SCOTTISH QUALIFICATIONS AUTHORITY

NATIONAL QUALIFICATIONS 2006

HOME ECONOMICS

All Contexts – Health and Food Technology
Fashion and Textile Technology
Lifestyle and Consumer Technology

INTERMEDIATE 2

Notes of guidance for Teachers and Lecturers
on the
Technological Project

Please destroy all previous versions of this document.

Introduction

To gain the Course award, candidates will have to achieve all the outcomes of the following three Units:

- Management of Practical Activities
- Product Development
- Consumer Studies

as well as the external Course assessment. This consists of a Question Paper and a Technological Project.

The following notes offer teachers/lecturers guidance on the Technological Project.

The Technological Project will enable candidates to demonstrate integration of knowledge and skills across the component Units in order to realise a solution and demonstrate technological capability. The project will be carried out within the centre. Two project briefs will be issued by SQA on an annual basis. One of these should be selected by the candidate and completed within approximately 20 hours. **Time to complete the Technological Project may be taken from the additional 40 hours allocated to the Course and from time available within the component Units. A number of outcomes in the component Units will be achieved when candidates undertake the Technological Project, thus reducing the demands and time required for internal Unit assessment.**

Assessment

The Technological Project is worth 50 marks and will be externally assessed. A breakdown of the marks for performance in each of the steps of the Technological Project is given in this document.

Candidates will be required to submit their work on the Technological Project pro forma issued by SQA. This pro forma, when completed by candidates, will provide all the evidence required for submission to SQA. The work should be legible and clearly presented.

The amount of space allowed in the pro forma and the relevant mark allocation should guide candidates as to the length and weighting of each stage. **Candidates must use only the number of pages within the pro forma**. Pages 22 and 23 are provided at the back of the pro forma should candidates require additional recording space. **Additional pages must not be added**. Candidates should therefore be encouraged to present their work in a format that is clear and concise, eg by using bullet points, tables etc.

Candidates work should be their own. Candidates should use the *Notes of Guidance for Candidates on the Technological Project*.

Candidates must sign the front cover of the pro forma to certify that the work undertaken in the Technological Project is that of the candidate.

Photographic evidence of the solution taken during and after manufacture is required to certify that the work is that of the candidate (Page 15 of the pro forma).

Teachers/lecturers may offer guidance by giving:

- advice on source information, persons, agencies or establishments that may be able to help
- assistance with planning deadlines
- advice on the suitability and practicability of the ideas produced by the candidate

The date for submission of the Technological Project pro forma will be issued by SQA.

Where the Technological Project is being used to subsume the outcomes of the component Units of the Course, teachers and lecturers should make reference to the following document: *The Technological Project and unit assessment: Guidance document for teachers and lecturers* (SQA, June 2002).

There is no requirement for the Technological Project to be word processed as there is no mark allocation for presentation

Copies of the Technological Project pro forma can be downloaded from SQA's website at: **www.sqa.org.uk**

Note on the use of the electronic pro forma

If candidates are using the electronic version of the pro forma, care is required when inserting text.

The text boxes have been protected to ensure that pages cannot be moved as a result of typing in excessive text. However if a candidate:

- inserts excessive text into the text box provided, or
- inserts additional text at a later time into the text boxes provided

the text at the bottom of the text box may disappear, ie the text has been pushed below the bottom of the text box and so does not appear as visible or printable text. This 'additional' text would be best placed in the space provided at the back of the pro forma.

Guidance to Teachers/Lecturers on the breakdown of marks

The time allocated for the completion of the Technological Project will be dependent on:

- the Course plan adopted by the centre
- the needs of the candidate

Step 1 Total mark allocation - 14 marks

1 : 1 Identification of the key points with explanation

The candidate should identify the 'core' key points — these are all the main key words of the Technological Project brief.

The number of 'core' key points which can be identified will depend on the wording of the Technological Project brief.

Candidates should number each key point identified.

Identify the key points - 3 marks

Candidates who record all the 'core' key points will gain 2 marks.
Candidates who record ½ or more, but not all the 'core' key points will gain 1 mark.
Candidates who record less than ½ the 'core' key points will gain 0 marks.

Candidates who provide an additional key point, other than those identified as 'core' will be awarded an additional 1 mark.

