FOR OFFICIAL USE

C

Q1		Q4	
Q2		Q5	
Q3			

Total Mark

0600/403

NATIONAL QUALIFICATIONS 2011

FRIDAY, 27 MAY
1.00 PM – 2.00 PM

CRAFT & DESIGN
STANDARD GRADE
Credit Level

Fill in these boxes and read what is printed below.

Full name of centre

Town

Forename(s)

Surname

Date of birth
Day Month Year

Scottish candidate number

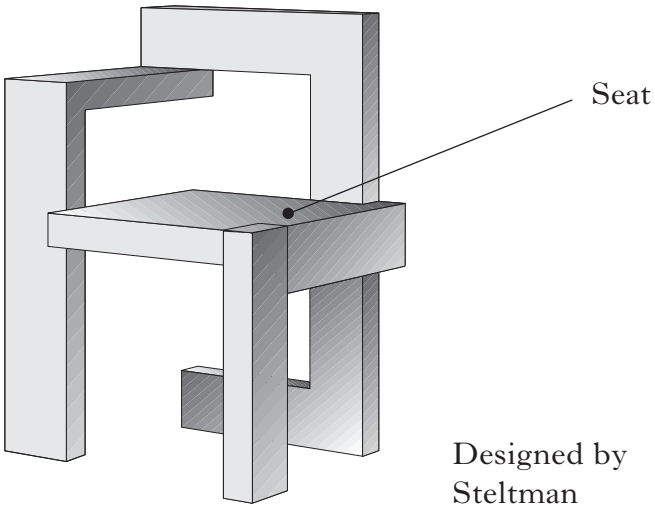
Number of seat

1. Answer all the questions.
2. Read every question carefully before you answer.
3. Write your answers in the spaces provided.
4. Do not write in the margins.
5. All dimensions are given in millimetres.
6. Before leaving the examination room you must give this book to the Invigilator. If you do not, you may lose all the marks for this paper.

DO NOT WRITE IN THIS MARGIN

ATTEMPT ALL QUESTIONS

1. (*a*) A wooden chair is shown below.



(i) **Shape, form** and **proportion** were considered when designing the chair.
State the name of the design factor that includes shape, form and proportion.

_____ **1 0**

(ii) Reference was made to the anthropometric data when designing the chair.
State the percentile used for the:

Smallest user _____ **1 0**

Largest user _____ **1 0**

(iii) The height from the floor to the seat of the chair is important.
State the human dimension that would influence this height.

_____ **1 0**

(iv) A scale model of a human was used during the design of the chair.
State the name of this type of model.

_____ **1 0**

(v) During the design process a scale model of the chair was produced.
State **two** reasons for producing a scale model of the chair.

1 _____ **1 0**

2 _____ **1 0**

1. (continued)

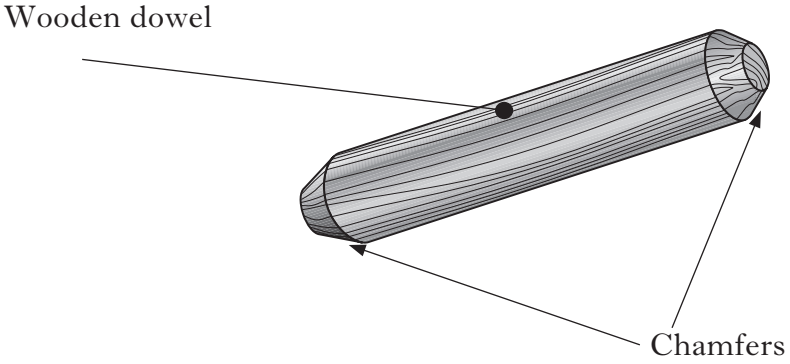
(*b*) A **flatpacked** version of the chair was produced.

(i) State an advantage of **flatpack** furniture to:

The retailer _____ **10**

The customer _____ **10**

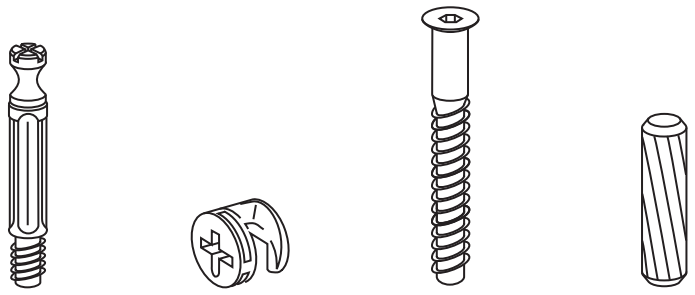
Wooden dowels were used during the construction.



