



2008 Lifestyle and Consumer Technology Home Economics

Higher Technological Projects

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 food or textile item to encourage health in pre-school children.

Brief 1

Key points

1. develop
2. (a) food (or) textile
3. item
4. (to) encourage
5. health
6. (in) pre-school children

Brief 2

Develop an environmentally friendly food or textile item for sale at a school event.

Brief 2

Key points

1. develop
2. (an) environmentally friendly
3. food (or) textile
4. item
5. (for) sale
6. (at a) school event

Example of basic accurate explanation of key points

- Develop** • create or devise ideas for a new product

Example of further accurate detail in explanation of key points

- Develop** • create or devise ideas for a new product
• make a product which is original or different to what is available at present

**Brief 1 – Pre-school children
Additional Key Points**

7. Facilities/resources available
8. Aesthetic appeal
9. Time available for manufacture
10. Skills/abilities
11. Hygiene/safety
12. Likes/dislikes
13. Appeal to target group
14. Allergies
15. Cost
16. Quality/standard required for sale
17. Gender of target group
18. Age range of target group
19. Suitability for bulk production

**Brief 2 – Environmentally friendly
Additional Key Points**

7. Facilities/resources available
8. Aesthetic appeal
9. Time available for manufacture
10. Skills/abilities
11. Hygiene/safety
12. Likes/dislikes
13. Appeal to target group
14. Allergies
15. Cost
16. Quality/standard required for sale
17. Gender of target group
18. Age range of target group
19. Suitability for bulk production

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

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

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

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

Note: Candidates are expected to produce a **minimum of five** specification points. However due to constraints of 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 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
Half or more, but not all specification points are measurable/tested	1 mark
Less than half the specification points are measurable/tested	0 marks

Candidate has linked each specification point to the key points and additional 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 half or more, but not all key points and additional key points	1 mark
Specification points are linked to less than half 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 half or more, but not all specification points.	1 mark
Basic explanations are provided for less than half 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 of explanation is provided for any one of the specification points.

Step 1.2 – Specification

Brief 1 – Pre-school children		
Item must:		Measured by:
1	<ul style="list-style-type: none"> be edible/be a fabric item 	Interview with food/textile technologist Component checklist/recipe analysis
2	<ul style="list-style-type: none"> promote health in pre school children/under fives 	Interview with food/textile technologist/ appropriate teacher/health professional/ EHO
3	<ul style="list-style-type: none"> be of an acceptable/satisfactory standard 	Interview with food/textile technologist/ appropriate teacher/health professional/ EHO/parent Sensory testing with target group/parent Quality checklist
4	<ul style="list-style-type: none"> be different to other products/be original 	Survey of retail outlets Literary/Internet search Interview with food/textile technologist/retailer/ appropriate teacher/health professional
5	<ul style="list-style-type: none"> be aesthetically pleasing to target group 	Questionnaire to target group Interview with food/textile technologist/ appropriate teacher/health professional Sensory testing with target group/food/textile technologist/appropriate teacher/health professional
6	<ul style="list-style-type: none"> take account of the likes/dislikes of target group 	Questionnaire to target group Interview with food/textile technologist/ appropriate teacher/health professional Sensory testing with target group
7	<ul style="list-style-type: none"> be suitable for pre-school children 	Questionnaire/interview parents Interview with food/textile technologist/ appropriate teacher/health professional
8	<ul style="list-style-type: none"> take account of current trends 	Interview/questionnaire target group/food/textile technologist/health professional/parents
9	<ul style="list-style-type: none"> be made using the facilities/resources available to the candidate 	Interview food/textile technologist Checklist of facilities/component checklist
10	<ul style="list-style-type: none"> be made in the time available 	Interview with food/textile technologist Timed trial of prototype & interview food/textile technologist
11	<ul style="list-style-type: none"> be within the capabilities of the candidate to produce 	Interview with food/textile technologist Skills analysis Trial of prototype Quality checklist
12	<ul style="list-style-type: none"> be prepared under hygienic/safe conditions 	Interview food/textile technologist/EHO/Trading Standards Officer Literary/Internet search & quality checklist
13	<ul style="list-style-type: none"> be safe in use/to eat 	Interview with food/textile technologist/EHO/ Trading Standards Officer Literary/Internet search & quality checklist
14	<ul style="list-style-type: none"> have an appropriate shelf life/durability 	Interview with food/textile technologist/ appropriate teacher/health professional/EHO User/wearer trials
15	<ul style="list-style-type: none"> be suitable for bulk production 	Interview with food/textile technologist

