

Name _____

Class _____

Date _____

By the end of this worksheet I can...

- ☐ name 2D CAD tools from a sequence of changes: line, trim, mirror, rotate, scale, fillet, chamfer
- ☐ explain the use of CAD libraries
- ☐ use offset, extend, array and project edge
- ☐ explain 2D constraints: linear, radius, diameter, perpendicular, parallel, fixed, tangent, concentric

I DO

Worked example

Read how a full-mark answer is built

A 2D CAD drawing of a shelf bracket is created in five stages: lines are drawn; overlapping lines are removed; the shape is copied as a reflection; the shape is turned 90°; the shape is enlarged.

1 State the name of the 2D CAD tool used at each stage. (5 marks)

Points that earn marks from the marking instructions: one ✓ per point

- ✓ Line
- ✓ Trim
- ✓ Mirror
- ✓ Rotate
- ✓ Scale (accept zoom only if the question allows)

WE DO

Guided practice

Use the starters and word bank to help you

An architect uses a CAD library when drawing floor plans.

2 Describe two advantages of using a CAD library. (2 marks)

Sentence starters

One ... is ..., which means ...

Another ... is ..., so ...

Word bank

redrawn · saving · consistent · library ·
symbols · standard · accurate · sanitary

Tip: 2 marks = 2 separate, developed points.

YOU DO

On your own No notes. Check your answers afterwards.

3 Quick check: tick one box for each.

- a) A designer draws half a symmetrical shape. Which tool completes it?
☐ Rotate ☐ Mirror ☐ Fillet ☐ Zoom
- b) Zoom changes...
☐ The size of the object ☐ The line type ☐ The scale on the drawing ☐ The view only
- c) Which constraint makes two circles share a centre?
☐ Tangent ☐ Concentric ☐ Parallel ☐ Perpendicular
- d) Which tool makes a parallel copy 12 mm away?
☐ Offset ☐ Mirror ☐ Extend ☐ Project edge

4 Key terms: write the letter of the matching description next to each term.

1. Trim	_____	A Cuts a corner at an angle.
2. Mirror	_____	B Ready-made standard parts and symbols; saves time and is accurate.
3. Fillet (2D)	_____	C Removes parts of lines up to where they meet other lines.
4. Chamfer (2D)	_____	D Creates a reflected copy about a line.
5. CAD library	_____	E Rounds a corner to a set radius.
6. Offset	_____	F Creates a parallel copy at a set distance.

A 2D sketch made from overlapping hexagons is turned into the outline of a coaster with a border.

5 Describe the 2D CAD steps used to: remove the inside lines, round the outer corners and create the border 12 mm inside the edge. (3 marks)

6 Explain what is meant by 'Radial array'. (2 marks)

7 Explain what is meant by '2D constraint'. (2 marks)

Check and reflect

Mark your answers with the answer sheet. Go back to the checklist on the site and re-rate each "I can" statement above. Which one still needs work?