(ii) State the reason for chamfering the ends of the dowels.

_____ **10**

(iii) The fixings shown are used in the assembly of the chair.

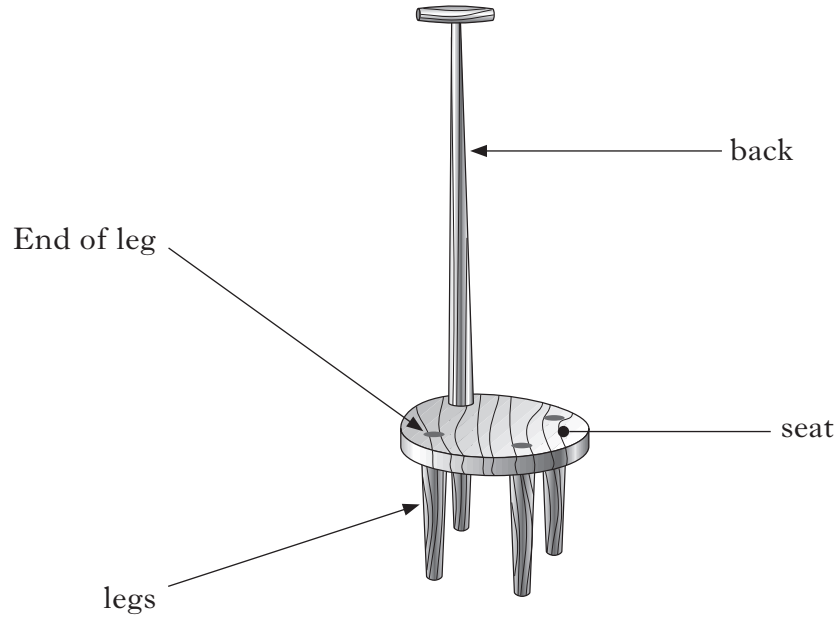


State the collective name of these fixings.

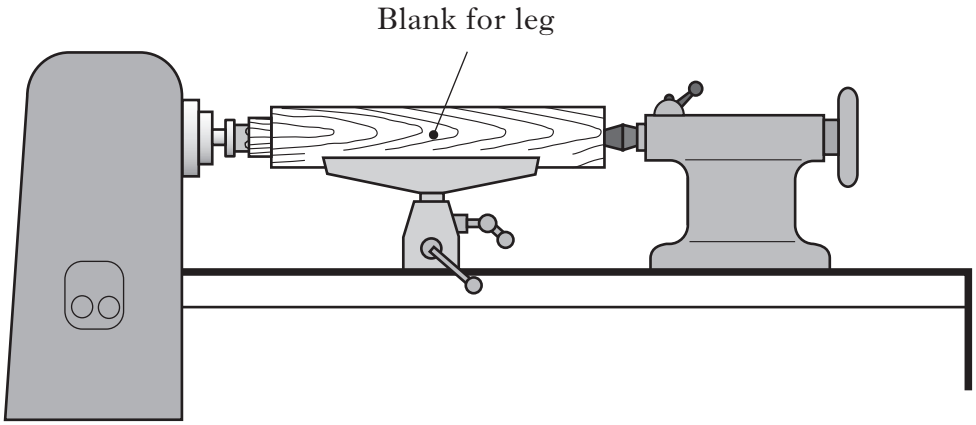
_____ **10**

[Turn over

2. (*a*) A wooden stool is shown below.



Parts of the stool were manufactured on a wood lathe.



(i) The blank was held between "centres".

State the name of a "centre" that would be fitted in the:

Headstock _____ **1 0**

Tailstock _____ **1 0**

(ii) The "centres" support the blank.

State a further function of the "centre" fitted in the headstock.

_____ **1 0**

(iii) The tailstock can be adjusted.

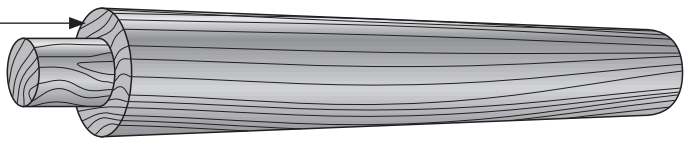
State why an adjustment of the tailstock may be necessary when manufacturing the stool.

_____ **1 0**

2. (continued)

(*b*) A gouge and parting chisel were used during the manufacture of the leg shown below.

Shoulder



Describe the operation performed by the:

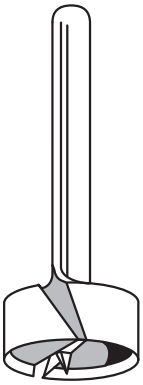
(i) Gouge _____ **10**

(ii) Parting chisel _____ **10**

(*c*) State a functional reason for the shoulder at the top of the leg.