Step 1.2 (continued)

Brief 1 – Pre-school children		
Item must:		Measured by:
16	<ul style="list-style-type: none"> • be cost effective/inexpensive to produce 	Costing exercise & interview with food/textile technologist
17	<ul style="list-style-type: none"> • be within the budget of the target group 	Costing exercise & interview with food/textile technologist/appropriate teacher/child carer Costing exercise & interview/questionnaire to target group
18	<ul style="list-style-type: none"> • be comparable in cost to similar products 	Costing exercise & interview with food/textile technologist/appropriate teacher/child carer/ health professional

Step 1.2 – Specification

Brief 2 – Environmentally friendly		
Item must:		Measured by:
1	<ul style="list-style-type: none"> be edible/be a fabric item 	Interview with food/textile technologist Component checklist/recipe analysis
2	<ul style="list-style-type: none"> take account of environmental issues 	Interview with food/textile technologist/ appropriate teacher/environmental agency
3	<ul style="list-style-type: none"> be suitable for sale at a school event 	Interview with food/textile technologist/ appropriate teacher/EHO/Trading Standards Officer
4	<ul style="list-style-type: none"> be of an acceptable/satisfactory standard for sale 	Interview with food/textile technologist/ appropriate teacher/EHO/Trading Standards Officer Sensory test with target group Quality checklist
5	<ul style="list-style-type: none"> be different to other products for sale in school/be original 	Interview with appropriate teacher/school representative
6	<ul style="list-style-type: none"> be aesthetically pleasing to target group 	Questionnaire to target group Interview with food/textile technologist/ appropriate teacher Sensory testing with target group/food/textile technologist/appropriate teacher
7	<ul style="list-style-type: none"> take account of the likes/dislikes of target group 	Questionnaire to target group Interview with food/textile technologist/ appropriate teacher Sensory testing with target group
8	<ul style="list-style-type: none"> be suitable for target group 	Questionnaire/interview target group Interview with food/textile technologist/ appropriate teacher/environmental agency
9	<ul style="list-style-type: none"> take account of current trends 	Interview/questionnaire with target group/food/textile technologist/ environmental agency
10	<ul style="list-style-type: none"> be made using the facilities/resources available to the candidate 	Interview with food/textile technologist Checklist of facilities/component checklist
11	<ul style="list-style-type: none"> be made in the time available 	Interview with food/textile technologist Timed trial of prototype & interview with food/ textile technologist/appropriate teacher
12	<ul style="list-style-type: none"> be within the capabilities of the candidate to produce 	Interview with food/textile technologist Skills analysis Trial of prototype Quality checklist
13	<ul style="list-style-type: none"> be prepared under hygienic safe conditions 	Interview with food/textile technologist/EHO/ Trading Standards Officer Literary/Internet search & quality checklist
14	<ul style="list-style-type: none"> be safe in use/to eat 	Interview with food/textile technologist/EHO/ Trading Standards Officer Literary/Internet search & quality checklist
15	<ul style="list-style-type: none"> be suitable to be made in advance 	Interview with food/textile technologist /appropriate teacher EHO/Trading Standards Officer
16	<ul style="list-style-type: none"> have an appropriate shelf life/durability 	Interview with food/textile technologist/ appropriate retailer/EHO/Trading Standards Officer User/wearer trials
17	<ul style="list-style-type: none"> be suitable for bulk production 	Interview with food/textile technologist

Step 1.2 (continued)

Brief 2 – Environmentally friendly		
Item must:		Measured by:
18	<ul style="list-style-type: none"> be cost effective/inexpensive to produce 	Costing exercise & interview with food/textile technologist/appropriate teacher
19	<ul style="list-style-type: none"> be within the budget of the target group 	Costing exercise & interview with food/textile technologist/appropriate teacher Costing exercise & interview/questionnaire to target group
20	<ul style="list-style-type: none"> be comparable in cost to other similar products 	Costing exercise & interview with food/textile technologist/appropriate teacher

Note:

- Food/textile technologist could include a person working in food/textile product development or a Home Economics 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

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

Candidate presents a list of investigations

2 marks

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

- the key points of the project brief
- the specification points
- 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. (See pages 24/25)

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.

