



Guide to Paper 1 for Cambridge O LEVEL Design & Technology (6043)

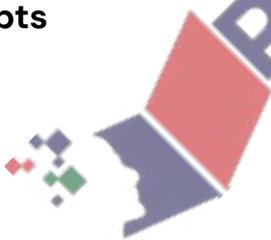
1st edition, for examination until 2026

Note to Readers:

If you are unable to understand some of the written handwriting in the scanned past-paper responses located throughout this guide, we have a text transcript at the end of the document. The transcript will rewrite the answer exactly as it is presented in the image, without grammatical changes. You may click on the link next to each image for easy access to the transcript. Thank you for your understanding! We hope you find this guide useful.

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Paper 1: The Product Design Paper

What does Paper 1 cover in IGCSE Design & Technology?

- Paper 1 is the Drawing paper, and is considered to be one of the easier papers
- It is 1 hour and 15 minutes long, with a total of 50 marks
- The paper gives you an option to draw between a unit of storage, a unit of advertising, and a mechanical unit.
- For example, in the M/J 2021 session:
 - Unit of storage for 8 pairs of boots
 - Advertising unit for a stand to sell eggs
 - Mechanical unit that lets the chickens out in the morning

Important tip:

My recommendation would be to choose between either storage or advertising. These are normally a lot easier to plan and think (and also more flexible). The mechanical unit is very complicated unless you have a perfect understanding of it and pretty much know the main idea straight away.

Depth question dive-in:

The most difficult issues I found during this paper were either getting a well-developed idea straight away (which is alright since there is a planning stage 😊) and managing time. 1 hour 15 minutes is very short for such a drawing task so proper time management should be prioritized. It is important to finish all questions, even if they are not perfect.

Question 1 (a):

- (a) List **four** additional points about the function of such a storage unit that you consider to be important. [4]

This question is very easy to answer. It pretty much gives 1 mark for every 1 additional point. An Important thing to know is that some points are stated in the question! These points must not be repeated, and you have to come up with your own points! These points can be very simple.

A personal example was that we had to draw a rack for javelins and one of my points was that it must have a handle to be transported (a very simple point, but clear and effective).

Here is a 4/4 response (according to my teacher and was done by me) ([Transcript](#))

