

# Occlusal preparations and restorations

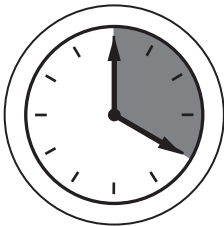
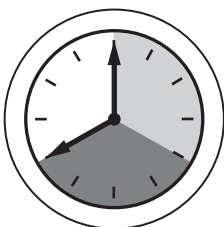

	Types of learning	Resources	UK General Dental Council learning outcome(s)*	Session learning outcome(s)
Session 1				Cut a suitable pit and fissure preparation into a plastic and a natural tooth
	Didactic elements		1.1.3 1.1.5 1.1.2 1.1.4	Describe the pattern of pit and fissure caries
	Learner-centred	Frasaco Jaw		
	Reflective	Chapters 6,8,20,22	1.1.1	Discuss the rationale of removing caries from pits and fissures
	Critical appraisal	Handout		
	Peer review		1.14.1	Plan a logical approach to investigating and managing pit and fissure caries
Session 2			1.14.1 1.14.5	Cut conservative pit and fissure preparations using appropriate instruments available in the basic dental kits
			1.14.1 1.14.4	Restore a pit and fissure preparation with amalgam
	Didactic elements			Identify faults with previous preparations
	Learner-centred			Further engage with peer review and critical appraisal
	Reflective	Chapters 13,20,22		Develop strategies to overcome common problems
	Critical appraisal		1.14.4 1.14.1	Restore completed preparations with amalgam
	Peer review			Identify how operator position may impact on the quality of the work carried out
				Recall and discuss alternatives to amalgam

\* - black (dentists), blue (therapists)

## Teaching notes for Session 1

### KEY POINTS:




- ✓ Highlight that the fissures are being used to develop and assess hand piece control. Ordinarily only carious tooth tissue would be removed
- ✓ Develop the concepts of resistance and retention form
- ✓ Introduce and encourage critical appraisal and peer review against set criteria

	<ul style="list-style-type: none"> <li>• Discuss briefly Black's cavity classification and why it was developed/how relevant it is now.</li> <li>• Work through the sheet discussing burs, depths, margins, caries, walls, floors and local anaesthetic.</li> <li>• Discuss retention and resistance form and how it is obtained.</li> <li>• Develop criteria for the class 1 cavity – depth, width, outline, floor, undercuts, walls, no burning, correct tooth!</li> <li>• Highlight posture and finger rest again</li> </ul>
	<ul style="list-style-type: none"> <li>• Cut fissures in <b>46 Frasaco</b> – 10 minutes maximum. Encourage them to plan and then do.               <ul style="list-style-type: none"> <li>▪ Ask the students to critically appraise using the criteria and then swap with the person opposite. Provide feedback.</li> </ul> </li> <li>• Problem solve – position, light, mirror, starting point, planning etc.</li> </ul>
	<ul style="list-style-type: none"> <li>• Cut <b>Frasaco 15 or 25</b> and then peer-review</li> <li>• Demonstrate on natural tooth and then students to cut <b>natural tooth 46</b></li> <li>• <b><u>STOP – the students will be keen to do more, but encourage them to reflect on what they've achieved instead</u></b></li> </ul>

## Teaching notes for Session 2

KEY POINTS:

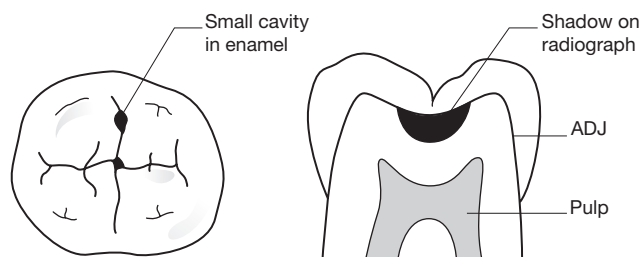
- ✓ Reinforce core clinical skills such as posture and cross infection control
- ✓ Further develop peer review
- ✓ Use a variety of methods (diagrams and demonstrations) to explain how carvers are used to shape plastic restorations

	<ul style="list-style-type: none"><li>• Peer review <b>46</b> again, show good/bad examples and troubleshoot</li><li>• Reinforce posture, position, mirror, light, planning and finger rest.</li><li>• Cut <b>natural tooth 24</b></li><li>• Encourage critical appraisal and peer review of both <b>46 and 24</b><ul style="list-style-type: none"><li>▪ Discourage the students from just 'handing' you the tooth for comment.</li><li>▪ Ask for an assessment of what they have done.</li><li>▪ Despite how good or bad it is, it is the correct assessment that is important at this stage.</li></ul></li></ul>
	<ul style="list-style-type: none"><li>• Discuss the important properties of amalgam and briefly its history</li><li>• Identify the instruments used to place an occlusal amalgam restoration.</li><li>• Demonstrate use of the hollenbach in wax on natural 46.<ul style="list-style-type: none"><li>▪ Take the time to show how the instrument works, resting on natural tooth tissue wherever possible</li><li>▪ Repeat the action of the instrument several times from several angles</li></ul></li><li>• Highlight that the amalgam plugger must never be left with amalgam inside – this is about time management as well – setting time! Demonstrate placing an amalgam in tooth <b>46</b> and develop criteria (well-condensed, no ledges, reproduces the morphology, not overfilled, smooth, matt finish).</li><li>• Students to restore <b>46 then 24</b> and then troubleshoot.</li><li>• Peer review 24 again and show good/bad examples</li></ul>
	<ul style="list-style-type: none"><li>• Discuss remaining difficulties and solutions.</li><li>• Cut <b>37</b> but don't restore – peer review and come up to check – reinforce the principles again</li><li>• Discuss fissure patterns of upper molars – ridge maintenance and management</li><li>• Cut <b>16</b> and review then restore 16 and 37 – review restoration afterwards.</li><li>• <b>This is the point for positive reinforcement</b></li><li>• <b>Frasaco 36</b> cut for wax practice if needed (with wide fissures cut)</li></ul>

## Handout for Occlusal preparations

### Caries removal & cavity design

This tooth has a carious lesion in the occlusal surface. There is no doubt that it has progressed to dentine and spread, but it is difficult to be sure how far, although the radiograph indicates substantial spread.



Discuss with your colleagues how you are going to deal with this. Specifically, assuming you see the need to open this up and remove the caries:

- What bur will you use on what handpiece first?

- How deep will you cut initially?

- Why?

- How will you know when you are at the right depth?

- Where will you finish the margins of the cavity?

- How will you get rid of the caries?

- What caries will you decide to leave and what will you remove?

- What will the walls of the cavity be like (vertical, tapered, slightly undercut?)

- Why?

- What will the floor be like (flat, scooped out?)

- Will you need to use local anaesthetic?

- Why?

Retention form - Is the cavity retentive (amalgam)

Resistance form - How will the restoration react to loading

### Criteria of minimal cavity design

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