



2012 Health and Food Technology

Higher – Technological Project

Finalised Marking Instructions

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STEP 1 Total mark allocation – 22 marks

1 : 1 Identification of the key points with explanation – 6 marks available

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.	2 marks
Candidates who record ½ or more, but not all the 'core' key points.	1 mark
Candidates who record less than ½ the 'core' key points.	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 a basic and accurate explanation.

If all key points have a basic and accurate explanation.	2 marks
If ½ or more but not all of the key points have a basic and accurate explanation.	1 mark
If less than ½ the key points have a basic and 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 or additional points.

Brief 1

Develop a dish high in iron for a school cafeteria.

Brief 2

Develop a food product suitable for a supermarket which promotes Scotland.

Brief 1

Key points

1. develop
2. (a) dish
3. high
4. (in) iron
5. (for a) school
6. cafeteria.

Brief 2

Key points

1. develop
2. (a) food product
3. suitable
4. (for a) supermarket
5. (which) promotes
6. Scotland.

Example of basic accurate explanation of key points

Develop • create or devise ideas for a new item

Example of further accurate detail in explanation of key points

Develop • create or devise ideas for a new item
• make an item which is original or different to what is available at present

Brief 1 – dish high in iron

Additional Key Points

7. Nutritional needs of target group
8. Current dietary targets
9. Aesthetic appeal
10. Likes/dislikes
11. Appeal to market/target group
12. Age range of target group
13. Allergies
14. Skills/abilities
15. Facilities/resources/time available
16. Hygiene
17. Safety
18. Cost/budget of target group
19. Quality/standard required for sale
20. Suitable for mass production
21. Availability of ingredients
22. Portion size/ease of portioning
23. Season of year
24. Packaging/labelling
25. Religious/moral/ethical beliefs
26. Nutrition standards for schools

Brief 2 – food product which promotes Scotland

Additional Key Points

7. Nutritional needs of target group
8. Current dietary targets
9. Aesthetic appeal
10. Likes/dislikes
11. Appeal to market/target group
12. Age range of target group
13. Allergies
14. Skills/abilities
15. Facilities/resources/time available
16. Hygiene
17. Safety
18. Cost/budget of target group
19. Quality/standard required for sale
20. Suitable for mass production
21. Availability of ingredients
22. Portion size/ease of portioning
23. Season of year
24. Packaging/labelling
25. Religious/moral/ethical beliefs

1 : 2 Draw up appropriate criteria for a specification – 10 marks available

Candidate's specification allows for a range of possible solutions 1 mark

Link to the key points of the brief.

Specification allows for a range of possible solutions which are relevant to the brief	1 mark
If a range of solutions is not possible – 0 marks	0 marks

Candidate provides five specification points, each containing more detail than the brief 2 marks

Note: Candidates are expected to provide a **minimum of five** specification points. However due to constraints of the time allocated for the Technological Project the candidates should not identify more than seven specification points as this would involve the candidate in unnecessary work.

Specification points must be **valid** (derived from the brief) to gain marks in this section. When drawing up the criteria for the specification candidates should not just rewrite the key points – greater detail is required.

Five valid specification points contain more detail than the brief.	2 marks
Three or four valid specification points contain more detail than the brief.	1 mark
Less than three valid specification points contain more detail than the brief.	0 marks

Candidate has written all specification points in measurable/able to be tested terms 2 marks

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

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

Candidate has linked each specification point to the key points and additional key point(s) **2 marks**

Candidates must show that each specification point is linked to the key points and additional key points identified in Step 1 : 1. All key points should be covered.

Specification points are linked to all key points and additional key points.	2 marks
Specification points are linked to ½ or more, but not all key points and additional key points.	1 mark
Specification points are linked to less than ½ the key points and additional key points.	0 marks

Candidate provides basic explanations **2 marks**

Basic explanations of the specification points, relevant to the project brief, should be provided by the candidate.

Basic explanations are provided for all specification points.	2 marks
Basic explanations are provided for ½ or more, but not all specification points.	1 mark
Basic explanations are provided for less than ½ the specification points.	0 marks

Candidate provides detailed explanation **1 mark**

If further detail, relevant to the project brief, is provided within the explanation then an additional mark will be awarded. Extra detail means one additional point if explanation is provided for any one of the specification points.