Basic and accurate explanation of key points - 2 marks

Marks are determined by the number of key points which have basic and accurate explanation.

If all key points have a basic and accurate explanation, candidates will be awarded 2 marks.
If ½ or more, but not all, the key points have a basic and accurate explanation, candidates will be awarded 1 mark.
If less than ½ the key points have a basic and accurate explanation, candidates will be awarded 0 marks.

Detailed and accurate explanation – 1 mark

Candidates who provide further accurate detail within the explanations will be awarded an additional mark. Extra detail means one additional point of explanation is provided for any one of the key points.

Total – 6 marks

1 : 2 Draw up appropriate criteria for a specification

Allow for a range of solutions - 1 mark

Candidates whose specification allows for a range of solutions will be awarded 1 mark.

No marks will be awarded if a range of solutions is not possible.

Contain more detail than the brief - 2 marks

Specification points must be derived from the brief.

When drawing up the criteria for the specification candidates should not just rewrite the key points — greater explanation is required.

All specification points contain more detail than the brief - 2 marks
½ or more, but not all, specification points contain more detail than the brief - 1 mark
less than ½ the specification points contain more detail than the brief - 0 marks

Be written in measurable terms - 2 mark

Candidates must indicate how each specification point should be able to be measured by a valid method.

All specification points are measurable - 2 marks.
½ or more, but not all specification points are measurable - 1 mark.
less than ½ the specification points are measurable - 0 marks.

Note: Candidates are expected to produce a **minimum of four** specification points.

Total - 5 marks

1 : 3 Devise an overall plan for investigations

List a range of relevant investigations - 2 marks

Candidates who provide a list of possible investigations which focus clearly on:

- the key points of the project brief
- the specification points, and
- and have a clear aim/purpose

will be awarded 2 marks.

Candidates who provide a list of investigations which do not focus clearly on the key points and the specification will be awarded 1 mark.

Obvious omissions from the list of investigations will result in the full mark allocation being unavailable.

Identify techniques to be used - 1 mark

All techniques must be appropriate for the investigations and so allow the candidate the possibility of collecting relevant data/information.

Where techniques are not consistently appropriate, candidates will be penalised.

Total - 3 marks

From the proposed list of investigations drawn up in 1 : 3 above, candidates should form a prioritised list of those investigations which they propose to undertake.

No marks are awarded at this stage but candidates are expected to focus on those investigations most relevant to the needs of the project brief. A number of investigations may be combined by using one technique.

No more than three depending on their nature, could be realistically carried out in the time available.

Candidates who intend to use a questionnaire as an investigation, must issue 20 in order to gain valid results.

Candidates should complete this work on pages 6 - 7 of the pro forma.

Step 2 Total mark allocation - 12 marks

2 : 1 Implement the overall plan for investigation - 9 marks

The mark allocation for this area will be awarded holistically and will be based on candidates' performance in a series of investigations.

Candidates will be assessed on the results and conclusions from each investigation - see the marking criteria breakdown listed on the next page.

Teachers/lecturers must ensure candidates present the results and conclusions of each investigation on pages 8 - 10 only.

Candidates using computer software to produce results, eg bar charts, graphs must ensure that these are presented only on the pages allocated for this work, ie pages 8 – 10.

Candidates who present the results and conclusions of each investigation on more than one A4 sheet of paper will be penalised.

Implement the overall plan for investigations

Marking criteria

- Holistic approach — marks must be briefly justified.
- Results must be brief, concise and easy to interpret.
- Results must show a link to the aim/purpose of the investigation.
- Results must be derived from the investigations and based on facts and evidence.
- Conclusions must be based on the results obtained.

