

National Unit Specification: general information

UNIT	Lifestyle and Consumer Technology: Product Development (Intermediate 2)
NUMBER	D502 11
COURSE	Home Economics: Lifestyle and Consumer Technology (Intermediate 2)

SUMMARY

At the end of this unit candidates will be able to demonstrate technological capability as a result of using knowledge, understanding and skills to carry out problem solving processes used in product development.

OUTCOMES

- 1 Develop ideas for a solution to meet the needs of a product brief.
- 2 Evaluate the solution of product development.
- 3 Use knowledge and understanding of an area of study to address a problem or situation.

RECOMMENDED ENTRY

While entry is at the discretion of the centre, candidates would normally be expected to have completed one of the following:

- a course or its component units at Intermediate 1 in Home Economics
- Standard Grade Home Economics at General level or equivalent

The unit is also suitable for 'new starts' or adult returners.

Administrative Information

Superclass:	NG
Publication date:	November 1999
Source:	Scottish Qualifications Authority
Version:	03

© Scottish Qualifications Authority 1999

This publication may be reproduced in whole or in part for educational purposes provided that no profit is derived from reproduction and that, if reproduced in part, the source is acknowledged.

Additional copies of this unit specification can be purchased from the Scottish Qualifications Authority. The cost for each unit specification is £2.50 (minimum order £5).

National Unit Specification: general information (cont)

UNIT Lifestyle and Consumer Technology:
Product Development (Intermediate 2)

CREDIT VALUE

1 credit at Intermediate 2.

CORE SKILLS

This unit gives automatic certification of the following:

Complete core skills for the unit	None
Core skills components for the unit	Critical Thinking Int 2 Reviewing and Evaluating Int 2

Additional information about core skills is published in *Automatic Certification of Core Skills in National Qualifications* (SQA, 1999).

National Unit Specification: statement of standards

UNIT Lifestyle and Consumer Technology: Product Development (Intermediate 2)

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to the Scottish Qualifications Authority.

OUTCOME 1

Develop ideas for a solution to meet the needs of a product brief

Performance criteria

- (a) The brief is analysed and the key points accurately identified.
- (b) Appropriate criteria for a specification are identified in measurable terms.
- (c) Investigations are clear in purpose and appropriate to the criteria identified in the specification.
- (d) A solution is proposed which reflects the results of investigation.
- (e) A prototype for the idea is manufactured to meet the specification.

Evidence requirements

Recorded evidence must be provided to show that each of the performance criteria has been met on one occasion. The proposed instrument of assessment is a design activity. The conditions which apply to the activity are: teacher/lecturer support in the manufacturing stages of the activity should there be a malfunction of equipment; negotiation of a time limit for the design activity. The recorded evidence should be produced as defined in performance criteria (a) - (e) using pro-forma. Attainment should be assessed by the use of a marking scheme and recorded on observational checklist. Specific advice:

- (a) Recorded evidence to show that the brief has been broken down into key parts
- (b) The specification should be recorded in measurable terms, in short statements and take account of the key points and principles of design
- (c) Evidence of search and investigation techniques could include: investigation to gain background information eg a list of questions to be addressed; technical information, eg, looking at existing products that meet the needs of the brief and identifying their characteristics; investigation into availability of resources
- (d) Evidence to show **one** idea - evidence could be **one** from the following: story board; design diagrams; recipes; brief descriptive notes
- (e) Evidence of the prototype - the item/photographic evidence/observational checklist/video

National Unit Specification: statement of standards (cont)

UNIT Lifestyle and Consumer Technology:
Product Development (Intermediate 2)

OUTCOME 2

Evaluate the solution of product development.

Performance criterion

The solution is evaluated against the specification, with accurate explanation.

Evidence requirements

Recorded evidence must be provided to show that the performance criterion has been met on one occasion. The proposed instrument of assessment is a design activity. The evidence should include a general appraisal of how well the solution meets the specification, with suggestions for modifications or improvements, if appropriate. Attainment could be assessed by the use of a marking scheme which takes account of the specification.

OUTCOME 3

Use knowledge and understanding of an area of study to address a problem or situation.

Performance criterion

(a) An accurate explanation, reflecting consideration of the problem or situation, is given.

Evidence requirements

Recorded evidence must be provided to show that the performance criterion has been met on one occasion. The proposed instrument of assessment is a question paper requiring short and restricted responses, using a closed book approach. The questions will be derived from sampling the content of the unit. Attainment could be assessed by the use of a marking scheme.