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

Step 1.3

Brief 1 – Pre-school children		
Investigation		Technique
1	<ul style="list-style-type: none"> Pre-school children's health issues 	Interview with food/textile technologist/health professional/parents Literary/Internet search
2	<ul style="list-style-type: none"> Current range of health promotion products 	Survey of retail outlets Interview with food/textile technologist/health professional/parent/child carer
3	<ul style="list-style-type: none"> Suitability for target group/skills/abilities of target group 	Interview with food/textile technologist/health professional/parent/child carer
4	<ul style="list-style-type: none"> Ideas for potential solutions 	Survey of retail outlets Literary/Internet/recipe/pattern search Trial of prototype Sensory testing/interview with target group/health professional/appropriate teacher/parent/child carer
5	<ul style="list-style-type: none"> Aesthetic appeal of potential solutions 	Sensory testing with target group Interview with a food/textile technologist/health professional/parent/child carer
6	<ul style="list-style-type: none"> Likes and dislikes of target group 	Interview/questionnaire with target group
7	<ul style="list-style-type: none"> Current trends 	Interview/questionnaire to target group Survey of retail outlets Literary/Internet search Interview with food/textile technologist/parent/child carer
8	<ul style="list-style-type: none"> Facilities/resources available to the candidate 	Interview with food/textile technologist Resources/equipment checklist
9	<ul style="list-style-type: none"> Skills necessary for manufacturing the product 	Interview with food/textile technologist Skills audit Literary/fabric construction books/recipe search
10	<ul style="list-style-type: none"> Time available for manufacturing the product 	Interview with food/textile technologist Timed trial of prototype
11	<ul style="list-style-type: none"> Hygiene/safety requirements for production 	Interview with food/textile technologist/EHO/Trading Standards Officer/health professional Literary/Internet search
12	<ul style="list-style-type: none"> Quality requirements of potential solutions 	Interview/sensory testing with food/textile technologist/health professional/child carer Trial of prototype Sensory testing with target group/appropriate teacher
13	<ul style="list-style-type: none"> Shelf life/durability of potential solutions 	Interview with food/textile technologist/EHO/Trading Standards Officer Literary/Internet search
14	<ul style="list-style-type: none"> Suitability for bulk production 	Interview with food/textile technologist
15	<ul style="list-style-type: none"> Price range of similar products 	Interview with food/textile technologist/retailer/health professional/parent/child carer Survey of retail products
16	<ul style="list-style-type: none"> Cost of potential components/solutions 	Costing exercise
17	<ul style="list-style-type: none"> Budget of target group/amount target group is prepared to pay 	Interview/questionnaire to target group

Step 1.3 (continued)

Brief 1 – Pre-school children		
Investigation		Technique
18	<ul style="list-style-type: none">Care requirements of materials/resources used	Interview with food/textile/technologist Trials of prototype
19	<ul style="list-style-type: none">Influencing factors on final product	Interview with food/textile technologist/target group/ health professional/child carer
20	<ul style="list-style-type: none">Safety in use	Interview with food/textile technologist/EHO/Trading Standards Officer Literary/Internet search

Step 1.3

Brief 2 – Environmentally friendly		
Investigation		Technique
1	<ul style="list-style-type: none"> Types of school events 	Interview with food/textile technologist/ appropriate teacher Literary/internet search
2	<ul style="list-style-type: none"> Environmentally friendly issues 	Literary/Internet search Interview with environmental agency
3	<ul style="list-style-type: none"> Current range of eco products 	Interview with food/textile technologist/ appropriate teacher/environmental agency Survey of retail outlets
4	<ul style="list-style-type: none"> Availability of environmentally friendly resources 	Survey of retail outlets Survey target group
5	<ul style="list-style-type: none"> Suitability for target group 	Interview with food/textile technologist/ appropriate teacher Interview/questionnaire to target group
6	<ul style="list-style-type: none"> Ideas for potential solutions 	Survey of retail outlets Literary/Internet recipe/pattern search Trial of prototype Sensory testing/interview with target group/ food/textile technologist/appropriate teacher
7	<ul style="list-style-type: none"> Aesthetic appeal of potential solutions 	Sensory testing with target group/food textile technologist/appropriate teacher
8	<ul style="list-style-type: none"> Likes and dislikes of target group 	Interview/questionnaire to target group/food textile technologist/appropriate teacher
9	<ul style="list-style-type: none"> Current trends 	Interview/questionnaire to target group Survey of retail outlets Literary/Internet search Interview with food/textile technologist/ appropriate teacher/environmental agency
10	<ul style="list-style-type: none"> Facilities/resources available to the candidate 	Interview with food/textile technologist Resources/equipment checklist
11	<ul style="list-style-type: none"> Skills necessary for manufacturing the product 	Interview with food/textile technologist Skills audit Literary/recipe/textile construction books search
12	<ul style="list-style-type: none"> Time available for manufacturing the product 	Interview with food/textile technologist Timed trial of prototype
13	<ul style="list-style-type: none"> Hygiene/safety requirements for production 	Interview with food/textile technologist/EHO/ Trading Standards Officer Literary/Internet search
14	<ul style="list-style-type: none"> Quality requirements of potential solutions 	Interview with food/textile technologist/ appropriate teacher Trial of prototype Sensory testing with target group/appropriate teacher
15	<ul style="list-style-type: none"> Shelf life/durability of potential solutions 	Interview with food/textile technologist/ EHO/Trading Standards Officer Literary/Internet search
16	<ul style="list-style-type: none"> Suitability for bulk production 	Interview with food/textile technologist/ appropriate teacher
17	<ul style="list-style-type: none"> Price range of similar products 	Interview with food/textile technologist/ appropriate teacher Survey of retail outlets
18	<ul style="list-style-type: none"> Cost of potential components/solutions 	Costing exercise

