

GENERAL CERTIFICATE OF SECONDARY EDUCATION

1956/03

DESIGN AND TECHNOLOGY

Resistant Materials Technology

Paper 3 (Foundation Tier)

MONDAY 9 JUNE 2008

Afternoon
 Time: 1 hour

Candidates answer on the question paper

Additional materials: No additional materials are required



Candidate Forename

Candidate Surname

Centre Number

Candidate Number

INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use blue or black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **50**.
- Dimensions are given in millimetres unless otherwise stated.
- Question 5, product analysis, is based on the theme of '**electrically operated drills**' printed in the specification.

FOR EXAMINER'S USE	
1	
2	
3	
4	
5	
TOTAL	

This document consists of **12** printed pages.

1 Fig. 1 shows a toy lorry.

The toy lorry will be made in a school workshop.

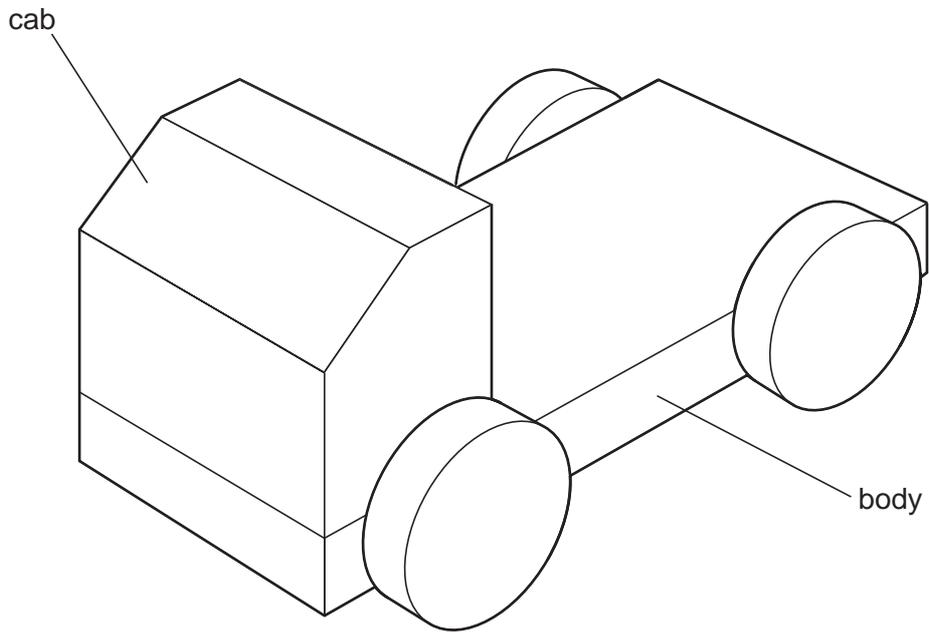


Fig. 1

(a) Give **two** reasons why MDF is a suitable material for the cab and body.

1 [1]

2 [1]

(b) Complete the table below by naming the tool or item of equipment you would use to make the cab of the toy.

Stage	Process	Tool or item of Equipment
1	Marking out the cab shape	
2	Cutting out the shape of the cab	
3	Smoothing the front of the cab	

[3]

(c) Fig. 2 shows the front view of the toy.

Complete Fig. 2 to show how the wheels could be attached to the body of the toy.

The wheels must be able to move freely.

