AS Level
DESIGN AND TECHNOLOGY (FASHION & TEXTILES)

Mark scheme

Version 1.0
Mark schemes are prepared by the Lead Assessment Writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students’ responses to questions and that every associate understands and applies it in the same correct way. As preparation for standardisation each associate analyses a number of students’ scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Assessment Writer.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students’ reactions to a particular paper. Assumptions about future mark schemes on the basis of one year’s document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from aqa.org.uk
Level of response marking instructions

Level of response mark schemes are broken down into levels, each of which has a descriptor. The descriptor for the level shows the average performance for the level. There are marks in each level.

Before you apply the mark scheme to a student’s answer read through the answer and annotate it (as instructed) to show the qualities that are being looked for. You can then apply the mark scheme.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptor for that level. The descriptor for the level indicates the different qualities that might be seen in the student’s answer for that level. If it meets the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptor and the answer. With practice and familiarity you will find that for better answers you will be able to quickly skip through the lower levels of the mark scheme.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best fit approach for defining the level and then use the variability of the response to help decide the mark within the level, ie if the response is predominantly level 3 with a small amount of level 4 material it would be placed in level 3 but be awarded a mark near the top of the level because of the level 4 content.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark. The descriptors on how to allocate marks can help with this. The exemplar materials used during standardisation will help. There will be an answer in the standardising materials which will correspond with each level of the mark scheme. This answer will have been awarded a mark by the Lead Examiner. You can compare the student’s answer with the example to determine if it is the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the Lead Examiner’s mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

Indicative content in the mark scheme is provided as a guide for examiners. It is not intended to be exhaustive and you must credit other valid points. Students do not have to cover all of the points mentioned in the Indicative content to reach the highest level of the mark scheme.

An answer which contains nothing of relevance to the question must be awarded no marks.
<table>
<thead>
<tr>
<th>Qu</th>
<th>Part</th>
<th>Marking guidance</th>
<th>Total marks</th>
<th>AO</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>Correct answer D Ramie</td>
<td>1 mark</td>
<td>AO4</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>1 mark for each correct answer, up to a maximum of 3 marks.</td>
<td>3 marks</td>
<td>AO4</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Commercial name</strong></td>
<td><strong>Classification of fibre or fabric</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tactel®</td>
<td>Nylon/Polyamide</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Modal®</td>
<td>Regenerated cellulose (accept Lyocell)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tencel®</td>
<td>Regenerated cellulose/Lyocell</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Recognise that two groups of socks do not contain synthetic fibres (wool / cotton/viscose) (1 mark)</td>
<td>2 marks</td>
<td>A04</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$26 000 + 34 000 / 200,000 \times 100$</td>
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<tr>
<td></td>
<td></td>
<td>$= 6/20 \times 100$</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>$= 30%$ (1 mark)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Correct answer = B Denim</td>
<td>1 mark</td>
<td>AO4</td>
</tr>
<tr>
<td>5 marks</td>
<td>Comprehensive evaluation of the dangers when using dyes and justifies the need to control hazardous substances. Candidate will refer to the dangers in detail, explain the benefits of using risk assessments, the importance of safety measures and what might happen if hazardous substances are not handled appropriately. Candidate presents a reasoned argument as to the importance of controlling hazardous substances.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-4 marks</td>
<td>Some evaluation of the dangers which may be more general but makes some reference to use of dyes. May refer to risk assessments. Will give some suggestions for safety measures. Candidate will make a judgement as to the importance of controlling hazardous substances.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2 mark</td>
<td>Basic information with few points concerning dangers of using dyes. May refer to risk assessments and safety measures. Little evaluation of the importance of handling hazardous substances safely and putting controls in place.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 marks</td>
<td>Nothing worthy of credit</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Indicative content:**

Risks to health include:
- Exposure to dyes: breathing in certain dyes may cause asthma, allergic reactions and cancer.
- Inhaling dust may cause immediate breathing difficulties and long term health issues.
- Skin contact with dyes may cause skin damage, allergic reactions and cancer.