<p>(a) Answer part (a) here. [4]</p> <ol style="list-style-type: none">1. Big wheels to make sure it can pass through muddy terrain.2. Handle to make it easy to push on distances, <u>not bend down</u>3. Stability it has not to give an bumps4. Materials it has to last a long time and not break apart under the mass of the javelins.	<p>(c)</p> <p>#1</p> <p>4</p> <p>5</p>
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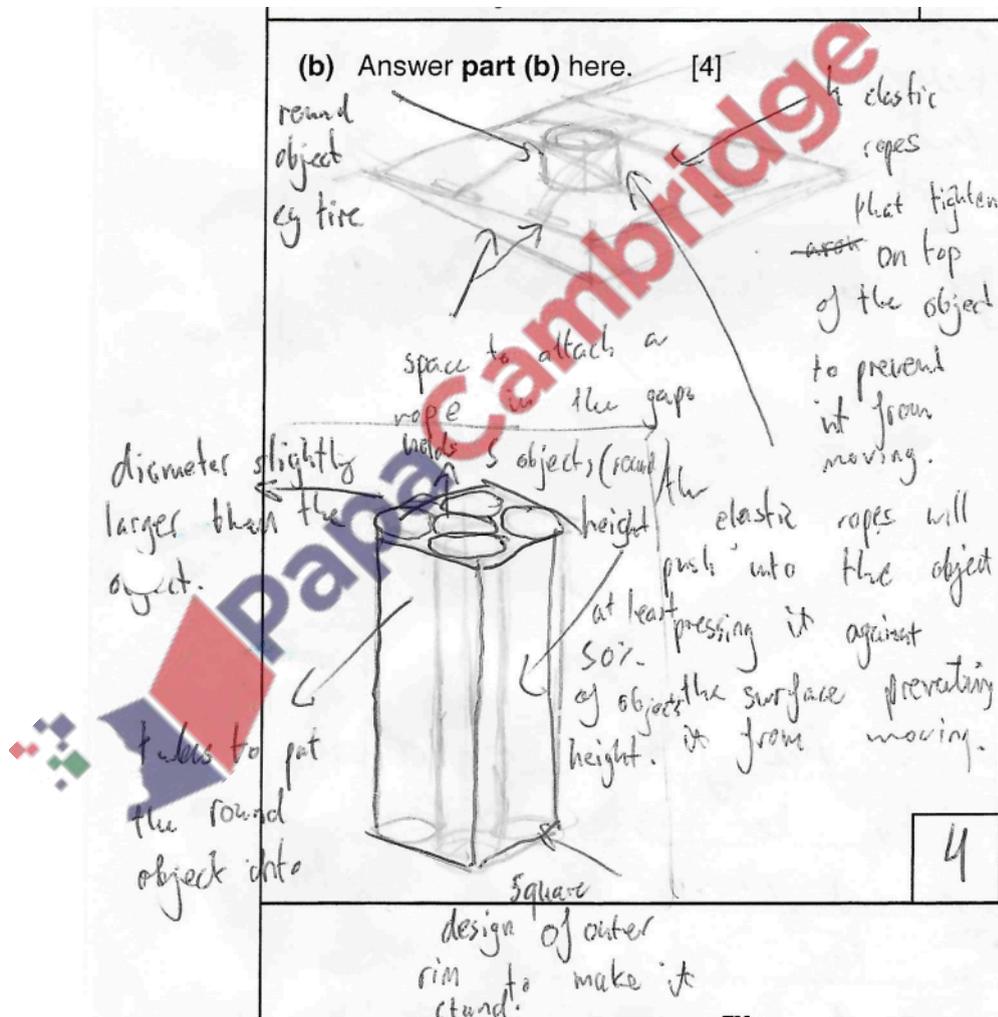
In this question, highlight the points of the design as well as the dimensions or features that the question gives you. This can prevent you from making silly mistakes!

Question 1 (b):

(b) Use sketches and notes to show **two** methods that could be used to protect products from the weather. [4]

This is another simple question, where 2 marks go for the sketches and 2 go for the annotations. The piece of paper (square) given is not that large so that diagrams don't have to be perfect. Annotations are very helpful. Not only do you get points for them, but they also compensate for your drawing if it isn't perfect. These are easier marks that can compensate you if you are very good at drawing.

Here is a 4/4 example (according to my teacher, done by me) ([Transcript](#))



Remember, these are sketches, and they are supposed to be very quick; not perfect! You are just supposed to convey the idea with some notes.

Question 1 (c):

This is a past paper example question:

(c) Develop and sketch **three** separate ideas for the storage unit.

[12]

