



2011 Craft & Design

Standard Grade
Foundation/General/Credit

Finalised Marking Instructions

© Scottish Qualifications Authority 2011

The information in this publication may be reproduced to support SQA qualifications only on a non-commercial basis. If it is to be used for any other purposes written permission must be obtained from SQA's NQ Delivery: Exam Operations Team.

Where the publication includes materials from sources other than SQA (secondary copyright), this material should only be reproduced for the purposes of examination or assessment. If it needs to be reproduced for any other purpose it is the centre's responsibility to obtain the necessary copyright clearance. SQA's NQ Delivery: Exam Operations Team may be able to direct you to the secondary sources.

These Marking Instructions have been prepared by Examination Teams for use by SQA Appointed Markers when marking External Course Assessments. This publication must not be reproduced for commercial or trade purposes.

2011 Craft and Design

Standard Grade – Foundation

Marking Instructions

Acceptable answers

- 1. (a)**
- (i) Wood lathe
 - (ii) Turning
 - (iii) A Fork centre
B Toolrest
C Revolving centre
 - (iv) Speed of the machine
Work secure between centres
Facemask/safety glasses. Position of toolpost. Personal safety. Dust extraction
- (b)**
- (i) Beech
 - (ii) Plane
 - (iii) Checking sizes
- 2. (a)** It contains iron and is magnetic
- (b)**
- (i) Spring dividers
 - (ii) Centre punch
 - (iii) Ball pein hammer
- (c)** Second box
- (d)**
- (i) Clean the metal to remove grease and dirt
 - (ii) Remove from fluidiser and allow to cool
 - (iii) Paint/Galvanising/Lacquer/Bluing
- 3. (a)**
- (i) Evaluation
 - (ii) Cutting list
 - (iii) Brief
 - (iv) Ideas
 - (v) Sequence of operations
- (b)**
- 1. Easy to cut into shape
 - 2. Smooth surface to paint on

Unacceptable answers

Gloves

File, Sander, Chisel

Any wood finish, Varnish

Acceptable answers

4. A mark for any of the following:

Coat hook too sharp – could rip clothes/coats
– could cut fingers

One screw – the mirror will hang at an angle

Coat will cover the mirror

Weakness in fixing coat hook

5. (a) Aluminium

(b) (i) Safety

(ii) Hacksaw

(c) (i) Metal work lathe/Centre lathe/Lathe

(ii) Work is secure
Guard is down
Correct speed
Chuck key removed
Work is gripped by all the chuck jaws
Tool:- at correct height, sharp, correct tool

(d) Facing

6. (a) It can be re-heated and bent again

(b) Coping saw

(c) Half round

(d) (i) Cross file all the edges

(ii) Polish edges

(e) Pedestal drill

(f) Support the acrylic with a piece of wood

(g) Strip heater

7. (a) The size of pencils
The number of pencils

(b) Sawing board

(c) Sander

(d) (i) Dowel

(ii) PVA

(iii) Sash cramp

Unacceptable answers

Wood Lathe

Acceptable answers

- 8. (a)**
- (i) Heavy base
 - (ii) Energy efficient bulbs
 - (iii) Easy wipe finish
 - (iv) Easily adjustable swivel head
 - (v) Anti-skid, rubber feet
- (b)** Fourth box
- (c)**
- (i) Casting
 - (ii)
 - 1. Cope
 - 2. Crucible
 - 3. Runner

Unacceptable answers

2011 Craft and Design

Standard Grade – General

Marking Instructions

Acceptable answers

1. (a) (i) MDF, Plywood or any suitable manufactured board
- (ii) Available in large sheets, has a good surface to paint on, does not twist or warp, easy to work/shape, defect free, strong, cheaper than 'natural' wood. Easy to cut and shape. Environmentally friendly.
- (b) Any two advantages
Speed; all the same; reusable; more accurate; neater; saves time; repeatable; easier.
- (c) (i) PVA
- (ii) Countersink
- (iii) So that the head of the screw is flush with the surface of the wood or, so that the head doesn't stick out from the wood or, any answer which indicates the above. Level with top/surface – 1 mark
- (d) Glass paper, sand paper, wet & dry Garnet paper, Aluminium Oxide
- (e) Attractive to look at, make it colourful, will protect from moisture/wet conditions, allows the step to be easily cleaned. Hide defects.
2. (a) (i) Machine vice; Nippy Vice.
- (ii) Engineers vice
- (b) 2 – Draw file the edges; Use a scraper
4 – Apply polish, basso, abrasive polish; Soap and steel wool; Polish.

