



NATIONAL QUALIFICATIONS 2008

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 19 and 20 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, for example 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* for the current year. Candidates must submit their work on the Technological Project pro forma issued by SQA.

The completed pro forma will provide all the evidence required for submission to SQA. The work should be legible and clearly presented.

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.

Principal Assessor Reports – each year the PA reports can be downloaded from the SQA website (www.sqa.org.uk). These reports give detailed feedback on candidate performance in the previous session's Technological Project and the contents can be taken on board for the following session.

Photographic evidence of the solution taken during and after manufacture is required to certify that the work is that of the candidate. (Page 14 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 the SQA web site 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 Analysing – Total mark allocation – 13 marks

1.1 Identification of the key points with explanation

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

The number of 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 – 2 marks available

Candidates who identify all the key points	2 marks
Candidates who identify half or more, but not all the key points	1 mark
Candidates who identify less than half the key points	0 marks

Basic and accurate explanation of key points – 2 marks available

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

All key points have a basic, accurate explanation	2 marks
Half or more of key points have a basic, accurate explanation	1 mark
Less than half of key points have a basic, accurate explanation	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 – 5 marks

1.2 Draw up appropriate criteria for a specification

Allow for a range of solutions – 1 mark available

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 – 1 mark available

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.

Where specification points do not consistently contain more detail than the brief, candidates will be penalised.

Be written in measurable terms – 2 marks available

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 specification points are measurable	0 marks

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

Total – 4 marks

1.3 Devise an overall plan for investigations

List a range of relevant investigations – 2 marks available

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

- the key points of the project brief
- the specification points
- 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 – 2 marks available

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

All techniques are appropriate	2 marks
½ or more, but not all techniques are appropriate	1 mark
less than ½ the techniques are appropriate	0 marks

Total – 4 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 3 investigations depending on their nature could be realistically carried out in the time available. The three investigations identified should ensure that all specification points are investigated. **Candidates will be disadvantaged if they do less than 3** as they will not have collected sufficient data to create a valid solution.

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

Candidates should complete the above work on pages 5 and 6 of the pro forma.

Step 2 Investigating – Total mark allocation – 15 marks

2.1 Implement the overall plan for investigation – 12 marks available

The mark allocation for this area will be awarded holistically and will be based on candidates' performance in the three 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 7, 8 and 9 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 7, 8 or 9.

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

See Appendix 1 for guidance on carrying out investigations/tests.

Implement the overall plan for investigations

Marking criteria

- 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

All investigations candidates have fulfilled the aims on page 8 of the pro forma	3 marks
Half or more investigations candidates have fulfilled the aims on page 8 of the pro forma	2 marks
Less than half investigations candidates have fulfilled the aims on Page 8 of the pro forma	1 mark
In no investigations candidates have fulfilled the aims on page 8 of the pro forma	0 marks

All investigations contain brief, concise and easy to interpret results	3 marks
Half or more investigations contain brief, concise and easy to interpret results	2 marks
Less than half investigations contain brief concise and easy to interpret results	1 mark
No investigations contain brief, concise and easy to interpret results	0 marks

All results are based on fact/relevant to option statement	3 marks
Half or more of the results are based on fact/relevant to design brief	2 marks
Less than half of the results are based on fact/relevant to design brief	1 mark
No results are based on fact/relevant to design brief	0 marks

All conclusions are based on the results and/or show progression	3 marks
Half or more conclusions are based on the results and/or show progression	2 marks
Less than half conclusions are based on the results and/or show progression	1 mark
No conclusions are based on results and/or show no progression	0 marks

Total – 12 marks

2.2 Derive a solution from the investigations – 3 marks

Generate one solution – 2 marks available

ie one dish or one textile item. A two-piece outfit will not be acceptable.

NB Candidates who generate more than one solution will be awarded no marks for Step 3 or Step 4.