Risk assessment:
- Identifying hazardous substances
- Safety measures put in place

Safety measures:
- Training of work force including safe handling of materials
- Warning labels/signs
- Protective clothing
- Tidy and organised work space including handling spillages and cleaning
- Safe disposal of waste
- Ventilation

Safety devices for:
- Storage of dyes
- Measuring quantities of dyes

Important to control hazardous substances to protect work force and abide by legal requirements for safety in the workplace. It is important that employers know the dangers, understand the requirements and put safety measures in place so that the hazardous substances are
effectively controlled.

Students may make valid points about other chemicals involved in dyeing e.g. mordants.

Award any other valid response.

| 6 | 5-6 marks | Demonstrates excellent knowledge and understanding of a wide variety of points. Explains in detail how computers can replace the need for fabric prototypes/samples and is likely to refer to virtual modelling and give a commercial context in their answer. At the top end of mark band student will refer to aspects of both developing and presenting ideas. |
| 3-4 marks | Demonstrates good knowledge and understanding of a variety of points and provides some detail in their explanation. May refer to only developing or presenting ideas but in this case, includes more points than just those relating to colour and pattern. |
| 1-2 marks | Demonstrates basic knowledge and understanding with little or no explanation. May only mention the most obvious points concerning colour and pattern. |
| 0 marks | Nothing worthy of credit |

**Indicative content:**

- 3-D Virtual modelling to show idea from every point of view
- Fabric samples can be scanned and used in modelling to show surface colour, texture and pattern.
- Colourways and styling details can be tested
- Drape can be simulated as movement and can be incorporated into presentation to imitate product in use.
- Background contexts can be included to promote the product
- Can be presented or emailed to client for feedback during development of idea

Award any other valid response.
<table>
<thead>
<tr>
<th>7</th>
<th>6 marks</th>
<th>AO4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5-6 marks</strong></td>
<td>Candidate shows excellent understanding of the suitability and detailed knowledge by including a wide variety of detailed points that relate directly to the dress.</td>
<td></td>
</tr>
<tr>
<td><strong>3-4 marks</strong></td>
<td>Candidate shows some understanding of the suitability and good knowledge, including why the fabric is a suitable choice with some detail that relates to the dress.</td>
<td></td>
</tr>
<tr>
<td><strong>1-2 marks</strong></td>
<td>Basic knowledge and understanding with few properties of polyester simply stated but not related to the dress.</td>
<td></td>
</tr>
<tr>
<td><strong>0 marks</strong></td>
<td>Nothing worthy of credit.</td>
<td></td>
</tr>
</tbody>
</table>

**Indicative content:**
- Polyester is a suitable choice of fabric for the dress because it can be fine and soft, drapes well and has very good crease resistance, very strong, resistant to abrasion, light weight, easy care although a high temperature wash will spoil pleats, dries well, doesn’t need to be dry cleaned.
- Thermoplastic so that it can be heat set into pleats.
- Dyes and holds colour well.
- Can be recycled.

Some students may refer to the fact it can be engineered to be breathable, comfortable and cool but is prone to static as it is non-absorbent. Credit should also be given for these points.

Award any other valid response.

<table>
<thead>
<tr>
<th>8</th>
<th>3 marks</th>
<th>AO4</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 point for any of the following to a max of 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The repeat needs to be taken into consideration when laying out pattern pieces so that the pattern is centralised</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The repeat needs to be matched across sections of the garment for aesthetic appearance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The pattern repeat will determine the length of fabric required for a textile product; a large repeat will need more fabric and it will create more waste when matching the pattern at every seam.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Matching the pattern repeat will make a high quality garment.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The layout has to ensure that all pattern template pieces face the same way to avoid upside down designs or different directional shading.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The nap may cause the garment to feel different according to the</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
direction in which the pattern pieces are laid e.g. velvet.

Points relating to cost should not be awarded credit as students have been given this information in the question.

