four beats.

Use this empty music staff to practice drawing notes. Notes below the third line are written with stems up, on the right side. Notes on or above the third line are written with stems down on the left side. The stems should be as long as three spaces on the staff.



# Compare Your Heartbeat to Common Tempos in Music

A normal resting heart rate for children (ages 5-12) is 70-120 bpm, and for adults is 60-100 bpm. A healthy active heart range depends on your age and physical fitness, but can range anywhere from 75-200 bpm.

In music notation, Italian words are used to encapsulate different ranges of tempos. Find what musical range your heart rate falls into, and learn more about the different songs and styles of music within that range.

**Presto**



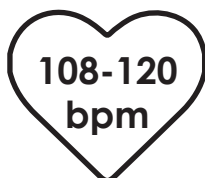
**Presto** is very fast. A lot of salsa music falls in this range.

**Allegro**



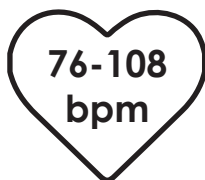
**Allegro** is fast. Bossa nova music falls in this range.

**Moderato**



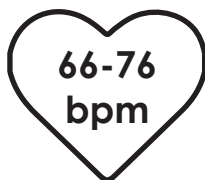
**Moderato** is brisk. Most marches and disco music fall around 120 bpm.

**Andante**



**Andante** is walking pace. The standard waltz falls in this range. The National Anthem has a tempo of 104 bpm.

**Adagio**



**Adagio** is slow. Samuel Barber's "Adagio for Strings" is a famously sad, somber composition.

**Lento**



**Lento** is very slow. Chopin's Prelude Op. 8, No. 4 in E minor is a recognizable composition for piano in this tempo range.