

Design & Technology

AQA GCSE

Generate imaginative and creative design ideas using a range of different design strategies

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 goal of *user-centred design*?

- A** To focus on manufacturing costs above all else
- B** To design based purely on aesthetics
- C** To meet the needs, wants, and limitations of the end user

Q2. What is a key feature of *iterative design*?

- A** Making one final model and then moving straight to production
- B** Repeating and refining the design through testing and feedback
- C** Completing all design stages without revisiting earlier decisions

Q3. Which of the following best describes *collaborative design*?

- A** Working alone to maintain creative freedom
- B** Using only professional designers for input
- C** Involving multiple people or teams to share ideas and solve problems

Q4. What is a potential risk of *design fixation*?

- A** Creating too many ideas and not choosing one
- B** Getting stuck on one idea and not exploring alternatives
- C** Changing your design too frequently

[illegible]

[illegible]

Answers

Q1. C

Q2. B

Q3. C

Q4. B

Q5.

NB Example(s) may be actual products or methods used in user centred design

- Constant contact, feedback and discussion with the end user or client group e.g., questionnaire's, survey.
- Designing thinking about how specific people will use products.
- Designing thinking about what clients and end users will do with the product.

User-centred design focusing on:

- a specific identified problem e.g., opening bottles and jars, mountain bike equipment storage.
- client-based approach e.g., GCSE projects where candidates identify an end user -responding to customer feedback on existing products e.g., computer games and gaming hardware such as, virtual reality headsets, game graphics etc.
- Focused on the needs and wants of the client or end user to ensure the product meets their specific requirements e.g., a suit or wedding dress.
- User-centred design is focused on a specific target or end user group.
- User-centred design focuses on the needs and wants of the user at each specific phase of design and development.
- User-centred design will make use of primary and secondary research e.g., interviews, focus groups, user interactions.
- Focus group testing – to ensure the product works safely and correctly with its intended user group. Testing may flag up issues and/or changes that need to be made to improve how a product works for a future iteration e.g., battery life, camera, screen size on a mobile phone. Accept all other valid responses

Q6.

Candidates can use examples of products designed through collaboration and/or examples of collaboration in designing itself.

Products:

- Mobile phones – many different parts requiring people with different skills to design them
- Product packaging – package itself, secondary packaging all need designing and will be done outsourced to different companies with different skills, equipment and expertise.
- Motor vehicles, complex products needing the input of team with various skills to meet technical, legal and user requirements.
- Public transport, requiring technical engineering expertise, ergonomic knowledge and interior design
- Medical equipment, requiring medical knowledge, technical and manufacturing expertise and human factors application.

Designing:

- The need to obtain specialist expertise; e.g. electronic engineers working with product designers, architects working with structural engineers
- Companies purchasing outside design ideas e.g. Products marketed as being “Porsche design”
- Where designers work together to solve problems
- Working with other people and not in isolation designers can feed off each other in terms of ideas or experience.
- Chance of designs based on the work of one individual becoming stale and not effective for purpose
- Commercially, companies may become slow to react to changing market demands – collaborative design could ‘future proof’ against this.
- eg IKEA now looking to involve designers from outside the organisation (Tom Dixon)
- Fashion stores will commission designs from designers outside of their own organisation.
- Belief that solutions to problems generated in isolation can be of a lower quality and not address all the needs of the client or user (especially if complex or extensive), due to limitations of expertise or experience.
- Used to increase the range and quality of solutions/ possibilities generated to solve a need eg by using teams of designers in competition
- Use different people with different skills, experience and expertise during the design process. Thus, ensuring a better end result.
- Designers can inspire each other leading to innovative and creative solutions to problems
- Shorter design timescale, as designers can work concurrently. Accept all other valid responses