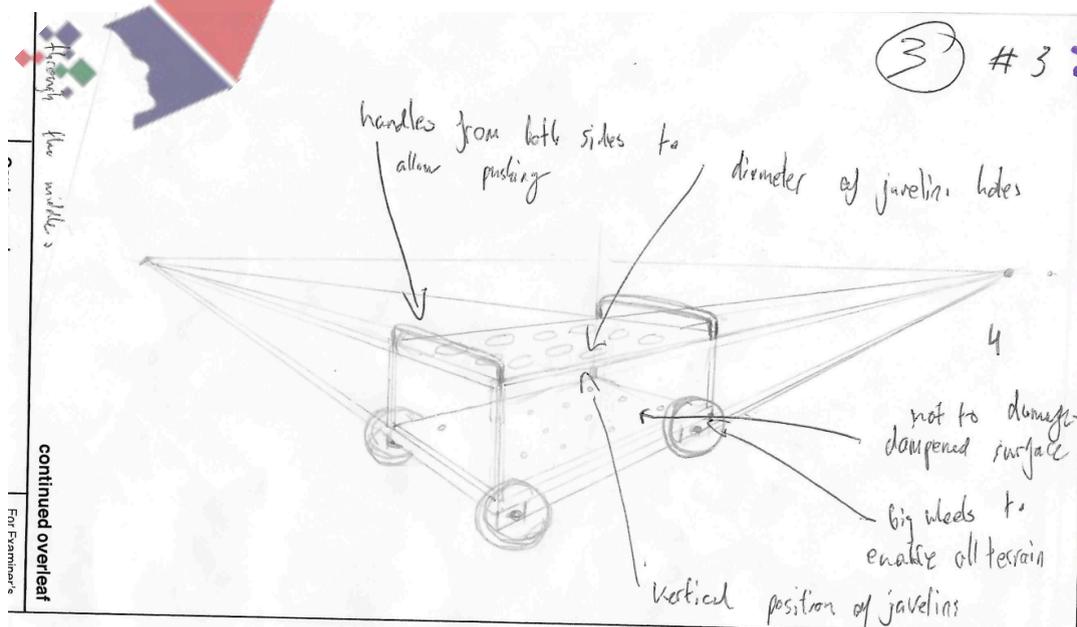
This is a very important question; it is worth a massive 12 marks. (According to my teacher, 4 marks are allotted for each drawing!) You must draw 3 and these 3 have to be different from one another.

