



Oxford Cambridge and RSA

Friday 16 October 2020 – Morning

A Level in Design and Technology: Product Design

H406/02 Problem Solving in Product Design

Time allowed: 1 hour 45 minutes



You must have:

- the Resource Booklet

You can use:

- a ruler (cm/mm)
- a scientific calculator
- geometrical instruments



Please write clearly in black ink. **Do not write in the barcodes.**

Centre number

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Candidate number

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First name(s)

Last name

INSTRUCTIONS

- Use black ink. You can use an HB pencil, but only for graphs and diagrams.
- Write your answer to each question in the space provided. You can use extra paper if you need to, but you must clearly show your candidate number, the centre number and the question numbers.
- Answer **all** the questions.
- Where appropriate, your answer should be supported with working. Marks might be given for using a correct method, even if your answer is wrong.
- Each question tells you which part of the Resource Booklet to refer to.

INFORMATION

- The total mark for this paper is **70**.
- The marks for each question are shown in brackets [].
- Quality of extended response will be assessed in questions marked with an asterisk (*).
- This document has **16** pages.

ADVICE

- Read each question carefully before you start your answer.

Answer **all** the questions.

Before responding to the questions in this paper you must spend time reading and familiarising yourself with the Resource Booklet.

1 A local council intends to host a street food market during the Summer months to boost visitor numbers and promote economic growth.

Critically examine the challenges that would be faced in organising the street food market.

In your response you must consider the different needs and requirements of:

- existing businesses in the town
- residents.

Refer to information on **page 2** of the Resource Booklet.

[8]

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- 3 Street food sellers require a level table on which to prepare food. The Council has been advised that the trestle tables that they have available can be upgraded with standard components as shown in **Fig. 5** for use at the street food market.

Use sketches and/or notes to show how this upgrade could be completed.

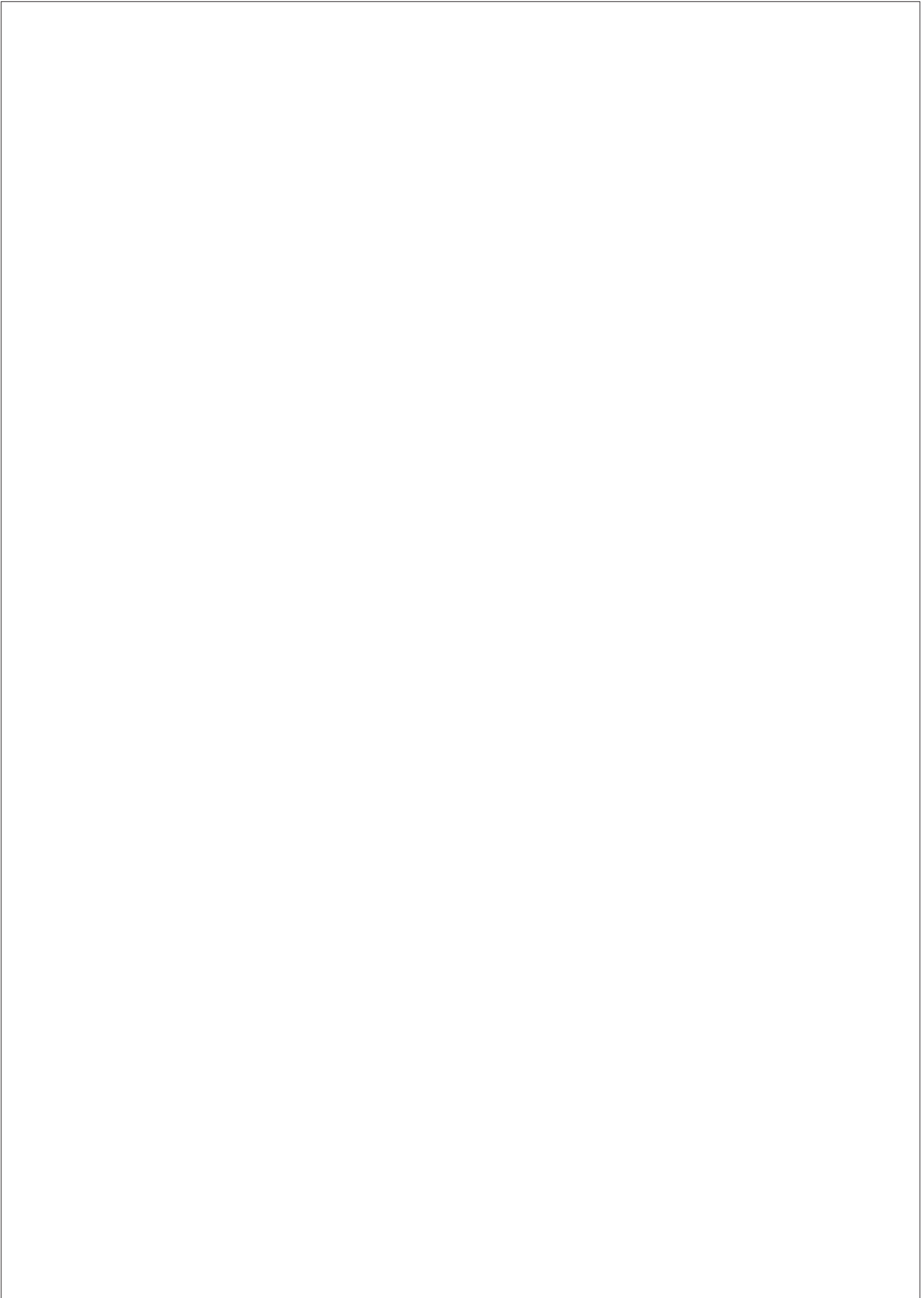
In your response you must consider:

