

**2006 Craft and Design**

**Standard Grade – F/G/C**

**Finalised Marking Instructions**

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**2006 Craft and Design**

**Standard Grade – Foundation**

**Marking Instructions**

**Each answer is allocated 1 mark unless otherwise stated**

**Acceptable answers**

1. (a) (i) Spring dividers  
(ii) Snips
- (b) (i) heating  
(ii) Tongs
- (c) R/H Box
- (d) (i) Metalwork lathe  
(ii) Two from:  
Guard down, secure metal, remove chuck key,  
check tool height. Correct speed  
(iii) Parting tool

**Unacceptable answers or answers for discussion**

NB checks should relate to machine.

**Acceptable answers**

2. (a) 1 Number of CDs to be stored  
2 Size of CDs
- (b) 1 Available in a range of colours  
2 Easy to bend when heated
- (c) (i) Pedestal drill  
(ii) To tighten the twist drill in the chuck  
(iii) One from:  
Use masking tape; drill slowly; drill from both sides. Place acrylic on wooden block.  
(iv) One from:  
Make sure the guard is down, make sure the twist drill is secure; make sure the work piece is secure, etc.
- (d) Square file
- (e) Strip heater

3. (a)

Part	Quantity	L	B	T	Material
A	1	250	80	15	Pine
B	1	400	80	15	Pine
C	1	100	80	15	Pine
D	1	100		60	Beech

- (b) (i) Woodwork lathe; wood lathe  
(ii) Measuring
- (c) Dowel
- (d) (i) Try square  
(ii) Tenon saw  
(iii) Mallet

**Unacceptable answers or answers for discussion**

Accept the items 'drill' or 'bit'

Stepped drill, pilot hole, clamp down ✓

Personal safety – ok ✓

Allow up to 50mm EXTRA for turning ie > 150 mm ✓

Lathe ✓

### Acceptable answers

4. (a) (i) Cutting list  
(ii) Brief  
(iii) Evaluation  
(iv) Sequence of operations  
(v) Specification
- (b) Tick at sketch of plywood
- (c) (i) PVA  
(ii) G-clamp  
(iii) The glue would show through the paint or varnish. Or looks better.

5. (a) Coping saw  
(b) So that they are comfortable to hold or safety.  
(c) An arrow on the sketch or at least indicating smoothing in the direction of the grain
6. (a) Not enough room for mugs between the 'pegs' or it would topple over  
(b) Holes in handles are too small  
(c) The base is too small  
(d) The position of the hands is too low; the clock is not high enough

### Unacceptable answers or answers for discussion

Difficult to remove; causes  
blemishes; prepare for finish

Accept any Aesthetic reason

Pointing in the same direction  
Pointing downwards  $\times -0$

Not enough room for fingers

The lamp is too big for the base  
It will topple: unstable

Accept: The minute hand is too long

### Acceptable answers

7. (a) (i) 15 (pencils)
- (ii) One from:
- Scratches easily
  - Breaks easily
- (iii) Reason 1 – difficult to join  
Reason 2 – too heavy
- (b) Reason 1 – stays flat  
Reason 2 – strong
8. (a) It's accurate; it's quick; it's easier
- (b) Scriber
- (c) (i) The metal should be centre punched to mark the position of the hole
- (ii) Tick at machine vice
- (d) By filing
- (e) Hacksaw
- (f) (i) Clean the bottle opener to remove grease
- (ii) Remove from fluidiser and allow to cool

### Unacceptable answers or answers for discussion

Aluminium, copper

Use bigger drill; use deburring tool;  
use countersink drill

**2006 Craft and Design**

**Standard Grade – General**

**Marking Instructions**

**Each answer is allocated 1 mark unless otherwise stated**

**Acceptable answers**

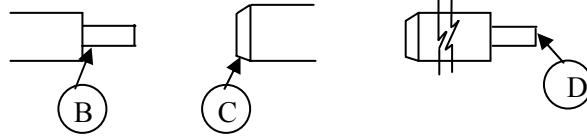
1. (a) Easily cleaned, able to be formed, available in a range of colours
- (b) Number of brushes to be held  
Length of a toothbrush
- (c) Stage 1 cross file  
Stage 2 draw file (Any order)  
Stage 3 wet & dry  
Stage 4 brasso
- (d) Hand vice
- (e) Oven
- (f) (i) Round head  
(ii) The steel screws will rust  
(iii) Brass, stainless steel

**Unacceptable answers or answers for discussion**

- Easily shaped; easily bent, does not rust; waterproof; no finish required; strong; durable; lightweight; cheap; easy to use; shiny; large sheets
- Location; size to be used only once
- File; plane; scraper } Any two from each row  
Steel wool; emery cloth }  
Polish; buff } Glasspaper  
sandpaper
- Mole grips; 'G' Clamp; vice grips; jig; machine vice
- Slotted
- Aluminium; copper; galvanised; black japanned

**Acceptable answers**

2. (a) (i)



(ii) To remove the sharp edge

(iii) KNURLING

(b) (i) Split circular die

(ii) Lubricant, regular removal of waste material  
Chamfer end

(c) (i) Pattern

(ii) Crucible

(iii) Runner

**Unacceptable answers or answers for discussion**

✓  
Safety: aesthetic reason ✓

✓  
Die

✓      ✓      ✓  
Keep level; keep square; adjust the die  
Do it slowly<sup>x</sup>

### Acceptable answers

3. (a) Popliteal height  
Length of thigh  
Width of hips (any two)
- (b) (i) Mortice and Tenon  
(ii) (A) Try square  
(B) Mortice gauge  
(C) Tenon saw, gents saw  
(D) Mortice chisel
- (c) Plane  
(d) PVA  
(e) To help keep board flat.

