SHEET 1

PENANG SANGAM HIGH SCHOOL

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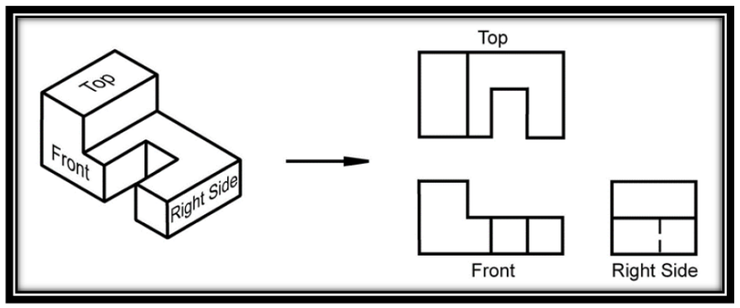
LESSON NOTES - 16

SCHOOL: PENANG SANGAM HIGH **SUBJECT: TECHNICAL DRAWING** **YEAR/ LEVEL: 11 C/D**

Strand	TD11.3 APPLIED DRAWING
Sub - Strand	TD11.3.1 ORTHOGRAPHIC PROJECTION
Content Learning Outcome	TD11.3.1.1 Demonstrate knowledge and skills of drawing orthographic projections of woodwork projects and the importance of dimensions in real life

Orthographic Projection

- Basically, Orthographic Projection is the representation of a three-dimensional (3D) component on a flat surface (the drawing sheet) in two-dimensional (2D) form.
- An orthographic drawing is also sometimes called a working drawing, is usually the last drawing produced by a designer.
- It normally has three accurate views of a product, a front view, side view and plan view.
- Dimensions (measurements) are also drawn on each view, ensuring the manufacturer can make the product to the precise size and to the designer's requirements.
- An orthographic projection represents different sides of an object. It is two dimensional (2D) representation of a three dimensional (3D) object as shown below.



Types of Orthographic Projection

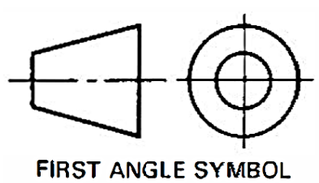
There are 2 types of orthographic projections.

1. First Angle Orthographic Projection
2. Third Angle Orthographic Projection

Projection Rules

First Angle Projection

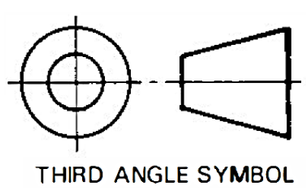
1. **Plan** is drawn at the bottom of the **Elevation**.
2. When view from the left the shape is drawn on the right.
3. When viewed from the right the shape is drawn on the left.
4. In general its opposite side vies.



Projection Rules

Third Angle Projection

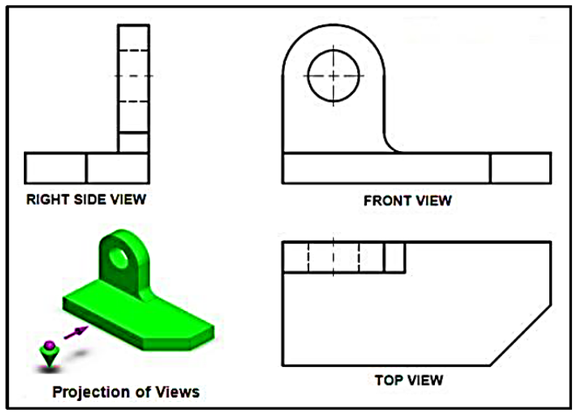
1. **Plan** is drawn above the **Elevation**.
2. When view from the left the shape is drawn on the left.
3. When viewed from the right the shape is drawn on the right.
4. In general its same side vies.