For all investigations candidates have done as they intended	2 marks
For ½ or more investigations candidates have done as they intended	1 marks
Less than ½ investigations candidates have done as they intended	0 mark

All investigations contain brief, concise and easy to interpret results	2 marks
½ or more investigations contain brief, concise and easy to interpret results	1 marks
Less than ½ investigations contain brief, concise and easy to interpret results	0 mark

All results are based on fact/relevant to option statement	2 marks
½ or more of results are based on fact/relevant to option statement	1 marks
Less than ½ of results are based on fact/relevant to option statement	0 mark

All conclusions are based on the results and show progression	3 marks
½ or more conclusions are based on the results and show progression	2 marks
Less than ½ conclusions are based on the results and show progression	1 mark
No valid conclusions are provided	0 marks

Total - 9 marks

2 : 2 Derive a solution from the investigations - 3 marks

Generate one solution - 2 marks

Candidates derive **one solution** which must be:

- relevant to the needs of the project brief - 1 mark
- based on the results and conclusions reached in the investigations – 1 mark

Brief description of the solution - 1 mark

The solution should be described so it is able to be **visualised**.

Various methods may be used — written details, sketches, diagrams, labelled diagrams, storyboards — to ensure clarity.

Total - 3 marks

Step 3 Total mark allocation - 18 marks

3 : 1 Manufacture the chosen solution

Candidates must complete the plan **before** starting to manufacture the solution.

Candidates will be penalised if the plan is written retrospectively.

Identify and requisition resources - 3 marks

Candidates who identify and requisition **all the main** resources will gain 3 marks.

Candidates who requisition **most** of the main resources will gain 2 marks.

Candidates who only requisition **some** main resources will gain 1 mark.

Resources will depend on the chosen solution and may relate to food, textiles, packaging materials.

Identify and requisition equipment - 3 marks

Candidates who identify and requisition **all** main equipment will gain 3 marks.

Candidates who identify and requisition **most** of the main equipment will gain 2 marks.

Candidates who identify and requisition **some** of the main equipment will gain 1 mark.

Equipment will depend on the chosen solution and may relate to equipment used in food or fabric activities.

Draw up a sequence of work - 3 marks

Candidates should show logical thinking when drawing up the sequence of work to manufacture the solution, eg:

- Activities should be in the correct order to complete the solution.
- Longer activities started nearer the beginning of the sequence.
- Dovetailing of activities as appropriate.

Sequence of work is highly effective — **all** activities planned in correct order - 3 marks.

Sequence of work is effective — **most** activities planned in the correct order - 2 marks.

Sequence of work is satisfactory — **some** activities planned in the correct order, sufficient to allow the solution to be manufactured - 1 mark.

Deployment of time (time plan) - 3 marks

Candidates should make good use of time.

- Activities should be appropriately timed.
- Resources and equipment are used to make more effective use of time.

Highly effective time plan - 3 marks.

Effective time plan - 2 marks.

Satisfactory time plan - 1 mark.

Total - 12 marks

After completing the plan for manufacture, candidates should start to manufacture the solution.

Candidates should be encouraged to make notes on page 14 as they are carrying out the manufacturing process. Notes may be made on how manufacture is proceeding, any problems encountered and any changes/modifications made to the plan.

This work is not marked, but may prove useful to candidates when completing Step 4 : 1 - Evaluation of the overall plan.

Photographic evidence of the candidates' work should be attached to page 15.

Two photographs are required:

- One should provide evidence of the solution during manufacture.
- The other should provide evidence of the completed solution.

Although the quality of the photographs is not important, they **must** give an indication of the work being carried out and completed by the candidate.

Although no marks are awarded for this area, **evidence must be provided** of the candidate's solution.

If photographic evidence is not provided, no further marking of the Technological Project will be carried out as no evidence has been provided on which to base the marking of the next stages of work.

If problems occur with photographic evidence, then the teacher/lecturer should contact Graeme Findlay (0141-242 2327) immediately.

Please note:

Page 15 of the electronic version has been set up to allow the electronic insertion of digital photographs. Such photographs **should not** be cut and then pasted into the spaces provided. Photographs should be inserted in the spaces provided by using the '*insert picture from file*' facility in Microsoft Word.

3 : 2 Devise a test for the manufactured solution

Present one test - 1 mark

Candidates should present **one** appropriate test — failure to do this will result in no marks being awarded.

Identify technique to be used - 1 mark

Technique must be **appropriate** to the test, allowing candidates to collect relevant data/information.

Total - 2 marks

3 : 3 Implement the test for the manufactured solution

Brief, concise and easy to interpret results - 2 marks

Results should be derived from the test and be based on facts and evidence.