Step 1.2 Specification			
Brief 1 – Dish high in iron			
Item must:		Measured by:	Identified expert:
1	<ul style="list-style-type: none"> be different to other products in the cafeteria/be original 	<ul style="list-style-type: none"> Interview Survey of school cafeteria menus/Internet search 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
2	<ul style="list-style-type: none"> be a food product 	<ul style="list-style-type: none"> Interview Component checklist/recipe analysis 	<ul style="list-style-type: none"> Food technologist/dietician/school cafeteria supervisor
3	<ul style="list-style-type: none"> be a single item/product/ dish 	<ul style="list-style-type: none"> Component checklist/recipe analysis Interview 	<ul style="list-style-type: none"> Food technologist/dietician/school cafeteria supervisor
4	<ul style="list-style-type: none"> be high/rich in iron 	<ul style="list-style-type: none"> Interview Nutritional analysis & check 	<ul style="list-style-type: none"> Food technologist/dietician/school cafeteria supervisor
5	<ul style="list-style-type: none"> be suitable for a school cafeteria 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/dietician/school cafeteria supervisor
6	<ul style="list-style-type: none"> be healthy/take account of current dietary targets 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/dietician/health professional/school cafeteria supervisor
7	<ul style="list-style-type: none"> take account of nutritional needs of children/teenagers 	<ul style="list-style-type: none"> Interview Nutritional analysis & check 	<ul style="list-style-type: none"> Food technologist/dietician/health professional/school cafeteria supervisor
8	<ul style="list-style-type: none"> take account of nutritional standards for schools 	<ul style="list-style-type: none"> Interview Nutritional analysis & check 	<ul style="list-style-type: none"> Food technologist/dietician/health professional/school cafeteria supervisor
9	<ul style="list-style-type: none"> be suitable for target group 	<ul style="list-style-type: none"> Interview Nutritional analysis & check 	<ul style="list-style-type: none"> Food technologist/dietician/health professional/school cafeteria supervisor
10	<ul style="list-style-type: none"> take account of other products in the cafeteria 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/dietician/school cafeteria supervisor
11	<ul style="list-style-type: none"> be easy to eat 	<ul style="list-style-type: none"> Interview Questionnaire/survey to target group 	<ul style="list-style-type: none"> Food technologist/dietician/school cafeteria supervisor
12	<ul style="list-style-type: none"> be comparable in cost to other similar dishes/items on the cafeteria menu 	<ul style="list-style-type: none"> Costing exercise & price check/comparison Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
13	<ul style="list-style-type: none"> be cost effective /be good value for money 	<ul style="list-style-type: none"> Costing exercise & interview Questionnaire/survey to target group 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
14	<ul style="list-style-type: none"> be within the budget of the target group/school cafeteria 	<ul style="list-style-type: none"> Costing exercise & questionnaire to target group Costing exercise & interview Quality checklist & interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
15	<ul style="list-style-type: none"> be of an acceptable/satisfactory standard for sale 	<ul style="list-style-type: none"> Interview Questionnaire/survey Sensory testing with target group 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
16	<ul style="list-style-type: none"> be an appropriate portion size 	<ul style="list-style-type: none"> Interview Sensory evaluation with target group Questionnaire with target group 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor

Item must:	Measured by:	Identified expert:	
17	<ul style="list-style-type: none"> be aesthetically pleasing to target group 	<ul style="list-style-type: none"> Interview Sensory evaluation with target group Questionnaire with target group 	<ul style="list-style-type: none"> Target group/food technologist/school cafeteria supervisor
18	<ul style="list-style-type: none"> take account of likes/dislikes of target group 	<ul style="list-style-type: none"> Interview Sensory evaluation with target group Questionnaire with target group 	<ul style="list-style-type: none"> Target group/food technologist/school cafeteria supervisor/dietician
19	<ul style="list-style-type: none"> be suitable for the season of the year 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
20	<ul style="list-style-type: none"> be made using the facilities/resources/time available/to the candidate 	<ul style="list-style-type: none"> Interview Checklist of facilities/component checklist Timed trial of prototype & interview 	<ul style="list-style-type: none"> Food technologist
21	<ul style="list-style-type: none"> be within the capabilities/skills of the candidate 	<ul style="list-style-type: none"> Interview Trial of prototype Skills analysis 	<ul style="list-style-type: none"> Food technologist
22	<ul style="list-style-type: none"> be made using the facilities/resources/time available/to the school cafeteria 	<ul style="list-style-type: none"> Interview Timed trial of prototype & interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
23	<ul style="list-style-type: none"> be within the capabilities/skills of the school cafeteria 	<ul style="list-style-type: none"> Interview Trial of prototype Skills analysis 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
24	<ul style="list-style-type: none"> be prepared under hygienic/safe conditions/be safe to eat 	<ul style="list-style-type: none"> Interview Quality checklist & interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/Environmental Health Officer
25	<ul style="list-style-type: none"> take account of allergies 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
26	<ul style="list-style-type: none"> be easy to prepare/cook/reheat/portion/serve 	<ul style="list-style-type: none"> Interview Skills analysis & check 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
27	<ul style="list-style-type: none"> be suitable to be made in advance 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
28	<ul style="list-style-type: none"> have an appropriate shelf life 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/Environmental Health Officer
29	<ul style="list-style-type: none"> be suitable for mass production 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
30	<ul style="list-style-type: none"> take account of religious/moral/ethnic beliefs 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/relevant teacher

Note:

- A food technologist could include a person working in food product development or a Home Economics/food technology teacher.