### Unacceptable answers or answers for discussion

- Sketch with dimension; length of leg; size of bottom/bum  
Number of people; weight; width of people  
Stub M& T; Mortice; Tenon  
Scriber; square; engineers square  
Dovetail saw; back saw; bench saw  
Mortice machine; chisel  
Jack plane; smoothing plane  
Cascamite; evostik  
Stronger



**Acceptable answers**

4. (a) Hook 

2
---

140
200

  
 Back
- (b) (i) Machine vice  
 (ii) Engineers vice
- (c) Spot welding, welding, brazing, riveting
- (d) (i) Protection, looks better  
 (ii) Gloss paint, plastic dip coating
5. Dot punch, nail punch  
 Sash cramp.  
 Quick release cramp  
 Tenon saw  
 Rip saw  
 Crosscut saw
6. Plywood – made up of layers  
 Mahogany – hardwood  
 Acrylic – shiny, available in many colours  
 Copper – non ferrous

**Unacceptable answers or answers for discussion**

- Bench vice<sup>x</sup>  
 Soldering;<sup>✓</sup> Poprivit,<sup>✓</sup> nuts & bolts;<sup>x</sup>  
 screws<sup>x</sup>
- Bluing;<sup>✓</sup> polish<sup>x</sup>  
 Paint – any type except emulsion<sup>x</sup>
- Hole Punch<sup>✓</sup>  
 Mitre clamp;<sup>✓</sup> corner clamp;<sup>✓</sup>  
 Tool markers clamp;<sup>✓</sup> Hand clamp<sup>x</sup>  
 Belt clamp  
 Gents backsaw<sup>✓</sup>  
 Any saw that is not on sheets including machines

**Acceptable answers**

7. (a) Affordable cost  
Attractive  
Keep a door open
- (b) No short grain because of layers in plywood
- (c) Quicker, all the same
- (d) Band saw, coping saw, fret saw, jigsaw.
- (e) Glass paper, garnet paper.
- (f) (i) Dowel joint  
(ii) Hole which does not go through to the other side.
- (g) Pig too close to edge, wedge angle too steep.

**Unacceptable answers or answers for discussion**

✓ ✓  
Cost; affordable on its own

✓ ✓ ✓  
Does not warp; does not break; flat;  
✓ × × ×  
strong large sheets; easy to cut; cost

✓ ✓  
Accurate; easier

✓ ✓  
Hegner saw; scroll saw

✓ ×  
Sandpaper: wet and dry paper

✓  
Turn the base around

**2006 Craft and Design**

**Standard Grade – Credit**

**Marking Instructions**

**Each answer is allocated 1 mark unless otherwise stated**

**Acceptable answers**

1. (a) Anthropometrics
- (b) The pliers design to fit majority of adult population. (one mark)  
Handle will fit most sizes but not the very largest or the smallest. (two marks)
- (c) Can be reheated and reshaped
- (d) Stage 2 Heat the metal  
Stage 3 Dip metal into fluidiser containing plastic  
Stage 4 Heat the metal and plastic coat covering
- (e) The object was not reheated sufficiently after dip coating to give smooth shiny surface
- (f) Aesthetics – colour contrast  
Protects the metal from rusting/corrosion  
Ergonomics – better grip/less slip comfortable to hold  
Safety – Insulates the handle when working with Electricity  
Any other acceptable answer
2. (a) (i)
  - Is there a demand for the product
  - Would people want to buy/have the product
  - Would the product be feasible to make
  - Would the product sell in the shops
  - Establishing a price people would be willing to pay for the object
  - Establishing if there are any competitors and their price quality etc
 Any other acceptable answer
- (ii)
  - Internet
  - Going visiting shops/retailers
  - Catalogues
  - Questionnaires
  - Surveys
 Any other acceptable answer

**Unacceptable answers or answers for discussion**

- Average implying range ✓  
'average' on its own<sup>x</sup>
- Heat & melt (as per dip coating); has plastic memory ✓
- Leave to cool ✓
- Not enough initial heat ✓
- No sharp edges; durable; easy to clean ✓ ✓ ✓  
Cheap; cost; lightweight<sup>x x x</sup>
- Look at other designs ✓
- Cannot use the same answer twice for parts (i) and (ii)

