

Handpiece maintenance and basic use

	Types of learning	Resources	UK General Dental Council learning outcome(s)	Session learning outcome(s)
Session 1				Cut specified shapes into plastic blocks in a controlled manner using the dental hand pieces
	Didactic elements		12.2	Describe the components of the hand pieces and how to connect them to the main supply
	Learner-centred	One ivory block per student	12.2	Recognise the importance of and the mechanics of the water system
	Reflective			Appreciate the need for, and practice an appropriate finger rest
	Critical appraisal	Chapters 2,5,6,8,20		Begin the process of peer review for work carried out
	Peer review			Appreciate the difficulties and problems of working within a mirrored image

Teaching notes



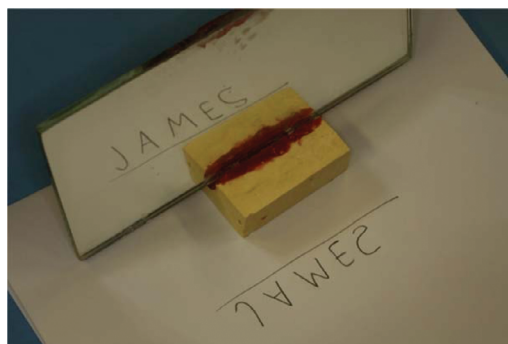
- This session is significant because most students will not have operated a handpiece before
 - Ensure that all have the correct attire, including safety glasses and closed footwear. Ensure compliance with your local clinical dress policy; at Newcastle hair must be tied back off the shoulders and jewellery should not be worn apart from simple stud earrings and a single plain wedding band. Students **must** be *bare below the elbow*.
- Outline the kit to be used
 - High and slow-speed handpieces, how they connect and the controls
 - Ivorine blocks
 - Types/dimensions of burs.
- Students should be shown how to set up the simulator units – at Newcastle we use a video that has been pre-recorded.
- Introduce the different types of handpiece
 - Common grips and uses
 - Highlight the need for a finger rest
 - Demonstrate these concepts
- Discuss how the students will know their depth of cut.



- Ask the students to divide the ivorine block into quarters and draw the letter X in one quadrant in pencil. This should then be cut at a consistent depth of 2mm.
 - Only give about 5-10 minutes for this exercise
 - Some students will want to see a demonstration, but resist at this stage.
 - Afterwards, discuss the incidence of snapped burs and burning
 - Highlight the need for careful handpiece techniques.
 - Introduce the concept of caring and maintaining for their individual units.
- Develop a number of criteria for assessment of the preparations
 - Accurate
 - Even depth
 - Undercut
 - No burning
 - Smooth.
- Cut a second letter and encourage reflection based on the criteria.
- Undertake some peer-review to the group and encourage students to share their work (good or bad) in order to aid discussion. Discourage a long queue for the 'teacher's opinion'.
- Cut a further two letters and for each, reinforce the concept of peer review with their neighbour or the operator opposite.
- The group can then be split so that students can be shown how to oil and store the handpieces
 - Meanwhile encourage the remaining students to draw a creative shape on the reverse of the block which they should attempt to cut.
 - Discuss the logistics of retention and removal of minimal tooth tissue – i.e. minimal entry and exit points and travelling over the same area as little as possible.
- The units will then be cleaned down, and a brief discussion to summarise what they have found and learned.
- Review pain in the back/fingers.



- For the last portion of the session, the students should be encouraged to try working in a large mirror on the bench.
 - The student should attempt to write on the page so that the text appears correctly in the mirror
 - Their hand should be covered over with a sheet of paper by a colleague so that they rely on the mirror for spacial feedback rather than watching their hand directly
 - Writing the words OXO and BOX and then their names. If they are good, they might try handwriting rather than capital letters.



- Points to reinforce this session:
 - cross infection and dress policy
 - punctuality and professionalism
 - Particularly at this stage the students develop habits of wearing gloves *all* the time, not removing them before they leave their simulator unit, and not washing their hands after removing gloves. Be strict. Also, no touching of the face/hair, worksheets or notes etc. without first removing gloves and washing hands.
- Reflection is important and many students that have made mistakes will want to throw away their block and start again. Discourage this, and encourage prior planning and accountability. Encourage them to *listen*, as things won't be repeated. Further, encourage the students to seek advice if they are unsure.
- Reinforce that prepublished ELOs should be available and students should read them in advance of the sessions.