- NB**
- **Specification Points** – It must be checked that the specification points are different.
– A candidate may use different wording to state the same thing.
 - **Measured by** – The candidate must specify the term ‘expert’ if used.

Method of measuring must be able to check/assess whether the specification point has been met.

Basic explanation of specification point

- be colourful/attractive/appealing to target group
- so the target group will like them

Detailed explanation of specification point

- be colourful/attractive/appealing to target group
- to encourage the target group or consumer to try the product again

Step 1.2 Specification			
Brief 2 – Promotes Scotland			
Item must:	Measured by:	Identified expert:	
1	<ul style="list-style-type: none"> be a food product 	<ul style="list-style-type: none"> Component checklist/recipe analysis Interview 	<ul style="list-style-type: none"> Food technologist/chef/dietician/supermarket manager
2	<ul style="list-style-type: none"> be a single product/item/dish 	<ul style="list-style-type: none"> Questionnaire 	<ul style="list-style-type: none"> Food technologist/chef/dietician/supermarket manager
3	<ul style="list-style-type: none"> be original/different to other dishes on sale 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/chef/dietician/supermarket manager
4	<ul style="list-style-type: none"> influence/promote/advertise Scotland/be recognised as Scottish 	<ul style="list-style-type: none"> Interview Check against current product range/survey menus Internet search 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
5	<ul style="list-style-type: none"> contain Scottish ingredients/produce 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/chef/dietician/supermarket manager
6	<ul style="list-style-type: none"> be suitable for sale in a supermarket 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
7	<ul style="list-style-type: none"> complement/fit in with other dishes in the supermarket range 	<ul style="list-style-type: none"> Interview Check against current product range/survey menus 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
8	<ul style="list-style-type: none"> be a nutritious product/include nutritious ingredients 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/chef/dietician/supermarket manager
9	<ul style="list-style-type: none"> be comparable in cost to similar dishes (in the supermarket range) 	<ul style="list-style-type: none"> Interview Costing exercise & check against current product price 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
10	<ul style="list-style-type: none"> be cost effective/good value for money 	<ul style="list-style-type: none"> Costing exercise & interview 	<ul style="list-style-type: none"> Target group/food technologist/chef/supermarket manager
11	<ul style="list-style-type: none"> be within the budget of the target group 	<ul style="list-style-type: none"> Costing exercise & interview/questionnaire 	<ul style="list-style-type: none"> Target group
12	<ul style="list-style-type: none"> be of an acceptable/satisfactory standard for sale 	<ul style="list-style-type: none"> Interview Sensory testing with target group Quality checklist & interview 	<ul style="list-style-type: none"> Target group/food technologist/chef/supermarket manager
13	<ul style="list-style-type: none"> be an appropriate/suitable portion size 	<ul style="list-style-type: none"> Interview Sensory testing/questionnaire with target group 	<ul style="list-style-type: none"> Target group/food technologist/chef/supermarket manager
14	<ul style="list-style-type: none"> be aesthetically pleasing to target group 	<ul style="list-style-type: none"> Interview Sensory testing/questionnaire with target group 	<ul style="list-style-type: none"> Target group/food technologist/chef/supermarket manager
15	<ul style="list-style-type: none"> take account of the likes/dislikes of target group 	<ul style="list-style-type: none"> Sensory testing/questionnaire with target group Questionnaire to target group Interview 	<ul style="list-style-type: none"> Target group/supermarket manager
16	<ul style="list-style-type: none"> take account of religious/moral/ethnic beliefs 	<ul style="list-style-type: none"> Interview Questionnaire to target group 	<ul style="list-style-type: none"> Food technologist/supermarket manager/relevant teacher
17	<ul style="list-style-type: none"> be suitable for target group 	<ul style="list-style-type: none"> Interview Questionnaire 	<ul style="list-style-type: none"> Target group/food technologist/chef/supermarket manager
18	<ul style="list-style-type: none"> take account of allergies 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/chef/dietician/supermarket manager

