Beckfoot

# AQA Design & Technology: Product Design

3.1 Technical principles **3.1.14 Design Communication**

Post 16

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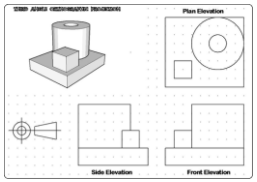
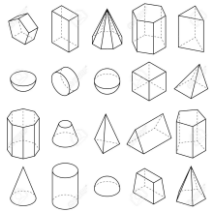
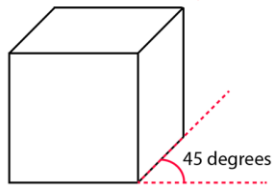
Able to explain and demonstrate the skills, in a range of communication and presentation techniques for conveying proposals and intentions to clients, potential users and manufacturers.

## 1. Interpretation Of 2D And 3D Engineering Drawings

| | | |
|---|---|---|
| 1 | Third Angle Orthographic Projection | Used in technical **drawing** and normally comprises the three views (perspectives): **front, top and side.**  |
| 2 | Isometric | A type of 3D **drawing** that is set out using 30-degree angles.  |
| 3 | Oblique | A simple type of technical drawing of graphical projection used for producing two-dimensional images of three-dimensional objects.   |

## 2. Standard Drawing Conventions On Engineering Drawings

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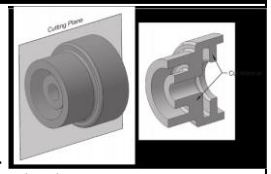
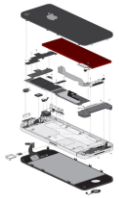
|---|---|---|
| 1 | Sectional Views | A **section** looks inside an object. Sections are used to **clarify** the Interior construction of a part that can not be clearly described by hidden lines in exterior **views**. By taking an imaginary cut through the object and removing a portion, the inside features may be seen more clearly.  |
| 2 | Exploded Drawings | A type of **drawing**, that shows the intended **assembly** of mechanical or other parts. It shows all parts of the **assembly** and how they fit together.  |
| 3 | Tolerances | The **allowable variation** for any given size in order to achieve a proper function. **Tolerance** equals the difference between **lower and upper limit** dimensions.+ / -. |
| 4 | Scale | The scale of a drawing **is the ratio of a distance on the drawing to the corresponding distance in the real world**. 1:2 means 1mm on the drawing equals 2mm in the real world. 1:5 scale would mean that 5mm in a drawing would equal 25mm when you make it. |
| 5 | Annotations | Extra information associated with a particular design / drawing on a document .It can be a note that includes a comment or explanation to clarify material choice, finish, process. |

## 3. Production Of Plans For The Making Of A Pre-production Product

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|---|---|
| 1 | Interpretation of the details and requirements of a pre-production product from engineering drawings. **What have you been asked to make? What size is it? How does it fit together? Is there any hidden detail you need to be aware of? Is there a scale on the drawing? When was the drawing completed? By whom? What version of the drawing do you have?** |
| 2 | Schedule a set of project activities which would enable manufacture of the component. The order in which you complete the tasks is crucial, however, there will be some tasks which can be completed 'out of order. Can a hole be drilled at the start of manufacture, or at the end?? You will need to consider every task and where it comes in the manufacture sequencing. |
| 3 | Tools, equipment and processes **Consider which are the best tools / machines to use. You will have to consider quality of outcome, speed of manufacture, availability of equipment, quantity of manufacture.** |
| 4 | Health and safety considerations **PPE, Machine guarding, training, machine maintenance / set up.** |
| 5 | Quality control checks: To check quality against a set standard or specification **Visual inspection, measuring (calipers / micrometers / rules), templates, use of jigs, go/no go gauges.** |