

Design & Technology

AQA GCSE

Explore and develop their own ideas

Materials required for questions

- Pencil
- Rubber
- Calculator

Instructions

- Use black ink or ball-point pen
- Try answer all questions
- Use the space provided to answer questions
- Calculators can be used if necessary
- For the multiple choice questions, circle your answer

Advice

- Marks for each question are in brackets
- Read each question fully
- Try to answer every question
- Don't spend too much time on one question

Good luck!

Q1. What is the main purpose of using an *iterative design process*?

- A** To complete all design work before testing
- B** To reduce the number of ideas to just one early on
- C** To explore, test, and improve ideas through continuous development

Q2. How does *sketching* help in the design process?

- A** It finalises all the details of the product
- B** It helps quickly visualise and communicate early ideas
- C** It shows how a product will look after manufacturing

Q3. Why is *modelling* useful when developing ideas?

- A** It creates a final version of the product
- B** It provides a digital-only plan
- C** It allows physical testing of shapes, sizes, and functions

Q4. What is a key benefit of *testing* a prototype during development?

- A** It avoids the need for further sketching
- B** It identifies problems and areas for improvement
- C** It confirms that the packaging is complete

Q5. Explain the importance of evaluation when developing prototypes. Give specific examples in your answer. **(4 marks)**

Q6. Explain why modelling is an important tool used by designers to develop prototypes box . Give specific examples in your answer. **(4 marks)**

Answers

Q1. C

Q2. B

Q3. C

Q4. B

Q5.

QUESTION IS ABOUT WHY WE TEST AND NOT HOW.

The guidance provided is illustrative and not exhaustive. Credit any worthy points made in support of the band descriptors above.

- Identify what is working well and what needs improving.
- Promote improved quality in the design.
- Allow designers to make sure prototypes are suitable for their intended user(s).
- Review of tests against both the design specification and manufacturing specification.
- Evaluate materials to be used and check their suitability, cost function etc against their intended use.
- Opinions of customer and end user need to be evaluated before prototypes become commercial products. Note: Examples could be something other than products e.g public

Q6.

Indicative content:

Examples could be – products or modelling techniques e.g. card, foam board, Toile, Circuit wizard

- Expect lots of reference to modelling used to develop a 3D impression/part or all of a prototype; visualisation
- Reduce product development times e.g. rapid prototyping
- Modelling can be undertaken using physical models made from clay, paper, card, prototyping boards, cheaper less durable easier sourced materials
- Allows the interaction of moving components to be viewed

- Non-destructive testing of materials virtually to avoid wasting real materials and components unnecessarily e.g. testing electronic circuits virtually
- Sharing of design concepts electronically via the internet (file sharing) allowing multiple persons to work on a proposal at once (collaborative design)
- Allows testing for stress under load