Item must:	Measured by:	Identified expert:	
19	<ul style="list-style-type: none"> be healthy/take account of current dietary guidelines 	<ul style="list-style-type: none"> Interview Component checklist & interview 	<ul style="list-style-type: none"> Food technologist/chef/dietician/supermarket manager
20	<ul style="list-style-type: none"> be made using the facilities/resources/time available to the supermarket 	<ul style="list-style-type: none"> Interview Checklist of facilities/component checklist Timed trial of prototype & interview 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
21	<ul style="list-style-type: none"> be made using the facilities/resources/time available/to the candidate 	<ul style="list-style-type: none"> Interview Checklist of facilities/component checklist Timed trial of prototype & interview 	<ul style="list-style-type: none"> Food technologist
22	<ul style="list-style-type: none"> be made within the capabilities/skills of the candidate 	<ul style="list-style-type: none"> Interview Trial of prototype Skills analysis 	<ul style="list-style-type: none"> Food technologist
23	<ul style="list-style-type: none"> be made within the capabilities/skills of the supermarket 	<ul style="list-style-type: none"> Skills analysis 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
24	<ul style="list-style-type: none"> be prepared under hygienic/safe conditions/be safe to eat 	<ul style="list-style-type: none"> Interview Quality checklist & interview HACCP checklist and interview 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/Environmental Health Officer
25	<ul style="list-style-type: none"> be easy to prepare/cook/reheat/portion/serve 	<ul style="list-style-type: none"> Interview Skills analysis & check 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
26	<ul style="list-style-type: none"> be suitable to be made in advance 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
27	<ul style="list-style-type: none"> have an appropriate shelf life 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
28	<ul style="list-style-type: none"> be suitable for mass production 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
29	<ul style="list-style-type: none"> be suitable for the season of year 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager

Note:

- A food technologist could include a person working in food product development or a Home Economics/food technology teacher.

NB

- Specification Points** – It must be checked that the specification points are different.
– A candidate may use different wording to state the same thing.

- Measured by** – The candidate must specify the term ‘expert’ if used.

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Basic explanation of specification point

- be colourful/attractive/appealing to target group
- so the target group will like them

Detailed explanation of specification point

- be colourful/attractive/appealing to target group
- to encourage the target group or consumer to try the product again

1 : 3 Devise an overall plan for investigations – 6 marks available

Candidate presents a list of investigations (minimum five)

2 marks

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

- the core key points of the project brief
- the candidates specification points
- 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 marks being deducted.

Candidate identifies techniques to be used

2 marks

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 awarded **1 mark**.

Candidate justifies the need for the investigation

2 marks

All justifications must be

- well thought out
- linked to the investigation.

Lack of clarity within the justification will result in candidates being unable to gain the full mark allocation available.

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 a minimum of 20 in order to gain valid results. If, however, too many questionnaires are distributed, collecting the data may become problematic for candidates.

A minimum of 3 websites/literary sources should be evident in a **literary/internet search**.

Candidates should complete this work on pages 9 – 11 of the pro forma.

Step 1.3			
Brief 1 – Dish high in iron			
Investigation – to establish/find out/investigate		Technique:	Specified expert:
1	<ul style="list-style-type: none"> foods/ingredients rich/high in iron ingredients/dishes 	<ul style="list-style-type: none"> Interview Literary/Internet search Survey of food retail outlets 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
2	<ul style="list-style-type: none"> potential recipes using ingredients containing iron 	<ul style="list-style-type: none"> Literary/Internet/recipe search Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
3	<ul style="list-style-type: none"> range of dishes available in school cafeteria 	<ul style="list-style-type: none"> Survey of food outlets Literary/Internet search Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
4	<ul style="list-style-type: none"> range of iron rich/high in iron dishes 	<ul style="list-style-type: none"> Survey of food retail outlets Internet search Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
5	<ul style="list-style-type: none"> range of dishes high/rich in iron in the school cafeteria 	<ul style="list-style-type: none"> Survey of food retail outlets Internet search Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
6	<ul style="list-style-type: none"> ideas for potential solutions to include in the school cafeteria 	<ul style="list-style-type: none"> Interview Survey of outlets Literary/Internet/recipe search Trial of prototype Sensory testing with target group/customers 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
7	<ul style="list-style-type: none"> nutritional value/iron content of potential solutions 	<ul style="list-style-type: none"> Nutritional analysis & check 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
8	<ul style="list-style-type: none"> aesthetic appeal of potential solutions 	<ul style="list-style-type: none"> Sensory testing Interview/questionnaire 	<ul style="list-style-type: none"> Target group/food technologist/school cafeteria supervisor
9	<ul style="list-style-type: none"> appropriate portion size of potential solutions 	<ul style="list-style-type: none"> Interview Literary/Internet search/recipe search 	<ul style="list-style-type: none"> Target group/food technologist/school cafeteria supervisor/dietician
10	<ul style="list-style-type: none"> likes and dislikes of target group 	<ul style="list-style-type: none"> Sensory testing with target group Interview Questionnaire 	<ul style="list-style-type: none"> Target group/food technologist/school cafeteria supervisor
11	<ul style="list-style-type: none"> nutritional needs of target group 	<ul style="list-style-type: none"> Interview Literary/Internet search 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/dietician
12	<ul style="list-style-type: none"> price range of similar dish/dishes in the school cafeteria 	<ul style="list-style-type: none"> Interview Survey of current product range 	<ul style="list-style-type: none"> Target group/food technologist/school cafeteria supervisor
13	<ul style="list-style-type: none"> cost of potential ingredients/solutions 	<ul style="list-style-type: none"> Interview Costing exercise Survey school cafeteria 	<ul style="list-style-type: none"> Cafeteria manager
14	<ul style="list-style-type: none"> budget of target group/amount target group is prepared to pay 	<ul style="list-style-type: none"> Interview Questionnaire 	<ul style="list-style-type: none"> Target group/food technologist/school cafeteria supervisor
15	<ul style="list-style-type: none"> ways of applying current dietary advice/healthy eating/nutrition standards for schools 	<ul style="list-style-type: none"> Interview Literary/Internet search 	<ul style="list-style-type: none"> Target group/food technologist/school cafeteria supervisor/dietician