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

Candidate describes the solution in detail – 1 mark available

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

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

Total – 3 marks

Step 3 Manufacture – Total mark allocation – 16 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 available

Candidates who identify and requisition all the main resources	3 marks
Candidates who identify and requisition most of the main resources	2 marks
Candidates who identify and requisition some of the main resources	1 mark

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

Identify and requisition equipment – 3 marks available

Candidates who identify and requisition all the main equipment	3 marks
Candidates who identify and requisition most of the main equipment	2 marks
Candidates who identify and requisition some of the main equipment	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 available

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 with all activities planned in the correct order	3 marks
Sequence of work is highly effective with most activities planned in the correct order	2 marks
Sequence of work is highly effective with some activities planned in the correct order	1 mark

Deployment of time (time plan) – 3 marks available

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 manufacture the solution.

Candidates should be encouraged to make notes on page 13 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.

NB Before candidates manufacture their solution they should be encouraged to complete the preparation for the testing of their proposed solution (Step 3.2). Candidates are required to devise one test, then produce any materials required to conduct each test before manufacturing the solution. For example, interview questions, facilities/ graphs/charts to record results. See page 15 of the pro forma.

Photographic evidence of the candidates' work should be attached to page 14.

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 (ext 0141 242 2327) or Lesley Clark, Qualifications Officer (0845 213 5490) immediately.

Please note:

Page 14 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 – 1 mark available

Candidates should present **one** appropriate test with an **appropriate** technique which allows the candidate to collect relevant information – failure to do this will result in no marks being awarded.

Total – 1 mark

3.3 Implement the test for the manufactured solution – 3 marks available

Marking criteria

- Results must be brief, concise and easy to interpret
- Results must be derived from the tests and based on facts and evidence
- Conclusions must be based on the results obtained

Test results are brief, concise and easy to interpret	1 mark
Test results are not brief, concise or easy to interpret	0 marks

Test results are factual and relevant to the specification	1 mark
Test results are not factual or relevant to the specification	0 marks

Conclusions are based on the results of testing	1 mark
Conclusions are not based on the results of testing	0 marks

Candidates must not offer personal opinions.

Total – 3 marks

Step 4 Evaluation – Total mark allocation – 6 marks

4.1 Evaluate the chosen solution

Evaluation against the specification points – 3 marks available

Candidates must rewrite (or copy and paste) 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 17 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 the specification points are evaluated	2 marks
Less than ½ the specification points are evaluated	1 mark
No specification points are evaluated	0 marks

Evaluation of the overall plan – 3 marks available

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.

Marks will not be awarded to candidates who do not use these criteria in their evaluation.

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.

Pages 18 of the pro forma should be used for the evaluation of the overall plan.

Total – 6 marks

Appendix 1
Intermediate 2 Technological Project
Guidance on Carrying out Investigations/Tests

Three investigations must be carried out.

The aim, should be rewritten or cut and pasted from page 6 of the pro forma onto the top of the investigation page.

Questionnaire

- Minimum of 20 respondents
- Minimum of 5 questions linked to aim/specification to allow relevant data to be collected
- All question and all possible answers must be displayed
- All responses must be displayed, including nil responses
- Given constraints of space, it is not necessary to display results as pie charts/graphs
- Table format for displaying results of questionnaires can be space saving

Survey

- The source(s) of information must be identified. The following sources could be used including the internet, literary, shop manager, restaurant/café manager.
- Source of information must be relevant to investigation
- The place selected should be related to the quality and quantity of the data available rather than the number of sources however more than one source should be used
- Information should be displayed using appropriate headings, sub-divisions etc

Interviews

- The suitability of the person interviewed should be carefully considered. The interviewee and their position in establishment/job title should be clearly identified.
- Minimum 5 relevant questions linked to aim/specification to allow relevant data to be collected
- Open-ended questions should be used to allow more data to be collected from the interviewee
- Questions should be carefully formatted to extract useful facts and avoid one word responses such as Yes/No. All questions and responses must be displayed

Internet/literary search

- All sources must be clearly identified
- Should be related to the quality/quantity/relevance of the data available rather than the number of sources
- Graphics may be included where relevant
- Data collected should be organised using appropriate headings/subdivisions etc
- Information should not be lifted 'en bloc' from websites. It is appropriate to summarise key points which are relevant to the aim/specification

Costing

- Breakdown cost of all ingredients/components must be included
- Details of quantities and unit costs must be included
- Sources should be included where appropriate
- Comparative costing should measure 'like for like'

NB Costing only proves cost of items/components. On its own it does not prove low/high cost, value for money, acceptability of price to target group.