Award any other valid response.

| 8 | 2 | Fabric 1:  
Number of pattern repeats in 4 metres is 400/75 = 5.333. Therefore 6 pattern repeats are needed for each dress. 
Amount of fabric required per dress is 6 x 75cm = 4.50 metres.  
(1 mark)  
4.5 metres of fabric at £12 per metre is £54. 
Fabric for 5000 dresses is £54 x 5000 = £270,000.  
(1 mark)  
Fabric 2:  
Number of pattern repeats in 4 metres is 400/60 = 6.666. Therefore 7 pattern repeats are needed for two dresses  
(1 mark)  
2 dresses cut side by side will require 7 pattern repeats 
Amount of fabric required for 2 dresses is 7 x 60cm = 4.20 metres. 
Or 1 dress is equivalent to 3.5 pattern repeats so amount of fabric required for 1 dress is 3.5 x 60cm = 2.10 metres 
(1 mark)  
4.2 metres of fabric at £31.95 per metre is £134.19  
Fabric for 5000 dresses is \(\frac{134.19 \times 5000}{2} = £335,475\)  
(1 mark)  
Or 2.1 metres of fabric at £31.95 per metre is £67.10 (£67.095)  
Fabric for 5000 dresses is £67.10 x 5000 = £335,500  
(1 mark)  
Difference in price for 5 000 dresses between Fabric 1 and Fabric 2 is £335,475 - £270,000 = £65,475.  
Or £335,500 - £270,00 = £65,500  
(1 mark) | 6 marks | AO4 |
<table>
<thead>
<tr>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-8</td>
<td>Candidate shows detailed analysis of the social, moral and environmental issues considered in the design of an outdoor jacket. Explains how several aspects of the jacket design might be influenced by these issues and gives a detailed range of specific examples of the wider issues. Information is accurate and clearly related to the outdoor jacket.</td>
</tr>
<tr>
<td>3-5</td>
<td>Candidate shows good analysis of the social, moral and environmental issues considered in the design of an outdoor jacket. Information will be mainly accurate and some of these issues will be explained including relevant examples of wider issues.</td>
</tr>
<tr>
<td>1-2</td>
<td>Candidate shows basic analysis of the social, moral and environmental issues considered in the design of an outdoor jacket. Simple points given to explain one or more issues which may be inaccurate confused or have little relevance to the outdoor jacket.</td>
</tr>
<tr>
<td>0</td>
<td>Nothing worthy of credit.</td>
</tr>
</tbody>
</table>

**Indicative content:**

The following points need to be considered by the designer:

- Choice of materials influenced by safety and sustainability as well as by suitability, performance and fitness for purpose.
- Sustainable choice of materials such as organic, non-toxic, eco-friendly or recycled materials.
- The wider issues linked to the aesthetics of the coat for example, social and moral issues regarding the use of animal fur or the colour, style and images, slogans and logos used that may reinforce gender stereotypes.
- The use, care and disposal of the selected materials for the product. The wider issues associated with the laundering requirements of the outdoor jacket at its end of life. Should high energy consumption temperatures or toxic chemicals be needed during its cleaning? Can the product be taken apart and recycled at the end of its useful life as a coat?
- Labelling to encourage sustainability for example, how to care for the product with less of an impact on the environment, or to encourage the coat to be passed on to a new owner after use.
- Requirement for outdoor clothing to be safe, for example if it was being used for practical activities or by children, the length of cords and drawstrings around hoods or the neck area or loose parts that could be a choking hazard.
- Price issues associated with brand
- Requirement for clothing to comply with legislation used to protect consumers. The product design should make the outdoor jacket not only fit for purpose but also of satisfactory quality and as described on any labelling.
- Inclusive design, for example with the suitability of the coat for
children, the elderly or those with disabilities.

Award any other valid response.
**Length of frill:**

Accept cos 45 or sin 45 in the following methods:

- $h$ is the short distance across the base to the corner of the frill
  - $\cos 45 = \frac{h}{5}$ or $\sin 45 = \frac{h}{5}$

  \[
  h = 5 \cos 45 \quad \text{or} \quad 5 \sin 45
  \]

  \[h = 3.5 \text{ (1 d.p.)} \quad \text{(1 mark)}\]

Length of base of large triangle = 140 – 3.5 = 136.5 cm

- $\cos 45 = \frac{136.5}{XY}$

  \[
  XY = \frac{136.5}{\cos 45}
  \]

  \[XY = 193 \text{ cm (1 d.p.)} \quad \text{(1 mark)}\]

**Note:** There are alternative methods for finding the length $XY$ and each valid method should be accepted. One such alternative is as follows:

**Alternative method**

- $d$ is the diagonal length in the small triangle

  \[
  \tan 45 = \frac{d}{2.5}
  \]

  \[d = 2.5 \tan 45 \quad \text{(1 mark)}\]

  \[d = 2.5 \text{ (can also be seen from symmetry) (1 mark)}\]

Diagonal of big square = $D$

\[
D^2 = 140^2 + 140^2
\]

\[D^2 = 39200\]

\[D = \sqrt{39200}\]

\[D = 198 \text{ cm}\]

So $XY = D - 2.5 - 2.5$

\[XY = 198 - 2.5 - 2.5 \quad \text{(1 mark)}\]

\[XY = 193 \text{ cm (1 d.p.)} \quad \text{(1 mark)}\]
### SECTION B – DESIGNING AND MAKING PRINCIPLES

<table>
<thead>
<tr>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-4 marks</td>
<td>Candidate demonstrates a detailed understanding of why market research is important with a number of well explained points</td>
</tr>
<tr>
<td>1-2 marks</td>
<td>Candidate demonstrates a basic understanding of why market research is important with a number of points explained in limited detail or one point well explained.</td>
</tr>
<tr>
<td>0 mark</td>
<td>No work worthy of credit.</td>
</tr>
</tbody>
</table>

**Indicative content:**
Market research is important because:
- client profiling gives an understanding of the interests, needs and wants of the client that will influence design decisions
- identifying target market gives an understanding of the type of individual who might buy and use a product
- questionnaires/opinion polls collect data that can be used to inform design decisions
- shop surveys give a better understanding of the context in which the product is sold and how shoppers are influenced to make purchases which will impact on the success of the product
- trend forecasts enable designers to make design decisions with more confidence that products will sell

Award any other valid response.
12 Width of fabric = 50+70+10 + x  
= 130 + x (1 mark)  
x = 80 x tan 10° (1 mark)  
=14.106 (1 mark)  
Width = 130 + 14.106  
= 144.106  
= 145cm (1 mark)  

13 1  
<table>
<thead>
<tr>
<th>Marks</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-9 marks</td>
<td>Demonstrates comprehensive analysis and evaluation, in explaining how a wide variety of Alexander McQueen’s fashion designs are inspired by the theme of nature and can give a range of specific examples from more than one fashion collection. Detailed understanding of which aspects of nature have inspired designs and how these have translated into designs. At the top of this mark band, candidate will make reference to themes of nature.</td>
</tr>
<tr>
<td>4-6 marks</td>
<td>Demonstrates some evaluation and analysis, in explaining how a variety of patterns and colours from some aspects of nature inspire the fashion designs. One or more fashion collection referenced, with some understanding shown through examples of specific designs described.</td>
</tr>
<tr>
<td>1-3 marks</td>
<td>Demonstrates basic analysis but little evaluation in describing inspiration from nature such as use of feathers in fashion designs, giving little information and few specific examples. Candidate may describe some inspiration from nature but give little further information so understanding will be limited. Little or no reference to specific fashion collections.</td>
</tr>
<tr>
<td>0 marks</td>
<td>Nothing worthy of credit.</td>
</tr>
</tbody>
</table>

Candidates may give examples from any one of Alexander McQueen’s collections and should be given credit for any appropriate fashion item including fashion accessories.

**Indicative content:**
- Examples of themes in nature such as evolution, exoticism, adornment, metamorphosis, mythical creatures
- Inspiration from nature such as marine life, reptiles, birds and use of natural elements such as hair, fur, feathers, horns, skin, scales, shells, crystals.
- Specific examples may include the Armadillo boot, ‘The Widows of Culloden’ antler headdress, the Sarabande’, flower dresses, the Butterfly headdress.
- Collections such as:
  - ‘It’s a Jungle Out There’ – animal skins, crocodile heads, horns. Theme of battle between life and death, predators.
  - ‘Eshu’ – Hair with glass beads, leather. Theme of time passing and ageing.
  - ‘The Horn of Plenty’ – Black/white duck feathers, Theme of freedom and captivity.
  - ‘Plato’s Atlantis’ - snake skins, jelly fish. Theme of metamorphosis, subterranean.

Award any other valid responses.