Investigation – to establish/find out/investigate	Technique:	Specified expert:	
16	<ul style="list-style-type: none"> facilities/resources/time available to the candidate 	<ul style="list-style-type: none"> Interview Resource/equipment checklist 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
17	<ul style="list-style-type: none"> skills necessary for manufacturing of the dish by the candidate 	<ul style="list-style-type: none"> Skills audit & check Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
18	<ul style="list-style-type: none"> facilities/resources/time available to the cafeteria 	<ul style="list-style-type: none"> Interview Timed trial of prototype & check 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
19	<ul style="list-style-type: none"> hygiene/safety requirements for food production 	<ul style="list-style-type: none"> Interview Literary/Internet search 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/ Environmental Health Officer
20	<ul style="list-style-type: none"> quality requirements of potential solutions 	<ul style="list-style-type: none"> Interview Manufacture prototype(s) & trial Sensory testing with target group Questionnaire 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
21	<ul style="list-style-type: none"> shelf life of potential solutions 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/ Environmental Health Officer
22	<ul style="list-style-type: none"> ease of portioning/serving/reheating/cooking 	<ul style="list-style-type: none"> Interview Literary/Internet/recipe search 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
23	<ul style="list-style-type: none"> suitability for mass production 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
24	<ul style="list-style-type: none"> food suited to time/season of year 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor
25	<ul style="list-style-type: none"> influences of religious/moral/ethical beliefs 	<ul style="list-style-type: none"> Interview 	<ul style="list-style-type: none"> Food technologist/school cafeteria supervisor/relevant teacher/dietician
26	<ul style="list-style-type: none"> other influencing factors on final product 	<ul style="list-style-type: none"> Interview Questionnaire 	<ul style="list-style-type: none"> Target group/food technologist/school cafeteria supervisor

Note:

- The candidate **must** specify the term 'expert' if used
- A food technologist could include a person working in food product development or a Home Economics teacher/food technology teacher
- Retailer outlet must be relevant to investigation and be specified

Step 1.3			
Brief 2 – Promotes Scotland			
Investigation – to establish/find out/investigate		Technique:	Specified expert:
1	<ul style="list-style-type: none"> range of Scottish ingredients 	<ul style="list-style-type: none"> Interview Literary/Internet search/retail search 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
2	<ul style="list-style-type: none"> range of recipes including Scottish ingredients 	<ul style="list-style-type: none"> Interview Literary/Internet search/retail search 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
3	<ul style="list-style-type: none"> range of Scottish food products 	<ul style="list-style-type: none"> Interview Questionnaire to target group Literary/Internet search/retail search 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
4	<ul style="list-style-type: none"> range of food products which promote Scotland 	<ul style="list-style-type: none"> Interview Questionnaire to target group Literary/Internet search/retail search 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
5	<ul style="list-style-type: none"> ways of promoting Scotland 	<ul style="list-style-type: none"> Interview Questionnaire to target group Literary/Internet search/retail search 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
6	<ul style="list-style-type: none"> suitable products for sale in a supermarket 	<ul style="list-style-type: none"> Interview Questionnaire to target group Literary/Internet search/retail search 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
7	<ul style="list-style-type: none"> current range of products available in supermarkets (promoting Scotland) 	<ul style="list-style-type: none"> Survey of supermarkets Interview Internet search 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
8	<ul style="list-style-type: none"> ideas for potential solutions 	<ul style="list-style-type: none"> Interview Survey of supermarkets Literary/Internet/recipe search Manufacture of prototype(s) & check Sensory testing with target group 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
9	<ul style="list-style-type: none"> appropriate portion size of potential solutions 	<ul style="list-style-type: none"> Interview Literary/Internet search/retail search 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/target group/dietician
10	<ul style="list-style-type: none"> aesthetic appeal of potential solutions 	<ul style="list-style-type: none"> Sensory testing 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/target group
11	<ul style="list-style-type: none"> likes/dislikes of target group 	<ul style="list-style-type: none"> Interview Questionnaire Sensory testing 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/target group
12	<ul style="list-style-type: none"> price range of similar products in supermarkets 	<ul style="list-style-type: none"> Interview Survey of menus 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/target group
13	<ul style="list-style-type: none"> cost of potential ingredients/solution 	<ul style="list-style-type: none"> Costing exercise 	<ul style="list-style-type: none">
14	<ul style="list-style-type: none"> budget of target group/amount target group is prepared to pay 	<ul style="list-style-type: none"> Interview Questionnaire 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/target group