National Unit Specification: support notes

UNIT Lifestyle and Consumer Technology: Product Development (Intermediate 2)

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

While the time allocated to this unit is at the discretion of the centre, the notional design length is 140 hours

GUIDANCE ON CONTENT AND CONTEXT FOR THIS UNIT

The content on which this unit is based is listed in the course specification for Home Economics: Lifestyle and Consumer Technology (Int 2).

This unit is set in the context of lifestyle and consumer technology. Candidates will be required to demonstrate the knowledge and understanding of the content which underpins the practical activities in product development. The content is concerned with those aspects of manufacturing which are important in the domestic and commercial setting.

Within the context of lifestyle and consumer technology, the candidate is required to develop skills to solve practical problems. The skills are those of analysis, investigation and evaluation, and they enable candidates to develop ideas for the manufacture of creative and imaginative products. When candidates evaluate the solution of product development, they should be encouraged to look at other commercial and home-made products, which have been manufactured to a specification. The principles of design identified within the content should be used as the basis for drawing up specifications for intended products.

GUIDANCE ON LEARNING AND TEACHING FOR THIS UNIT

Learning and teaching approaches should match the unit outcomes. Knowledge and understanding of the content can be acquired or consolidated through practical activities which focus on product development. Candidates should have opportunities to extend their knowledge and skills in the manufacture of products. However, it is not expected that candidates should carry out unrealistic activities which require equipment outside the scope of the classroom.

Successful learning and teaching should be the result of positive partnership between teacher/lecturer and candidate. The purpose of the unit and the performance required to attain it should be made clear to the candidate. The balance between demonstration and exposition, together with opportunities for candidates to work independently as learners, should be carefully considered. For example, a new concept may require a teacher-led approach to learning in order to ensure coverage of appropriate content. However, once this has been done candidates may be given an activity requiring them to work independently to demonstrate their understanding of the concept.

A group or candidate-centred approach to learning is recommended in the initial stages of unit delivery. Individuals should be encouraged to make contributions to ideas for product development as part of a group experience. This approach will help to develop candidates' confidence for working independently. Communication skills will be developed through shared ideas and experiences, and through the opportunity to offer opinions, comment and constructive criticism on the ideas of others. To encourage candidate participation and motivation, the pace of work, level of challenge and prior knowledge and experiences of candidates should be considered.

National Unit Specification: support notes (cont)

UNIT Lifestyle and Consumer Technology: Product Development (Intermediate 2)

Candidates' skills of evaluation can be developed by encouraging them to look at commercial products. Open discussion and brainstorming can stimulate ideas which may lead to the group to formulating opinions about: the product specification; the target group; the materials used; how successful the product has been. A selection of commercially manufactured products and their packaging, should be available for candidates to analyse, make use of and evaluate.

It is important that candidates are aware of food safety and hygienic practices in food production in the domestic context.

An integrated approach to delivery of the content is recommended, whereby several aspects may be covered during practical application.

GUIDANCE ON APPROACHES TO ASSESSMENT FOR THIS UNIT

Whilst it is possible to devise test instruments for each of the unit outcomes, it is preferable to use ones which encompass more than one outcome. This approach will reduce the demands of assessment on candidates and leave more time for learning and teaching. The evidence requirements fall into two categories:

- practical activity
- demonstration of the knowledge and understanding which underpins the practical activity

While attainment of outcomes 1 and 2 need only be demonstrated on one occasion, it is unlikely that candidates would be ready for assessment until the latter stages of delivery. Assessment could take place as an end of unit test. However, it is possible for evidence to be gathered when candidates are carrying out practical exercises throughout the unit.

Outcome 3

In the interests of confidentiality and national standards, it would be more appropriate for all candidates to carry out this assessment item at the same time within a teaching group.

Further guidance and exemplification on appropriate evidence will be provided in the Subject Guide.

The delivery and assessment of this unit is open to alternative methods to support the inclusion of all candidates. Examples include:

- extension to the notional design length
- use of technology to record information/instruction and to support assessment situations
- appropriate level of teacher/lecturer or auxiliary support in practical activities
- use of specialist equipment

National Unit Specification: support notes (cont)

UNIT Lifestyle and Consumer Technology:
Product Development (Intermediate 2)

SPECIAL NEEDS

This unit specification is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences, selecting assessment instruments or considering alternative outcomes for units. For information on these, please refer to the SQA document *Guidance on Special Assessment and Certification Arrangements for Candidates with Special Needs/Candidates whose First Language is not English* (SQA, 1998).