

OCR A-Level

**Importance of
Collaboration Across
Subject Areas (4.3b)**

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. A consumer electronics company is designing a new smartwatch. Bringing in a materials scientist during the early design phase is most useful for:

- A** Creating the advertising campaign visuals.
- B** Selecting biocompatible materials for the strap to reduce skin irritation.
- C** Writing the user interface code for the watch face.

Q2. A furniture design firm wants to create an ergonomic office chair that is also environmentally sustainable. Which combination of specialists would be most critical for a collaborative solution?

- A** A graphic designer, a marketing manager, and a sales analyst.
- B** An ergonomist, a sustainable materials expert, and a manufacturing engineer.
- C** A financial auditor, a logistics coordinator, and a packaging designer.

Q3. Why is cross-disciplinary collaboration considered essential for innovative product development?

- A** It guarantees the product will be the cheapest on the market.
- B** It allows potential conflicts between design, function, and production to be resolved early.
- C** It removes the need for any post-production testing or quality control.

Answers

Q1. B

Q2. B

Q3. B

Q4. C

Q5.

Indicative content:

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