Investigation – to establish/find out/investigate	Technique:	Specified expert:
15	<ul style="list-style-type: none"> ways of improving the nutritional value of potential solutions 	<ul style="list-style-type: none"> Food technologist/chef/dietician
16	<ul style="list-style-type: none"> nutritional needs of target group 	<ul style="list-style-type: none"> Food technologist/chef/dietician
17	<ul style="list-style-type: none"> ways of applying current dietary advice/healthy eating 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/dietician
18	<ul style="list-style-type: none"> facilities/resources/time available to the candidate 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
19	<ul style="list-style-type: none"> skills necessary for manufacturing the dish by the supermarket 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
20	<ul style="list-style-type: none"> skills necessary for manufacturing the dish by the candidate 	<ul style="list-style-type: none"> Food technologist/chef
21	<ul style="list-style-type: none"> time available for manufacturing the dish by the candidate 	<ul style="list-style-type: none"> Food technologist/chef
22	<ul style="list-style-type: none"> hygiene safety requirements for food production 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/Environmental Health Officer
23	<ul style="list-style-type: none"> quality requirements of potential solutions 	<ul style="list-style-type: none"> Target group/food technologist/chef/supermarket manager
24	<ul style="list-style-type: none"> shelf life of potential solutions 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/Environmental Health Officer
25	<ul style="list-style-type: none"> ease of portioning 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
26	<ul style="list-style-type: none"> foods suited to time/season of year 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
27	<ul style="list-style-type: none"> influences of religious/moral/ethical beliefs 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/relevant teacher
28	<ul style="list-style-type: none"> suitability for mass production 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager
29	<ul style="list-style-type: none"> influencing factors on final product 	<ul style="list-style-type: none"> Food technologist/chef/supermarket manager/target group

Note:

- The candidate **must** specify the term 'expert' if used
- A food technologist could include a person working in food product development or a Home Economics/food technology teacher
- Retailer outlet must be relevant to investigation and be specified

STEP 2 (Investigating) Total mark allocation

15 marks

2 : 1 Implement the overall plan for investigations – 12 marks available

The mark allocation for this area 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 9 – 11 of the pro forma only.

Candidates using computer software to produce results eg bar charts or graphs must ensure that these are presented only on the pages allocated for this work ie pages 9 – 11 of the proforma.

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

- Results must be brief, concise and easy to interpret
- Results must show a clear 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
1/2 or more investigations candidates have fulfilled the aims on page 8 of the pro forma	2 marks
Less than 1/2 investigations candidates have fulfilled the aims on page 8 of the pro forma	1 mark
In no investigations candidates fulfilled the aims on page 8 of the pro forma	0 marks

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

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

All conclusions are based on the results of investigations and/or show progression	3 marks
1/2 or more conclusions are based on the results of investigations and/or show progression	2 marks
Less than 1/2 conclusions are based on the results of investigations and/or show progression	1 mark
No conclusions are based on results of investigations and/or does not show progression	0 marks

2 : 2 Derive a solution from the investigations – 3 marks available

Generate one solution – 2 marks (ie ONE dish) NB it is extremely important that centres strictly adhere to this rule. No marks will be allocated for STEP 3 or STEP 4 if candidates generate more than one solution.

Candidates derive **one solution** which must

Be relevant to the needs of the project brief	1 mark
Be based on the results and conclusions reached in the investigations	1 mark
Describes the solution in detail	1 mark

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.

**Brief 1: Dish high in iron
Possible solutions**

Any appropriate dish high in iron suitable for a school cafeteria

**Brief 2: Promotes Scotland
Possible solutions**

Any food product suitable for a supermarket which promotes Scotland

NB Stop marking if more than one solution is given and refer technological project to the Principal Assessor.

STEP 3 (Manufacturing and Testing) Total mark allocation**21 marks****3 : 1 Manufacture the chosen solution – 10 marks available****Candidate completes the planned sequence of work****5 marks**

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

Candidates will be penalised if the plan is written **retrospectively**.