Unacceptable answers

- Hardboard
- Light
- Less waste
- Superglue; PVC; Bostick; Wood glue; Adhesive.
- Slotted, flat head.
- Lasts longer
- Metalwork vice; Bench vice.

Acceptable answers

- (c)** (i) Guard down, material is secure, remove chuck key, correct speed, drill straight in Chuck, On/Off Buttons; Emergency stop.
- (ii) One from:
Support the acrylic with a piece of scrap wood
use stepped drill.
use pilot hole
drill slowly and carefully
clamp the plastic to the drill table
stick masking tape to the plastic
use special plastic drill
- (d)** (i) First circle – B – Parallel Turning
Second circle – C – Chamfering
Third circle – D – Facing
- (ii) Grip, Aesthetics
- (e)** (i) Die
Die holder –1
Die stock – 1
- (ii) use cutting compound/ use lubrication
turn die 180 degrees then cut back again etc
make sure the die is at 90 degrees to the axis of the metal rod or similar
align the die
back cutting
second cut
Chamfer the end.
- 3. (a)** Ash, beech, mahogany, oak, or any other suitable hard wood, jelutong.
- (b)** Part A – Head stock
Part B – Tail stock
- (c)** Parting tool
- (d)** Outside callipers; 'Callipers' on own. Spring callipers; External callipers

Unacceptable answers

- NB checks should relate to machine.
No personal safety
- Keep the protective covering on the plastic.
Increase speed.
Heating plastic.
- 'Stock'
Threader.
- do it slowly
- balsa
- Head
Tail

Acceptable answers

4. (a) (i) Small holes – for drainage, let water out
Curved shape – to allow it to fit in bath;
fits a range of baths
- (ii) If it wasn't long enough it would fall into bath
If it was too long the curves wouldn't fit in bath
- (b) (i) band saw, jigsaw, scroll saw, hegner, fretsaw, vibrosaw.
- (ii) Coping saw; fretsaw; pad saw.
- (c) (i) Housing joint, stopped housing, Through housing.
- (ii)
- | Stage | Tool |
|------------------------------------|-----------------------------|
| | Try Square |
| To mark depth of the housing joint | |
| | Tenon Saw |
| | Bevel edged chisel |
| Level the housing joint | Hand router, Grannies tooth |
- (ii)
- Try Square
 - Mark lines parallel to an edge/mark the depth of the joint
 - Tenon saw
 - Bevel edge chisel
 - Level the bottom of the joint
 - Hand router or router. Granny's tooth.
- (d) Aesthetics – clear finish shows natural beauty of the wood grain.
Waterproof – finish will protect the wood from moisture/wet conditions.
Allows the holder to be easily cleaned.

Unacceptable answers

Safety issues (ie sharp corners).

abrafile

Saw on its own.
Chisel on its own.

Acceptable answers

5. (a) Any two from:
Stability; insulation of electrical wires and components; Shade shouldn't get hot; length of cable; no loose parts; Shouldn't pose a fire risk; No sharp edges; Non-slip base; Any electrical safety issues (ie correct fuse, etc).
- (b) 750
- (c) Odd leg callipers/Jenny callipers – to mark (or scribe) lines parallel to an edge find the centre

Centre punch/Dot punch – to mark the centre of a hole, highlight a bend or outline location point for dividers.

Hacksaw – To cut metal
- (d) Folding/bending bars
- (e) Spot welding, welding, brazing, riveting, soldering, Poprivet, nuts and bolts, Self tapping screws.
- (f) Advantages – available in range of colours, does not rust, no finish required, easy to bend when heated, easily cleaned, waterproof, aesthetic, hygienic, electrical insulation, easy to re bend/shape when heated.

Disadvantages – Easily scratched/broken/ cracks, not strong, not durable; brittle.
6. Function
Ergonomics
Safety
Aesthetics
Economics

Unacceptable answers

Callipers/Jennies

Screws on its own.

does not break easily; shiny; strong;
Lightweight; Easy to bend and shape.

