

Task for group work (3-5 students):

Pick one of the devices and instruments provided below and do the following tasks:

Find information on

- what material the device/instrument is made of,
- what the device/instrument is used for,
- how to handle the device/instrument,
- what to keep in mind when working with the device/instrument.

Prepare a poster with your findings. Each member of your group should be able to do a presentation with the help of the poster.

You may use the following links:

Protractors <ul style="list-style-type: none"> • http://www.ehow.com/how_12928_protractor.html • http://mmu.ic.polyu.edu.hk/handout/0101/0101.htm • http://nrw-24.de/Metall/winkelmesser/ 	Dial callipers <ul style="list-style-type: none"> • http://www.tresnainstrument.com/how_to_use_a_dial_caliper.html • http://www.wisc-online.com/objects/ViewObject.aspx?ID=MSR3903 • http://www.ehow.com/how_4794898_use-dial-calipers.html • http://www.mw-import.de/werkzeug/uhr-messschieber-ablesen.html 	Micrometers <ul style="list-style-type: none"> • http://www.ehow.com/micrometers/ • http://www.jjjtrain.com/vms/measure_mic_basic/measure_mic_basic_00.html • http://www.scribd.com/doc/12743217/Measure-Micrometer • http://www.scribd.com/doc/23133712/Object-of-Measurement • http://nrw-24.de/Metall/messschraube/
Feeler gauges <ul style="list-style-type: none"> • http://www.ehow.com/how_4962698_use-feeler-gauge.html • http://www.ehow.com/way_5492339_feeler-gauge-instructions.html • http://www.cdtextbook.com/toolsEquip/hpt/measuring/feelrgauge.html • http://de.wikipedia.org/wiki/F%C3%BChlerlehre 	Dial indicators <ul style="list-style-type: none"> • http://www.ehow.com/how_4778782_use-dial-indicator.html • http://www.ehow.com/how_4842513_read-dial-indicator.html • http://www.cdtextbook.com/toolsEquip/hpt/measuring/dialindicator.html • http://www.ts-aligner.com/dialindicator.htm 	Try squares <ul style="list-style-type: none"> • http://www.technologystudent.com/equip1/try2.htm • http://chestofbooks.com/home-improvement/woodworking/Tool-Processes-In-Woodworking/How-to-Use-The-Try-Square.html
Spring callipers <ul style="list-style-type: none"> • http://www.tpub.com/content/aviation/14310/css/14310_65.htm • http://www.wisc-online.com/objects/MTL3902/MLT3902.htm • http://autopedia.org/crafts_and_technology/Tools/Tools_and_How_to_Use_Them/Dividers_and_Calipers.html 	Spirit levels <ul style="list-style-type: none"> • http://www.accuratebuilding.com/publications/recipes/tools/how_to_use_level.pdf • http://www.ehow.com/how_5127944_read-spirit-level.html • http://www.hsc.csu.edu.au/construction/other_units/compulsory/levelling/3349/spirit_level.html 	Digital callipers <ul style="list-style-type: none"> • http://www.wikihow.com/Use-Calipers • http://www.tresnainstrument.com/how_to_use_digital_calipers.html • http://www.aylj.com/en/expertise_digitalcaliper.htm • http://www.warensortiment.de/messtechnik/messwerkzeuge/messschieberschieblehren.htm
Vernier callipers <ul style="list-style-type: none"> • http://hyperphysics.phy-astr.gsu.edu/hbase/class/phscilab/vernier.html • http://www.tresnainstrument.com/how_to_read_a_vernier_caliper.html • http://www.upscale.utoronto.ca/PVB/Harrison/Vernier/Vernier.html • http://www.scribd.com/doc/23133712/Object-of-Measurement • http://www.mw-import.de/werkzeug/messschieber-ablesen.html 		

Tip for the teacher:

To involve all students in the presentation of the results, split up the original groups after they have finished the posters. Then form new groups (each member of a new group should come from another original group). Set the students the task to inform the members of their new groups on the results of their previous groups. (To make that work, posters for presentation should be pinned up in different corners of the room so that groups can walk from one poster to the next and get informed.)