



National Qualifications

Home Economics

Intermediate 2

Technological Project: all contexts Candidate guidance

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Introduction

To gain the award for this Course you must pass all the Unit assessments as well as the external Course assessment. The external Course assessment consists of a Question Paper and a Technological Project.

SQA issues two Technological Project briefs annually — you will choose one. The time allocated for the Technological Project is 20 hours, and it will be completed under supervision in your centre. The Technological Project pro forma must be used to record your work. Do not add any additional pages as they will not be marked. The below table gives a breakdown of marks for the Technological Project. (Appendix 2 gives more detail about each step of the Project.)

Technological Project – mark allocation			
Step	Stage	Marks	Assessment
1	Analysing	13	Your completed pro forma is submitted to SQA to be marked
2	Investigating	15	
3	Manufacture	16	
4	Evaluation	6	
Total		50	

The following information will guide you through the four steps of the Technological Project.

Before you start, read both of the Technological Project briefs issued by SQA and choose the ONE you want to do. Insert the brief on page 2 of the Technological Project pro forma.

Step 1: Analysing

Step 1.1 Analyse a complex situation, issue or problem (5 marks)

- ◆ Identify the key points from the project brief
- ◆ Explain the relevance of the key points to the situation, issue or problem given in the project brief

Key point—number each point (2 marks)

Explanation (3 marks)

Identify the key points from the project brief:

- ◆ read the Technological Project brief
- ◆ consider the words which are important and underline them
- ◆ these are the **key points** of the Technological Project brief
- ◆ you should try to identify **all** the key points
- ◆ you may like to put two or more of the works together to make one key point
- ◆ **number** the key points

Explain the relevance of the key points to the situation, issue or problem given in the project brief:

- ◆ explain **each** of the key points
- ◆ make sure each explanation **links to the needs of the brief**
- ◆ give as much detail as you can
- ◆ avoid giving dictionary definitions of the key points
- ◆ if a key point has more than one word, the explanation must take account of all the words included

Step 1.2 Draw up appropriate criteria for a specification (4 marks)

Specification Point—number each point (2 marks)	How it can be measured (2 marks)
<ul style="list-style-type: none">◆ A specification is a set of criteria that your solution must meet◆ These criteria must be relevant to the Technological Project brief◆ Your specification should allow for a range of solutions to be developed◆ Your specification points should link to the key points you listed on page 3. Do not, however just rewrite your key points – more detail is needed◆ Number each specification point◆ You must have a minimum of four specification points. (Do not include too many specification points as this may make it more difficult to gain all the marks at a later stage.)	<ul style="list-style-type: none">◆ A measure is a method of proving if a specification point has been met◆ You could prove if the specification point has been met in a variety of ways, eg costing exercise, checking with an expert◆ If your measure involves an ‘expert’, you must specify who the expert is eg interview a food technology teacher/ dietician

Step 1.3 Devise an overall plan for investigations (4 marks)

Investigation required—number each investigation (2 marks)	Technique to be used (2 marks)
<ul style="list-style-type: none">◆ As part of your overall plan, you have to make a list of investigations which you could carry out◆ Your investigations should be relevant to the project brief◆ Your investigations should link to your specification points ie the criteria you consider to be important to the project brief◆ Ask yourself what you need to find out eg existing products that meet the needs of the brief, availability of resources◆ You must list a minimum of four investigations◆ You should include sufficient investigations to provide you with enough data to allow you to reach a solution	<ul style="list-style-type: none">◆ You must identify the technique to be used in each investigation◆ The method must be appropriate to the investigation◆ The method should allow you to gain information relevant to the brief◆ If your investigation involves gathering information from a group of people eg a questionnaire, you must identify the target group◆ If your investigation involves interviewing an expert, you must specify the expert, eg dietician

Step 1.3 Devise an overall plan for the investigations—continued (4 marks)

Given the time available, choose from the proposed list of investigations those that you think are the most important in relation to the needs of the project brief.