**Acceptable answers**

- (b)
- To show aesthetics of the product
  - To give a 3d real world form to idea
  - Easier to evaluate than a drawing
  - Highlights any areas of difficulty or problems eg manufacturing
  - Models can be evaluated more comprehensively than a drawing
  - Allows designers to make informed modifications before deciding on a solution.
  - Allows limited testing eg ergonomics
2. (c) (i) Can be bent into shape without cracking/ breaking
- (ii) Copper aluminium lead
- (d) Tapered sides  
Smooth finish  
Screw hole for inserting screw
- (e) (i) To soften the aluminium  
Make easier to bend/work with
- (ii) Heat with blow torch/quickly and let cool slowly
- (f) (i) Increase weight of base – use different material  
Increase width of the base  
Shorten the length of the stem  
Any other suitable answer
- (ii) Fix rubber feet to the bottom of the base  
Fix cloth or felt to the bottom of the base  
Any other suitable answer
3. (a) (i)/(ii) { Thought shower (brain storming)  
Take your pencil for a walk  
Existing products/styles  
Analogy  
Mood boards  
Shapes Geometric/natural, organic/curves etc  
Any other acceptable answer
- Must be two different

**Unacceptable answers or answers for discussion**

- Let client see the ides ✓
- Easy to bend/shape; flexible ✓ ×
- Soft iron; tin; steelwire ✓ × ×
- Round corner ✓
- Cool in water: ✓  
if it's the forging process ×
- Increase size of base
- Filing; smooth base × ×
- Mind map/bubble diagram/spider diagram ✓
- Morphological analysis; lateral thinking; themes; ✓  
asking people ×

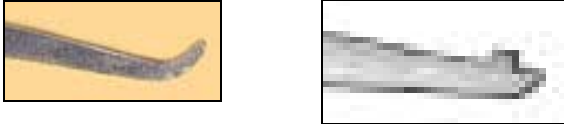
**Acceptable answers**

- (b) (i) Revolving centre doesn't need lubrication.  
Revolving centre won't burn wood
- (ii) Parting chisel
- (iii) Outside callipers
- (iv) Setting the lathe to a high speed give better finish
- (c) Quick ✓  
Easy to do/assemble
- Can be taken apart/reassembled
- (d) (i) Countersink left circle (B)
- (ii) Clearance hole bottom right circle (C)
- (iii) Pilot hole top right circle (A)
- (e) Pine more readily available  
Grows faster than hardwoods
4. (a) **Process A** Parallel turning/step turning ✓  
**Process B** Taper turning/chamfering ✓  
**Process C** Knurling
- (b) Knurling requires a slow speed  
A good finish requires a high speed eg parallel turning
- (c) (i) Stage 2 Place centre drill in tail stock and bore starter hole
- Stage 3 Replace centre drill with twist drill
- Stage 4 User vernier gauge on tail stock to drill 25mm hole
- (d) (i) The tap will break if it hits the bottom of hole
- (ii) The taper tap
- (iii) The plug tap

**Unacceptable answers or answers for discussion**

- Reduces friction; turns freely ✓ ✓
- Parking off tool; skew chisel ✓ ✓
- Micrometer; callipers × ×
- Assembled by user; mass production; ergonomics (explained); flat packed; stronger ✓ ✓ ✓ ×
- Sustainable forests, not using up or depleting rain forests; cost ✓ ×
- Different materials; different operations ✓ ✓
- Bigger diameter/cut ✓
- Slocombe drill ✓
- Use a series of drills ✓
- Masking tape on drill; marker pen on drill ✓ ✓
- Strip the thread ✓
- bottoming tap ✓

**Acceptable answers**

5. (a) (i) The shapes triangles contrast with circles  
The matt paint dull contrasts with polished peg  
The two colours black/white
- (ii) Eye catching  
Emphasizes certain parts/areas
- (b) (i) So the coat doesn't slide off.
- (ii) So the coat doesn't catch/rip on peg
- (c) (i) Does not contain iron
- (ii) A mix of metals/materials ✓
- (d) (i) 
- (ii) The callipers are set approximately to the centre. }  
Then the callipers mark a line from both edges. } 1 mark
- Repeat process so only one line appears when marking from either side. } 1 mark
- (e) Dividers/spring dividers
- (f) Hacksaw/junior hacksaw
- (g) Mask one side paint the other.  
Let dry then repeat process for other side.
- (h) Allows the colour of the brass to show shiny  
Polished finish. Allows natural colours of brass to be seen. Shiny ×
- (i) To ensure the solution meets all design criteria.  
Any other suitable answer

**Unacceptable answers or answers for discussion**

- ✓ ✓ ✓ ×  
Shape; colour; finishes; materials
- Stands out; ✓ more interesting; ✓ looks better ×
- Any aesthetic reason ×
- ✓ ✓ Safety; aesthetic; gets coat on easier ✓
- × ×  
Does not rust; not magnetic
- 1 mark
- Joining corners to find centres ×
- 1 mark
- ✓ ✓ ×  
Abrafile; cold chisel; chisel
- Masking tape only; ✓ × tape
- Stops brass going dull ✓
- Keeps polished finish; ✓ keeps it shiny; ✓  
tarnishing; ✓ dull ×
- Hard wearing/durable ×  
Rusting; × easy to clean ×

[END OF MARKING INSTRUCTIONS]