Cost; It could melt with the heat of the lamp.

2011 Craft and Design

Standard Grade – Credit

Marking Instructions

Acceptable answers

1. (a) (i) Aesthetics
- (ii) 5% and 95%
- (ii) From the heel to the knee (popliteal);
Floor to knee; Knee height; Length of lower leg.
- (iv) Ergonome
- (v) To check the ergonomics
Make quick changes
Show potential customers
Check the manufacture
Evaluate the product; check sizes;
Stability; See what it looks like.
- (b) (i) Same answer can only be used once.
The retailer – Saves space; Easier to send to customers; Easier to package; Lower costs; More stock available.
The customer – Low costs
Ease of transportation
Assembled in small space
- (ii) To assist the location of the dowel into hole
- (iii) Knock down fitting
2. (a) (i) Headstock – Fork centre, driving centre
Butterfly centre
Tailstock – Revolving/Live centre, dead centre, Cone centre.
- (ii) To turn the wood
- (iii) To account for the various lengths of wood; Tighten wood; Lubrication; To remove wood.
- (b) (i) To turn the wood to a cylinder;
To turn to a taper; Roughing; Parallel turning
- (ii) To produce a shoulder; To cut the leg to length; Reduce to diameter; Parting off.

Unacceptable answers

Length of leg.

Manikin; Dummy.

Easier to build.

Easier to assemble; Easier to make up yourself.

Live centre.

Remove wood.

Acceptable answers

- (c) To support the seat
To stop the leg pushing through the seat
- (d) (i) Bit 1 Fostner.
Bit 2 Auger; Jenning pattern auger bit.
- (ii) It can be fitted to a drilling machine;
Clean cut.
- (e) To raise the grain of the wood
3. (a) (i) High speed
Slow feed rate
Tool is at the correct height
Use of coolant
Correct tool
The tool is sharp
Take a fine cut.
- (ii) Knurling
- (iii) Micrometer, vernier callipers, digital callipers.
- (b) (i) So you are drilling in the middle
Easier to hold the metal in the lathe
The drill will follow along the axis
(straight)
- (ii) Centre drill (slocome, combination)
Twist drill, Twist bit, Jobber.
- (iii) Scale on the tailstock
Masking tape on the drill
- (iv) Plug; Third tap; Bottoming tap.
- (v) Easy to snap the tap
- (c) Bend as a pair on the metal folder;
Former; Jig; Template.
- (d) Malleable/malleability

Unacceptable answers

Easier; Bigger diameter.

Remove the dust.

Correct speed.
Remove 'pip'.

It is easier.

Depth stop.

Soft; Flexible.

Acceptable answers

4. (a) Any hardwood
Manufactured board; Manmade board;
Manmade on its own.
Any softwood
Thermoplastic
Mild steel (any ferrous metal)
Acrylic (any thermoplastic); Thermo.
- (b) Full answer two marks, partial answer 1 mark
Drilling holes and adjustment of the coping
saw or use a jig, hegner or vibro saw.
- (c) Cross halving/halving
- (d) (i) Spring dividers/Dividers
(ii) Tin snips/snips, file, nibbler, Abrafile,
Gabro notcher, Guillotine.
- (e) Epoxy resin, araldite, contact adhesive, hot
melt glue gun.
- (f) To make the product stand out; Eyecatching.
5. (a) The people the product is aimed at
- (b) Sub division of design factors can be used
only once.

Environment it is to be used in; The Function
of the product; Aesthetics; Cost;
Construction/joining; Ergonomics; Safety;
Manufacturing.
- (c) (i) Casting
(ii) Aluminium, brass, cast iron, bronze,
copper, lead, steel.
- (d) To hold the metal during melting;
Vessel to hold molten material
- (e) (i) To protect the product; Displays the
product; Easy to package an irregular
shape; Less packaging; Product can be
seen; Can be stored; Less space;
Recycled; Cannot be tampered with.
(ii) Vacuum forming
(iii) Taper the sides of the pattern; Slope.
(iv) The edges of the pattern were sharp
(not rounded)

Unacceptable answers

- Compass.
- Hacksaw; Junior hacksaw; Coping saw.
- Super glue; 'No Nails' glue.
- Attractive; Aesthetically pleasing.
- Moulding.

[END OF MARKING INSTRUCTIONS]