_____ **10**

(*d*) (i) Two bits are shown below.



Bit 1

Bit 2

State the name of each bit shown.

Bit 1 _____ **10**

Bit 2 _____ **10**

(ii) State a reason why bit 1 was preferred when boring the holes in the seat.

_____ **10**

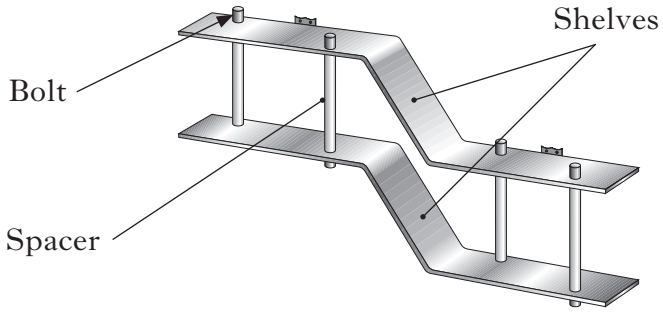
(*e*) A damp cloth was used to wet the stool during the finishing process.

State a reason for wetting the stool.

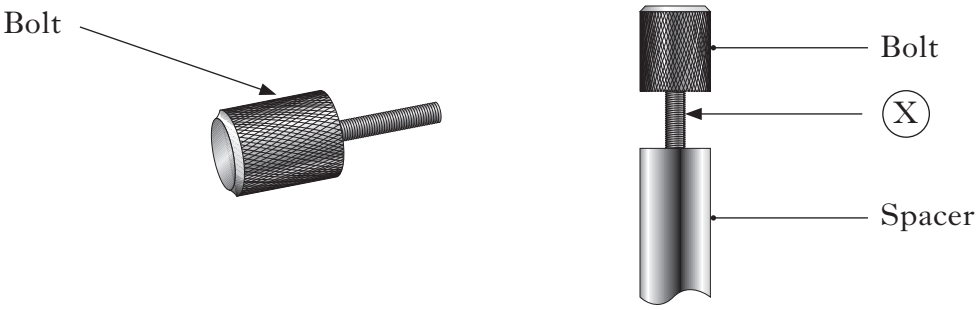
_____ **10**

DO NOT WRITE IN THIS MARGIN

3. A shelving unit manufactured from aluminium is shown below.



(*a*) The bolts and spacers were manufactured using a metalwork lathe.



(i) A high quality finish was required when facing the end of the bolt.

State **two** checks or procedures that would ensure a high quality finish.

1 _____

2 _____

10

(ii) The lathe speed was reduced during the manufacture of the bolt.

State the turning process that requires a reduction in speed.

_____

10

(iii) The diameter at (X) was checked before threading.

State the name of a tool other than outside callipers which would give an accurate measurement.

_____

10

3. (continued)

(*b*) The spacers had a 25 mm deep blind hole drilled in each end.

(i) State a reason why a metalwork lathe rather than a pedestal drill was used for the above process.

_____ **10**

(ii) State the name of **two** types of drill bits used during the above process.

10

1 _____ **10**

2 _____ **10**

(iii) Describe a method of ensuring the blind holes are drilled to the correct depth.

_____ **10**

(iv) The blind holes were threaded.

State the name of the tap used to finish threading the blind hole.

_____ **10**

(v) State a reason why care must be taken when threading a blind hole.

_____ **10**

(*c*) The two aluminium shelves are identical.

State a method of ensuring the shelves are bent to the same shape.

_____ **10**

(*d*) Aluminium can be shaped and bent by hammering.