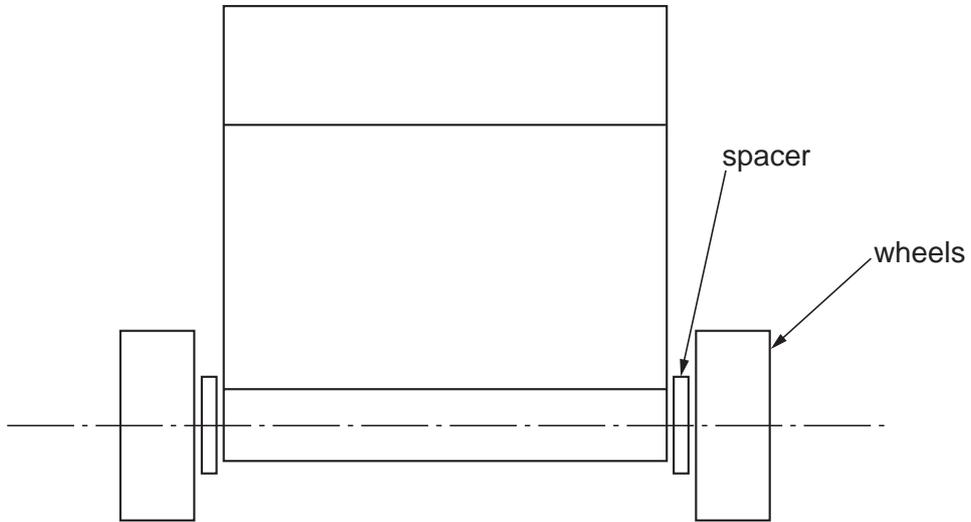


Fig. 2

[2]

(d) Add sketches and notes to Fig. 3 to show how the toy could be pulled along.

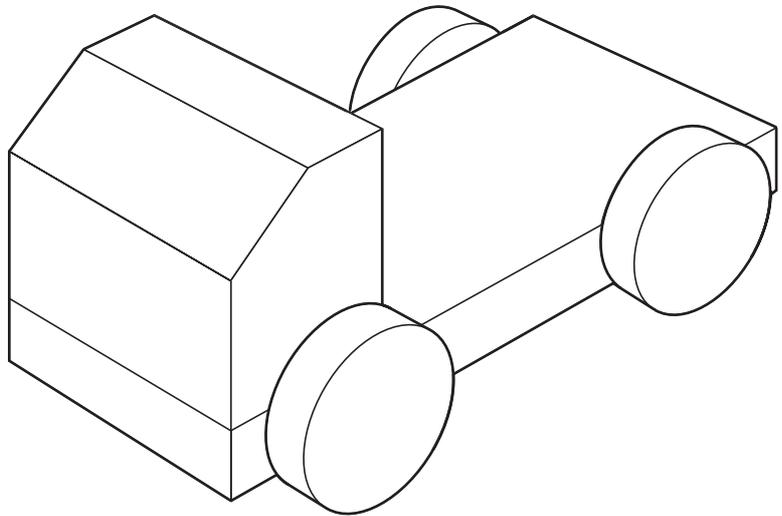


Fig. 3

[2]

(e) State **one** safety precaution you would take when making the toy.

..... [1]

2 Fig. 4 shows a desk tidy made in a school workshop.

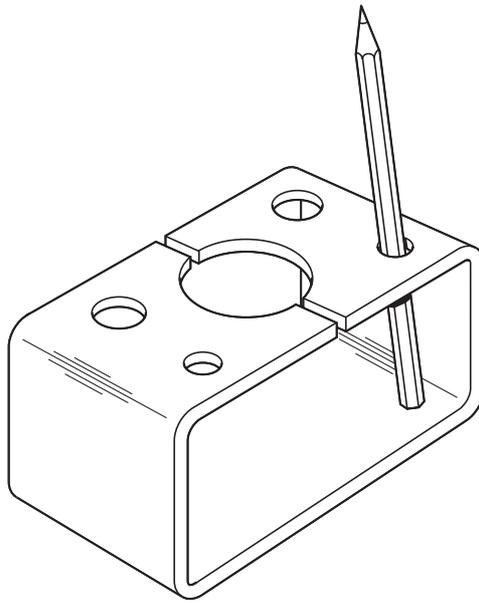


Fig. 4

(a) (i) Name a suitable plastic for making the desk tidy.

..... [1]

(ii) Give **two** reasons for your choice.

1 [1]

2 [1]

(b) Give **two** reasons why you would drill the holes before bending the plastic into shape.

Reason 1 [1]

Reason 2 [1]

(c) Twenty five (25) desk tidies are to be made.