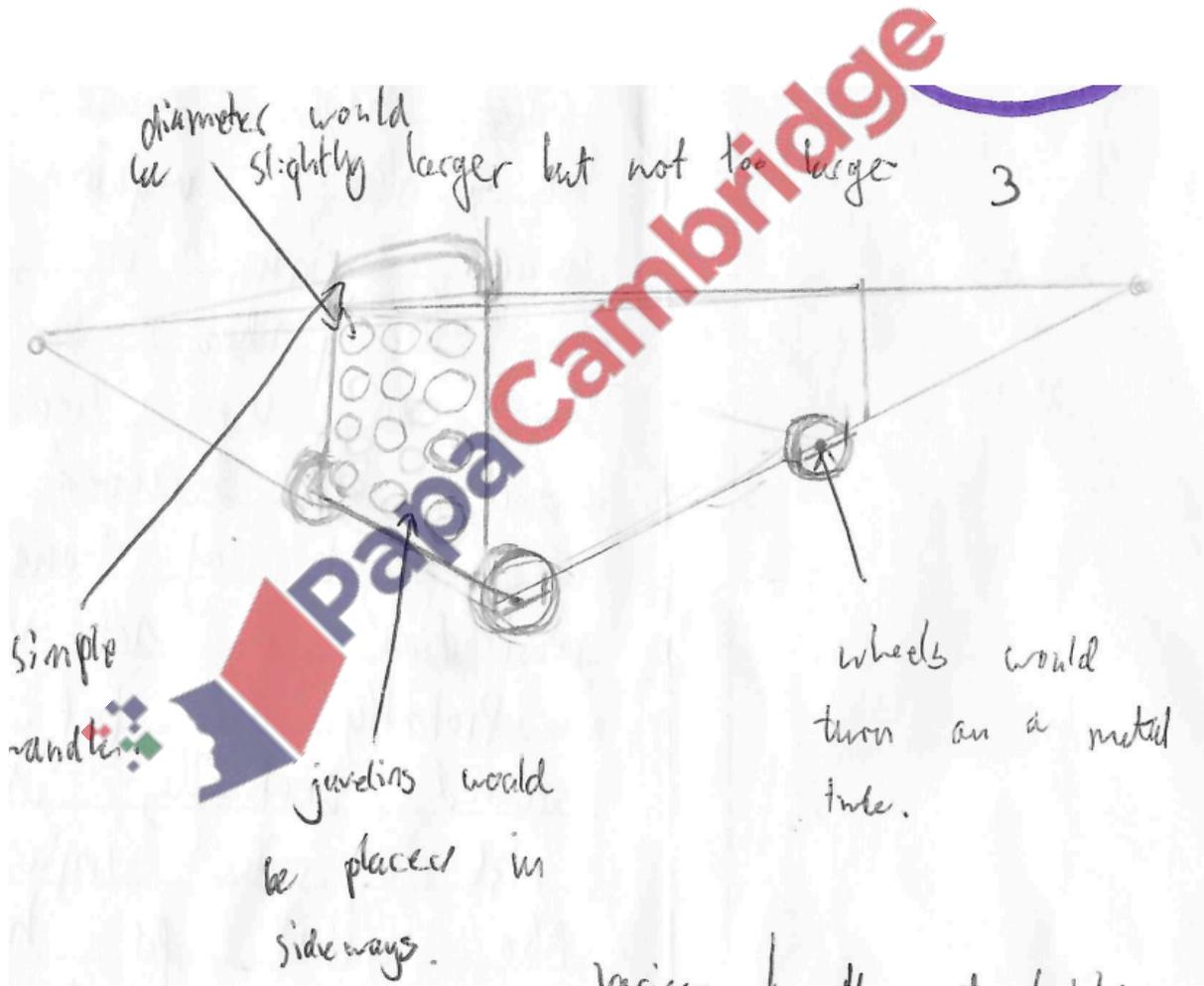
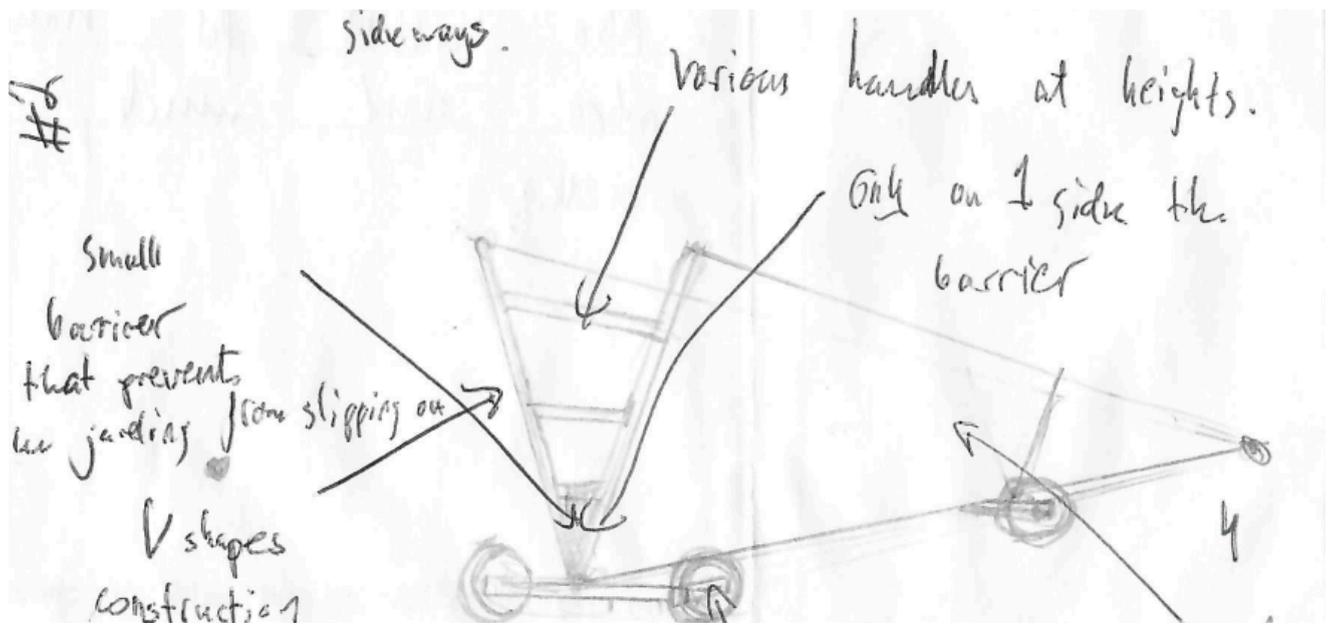
A mistake I made is that 2 of mine were very similar which led me to lose 1 mark. A helpful technique is to draw the one you have in mind first (the one you will develop in large at the end) and then draw the other two very differently (you must still draw them even if they are worse). An idea I use is that if one of your designs has wheels, one of the others should not have wheels.