Test results should be presented in a format which is:

- brief
- concise
- easy to interpret

Brief conclusions based on results - 2 marks

Candidates will be marked on their ability to draw meaningful and accurate conclusions from the results of the test.

Conclusions must be:

- factually correct
- based on the evidence provided by the results

Candidates must not offer personal opinions.

Total - 4 marks

Step 4 Total mark allocation - 6 marks

4 : 1 Evaluate the chosen solution

Evaluation against the specification points - 3 marks

Candidates must rewrite the specification points briefly in the appropriate column.

Candidates must evaluate the solution against **each** specification point. The results of the testing can be used here.

Candidates will be penalised for lack of accuracy and detail within the explanation.

Page 19 of the pro forma should be used for the evaluation against the specification.

- All specification points are evaluated 3 marks
- ½ or more, but not all, specification points are evaluated 2 marks
- Less than ½ the specification points are evaluated 1 mark
- No evaluation is provided 0 marks

Evaluation of the overall plan - 3 marks

Candidate will evaluate the overall plan (Steps 1 - 3 of the Technological Project).

The following criteria should be used in the review:

- time
- resources
- skills and abilities

No marks will be awarded to candidates who do not use these criteria in their review.

The evaluation which may include adaptations/modifications, **must be based on evidence** which can be found within the candidate's Technological Project pro forma.

Candidates should be encouraged to give reasons for any statements they make in the evaluation.

Candidates may find it helpful to use some of the headings for Steps 1 - 3 in the pro forma for the evaluation.

Pages 20 and 21 of the pro forma should be used for the evaluation of the overall plan.

Total - 6 marks

Technological Project at Intermediate 2

Summary Mark Allocation

50 marks available

Step	Mark Breakdown	Allocation
1 : 1	**Identification of the key points with explanation**	
	Identify the key points	**2 marks**
	Identify additional key points	**1 mark**
	Key points plus basic and accurate explanation	**2 marks**
	Key points plus detailed and accurate explanation	**1 mark**
		Total mark allocation - 6
1 : 2	**Draw up appropriate criteria for a specification**	
	Allows for a range of solutions	**1 mark**
	Contains more detail than the brief	**2 mark**
	Be written in measurable terms	**2 marks**
		Total mark allocation - 5
1 : 3	**Devise an overall plan for investigation**	
	List a range of relevant investigations	**2 marks**
	Identify techniques to be used	**1 mark**
		Total mark allocation - 3
Total mark allocation for Step 1 - 14 marks		
2 : 1	**Implement the overall plan for investigations**	
	Holistic approach	**Total mark allocation - 9**
2 : 2	**Derive a solution**	
	From the investigation generate one solution	**2 marks**
	Brief description of the solution	**1 mark**
		Total mark allocation - 3
Total mark allocation for Step 2 - 12 marks		

Step	Mark Breakdown	Allocation
3 : 1	**Manufacture the chosen solution**	
	Requisitions all main resources	**3 marks**
	Requisitions most main resources	**2 marks**
	Requisitions some main resources	**1 mark**
		Total mark allocation - 3
	Requisition all main equipment	**3 marks**
	Requisition most main equipment	**2 marks**
	Requisition some main equipment	**1 mark**
		Total mark allocation - 3
	Highly effective sequence of work	**3 marks**
	Effective sequence of work	**2 marks**
	Satisfactory sequence of work	**1 mark**
		Total mark allocation - 3
	Highly effective deployment of time (time plan)	**3 marks**
	Effective deployment of time (time plan)	**2 marks**
	Satisfactory deployment of time (time plan)	**1 mark**
		Total mark allocation - 3
3 : 2	**Devise a test for the manufactured solution**	
	One test presented	**1 mark**
	Technique identified	**1 mark**
		Total mark allocation - 2
3 : 3	**Implement the test for the manufactured solution**	
	Brief, concise and easy to interpret results	**2 marks**
	Brief conclusions based on the results	**2 marks**
		Total mark allocation - 4
Total mark allocation for Step 3 - 18 marks		
4 : 1	**Evaluate the chosen solution**	
	Evaluation of specification points	**3 marks**
		Total mark allocation - 3
	Evaluation of overall plan against set criteria: time/resources/ skills and abilities	**3 marks** **Total mark allocation - 3**
Total mark allocation for Step 4 - 6 marks		