Step 1.3 (continued)

Brief 2 – Environmentally friendly		
Investigation		Technique
19	<ul style="list-style-type: none">Budget of school group	Interview with food/textile technologist/ appropriate teacher
20	<ul style="list-style-type: none">Budget of target group/amount target group is prepared to pay	Interview/questionnaire to target group/ food/textile technologist/appropriate teacher
21	<ul style="list-style-type: none">Care requirements of materials/resources used	Interview with food/textile/technologist Trials of prototype
22	<ul style="list-style-type: none">Influencing factors on final product	Interview with food/textile technologist/ appropriate teacher/target group
23	<ul style="list-style-type: none">Safety in use	Interview with food/textile technologist/EHO/ Trading Standards Officer Literary/Internet search

Note:

- The candidate **must** specify the term ‘expert’ if used
- A food/textile technologist could include a person working in food/textile product development or a Home Economics teacher.

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 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 proforma 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
½ or more investigations candidates have fulfilled the aims on page 8 of the pro forma	2 marks
Less than ½ 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 and easy to interpret results	3 marks
½ for more investigations contain brief, concise and easy to interpret results	2 marks
Less than ½ 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
½ or more of the results are based on fact/relevant to design brief	2 marks
Less than ½ 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
½ or more conclusions are based on the results and/or show progression	2 marks
Less than ½ conclusions are based on the results and/or show progression	1 mark
No conclusions are based on results 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
based on the results and conclusions reached in the investigations	1 mark

Candidate 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: Pre-school children
Possible solutions**

**Brief 2: Environmentally friendly
Possible solutions**

Any food or textile item which encourages health in pre-school children

Any environmentally friendly food or textile item suitable for sale at a school event

NB Stop marking if more than one solution is given

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.

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, textiles, packaging materials, equipment.

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.

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.

If problems occur with photographic evidence, then the teacher/lecturer should contact Graeme Findlay, Qualifications Manager (0845 213 5492) or Lesley Clark, Qualifications Officer (0845 213 5490) immediately.

Please note:

Page 16 of the electronic version of the pro forma 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 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**

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.

Briefs 1 & 2

Test	Technique	Justification
1. Examination by a specified expert eg manufacturer/retailer/textile technologist	Interview/questionnaire Sensory testing with target group	<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 Sensory testing Observational checklist Wearer/user trial by target group	<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 textile technologist	<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	Interview with an expert, eg dietician	<ul style="list-style-type: none">• Check/assess nutritional suitability for target group

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 not done as they intended from page 15	0 marks

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

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

Conclusions for two tests are based on the results and/or show progression	2 marks
Conclusions for one test are based on the results and/or show progression	1 mark
No conclusions for the tests are based on results 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 explanation 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 explanation (specification)**1 mark**

If further detail is provided within the explanations 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.

Full 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 criteria 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 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 questions linked to aim/specification to allow relevant data to be collected.
- 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

- 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 interviewee/ their position in establishment/job title and establishment name.
- 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.
- 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 Key points plus basic and accurate explanation Key points plus detailed and accurate explanation Additional key points	2 marks 2 marks 1 mark 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]