



## Higher National Unit specification

### General information for centres

**Unit title:** Dental Orthodontics: Functional Appliances

**Unit code:** F3G6 35

**Unit purpose:** This Unit is designed to enable candidates to develop their knowledge and skills in the principles of functional appliance therapy and the techniques employed in their construction.

On completion of the Unit the candidate should be able to:

- 1 Evaluate the principles used in functional appliance therapy.
- 2 Construct five functional appliances.

**Credit points and level:** 2 HN credits at SCQF level 8: (16 SCQF credit points at SCQF level 8\*)

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

**Recommended prior knowledge and skills:** Although access to this Unit is at the discretion of the centre, it is recommended that candidates should have completed the HNC in Dental Technology or equivalent so that dental laboratory practice, working to a prescription, treatment planning skills and preparing products to a standard suitable for presentation to a clinical dental professional are established. The ability to prepare submissions to a standard format, which includes Harvard referencing, would also be preferable.

**Core Skills:** There are opportunities to develop the component 'Written Communication' of the Core Skill *Communication* at SCQF level 6, and the components 'Planning and Organising', 'Reviewing and Evaluating' and 'Critical Thinking' of the Core Skill *Problem Solving* at SCQF level 6 in this Unit. There are also opportunities to develop the Core Skill *Information Technology* at SCQF level 6, and the component 'Using Graphical Information' of the Core Skill *Numeracy* at SCQF level 6, although there is no automatic certification of Core Skills or Core Skills components.

**Context for delivery:** If this Unit is delivered as part of a Group Award, it is recommended that it should be taught and assessed within the subject area of the Group Award to which it contributes.

**Assessment:** Outcome 1 could be assessed using a candidate submission covering all of the Evidence Requirements. Outcome 2 will be assessed by a practical task undertaken in a dental laboratory setting.

## **Higher National Unit specification: statement of standards**

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The sections of the Unit stating the Outcomes, Knowledge and/or Skills, and Evidence Requirements are mandatory.

Where evidence for Outcomes is assessed on a sample basis, the whole of the content listed in the Knowledge and/or Skills section must be taught and available for assessment. Candidates should not know in advance the items on which they will be assessed and different items should be sampled on each assessment occasion.

### **Outcome 1**

Evaluate the principles used in functional appliance therapy

#### **Knowledge and/or Skills**

- ◆ Functional appliance therapy
- ◆ Indications and contra-indications
- ◆ Functional appliances

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can:

- ◆ evaluate the selection for use in appliance therapy of five types of functional appliances (ie Andresen, Frankel I, Frankel III, Clark Twin Block, and Newport Twin Block)
- ◆ explain the action of functional appliances on the oral tissues
- ◆ explain the correct process for the trimming of a functional appliance
- ◆ evaluate the principles of functional appliance therapy, the indications and contra-indications to its use

Candidates must make reference to all of the following topics in the evaluation: restraint of maxillary; acceleration of mandibular growth; forward movement of lower teeth and retraction of upper teeth; rotation of the occlusal plane with different eruption of the lower molars and upper incisors.

#### **Assessment Guidelines**

The underpinning knowledge of this Outcome could be assessed in the form of a candidate submission. Whilst the format the submission takes is left to the discretion of the centre, it is recommended that submissions be the equivalent to 1,500 words (excluding appendices and diagrams). The submission may be presented in any suitable way to ensure Disability Discrimination Act (DDA) compliance. Examples of suitable submission formats are: oral questioning; candidate presentation; and candidate report. Further details are given in the Support Notes.

## **Higher National Unit specification: statement of standards (cont)**

**Unit title:** Dental Orthodontics: Functional Appliances

### **Outcome 2**

Construct five functional appliances

#### **Knowledge and/or Skills**

- ◆ Functional appliance components
- ◆ Construction techniques

#### **Evidence Requirements**

Candidates will need to provide evidence to demonstrate their Knowledge and/or Skills by showing that they can construct the following functional appliances:

- ◆ one Andresen appliance
- ◆ one Frankel I appliance
- ◆ one Frankel III appliance
- ◆ one Clark Twin Block appliance
- ◆ one Newport Twin Block Appliance

In constructing the functional appliances candidates must ensure that the appliances comply to the clinical prescription and are fabricated; positioned; trimmed; fitted; and polished accurately to a standard ready for delivery to the clinical dental professional. These practical tasks must be carried out within a dental laboratory setting and be completed within a timeframe which reflects commercial practice and is agreed with the tutor.