<table>
<thead>
<tr>
<th>13</th>
<th>2</th>
<th>9</th>
<th>AO3/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-9 marks</td>
<td>Candidate understands that digital printing involves computer technology to print from computer screen to fabric. Excellent knowledge and understanding with detailed analysis and evaluation of advantages of digital printing compared to traditional methods of printing. Candidate knows what is meant by digital printing and applies understanding to the fine quality of print seen in the dress in Figure 7. A wide range of points to justify digital printing are explained with a reasoned argument as to the advantages of using digital printing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-6 marks</td>
<td>Good knowledge and understanding of digital printing with good analysis and evaluation of a variety of advantages of digital printing. Candidate understands what is meant by this method and makes reference to the complexity of the print design in Figure 7. Some conclusion is given as to the reasons for using digital printing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-3 marks</td>
<td>There may be some confusion about digital printing and knowledge and understanding is limited to only a few points. Basic analysis and evaluation of the digital print design in Figure 7. A few advantages of digital printing will be given but may be lacking in detail. May be little or no conclusion of the reasons for using digital printing.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 marks</td>
<td>Nothing worthy of credit.</td>
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</table>

**Indicative content:**
This is a suitable technique due to:
- Possible to print very fine detail due to photographic quality of reproduction.
- Tonal variation can be printed in a full range of colours to give complex and subtle effects.
- Computer aided design can be linked directly to manufacture.
Print sampling can be rapid and edited efficiently to respond to customer requirements.
- Traditional methods of time consuming and expensive sampling are eliminated.
- The speed of the technology enables businesses to respond rapidly to changing markets.
- Cost effective for niche markets.
- Print designs are computer generated and can be emailed to customer for approval.
- Prints can be customised for individual bespoke orders.
- Individual customers can upload their own designs to make fabric prints.
- Sampling can be kept to the minimum as designs can be viewed on screen.
- Wide range of fabrics can be printed on including both natural and synthetic fabrics.
- Prints can be made on demand so no requirement to hold stock.
- Cost effective to print small quantities.

Digital printing is a technique that makes very fine detail possible, it is quick and cost effective to alter and sample designs, can be used to respond quickly to changes in the market and the need to individualise orders.

Award any other valid responses.

<table>
<thead>
<tr>
<th>13</th>
<th>3</th>
<th>1 mark for any appropriate answer up to a maximum of 3 marks.</th>
<th>3 marks</th>
<th>AO3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>Indicative content:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• dress can be made to exact requirements to fit client</td>
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<tr>
<td></td>
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<td>• a customised garment is made to client’s choice of detail</td>
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<tr>
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<td>• finishing detail can be completed by hand to ensure a high quality product</td>
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<tr>
<td></td>
<td></td>
<td>• client will benefit from owning a unique garment</td>
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<tr>
<td></td>
<td></td>
<td>• to ensure customer satisfaction as new methods of manufacturing clothing using CAM can customise designs to fit individual customer requirements</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Award any other valid responses.
Indicative content:
Ethical responsibilities include products that are developed to include:

- sustainable materials including modern developments in fabrics to make them more environmentally friendly such as new generation lyocell fabrics.
- sustainable techniques in textiles production such as those associated with fair trade and involve handicrafts of developing countries which may include intensive work such as hand finishing, beading or stitching
- consideration of the six Rs of sustainability including use of recycled materials
- upcycling
- sustainable and ethical production methods which may involve renewable energy sources and safe disposal of waste.
- use of local employment or employment of the disadvantaged or other considerations of employment associated with fair trade such as only employing adults and safe working conditions.

Award any other valid responses.

<table>
<thead>
<tr>
<th>5-6 marks</th>
<th>Demonstrates excellent knowledge and understanding with clear detail that includes a wide range of different points. Will refer to fair trade and sustainability. Will consider sustainable use of materials and may also refer to sustainable techniques.</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-4 marks</td>
<td>Demonstrates good knowledge and understanding with a range of points some of which are in detail. Will refer to fair trade or sustainability. May include points about use of sustainable materials or techniques.</td>
</tr>
<tr>
<td>1-2 marks</td>
<td>Demonstrates basic knowledge and understanding with only a few points with little or no explanation. Little or no reference to sustainability or fair trade. Is likely to include the most obvious points concerning recycling.</td>
</tr>
<tr>
<td>0 marks</td>
<td>Nothing worthy of credit.</td>
</tr>
</tbody>
</table>