For the drawing you can use any technique that you have learned (ex. isometric or two point perspective). I highly recommend using the two point perspective as it is considerably easier than doing isometric without the triangles.

Annotations are very important in my opinion! These can help gain extra marks or make the examiner more likely to give you an extra mark. Your drawing still has to be the main aspect however, and 2-3 annotations is great per drawing.

Here is a 10/12 question answer. (According to my teacher and drawn by me. Marks were lost because the designs 1 & 2 were very similar ☹, although it was meant to be full marks for drawing and annotations) ([Transcript 1](#), [Transcript 2](#), [Transcript 3](#))





Don't bother with shading if you don't have enough time; shading will be more important in the question of where you make one of your designs larger! Make sure that all the designs comply with the features that the questions tell you they must do!

Question 1 (d): Evaluation Part 1

(d) Evaluate your three ideas. Choose **one** idea to develop further and justify your choice. [8]

This question is worth 8 marks and they are relatively easy to get if you know what you are doing. You have to evaluate the 3 designs you made and, by the end, be able to choose which one you will draw much bigger and in greater detail. There are 3 boxes, each for 1 idea. You have to rate the idea based on the points that were given in the question and based on the points that you made in question 1 (a). It is important to know that you should not describe the idea (as in saying it is a triangular structure etc.). You must list the positives and negatives of each idea.

It also helps to find positives and the negatives of each design. Do not just list all negative for the 2 designs you won't choose and all positive for the one you will choose. Be consistent!

Here is an example of one of my past papers I've done: ([Transcript](#))

1) Evaluate your ideas.

Idea 1 the weakest of all 3 of the ideas because the javelins could potentially slide out from both sides and cause some injuries. The box also requires a lot of material usage, since it cannot be hollow inside.

Idea 2 the idea is really cheap and simple to use. However, the javelins would only be secured to 1 side. Also the height of handles is limited. And the construction is not very stable in the gusts of wind.

Idea 3 Probably the best idea because the javelins are secured vertically, it helps reduce the risk of spike injuries and improves stability. Also allows for handles to be added both sides and much larger wheels as well as wheels.

You have limited space and limited time especially, and it's worth quite a few marks. To save time, sometimes I use the technique of listing (just list the benefits and the drawbacks of that idea; it's that simple and there are no tricks involved).

A question is worth practicing 1 or 2 times before going into the exam, according to my teacher, since many of the students misinterpret it.

Question 1 (e):

- (e) Draw, using a method of your own choice, a full solution to the design problem. Include construction details and important dimensions. [12]

This is by far the biggest question and you should spend the most time on it. It is worth 12 marks. You need to enlarge the chosen example, with clear drawing, annotations (these are super important), and measurements (often forgotten). It is worth noting that you should draw at least 2 drawings. For example, one main drawing, one in two point perspective, and another one in normal (just being the top view). For your main drawing it should be either in isometric (you don't have the paper) or in two point perspective.

Include annotations as these sometimes could save you some marks if you aren't too good at drawing. You should spend a good amount of time on this question.

