

The instruments of the orchestra

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to Angela Colbers

The wind instruments

At the back of the orchestra the wind instruments have found a place (**play winds, 5 sec**). Some wind instruments have been made of wood (**show**) and others are made of metal (**show**). Just like the string instruments the different wind instruments vary in size from very small (**show piccolo**) to big (**show tuba or contrabassoon**).

With string instruments, the vibrating string is the source of the sound, with wind instruments different ways are used to force the air to vibrate. At the flute mouthpiece (**show flute**) with the lips some airflow from breathing-out is directed towards a rather sharp edge causing some sound. With the so-called reed instruments (**show reeds**) a thin reed is forced to vibrate, and with the brass instruments a slight air flow between the lips causes vibration (**show brass mouthpiece**).

Then, *very important*, after the mouthpiece a piece of tube is mounted. And the air column inside that tube might vibrate as well, the so-called *resonance*. That only happens when the vibrations in the mouthpiece are at a pitch that is able to resonate in the specific length of air column. A much louder and more defined sound is then generated (**play trumpet mouthpiece separately and mounted**). That resonance happens at a *short* tube for *high pitch* (**play piccolo**) and at a *long* tube for *low pitch* (**play tuba**).

The trombone

The standard trombone is twice as long as the trumpet and the valves are replaced by a slide (**show trombone**). That enables not only the playing of notes at specific pitch but at every pitch in between (**trombone plays glissando**). And some trombones have been equipped with valves as well for a further extension of the tube length. Trombones are built in different sizes and now the most common trombones are the tenor trombone and the bass trombone (**show different trombones**).

Because of the different trombone sizes a broad spectrum of notes can be waited from this trombone section. The tenor trombone can play the mellow mid-range parts and the bass trombone feels easy at the lower pitch, enriching the bass notes. And because the trombone sound is directed straight into the audience it delivers a welcome contribution when more sound volume is awaited.

(Now the trombones play the trio).

Moderato ♩ = 96

Trombone 1

Trombone 2

Trombone 3

mf

mp

mp

mf

8

f

mp

f

p

f

mp

15

f

f

f

Finale

Allegro maestoso

Trombone 1

9 *f*

13 8 1 2 3 4 25 2

p *pp* *p*

27 3 4 5 6 7 8 9 10 11 12 1

38 2 3 41 57 15 3

f *f*

64 *f* *ff*

74 1. 2. **Slow blues, $\text{♩} = 72$**
4 *f*

82 *pp*

90 8 98 *mp*

106 **Allegro maestoso** *mp* 114 *f*

115 3 *f*

125 *ff*