

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 tuba

The tuba is the largest brass instrument and has the lowest pitch of all **(show tuba)**.

The length of the tube may stretch to up to 5.5 m and handling of the tuba calls for a robust player. Not only because of the enormous weight of the instrument but also for controlling the amount of air that is needed to play the instrument. With a deep breath the tuba player can make a lot of noise but after all; for a smooth performance of soft tones a very well skilled mastering of the instrument is crucial.

In the orchestra the tuba is the base of all produced sound and the reference for intonation for the other instruments. Concerning the rhythm in music the tuba often serves as the stable companion for the timing of the other instruments. From this it becomes clear that the tuba player has a key role in the orchestra.

(Now the tuba plays the piece below).

Allegro ♩ = 90

Bass Tuba

p tweede maal *mf*

5

9

13

f

rall.

Finale

Allegro maestoso, ♩ = 112