Candidates who draw up a sequence of work which consistently demonstrates effective deployment of time	5 marks
Candidates who draw up a sequence of work with minor lapses in the deployment of time	4 marks
Candidates who draw up a sequence of work with occasional lapses in the deployment of time	3 marks
Candidates who draw up a sequence of work with regular lapses in the deployment of time	2 marks
Candidates who draw up a sequence of work with frequent lapses in the deployment of time	1 mark
Candidate who submits a retrospective sequence of work	0 marks

Candidates may choose to present their sequence of work in an appropriate form eg table, chart, written details, flow chart. An indication of dates, times and details of the proposed work to be undertaken must demonstrate effective use of time by the candidate.

The sequence of work must show logical progression and allow the solution to be manufactured

Candidates' work must be completed on page 13 of the pro forma.

Candidate identifies and requisitions equipment and resources**3 marks**

Candidates who identify and requisition all resources and equipment	3 marks
Candidates who identify and requisition most resources and equipment	2 marks
Candidates who omit any obvious resources and/or equipment	1 mark

Resources will depend on the chosen solution and may relate to food, equipment.

Note: all resources and equipment required for manufacture must be listed and take into account

- metric weights
- exact weights of foods used.

Candidate consistently justifies effective deployment of equipment and resources

2 marks

Justification should relate to all the identified equipment and resources to gain full marks. Justification can be linked to the functional properties/aesthetic qualities of ingredients or results of investigations

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

Candidates should be encouraged to make notes on page 15 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.

Photographic evidence of the candidates' work must be attached to page 16 of the proforma.

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 type of work being carried out and completed by the candidate.

Although no marks are awarded here, **photographic evidence must be provided** of the candidates' 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.

Please note:

Page 16 of the electronic version of the pro forma has been set up to allow the electronic insertion of digital photographs.

3 : 2 Devise two tests for the manufactured solution – 3 marks available**Candidate presents two tests** **1 mark**Candidates should present **two** appropriate tests – failure to do this will result in no marks being awarded.**Candidate identifies techniques to be used** **1 mark****Two different techniques** should be identified.Techniques must be **appropriate** to the tests, allowing candidates to collect relevant data/information.**Candidate justifies the two tests** **1 mark**

Justifications should be

- clear and well thought out
- linked to the test.

NB Candidates are expected to include any literary titles/authors, web addresses and the title of any person/expert interviewed. Candidates are expected to identify the target group which is used during testing.

Briefs 1 & 2

Test	Technique	Justification
1. Examination by a specified expert eg dietician/food technologist/supermarket manager/school cafeteria manager/health professional/chef/ Environmental Health Officer	Interview/questionnaire with specified expert Sensory test with specified expert which is backed up by interview questions	<ul style="list-style-type: none"> • To check aesthetic qualities • To check if item is marketable • To check cost effectiveness/ profitability of item
2. Examination by target group	Interview/questionnaire/ discussion with target group Sensory testing with target group Observational checklist	<ul style="list-style-type: none"> • To find out if item is acceptable/appropriate to target group • To establish marketability
3. Costing exercise	Costing exercise confirmed by interview with an expert, eg food technologist/ supermarket manager/ school cafeteria manager/ chef/target group	<ul style="list-style-type: none"> • To establish whether item is cost effective to produce • To establish a selling price for the finished item
4. Nutritional analysis	Nutritional analysis and check interview with specified expert eg dietician/food technologist/ chef	<ul style="list-style-type: none"> • To check/assess nutritional suitability for target group
5. Time trial of product/solution	Time trial & check with specified expert	<ul style="list-style-type: none"> • To check if product/solution can be made in time available

3 : 3 Implement the tests for the manufactured solution – 8 marks available (revised)

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 test
- Results must be derived from the tests and based on facts and evidence
- Conclusions must be based on results obtained

For both tests – candidates have done as they intended from page 15	2 marks
For 1 test – candidates have done as they intended from page 15	1 mark
No test – candidates have done as they intended from page 15	0 marks

Both tests contain brief/concise/easy to interpret results.	2 marks
One test contains brief/concise/easy to interpret results.	1 mark
No test contains brief/concise/easy to interpret results.	0 marks

All results of tests are based on fact/valid evidence/relevant to specification points/design brief.	2 marks
One result of tests is based on fact/valid evidence/relevant to specification points/design brief.	1 mark
No results of tests are based on fact/valid evidence/relevant to specification points/design brief.	0 marks

Conclusions for two tests are based on the results of tests and/or show progression	2 marks
Conclusions for one test are based on the results of tests and/or show progression	1 mark
No conclusions for the tests are based on results of tests and/or show no progression	0 marks

STEP 4 Total mark allocation**12 marks****4 : 1 Evaluate the chosen solution – 6 marks available****Candidate provides accurate evaluation some of which is detailed against the specification****5 marks**

Candidates must rewrite (or copy and paste) the specification points in the appropriate column. Candidates must evaluate the solution against each specification point. Candidates should use the results of the investigations, manufacture and/or testing where appropriate.