Investigation number	Investigation to be carried out
1	<ul style="list-style-type: none">◆ From your list of investigations on page 5, choose the three you think are the most important to help you meet the needs of the Technological Project brief.◆ You must plan and carry out three investigations. (You will be disadvantaged if you do more or less than three.)◆ Your chosen investigations should be relevant to the project brief◆ Your chosen investigations should provide you with the data you need to ensure that all your specification points are met
2	
3	

Step 2: Investigating

Step 2.1 Implement the overall plan for the investigations (12 marks)

The three investigations should now be carried out in the order stated on page 6.

For each investigation, you should:

- ◆ state the aim of the investigation
- ◆ record the results of the investigation
- ◆ draw conclusions from the results

Record your investigations on pages 7, 8 and 9 of the Technological Project pro forma.

Aim

- ◆ Carry out your aim from page 6 of the pro forma. (Make sure that, for each investigation, the aim is the same as specified on page 6.)

Results

- ◆ You should record the raw data you collect during your investigation. Do not summarise your results.
- ◆ Display your results in a format that is brief, concise and easy to interpret, eg all tables/charts must include a key.
- ◆ You must ensure that all results etc can be presented on one side of A4 paper.
- ◆ Results must be based on facts/evidence discovered during the investigation.

Conclusion

- ◆ Do not give your personal opinion. All conclusions must be drawn from the results of the investigation.
- ◆ Conclusions should show justification based on the information found in the investigation.
- ◆ Conclusions should demonstrate progression towards the solution.

Appendix 1 has further guidance on carrying out investigations.

Step 2.2 Derive a solution from the investigations (3 marks)

Chosen solution (2 marks)

Using the conclusions of your investigations devise **one** solution which will meet the needs of the Technological Project brief.

You must not produce more than one solution ie ONE dish or ONE textile item only.

If you produce more than one solution, you will not be able to gain a significant number of marks in Step 3 and Step 4.

- ◆ Your solution must be based on the results of your investigations. You should not decide what your solution will be before you have completed the investigations
- ◆ Your solution must be relevant to the Technological Project brief

Describe the chosen solution in detail (1 mark)

It is important that your description is clear so that the person marking your work can fully understand your solution.

To help you to do this, you could use one or more of the following methods:

- ◆ written details
- ◆ design sketches
- ◆ labelled diagrams

Step 3: Manufacturing**Step 3.1 Manufacture the chosen solution (12 marks)**

Planned sequence of work

Time allocation (3 marks)

- ◆ your plan should show a breakdown of time
- ◆ the time allocated to each task should be realistic
- ◆ you must include the day and date of manufacture

Step-by-step sequence of work (3 marks)

- ◆ your sequence should describe clearly how you intend to use the time you have for manufacture
- ◆ your order of work should be logical

Identify and requisition all the resources and equipment required to manufacture the solution

Resources required (3 marks)	Equipment required (3 marks)
<ul style="list-style-type: none">◆ identify every resource you will use◆ measurements/quantities of foods and fabrics must be exact◆ fabric resources must include size (length and width)◆ you should include types and colours of textiles and trimmings◆ you must use metric weights and measurements	<ul style="list-style-type: none">◆ you must include all the equipment you need to manufacture your solution◆ for food solutions, weighing and measuring equipment must be identified if they are required◆ you must specify any cutlery you require◆ specialised fabric equipment eg scissors, needles must be specified

Before you manufacture your solution you should now complete the preparation for the testing of your proposed solution. You must devise one test and then produce any materials required to conduct the test before you manufacture the solution, eg interview questions, graphs/charts to record results.

This page is for the candidate's own use

It may be used to make notes during manufacture or record any modifications made to the plan

Page 13 is for your own use and will not be marked. It should be used to make notes when you are manufacturing your solution. You may want to make notes about:

- ◆ how the stages of manufacture are progressing
- ◆ the resources/equipment you are using
- ◆ any changes/modifications you make to the plan

These notes may be helpful to you when completing Step 4.1 as they can be used as evidence for the evaluation.

