

Name _____

Class _____

Date _____

By the end of this worksheet I can...

- ☐ explain how models are used to generate and explore, test and refine, and communicate
- ☐ give reasons for choosing sketch, scale, block and computer-generated models
- ☐ describe the advantages of using models in the design process

I DO

Worked example Read how a full-mark answer is built

A designer developed a hand-held torch.

1 Describe one benefit of a sketch model and one benefit of a block model for the torch. (4 marks)

Full-mark answer each ✓ is one mark

Sketch model: it can be made quickly from card or foam, so the designer can try several different torch shapes in a lesson ✓ and see forms that are hard to draw ✓. Block model: it shows the true size and shape of the torch so it can be held to test the grip and the position of the button ✓, and it can be shown to the client for feedback ✓.

Why marks are not awarded

"Sketch models are cheap and quick. Block models are good to see what it looks like."

0 marks: unqualified "cheap/quick", and "see what it looks like" is too vague.

WE DO

Guided practice Use the starters and word bank to help you

2 Explain two reasons a designer would use a 3D CAD model. (2 marks)

Sentence starters

One reason is ... because ...

Another reason is ... so ...

Word bank

Prototype · viewed · 3D printer · without · client · change · rendered · starting

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) Why are sketch models used early in the design process?
☐ They show exactly what the final finish will be ☐ They are quick and low cost to make and change ☐ They are fully working and can be user tested ☐ They are used to set up mass production
- b) Which model would a designer use to test the comfort of a handle grip?
☐ Scale model ☐ Exploded drawing ☐ Sketch model of a different product ☐ Block model
- c) An architect shows a new school building to the council. Which model?
☐ Scale model ☐ Sketch model ☐ Block model ☐ Computer-generated model

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

- | | | |
|------------------------|-------|--|
| 1. Sketch model | _____ | A Solid, non-working model showing shape and form; often used to test ergonomics. |
| 2. Block model | _____ | B Quick, low-cost model from scrap materials to generate and explore ideas. |
| 3. Scale model | _____ | C Model at a different scale for objects too large or small to model full size. |

5 Describe one benefit of a computer-generated model. (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?