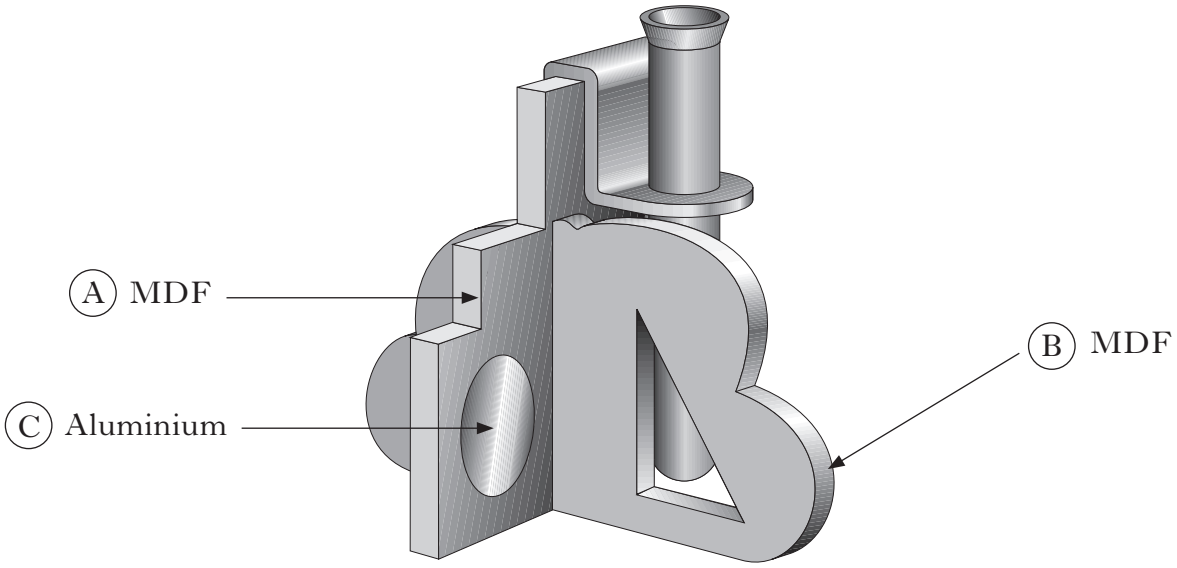
State the name of the property of aluminium that allows it to be shaped and bent.

_____ **10**

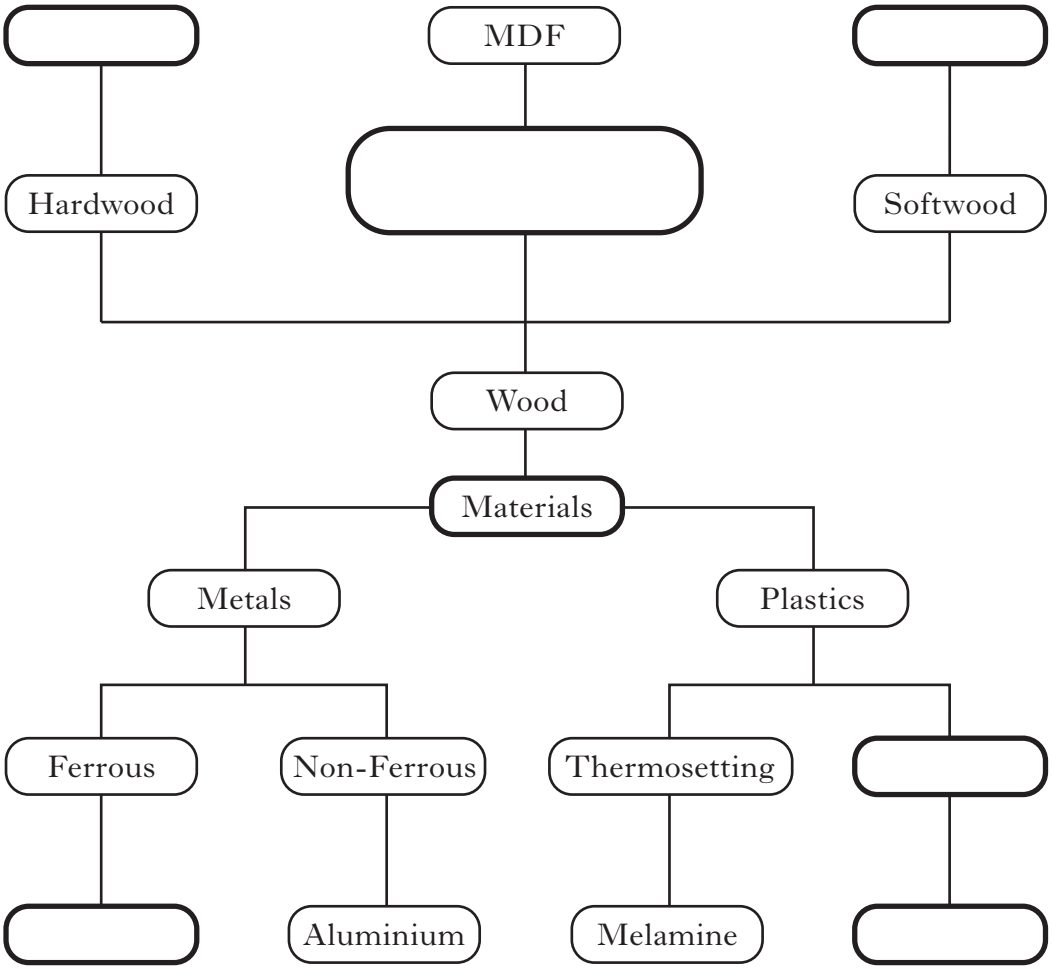
[Turn over

DO NOT WRITE IN THIS MARGIN

4. (*a*) A vase is shown below.



