The following tasks refer to the sample video clip that can be watched on the homepage of the Society of Manufacturing Engineers:
http://www.sme.org/cgi-bin/get-item.pl?DV03PUB25&2&SME&

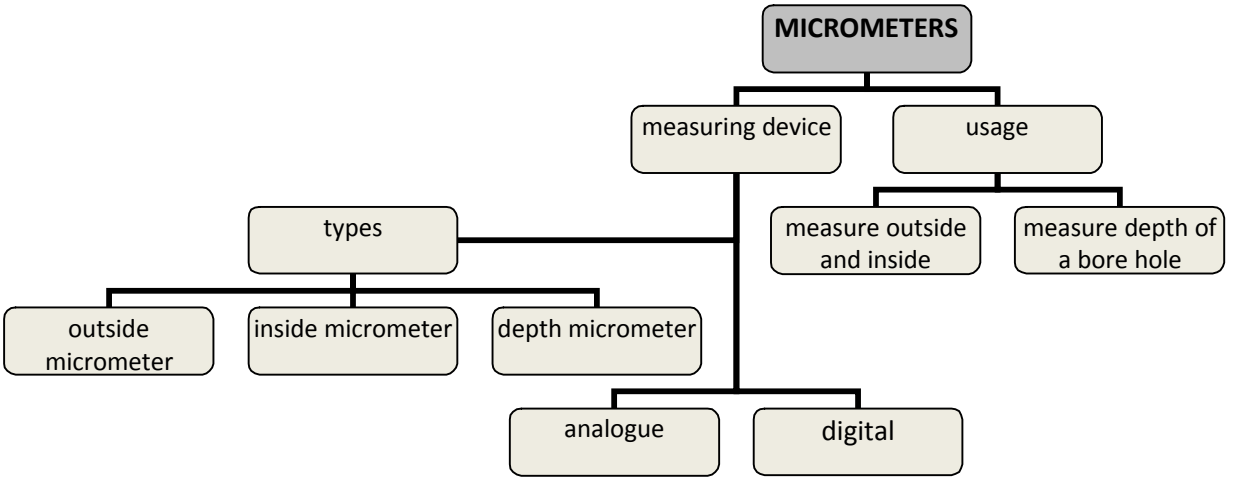
The video clip and the tasks on the video clip can be used for the introduction of micrometers. When starting to deal with the topic, make sure that all students know the term “micrometer”, e. g. by showing one.

Pre-watching tasks

a) *Make a mind map showing all the information you already have on micrometers.*

b) *Explain it to the class/group/your partner. Add additional information your partner/the group/the class has.*

POSSIBLE SOLUTION:



Tasks while watching

Watch the video clip twice and do the following tasks.

1) General facts about micrometers

Complete the sentences.

a) What makes each type of micrometer different is the thread pitch of the spindle screw.

b) The thread pitch is the distance between two adjacent *[benachbart]* thread crests.

c) Each revolution of the thimble of a micrometer moves the micrometer spindle.

2) The graduation of the micrometer

Match the sentence parts. (→)

The vertical graduations on the top of the reading line represent	single millimetres.
The vertical graduations below the reading line indicate	50 divisions.
The bevelled edge of the thimble is graduated into	half millimetres.

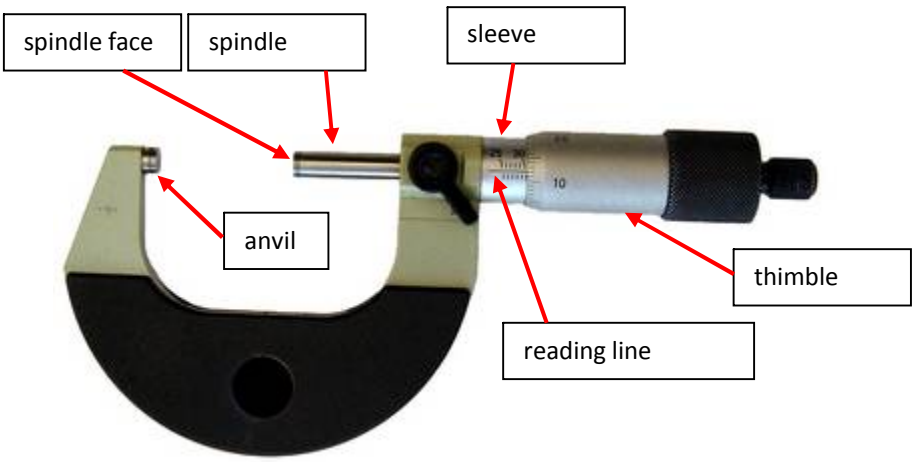
3) Reading a micrometer

Can you correct the mistakes? Replace the wrong words with the correct ones.

To read this micrometer, add the number of millimetres and half millimetres visible on the ~~**thimble**~~ sleeve to the number of hundredths of a millimetre indicated by the thimble graduation which coincides with the ~~**vertical graduation**~~ **reading line** on the micrometer sleeve.

Post-watching tasks

a) Say where the following parts of a micrometer are that were mentioned in the video clip.



b) Watch the video clip again, this time without sound. Now you explain how a micrometer works (either in English or in German).

c) Take work-pieces and micrometers and measure the size of these work-pieces. Take down your measurements.

d) Exchange the work-pieces between groups and compare your measurements. Think of reasons for the differences in measurements.

e) Try to formulate rules for the use of micrometers.

Possible solution:

- *Only move the spindle by rotating the thimble. Do not move it by hand.*
- *Always hold the micrometer on the insulation. Otherwise body heat will influence the result of the measurement.*
- *Hold the micrometer perpendicular to the surface of the item being measured.*
- *Adjust the ratchet of the micrometer carefully.*
- *Always lock the lock lever or the lock nut of the micrometer after adjusting the item you want to measure.*
- *Clean the anvil and the spindle of the micrometer with a clean cloth (maybe soaked with cleaning oil).*
- *Store your micrometer in a dry place at room temperature.*