

## Making the Most of Your Symphony Experience

At every single symphony orchestra performance, composers, conductors, instrumentalists, and *audience members make wonderful musical discoveries*. Even if you aren't steeped in musical knowledge, even if you are only beginning the habit of attending GSO concerts, you can greatly enhance your musical experience by paying closer attention to what's actually happening around you. Here is some basic information to help you get started.

### What IS a Symphony Orchestra

The modern orchestra is comprised of instruments from the string, woodwind, brass, and percussion families. As you probably know from perusing your program, a standard orchestra might include:

STRINGS	BRASSES	WOODWINDS	PERCUSSION
1 <sup>st</sup> Violins	Trumpets	Flutes/ Piccolo	Tympani
2 <sup>nd</sup> Violins	Horns	Oboes	Bass Drum
Violas	Trombones	Clarinets	Snare Drum
Cellos	Bass Trombone	Bassoons	Piano
Basses	Tuba		Xylophone
Harp			Chimes
			Cymbals, and more!

But bear in mind that the *number and combination of instruments* depends entirely on the requirements of the musical selections to be performed. The orchestra is a relatively flexible ensemble. In most cases, however, there will be five sections of string instruments, a pair of trumpets, a quartet of horns, two or three trombones, pairs of each type of woodwind instrument, and an assortment of percussion instruments. Some works, however, will require additional brass and/or woodwind instruments, perhaps even more types of percussion instruments, possibly a piano or a harp...other works will need fewer types of instruments and in smaller numbers. It all depends on what the composer wants the music to sound like.

So pay close attention and watch who comes onto the stage, even before the music begins. You'll notice how the various sections of the orchestra are augmented or decreased for each selection. Then listen closely to discover the particular sound palette each composer has selected.

## How Does Each Instrument Produce Its Unique Sound?

Each type of instrument has a distinctive sound, or *timbre*, which is determined by its design, and by the materials from which it is made. For example, larger instruments have deeper, more resonant timbres, while smaller instruments tend to have more compact, piercing, or intense timbres. Similarly, the materials used to make the instrument affect its timbre. Several instruments in the orchestra are made from very special types of wood (all of the string instruments, along with clarinets, oboes, and bassoons), while others are made from special metal alloys (most flutes, along with trumpets, horns, trombones, and tubas).

Timbre, or tone color, is also determined to a large extent by the manner in which the instrument is played to produce a tone. Simply put, sound is vibration, nothing more. Think about size, design, materials, and tone production when you listen to musicians warming up, and you'll have a better understanding of how it is that they work to produce the wonderful sounds you are hearing.

### The String Family

When bows are drawn across the strings of a *violin*, *viola*, *cello*, or *bass*, the quickly vibrating strings cause the air inside the instrument to resonate within a hollow wooden sound box. The amount of tension on the bow, and the length of the strings, determines the intensity and the pitch of the tones that result, and the speed with which the bow is pulled or pushed over the strings is yet another factor. The shape of the instrument's wooden sound box and the type of wood it is made from also influence its tone.

### The Woodwind Family

Instruments in the woodwind family produce vibrations in three ways.

1. Air is blown across a small hole in the side of a *flute* or *piccolo*, causing the slender column of air inside its hollow cylindrical body to vibrate and resonate.
2. Air is blown between a single thin reed and a wooden or plastic mouthpiece of *clarinets* and *bass clarinets*. The reed vibrates against the edges of the mouthpiece, causing the air column inside the instrument's wooden body to begin to resonate. (*Saxophones* are also single reed instruments, but with metal bodies that produce a somewhat louder timbre. You've probably noticed that saxophones are not included in the standard instrumentation of a symphony orchestra, but many composers use them for their orchestral compositions.)

- Air is blown between two thin reeds on *oboes, English horns, and bassoons*. These “double reeds” vibrate against one another, causing the air column between them to resonate through the slender metal tube and then into a slightly conical wooden body.

### **The Brass Family**

Brass players (trumpets, horns, trombones, bass trombones, and tubas) send a steady column of air between their carefully pursed lips, causing their lips to vibrate against one another. Those vibrations pass into a funnel- or cup-shaped metal mouthpiece into the tubular metal body of the instrument, which serves to amplify the tone.

### **The Percussion Family**

Vibrations are produced on each of the many percussion instruments by striking some part of the instrument. Drumsticks or mallets are used to strike the stretched heads of tympani, bass drums, snare drums, and tenor drums, for example. The air inside of each of those instruments resonates and amplifies the percussive vibrations. Special mallets are used to strike the wooden bars of a xylophone, causing the bars to resonate. Hammers strike metal strings inside a piano, and their vibrations are amplified by the instrument’s wooden soundboard.