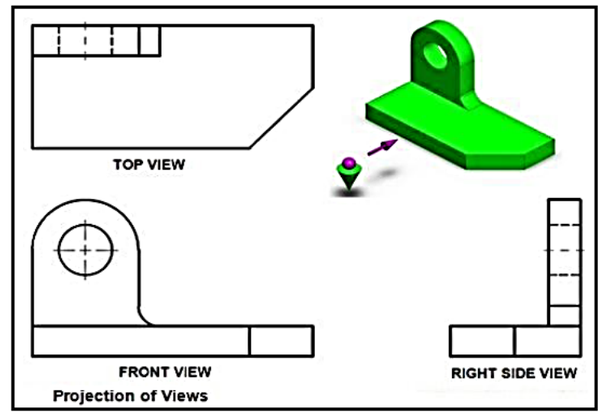
There are 2 major planes of projection.

1. Horizontal Plane **(HP)** – consists of the top view **(Plan)**
2. Vertical plane **(VP)** – consists of front view **(Front elevation)** and the side view **(End Elevation).**

Plan consists of **Length** x **Width (L x W)**
Front Elevation consists of **Length** x **Height (L x H)**
End Elevation consists of **Width** x **Height (W x H)**



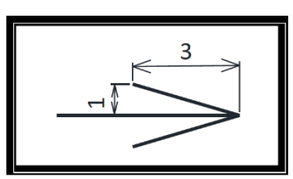
Example of First Angle Orthographic setup

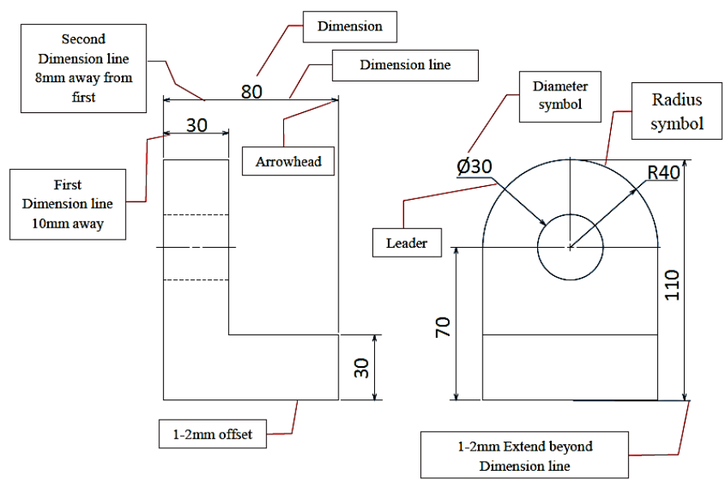


Example of Third Angle Orthographic setup

Dimensioning

Note:
The dimension should be read from the bottom and right of a drawing and it should be placed on top of projection line.



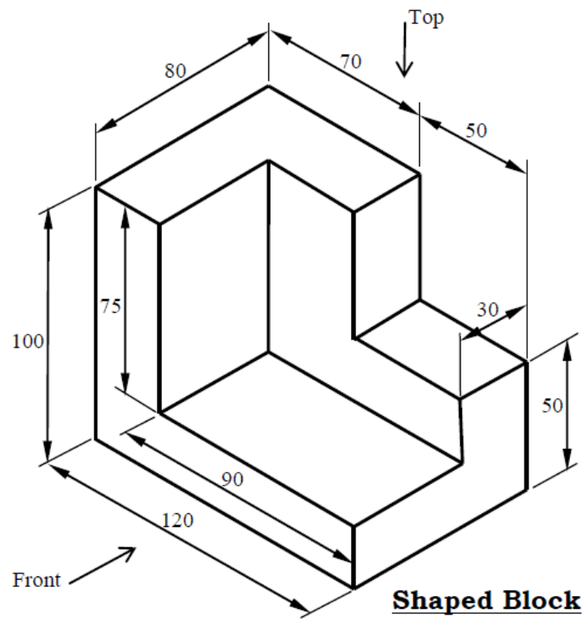


SHEET 2

QUESTION 1

Given: The isometric view of a shaped block.

Required: Draw the first angle orthographic projection of the shaped block to a scale of 1:2



Shaped Block