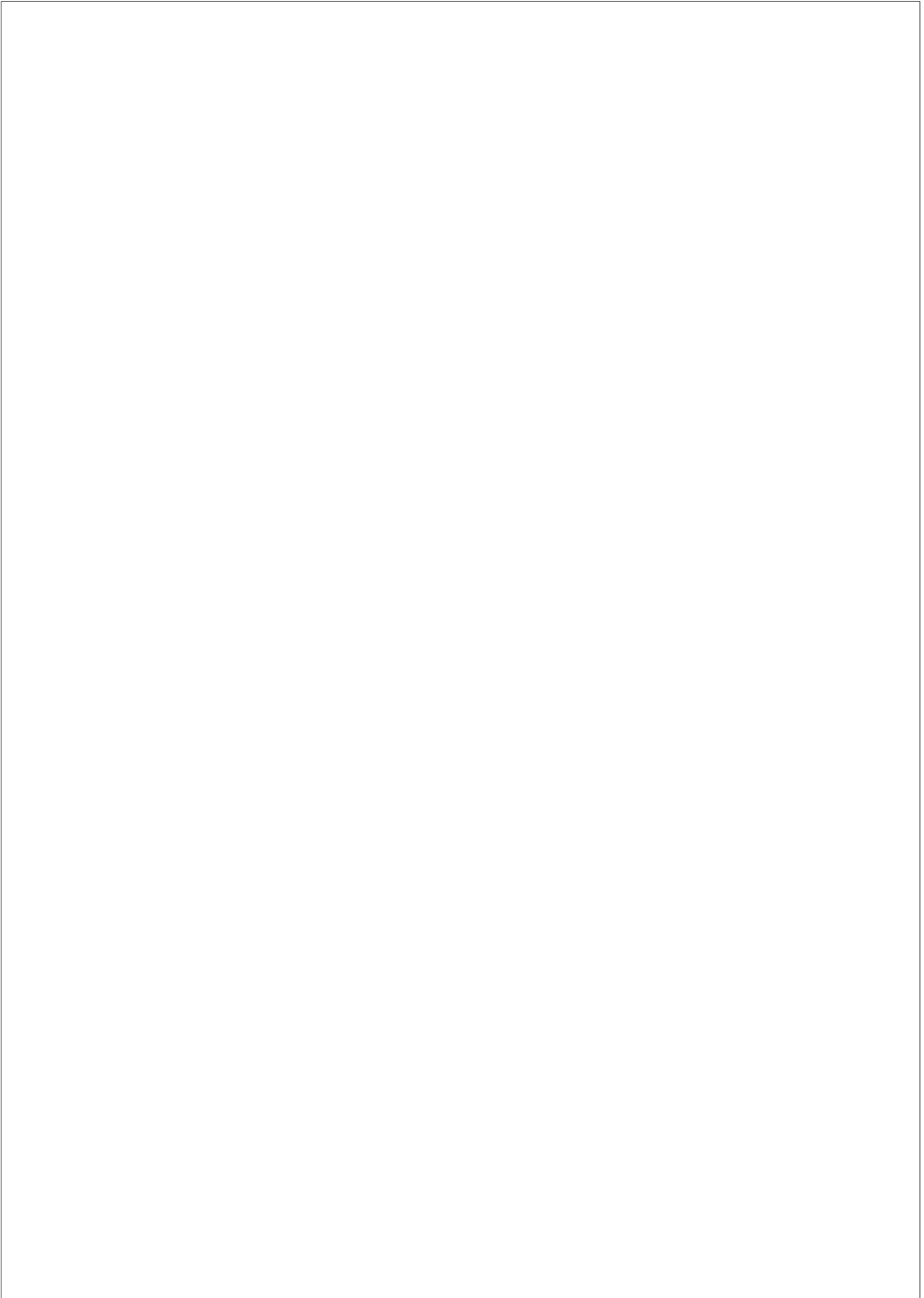
- how to avoid damage to the existing parts of the trestle table
- any tools and/or equipment required
- health and safety considerations.