Authenticated photographic evidence of manufacture

Photographic evidence of your solution must be provided on page 14.

Two photographs should be included:

- ◆ one during manufacture
- ◆ one after manufacture

Step 3.2 Devise a test for the manufactured solution (1 mark)**Test to be carried out:**

You must decide on one test to be carried out on your manufactured solution.

Your test should:

- ◆ be a method of checking whether the specification has been met
- ◆ have a clear aim

Technique to be used:

You must identify the technique you are going to use to carry out the test.

The technique must:

- ◆ be appropriate to the test
- ◆ allow you to collect information
- ◆ specify any 'expert' or target group used

Step 3.3 Implement the test for the manufactured solution (3 marks)

Test (3 marks)

For the test you must:

- ◆ record the results
- ◆ draw conclusions from the results

Results

- ◆ You should record the raw data you collect during your test., Do not summarise your results.
- ◆ Display your results in a format that is brief, concise and easy to interpret, eg all tables/charts must include a key.
- ◆ Ensure that all results can be presented on one side of A4 paper.
- ◆ Results must be based on facts/evidence discovered during the investigation.

Conclusion

- ◆ Do not give your personal opinion. All conclusions must be drawn from the results of the test.

There is further guidance on conducting tests in Appendix 1.

Step 4: Evaluating

Step 4.1 Evaluate the chosen solution (6 marks)

Evaluate the chosen solution against the specification. (3 marks)

Use the results of either from investigations, manufacture and/or testing where appropriate.

Specification point	Evaluation
<ul style="list-style-type: none">◆ you should now evaluate your solution against your specification points – using the results of the investigations and testing where appropriate◆ copy and paste your specification points from page 4 into this column.	<ul style="list-style-type: none">◆ for each specification point, give a judgement (good, bad, successful or unsuccessful) based on facts from your Technological Project and then explain the consequences for the final solution◆ when using the results of investigations or testing in your evaluation, you should identify the investigation, test or page number which you are using as evidence of your evaluative comment◆ if you find that you have not investigated/tested a specific area of nutritional analysis/costing which you have included in your specification points, you may conduct this at this stage◆ you must be able to base your evaluation on evidence which can be found in the Technological Project

Step 4.1 (continued)**Evaluate the overall plan (3 marks)**

Evaluate Steps 1 – 3 using the following criteria:

- ◆ time
- ◆ resources
- ◆ skills and abilities

It is important that you evaluate each of these criteria under the correct heading.

Your evaluation comments must be based on evidence which can be found within your Technological Project pro forma.

Do not state any personal opinions in your evaluation.

Use any notes you made on page 13 to assist you with your evaluation of Step 3.

Appendix 1

Guidance for investigations/ tests

Questionnaire

- ◆ minimum of 20 respondents
- ◆ minimum of five 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.
- ◆ The 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.
- ◆ A minimum of five 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'

Note: 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

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 about the method of testing must be given

Sensory testing

- ◆ all potential solutions must be clearly described
- ◆ breakdown of results must be shown, a 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)

Appendix 2

Mark allocation checklist

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

Step	Mark breakdown	Mark allocation	
3.1	Manufacture the chosen solution Requisitions all main resources Requisitions most main resources Requisitions some main resources Requisition all main equipment Requisition most main equipment Requisition some main equipment Highly effective sequence of work Effective sequence of work Satisfactory sequence of work Highly effective deployment of time (time plan) Effective deployment of time (time plan) Satisfactory deployment of time (time plan)	3 2 1 3 2 1 3 2 1 3 2 1	
3.2	Devise a test for the manufactured solution One test presented	1	
3.3	Implement the test for the manufactured solution Brief, concise and easy to interpret results Factual and relevant results Brief conclusions based on the results	1 1 1	
Total marks available for Step 3		16	
4.1	Evaluate the chosen solution Evaluation of specification points Evaluation of overall plan against set criteria: time/resources/ skills and abilities	3 3	
Total marks available for Step 4		6	
Total marks available		50	