#### **Assessment Guidelines**

This Outcome may be assessed by the construction of an example of each type of appliance to a given prescription provided by the centre.

## Administrative Information

**Unit code:** F3G6 35

**Unit title:** Dental Orthodontics: Functional Appliances

**Superclass category:** PF

**Original date of publication:** August 2007

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### History of changes:

Version	Description of change	Date

**Source:** SQA

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## **Higher National Unit specification: support notes**

### **Unit title: Dental Orthodontics: Functional Appliances**

This part of the Unit specification is offered as guidance. The support notes are not mandatory.

While the exact time allocated to this Unit is at the discretion of the centre, the notional design length is 80 hours.

### **Guidance on the content and context for this Unit**

The purpose of this Unit is to allow candidates to develop their knowledge and understanding of the principles of functional appliance therapy and the techniques employed in their construction.

It is envisaged that the teaching of this Unit could be delivered through lecturer mediated discussion, practical demonstrations and the reading of recommended texts.

A list of topics for each Outcome is given below.

#### **Outcome 1**

In this Outcome candidates will evaluate the principles used in functional appliance therapy, ie restraint of maxillary, acceleration of mandibular growth; forward movement of lower teeth and retraction of upper teeth; rotation of the occlusal plane with different eruption of the lower molars and upper incisors.

Candidates will also explore the indications and contra-indications of functional appliance therapy.

#### **Outcome 2**

In this Outcome candidates will demonstrate competence in constructing five functional appliances. Functional appliances to be covered include: Andresen, Frankel I, Frankel III, Clark Twin Block and Newport Twin Block. Construction of the five functional appliances will demonstrate success in this Outcome. All restorations should be finished accurately for delivery.

### **Guidance on the delivery and assessment of this Unit**

This Unit is likely to form part of a Group Award designed to provide candidates with technical and professional knowledge and skills for employment within a dental technology environment. It is envisaged that the teaching of this Unit could be delivered through lecturer-mediated discussion, practical demonstrations, reading of recommended texts and professional peer-review journals.

This Unit offers the opportunity to introduce candidates to self and peer assessment as a formative assessment method. Such an initiative as well as providing both the candidate and the centre with an indication of candidate progress will also help in the development of the candidate's critical skills. A possible example would be to ask the candidates to develop quality criteria for the five functional appliances in Outcome 2 as a group work activity, evaluate their own performance and that of a peer against this agreed set of criteria.

## **Higher National Unit specification: support notes (cont)**

### **Unit title:** Dental Orthodontics: Functional Appliances

Outcome 1 could be assessed by a candidate submission. Whilst the format the submission takes is left to the discretion of the centre the author would recommend that such a submission be the equivalent to 1,500 words (excluding appendices and diagrams). Examples of possible submission types are:

#### *Oral Questioning*

The underpinning knowledge and skills could be assessed using the form of oral questioning. The centre would need to develop a bank of suitable questions of equal reliability and validity to ensure that each candidate is assessed appropriately ensuring coverage of all underpinning knowledge. If this format is selected careful consideration is required in relation to venue, etc. The author would suggest that such a format would require to be carried out in time-controlled conditions.

#### *Candidate Presentation*

A candidate presentation could take the form of an oral presentation by the candidate to their peers and teaching staff. Such a submission would need time to be prepared and therefore careful consideration will need to be given as to when the assessment is given candidates to allow time for research and preparation. The candidate may use presentation software such as PowerPoint to aid the presentation delivery but this is not essential. The candidate may opt to produce and talk to a handout supplied to the group. Using such software could give the candidate the opportunity to develop their Core Skills in *Information Technology*.