Refer to information on **page 5** of the Resource Booklet.

[12]







A series of 20 horizontal dotted lines for writing.

- 5 The designer has created a concept model of a trolley suitable for the storage of dirty 'BambEat' sets after customer use.

In order to lower transportation and storage costs, the manufacturer needs the final product to be flat-packed.

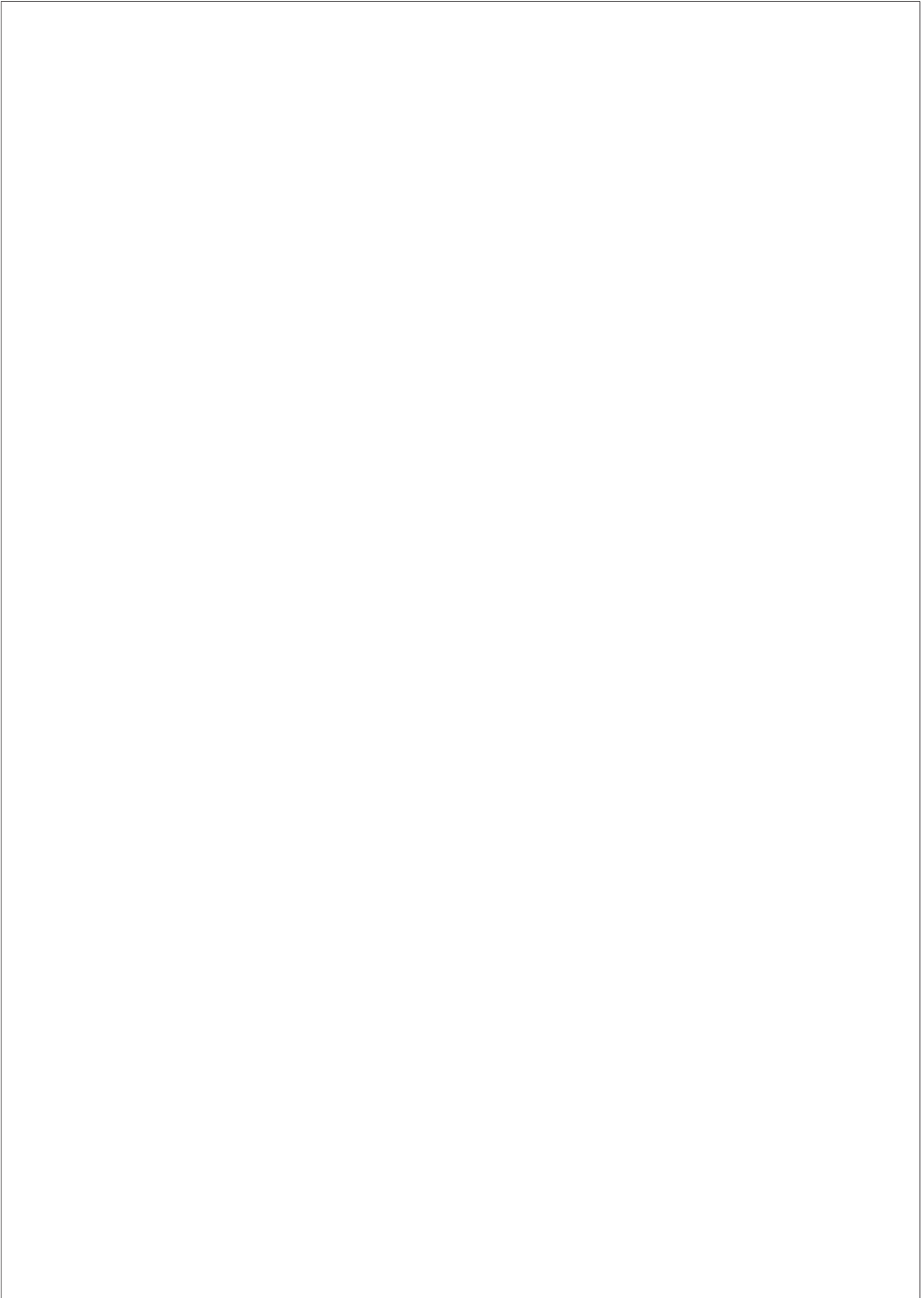
Use sketches and/or notes to outline suitable methods of assembly in order for the trolley, in **Fig. 8**, to be flat-packed.