During the research stage materials were investigated. Complete the research diagram shown below.



10

10

10

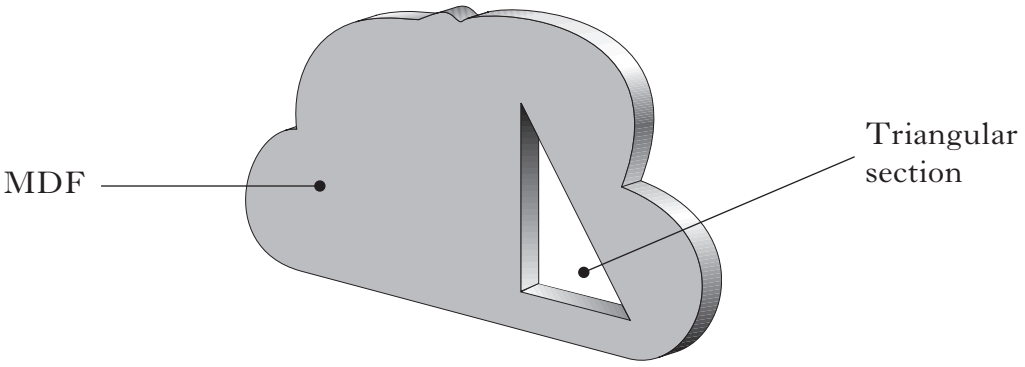
10

10

10

4. (continued)

(*b*) Part (B) of the vase is shown below.



The triangular section was removed.

Describe in detail how this section of material could be removed.

_____

_____ **2 1 0**

_____

(*c*) Part (A) and part (B) shown opposite are joined.

State the name of a suitable joint.

1 0

_____

(*d*) Part (C) was marked out on sheet aluminium.

(i) State the name of the metalwork tool used to mark a circle on the aluminium.

1 0

_____

(ii) State the name of **two** hand tools which could be used to cut out and shape the thin aluminium disc (C) .

1 0 1 0

1 _____

2 _____

(*e*) The aluminium disc (C) was joined to the MDF using an adhesive.

State the name of a suitable adhesive.

1 0

_____

(*f*) The product was finished in contrasting colours.

State a reason for this.

1 0

_____

DO NOT WRITE IN THIS MARGIN

5. A metal door stop is shown below.

(*a*) Products are designed with a target market in mind.

State what is meant by target market.

_____ **1 0**

(*b*) The choice of material is important when designing a product.

State **three** factors that may influence the choice of material when designing a product.

1 _____ **1 0**

2 _____ **1 0**

3 _____ **1 0**

(*c*) (i) The door stop was manufactured by pouring molten metal into a sand mould.

State the name of this process.

_____ **1 0**

(ii) State the name of a suitable metal for the above process.

_____ **1 0**

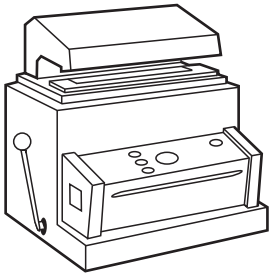
(*d*) A crucible was used during the manufacture of the door stop.

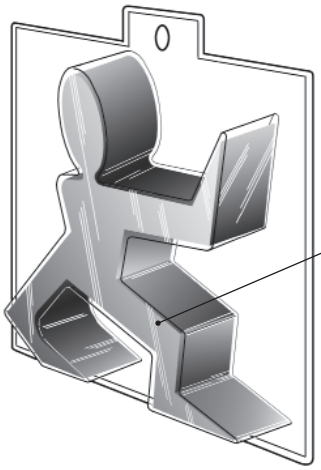
State the function of a crucible.

_____ **1 0**

5. (continued)

(*e*) Thin clear plastic packaging was manufactured using the machine shown below.





(i) State **two** reasons for packaging this product in this way. **10**

1 _____ **10**

2 _____ **10**

(ii) State the name of the process used to manufacture the packaging. **10**

_____ **10**

(iii) When testing it was difficult to remove the pattern from the plastic.
State a modification to the pattern to make removal easier. **10**

_____ **10**

(iv) Tearing appeared at the corners of the packaging.
State a reason for the tearing. **10**

_____ **10**

[*END OF QUESTION PAPER*]

ACKNOWLEDGEMENT

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