Candidates who evaluate all or five specification points	5 marks
Candidates who evaluate four specification points	4 marks
Candidates who evaluate three specification points	3 marks
Candidates who evaluate two specification points	2 marks
Candidates who evaluate one specification point	1 mark

Candidate provides detailed accurate evaluation against specification**1 mark**

If further detail is provided within the evaluations then an additional mark will be awarded.

Extra detail means that one additional point of evaluation is provided for **any one** of the specification points.

4 : 2 Evaluate the Technological Project – 6 marks available

Candidates evaluate the Technological Project: Step 1 Analysing, Step 2 Investigating and Step 3 Manufacturing and Testing

All of the following criteria must be used in the evaluation

- 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 candidates' Technological Project pro forma eg from investigations, manufacture and/or testing.

In the evaluation the candidates should give an opinion based on facts from their Technological Project **and then explain the consequences for the final solution.**

Candidates should provide **two** points of evaluation for **each** step of the Technological Project.

One mark should be awarded for each point of evaluation. A minimum of one mark must come from each step evaluated.

Step 1	Analysing	2 marks
Step 2	Investigating	2 marks
Step 3	Manufacturing and Testing	2 marks

Pages 23 to 24 of the pro forma should be used for the evaluation.

**Appendix 1
Higher Technological Project
Guidance on Carrying out Investigations/Tests**

Three investigations and two tests must be carried out.

The aim, which should be linked to the candidates' specification, should be rewritten or cut and pasted from page 8 of the pro forma onto the top of the investigation page.

Questionnaire

- Minimum of 20 respondents.
- Minimum 5/8 relevant/valid questions linked to aim/specification to allow relevant data to be collected.
- Questions 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

- Must identify the source(s) of information.
- Source of information must be relevant to investigation.
- The following sources could be used including the Internet, literary, shop, restaurant/café as a source of information.
- The source of information should be identified.
- 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

- Carefully consider the suitability of the person interviewed. Must clearly identify their position in establishment/job title.
- Minimum 5/8 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 – minimum of 3 websites/literary sources.
- 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/sub-divisions 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 provide low/high cost, value for money, acceptability of price to target group.

Nutritional Analysis

- Sources must be shown.
- All nutrients relevant to the aim 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 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 products.

Technological Project Higher

Summary Mark Allocation

Total 70 marks available

Step	Mark Breakdown	Allocation
1 . 1	Identification of the key points with explanation Identify the key points Additional key points Key points plus basic and accurate explanation Key points plus detailed and accurate explanation	2 marks 1 mark 2 marks 1 mark Total mark allocation 6
1 . 2	Draw up appropriate criteria for a specification Allow for a range of possible solutions Contain more detail than the brief Be written in measurable/able to be tested terms Link each specification point to the key points Provide basic explanations Provide detailed explanations	1 mark 2 marks 2 marks 2 marks 2 marks 1 mark Total mark allocation 10
1 . 3	Devise an overall plan for investigations Present a list of investigations Identify techniques to be used Justify the need for the investigations	2 marks 2 marks 2 marks Total mark allocation 6
Total mark allocation for Step 1 — 22 marks		
2 . 1	Implement the overall plan for investigations Aims fulfilled Brief, concise, easy to interpret Relevant and valid results Conclusions	3 marks 3 marks 3 marks 3 marks Total mark allocation 12
2 . 2	Derive a solution from the investigations Generate one solution – based on evidence Relevant to brief Describe the solution in detail	1 mark 1 mark 1 mark Total mark allocation 3
Total mark allocation for Step 2 — 15 marks		

Step	Mark Breakdown	Allocation
3 . 1	Manufacture the chosen solution Step by step sequence of work showing effective deployment of time Requisition of resources Justification of resources/equipment	5 marks 3 marks 2 marks Total mark allocation 10
3 . 2	Devise two tests for the manufactured solution Present two tests Identify techniques to be used Justify the two tests	1 mark 1 mark 1 mark Total mark allocation 3
3 . 3	Implement the tests for manufactured solution Aims fulfilled Brief, concise and easy to interpret Relevant and valid reasons Conclusions	2 marks 2 marks 2 marks 2 marks Total mark allocation 8
Total mark allocation for Step 3 — 21 marks		
4 . 1	Evaluate the chosen solution Accurate explanation some of which is detailed against each specification point (to include results of investigations and/or tests where appropriate) Valid evaluations Provide detailed accurate explanation	5 marks 1 mark Total mark allocation 6
4 . 2	Evaluate the Technological Project Candidate can evaluate Steps 1-3 of the Technological Project with detailed reference to the following criteria: Time Resources Skills/abilities Step 1 Analysing Step 2 Investigating Step 3 Manufacturing and Testing	2 marks 2 marks 2 marks Total mark allocation 6
Total mark allocation for Step 4 — 12 marks		

[END OF MARKING INSTRUCTIONS]