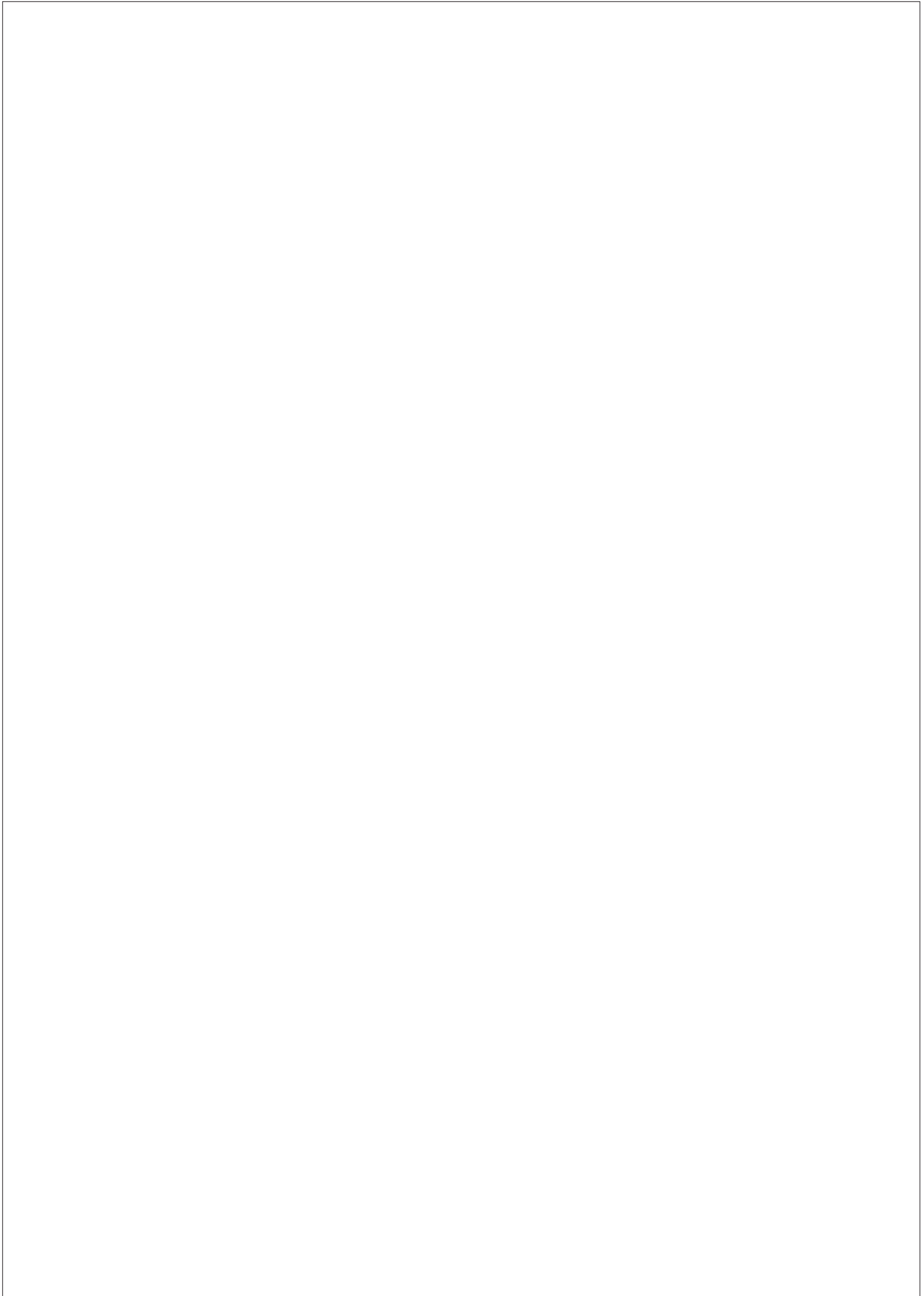
Provide annotations of technical information including:

- materials
- manufacturing processes
- finishes
- standard components to be used.

Refer to information on **page 7** of the Resource Booklet.

[20]





- 6 In order to assess the viability of the trolley design, shown in **Fig. 8**, the designer needs to calculate how many 'BambEat' cups and plates will fit in it.

Calculate the maximum quantity of 'BambEat' cups and plates that will fit into the trolley.

Show your working.

Refer to information on **pages 6 and 7** of the Resource Booklet, specifically **Fig. 7 and Fig. 8**.

Number of cups

Number of plates

[6]

15
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