

Name _____

Class _____

Date _____

By the end of this worksheet I can...

- ☐ identify and arrange elevation, plan and end elevation in third-angle projection
- ☐ show hidden detail correctly in every view
- ☐ work out missing sizes from an orthographic drawing
- ☐ identify true lengths and true shapes
- ☐ explain and recognise auxiliary views
- ☐ locate the centres of internal and external radii (tangency)

I DO**Worked example** Read how a full-mark answer is built

An L-shaped bracket is shown as a pictorial view. Four sets of orthographic views are shown, labelled A to D.

1 State what you would check to decide which set of views is correctly arranged in third-angle projection. (2 marks)

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

- ✓ The plan is drawn above the elevation
- ✓ The end elevation is on the side it is viewed from

WE DO**Guided practice** Use the starters and word bank to help you

A shelf bracket has an overall length of 200. From the left it has a 62 flange, then a slot, then a 72 end section.

2 Calculate the length of the slot. (1 mark)

Sentence starters

One ... is ..., which means ...
Another ... is ..., so ...

Word bank

Tip: 1 marks = 1 separate, developed points.

YOU DO**On your own** No notes. Check your answers afterwards.**3 Quick check: tick one box for each.**

- a) An outside corner 15 from the datum is rounded R2. Its centre is...
☐ 15 ☐ 13 ☐ 17 ☐ 30
- b) Hidden detail is shown with...
☐ Thick continuous lines ☐ Thin dashed lines ☐ Chain lines ☐ Wavy lines
- c) To find the true shape of a sloping cut you look...
☐ From the front elevation ☐ Looking down from directly above ☐ From the end elevation ☐ At 90° to the cut surface

d) An auxiliary view is used to...

- ☐ Show the true shape of an inclined surface ☐ Show hidden detail inside the part clearly ☐ Show how all of the parts fit together ☐ Show the part in full colour for the client

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

1. Third-angle projection: where is the plan?	_____	A Above the elevation.
2. Elevation	_____	B The actual shape of a sloping surface, seen by looking at 90° to it.
3. End elevation	_____	C Edges that can't be seen, drawn as thin dashed lines.
4. Related views	_____	D The side view, drawn on the side it is viewed from in third angle.
5. Hidden detail	_____	E Views lined up so sizes project between them.
6. True shape	_____	F The main front view of an object.

A plate has an outside corner 15 from the datum edge, rounded with an external radius of R2.5. Inside, a step face 4 from the datum blends into the floor with an internal fillet of R1.5; the fillet's centre is on the open side of the step.

5 Calculate the distance from the datum to (i) the centre of the external radius and (ii) the centre of the internal fillet. (2 marks)

A casting has a face inclined at 30° that contains two drilled holes.

6 Explain why an auxiliary view of this face would be included on the production drawing. (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?