From the list below circle the production method that would be used.

batch production

one off production

mass production

desk tidy production

continual flow production

[1]

(d) Use sketches and notes to modify the design of the desk tidy so that:

- the pens and pencils do not slide around or fall out of the desk tidy;
- it can also store paper clips.

3 Fig. 5 shows a wooden drawer.

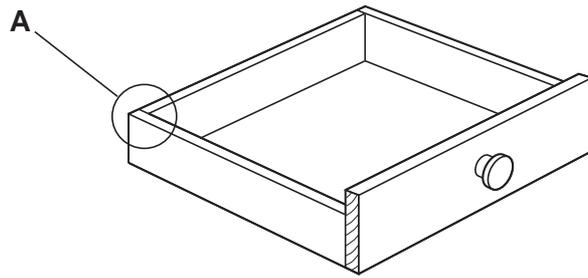


Fig. 5

(a) Name the joint shown at corner A.

..... [1]

(b) Name a suitable adhesive for gluing the joint together.

..... [1]

(c) Fig. 6 shows a drawer handle which could be made from either Brass, Polystyrene, Aluminium or Beech.

In the table below, link each of the materials to the correct manufacturing process.

One has been done for you.

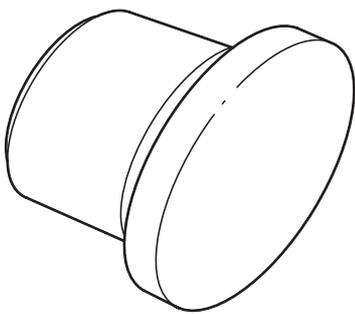


Fig. 6

Material
Brass
Polystyrene
Aluminium
Beech

Manufacturing process for a draw handle
vacuum forming
wood turning
fabrication
welding
injection moulding
casting
centre lathe turning

[3]

(d) Fig. 7 shows a cabinet which will hold five of the drawers shown in Fig. 5.

The cabinet is made of 15 mm thick plastic coated chipboard.

Use sketches and notes to show how you would support **one** of the drawers so that it:

- is able to slide in and out;
- does not go too far inside the cabinet.

You should include details of all materials and fixings.

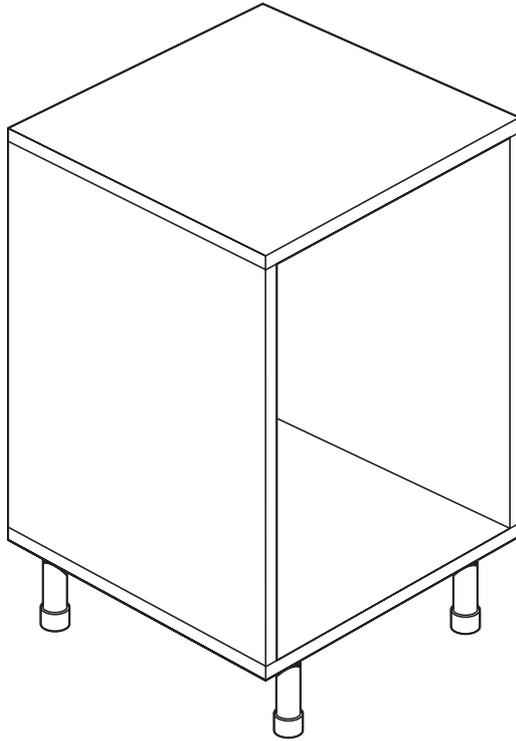


Fig. 7

[4]

(e) State **one** problem you might encounter when working with 15 mm plastic coated chipboard.

..... [1]

4 Fig. 8 shows a stacking chair.

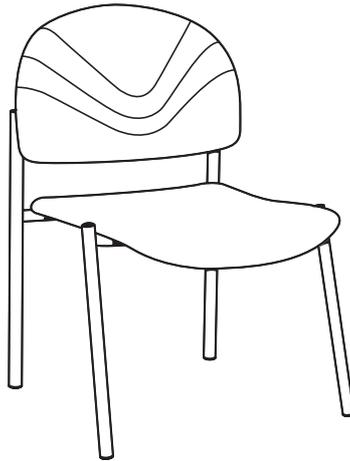


Fig. 8

(a) State **two** ways in which computer technology could be used during the design of the stacking chair.