Question 1 (f):

- (f) Suggest two suitable specific materials for the solution you have drawn in part (e) and give reasons for your choice. [4]

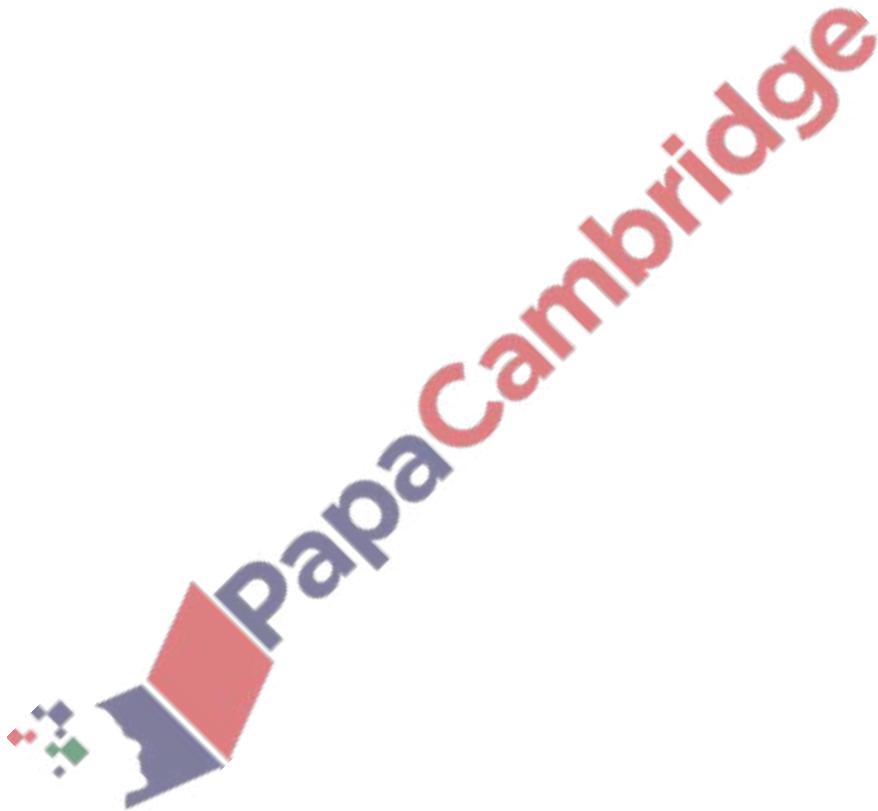
This is a quick question worth 4 marks. 2 marks are for the materials and 2 marks are for the explanation. The materials have to be precise. For example, just saying "wood" is not enough; you have to state the type of wood (ex. Balsa wood). As for the reason, they don't have to be super detailed as there's only 1 mark given per reason. (These could be along the lines of being lightweight to allow portability of the object, weather resistance if the object will be outdoors a lot, etc.).

Question 1 (g):

- (g) Outline a method that could be used to manufacture **one** part of your solution drawn in part (e). Include the names of the tools used. [6]

This is another semi mark-heavy question. You have to include the specific name of the tool. (For example, don't just say 'saw'; you have to be specific by saying 'Band saw'). You have to include a sketch of the tool (which is usually worth about 4 marks) and include annotations. You could show the part of the piece that you were supposed to make with this tool.

Use a simple tool (like a band saw). There is no need to talk about something complicated, since you don't get more marks. You get points for your drawing.