#### *Candidate Report*

A candidate report may be presented in a variety of suitable ways: oral, written or signed. The author would suggest that if a candidate report is selected as the chosen assessment format that this should have a conventional structure ie title page; table of contents; introduction; report body; conclusion(s); reference list. Such a submission would need time to be prepared and therefore careful consideration will need to be given as to when the assessment is given to candidates to allow time for research and preparation.

The assessment of Outcome 2 will be in the form of practical tasks involving candidates in the construction of five functional appliances, to a given prescription. These practical tasks should be carried out within a dental laboratory setting.

#### ***Opportunities for developing Core Skills***

In completing the evidence tasks for Outcome 1 candidates may have the opportunity to develop the component 'Written Communication' of the Core Skill *Communication* at SCQF level 6. Candidates may have the opportunity to analyse and evaluate complex information from a variety of dental literature sources. The general skill that the candidate may have to complete is 'Read and understand complex written communication'.

If the candidates produce a report for Outcome 1, they will have the opportunity to develop the component 'Written Communication' of the Core Skill *Communication* at SCQF level 6. Candidates may have to structure their report, which could include complex vocabulary, accurately and using a logical structure. The general skill that candidates may have to complete is 'Produce well-structured written communication on complex topics'.

## Higher National Unit specification: support notes (cont)

### Unit title: Dental Orthodontics: Functional Appliances

If the candidate produces a written report for Outcome 1 there is the opportunity for the candidate to develop the Core Skill *Information Technology* at SCQF level 6. Candidates could carry out searches of information databases while carrying out research for the report.

There is also the opportunity for the candidate to develop the components ‘Planning and Organising’ and ‘Reviewing and Evaluating’ of the Core Skill *Problem Solving* at SCQF level 6 while completing the class work of Outcome 2. In this Outcome the candidate will construct five functional appliances that will require the candidate to organise, plan and review the procedures involved in the task.

There is the opportunity for the candidate to develop the component ‘Critical Thinking’ of the Core Skill *Problem Solving* at SCQF level 6 while completing the Evidence Requirements for Outcome 1. The candidate may be required to analyse and evaluate complex information, explaining the use and types of complex partial denture design. The general skill that candidates may have to complete is ‘Analyse a complex situation or issue’.

There is the opportunity to develop the component ‘Using Graphical Information’ of the Core Skill *Numeracy* at SCQF level 6. When constructing the five functional appliances in Outcome 2 candidates will have to interpret complex data presented in graphical form from numerous dental material manufacturers. The general skill that candidates may have to complete is ‘Apply a wide range of graphical skills to interpret and present complex information in generalised contexts’.

### Open learning

This Unit could be delivered by distance learning, which may incorporate some degree of online support. With regard to assessment, planning would be required of centres to ensure the sufficiency and authenticity of the candidate evidence. Outcome 2 requires to be assessed within a dental laboratory setting.

### Candidates with disabilities and/or additional support needs

The additional support needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments, or considering alternative Outcomes for Units. Further advice can be found in the SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* ([www.sqa.org.uk](http://www.sqa.org.uk)).

## General information for candidates

### Unit title: Dental Orthodontics: Functional Appliances

This Unit will develop your knowledge and understanding, enabling you to become competent, in the design and principles of functional appliance therapy and the techniques employed in their construction.

The Unit has two main areas, each the subject of a separate Outcome. Firstly you will be evaluating different types of appliances used in functional appliance therapy. You will then construct five functional appliances in Outcome 2.

The formal assessment of this Unit may consist of a report for Outcome 1 and a practical assessment for Outcome 2. The assessment for Outcome 1 may be carried out at the end of delivery of the Unit. The practical assessment should be carried out within a dental laboratory setting.

In completing the class work and assessments of this Unit you may have the opportunity to develop the component 'Written Communication' of the Core Skill *Communication* at SCQF level 6, and the components 'Planning and Organising', 'Reviewing and Evaluating' and 'Critical Thinking' of the Core Skill *Problem Solving* at SCQF level 6 in this Unit. There are also opportunities to develop the Core Skill *Information Technology* at SCQF level 6, and the component 'Using Graphical Information' of the Core Skill *Numeracy* at SCQF level 6, although there is no automatic certification of Core Skills or Core Skills components.