Nutritional analysis

- Sources must be shown
- All nutrients relevant to the brief should be shown
- Nutritional analysis of all ingredients must be included. (A 'total' for a dish is not acceptable)
- Sufficient data must be accessed in order to draw relevant conclusions
- When used as a test the suitability of the results should be assessed by a suitable expert, eg community dietician, food technologist, etc

Fabric analysis

- There is no need to repeat fabric tests where information is already easily available in textbooks/websites
- Fabrics used for testing must be clearly identified ie construction/fibre composition
- Only fabrics being considered for potential solution should be tested/sampled/investigated towards final solution
- Details of method of testing must be given

Sensory Testing

- All potential solutions must be clearly described
- Breakdown of results must be shown. Summary of results is not acceptable
- Key must be provided
- It is appropriate to ask questions to elicit potential improvements/modifications
- It is suggested for sensory testing that a minimum of five people are used to assess the product(s)

Technological Project at Intermediate 2

Summary Mark Allocation

50 marks available

Step	Mark Breakdown	Allocation
1.1	<p>Identification of the key points with explanation</p> <p>Identify the key points Key points plus basic and accurate explanation Key points plus detailed and accurate explanation</p>	<p>2 marks 2 marks 1 mark Total mark allocation 5</p>
1.2	<p>Draw up appropriate criteria for a specification</p> <p>Allows for a range of solutions Contains more detail than the brief Be written in measurable terms</p>	<p>1 mark 1 mark 2 marks Total mark allocation 4</p>
1.3	<p>Devise an overall plan for investigation</p> <p>List a range of relevant investigations Identify techniques to be used</p>	<p>2 marks 2 marks Total mark allocation 4</p>
Total mark allocation for Step 1 – 13 marks		
2.1	<p>Implement the overall plan for investigations</p> <p>Holistic approach</p>	<p>Total mark allocation 12</p>
2.2	<p>Derive a solution</p> <p>From the investigation generate one solution Brief description of the solution</p>	<p>2 marks 1 mark Total mark allocation 3</p>
Total mark allocation for Step 2 – 15 marks		

Step	Mark Breakdown	Allocation
3.1	<p>Manufacture the chosen solution</p> <p>Requisitions all main resources Requisitions most main resources Requisitions some main resources</p> <p>Requisition all main equipment Requisition most main equipment Requisition some main equipment</p> <p>Highly effective sequence of work Effective sequence of work Satisfactory sequence of work</p> <p>Highly effective deployment of time (time plan) Effective deployment of time (time plan) Satisfactory deployment of time (time plan)</p>	<p>3 marks 2 marks 1 mark Total mark allocation 3</p> <p>3 marks 2 marks 1 mark Total mark allocation 3</p> <p>3 marks 2 marks 1 mark Total mark allocation 3</p> <p>3 marks 2 marks 1 mark Total mark allocation 3</p>
3.2	<p>Devise a test for the manufactured solution</p> <p>One test presented</p>	<p>1 mark Total mark allocation 1</p>
3.3	<p>Implement the test for the manufactured solution</p> <p>Brief, concise and easy to interpret results Factual and relevant results Brief conclusions based on the results</p>	<p>1 mark 1 mark 1 mark Total mark allocation 3</p>
Total mark allocation for Step 3 – 16 marks		
4.1	<p>Evaluate the chosen solution</p> <p>Evaluation of specification points</p> <p>Evaluation of overall plan against set criteria: time/resources/ skills and abilities</p>	<p>3 marks Total mark allocation 3</p> <p>3 marks Total mark allocation 3</p>
Total mark allocation for Step 4 – 6 marks		