Time Management

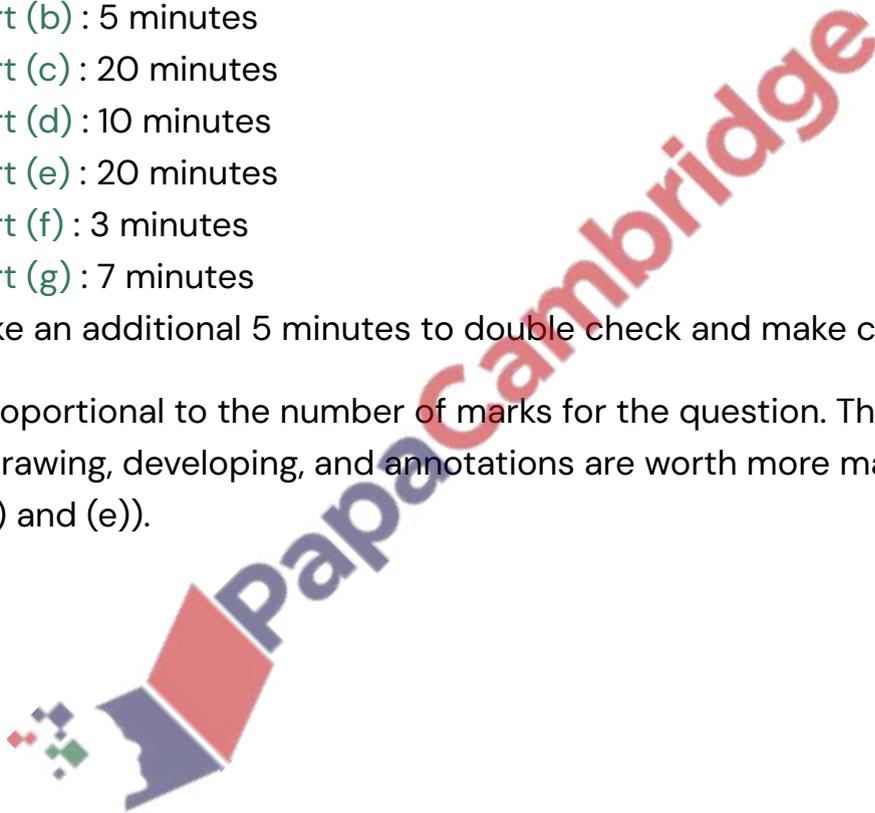
(Just as a note, this is what works for me and the people I know, but it may not be for everyone).

For the paper, you have exactly 1 hour 15 minutes. There are 7 questions split over 50 marks.

Here are my recommendations to allot enough time to each question:

- Part (a) : 5 minutes
- Part (b) : 5 minutes
- Part (c) : 20 minutes
- Part (d) : 10 minutes
- Part (e) : 20 minutes
- Part (f) : 3 minutes
- Part (g) : 7 minutes
- Take an additional 5 minutes to double check and make corrections

This is proportional to the number of marks for the question. The questions that require drawing, developing, and annotations are worth more marks most of the time. (parts (c) and (e)).



Transcripts

Question 1 (a):

1. Big wheels to make sure it can pass through muddy terrain
2. Handle to make it easy to push on distances, not bend down
3. Stability it has not to flip on bumps
4. Materials it has to last a long time and not break apart under the mass of the javelins

Question 1 (b):

From left to right:

- Diameter slightly larger than the object
- Tubes to put the round object into
- Round object e.g tire
- Space to attach a rope in the gaps
- Holds 5 objects (round)
- Square design of outer rim to make it stand
- Height at least 50% of object's height
- Elastic ropes will push into the object pressing it against the surface preventing it from moving.
- 4 elastic ropes that tighten on top of the object to prevent it from moving

Question 1 (c):

Image 1 (from left to right):

- Handles from both sides to allow pushing
- Vertical position of javelins
- Diameter of javelin holes
- Not to damage dampened surface
- Big wheels to enable all terrain

Image 2 (from left to right):

- Small barrier that prevents the javelins from slipping out
- V-shaped construction
- Various handles at heights
- Only on one side the barrier

Image 3 (from left to right):

- Simple handles
- Diameter would be slightly larger but not too large
- Javelins would be placed in sideways

- Wheels would turn on a metal tube

Question 1 (d):

Idea 1: The weakest of all 3 of the ideas because the javelins could potentially slide out from both sides and cause some injuries. The box also requires a lot of material since it cannot be hollow inside.

Idea 2: The idea is really cheap and simple to use however the javelins would only be secured to 1 side. Also the height of handles is limited. And the construction is not very stable in the gusts of winds.

Idea 3: Probably the best idea, because the javelins are secured vertically it helps reduce the risk of spike injuries and improves stability. Also allows for handles to be added to both sides and much larger wheels as well as brakes.