1 [1]

2 [1]

(b) State **two** ways in which computer technology could be used in the marketing of the stacking chair.

1 [1]

2 [1]

(c) Commercially manufactured products can be made and distributed as either fully assembled products or products for 'self assembly'.

State **two** benefits to the manufacturer of producing products for 'self assembly'.

1 [1]

2 [1]

(d) State **two** benefits to the consumer of buying or using fully assembled products.

1 [1]

2 [1]

(e) During manufacture quality control checks are carried out.

Explain what is meant by quality control.

.....

.....

..... [2]

5 This question is based on the theme of ‘electrically operated drills’.

Fig. 9 shows a view of a corded electric drill.

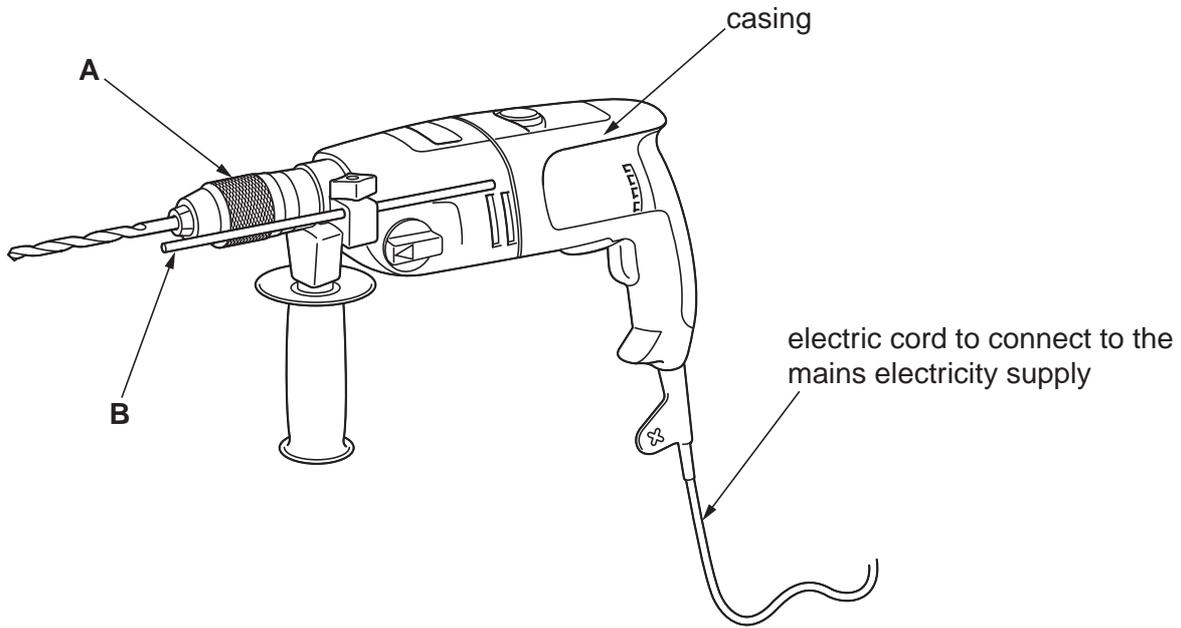


Fig. 9

(a) Name part **A** of the drill shown in Fig. 9.

..... [1]

(b) State the purpose of part **B** of the drill shown in Fig. 9.

..... [1]

(c) State **one** ergonomic feature of the design of the drill shown in Fig. 9.

..... [1]

(d) The casing of the drill in Fig. 9 is made of plastic.

Give **two** benefits of using plastic for the casing of the drill.

1 [1]

2 [1]

(e) Some electric drills are cordless.

Give **two** advantages of a cordless electric drill.

1 [1]

2 [1]

- (f) Give **one** additional feature, other than those identified in parts (a) and (b), which can be found on electrically operated drills and explain its function.

Feature [1]

Function

.....

..... [2]

PLEASE DO NOT WRITE ON THIS PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (OCR) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

OCR is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.