

**WEEK: TWO and THREE.**

**SUBJECT: TECHNICAL DRAWING.**

**CLASS: SS1.**

**TOPIC: DRAWING MATERIALS AND EQUIPMENT**

## **DRAWING MATERIALS AND EQUIPMENT**

Technical drawing is defined as a graphical representation of figures by engineers, technicians, artisans, draughts men, architects and students for effective communication in the industrial sector. The word “graph” means pencil and paper work, “graph” is paper, while “graphite” represents pencil lead.

### **Importance of technical drawing**

**The importance of technical are as follows;**

1. It is an effective medium for communication among technical professional members.
2. It increases the sense of reasoning and accurate judgment.
3. It helps to design all kinds of objects in concise approach.
4. It enhances creativity and analytical reasoning.
5. It builds one’s stress immunity.
6. It develops the psychomotor domain etc.

### **Branches of technical drawing.**

**Technical drawing is divided into;**

- a. Plane geometry: This deals with objects in two dimensions ie, length and height. Examples are triangles, polygons, circles etc.
- b. Solid geometry: This deals with three dimensional objects ie, length, width, and height. Example are prisms, pyramids, spheres etc.
- c. Mechanical drawing: This deals with the drawing of machine parts, assembly, sectioning, screw threads, gears and pinions, exploded views, part list etc.
- d. Building drawing: This is a sequential completion of a building from foundation to roofing according to specifications on paper.
- e. Electrical drawing: This deals with the electrical network/ fitting of a building.

### **Drawing material and equipment**

Technical drawing requires the integration of the psychomotor and the cognitive domain which enables one to manipulate the instruments and relax the muscles. For effective technical drawing to be carried out, the following instruments must be readily available.

## **They include;**

1. Drawing board
2. Tee-square
3. Set-square ( $30^{\circ}$ ,  $45^{\circ}$  and  $60^{\circ}$ )
4. Set of French or flexible curves.
5. Pair of dividers
6. Pair of compasses
7. Protractor
8. Set of pencils, HB, 2H and H
9. Pencil cleaner and erasers
10. Pencil sharpeners
11. Drawing paper/ cardboard sheet
12. Tapes, pins, clips
13. Engineering drawing sets
14. Scale rule
15. Handkerchief or dusting brush.
16. Template etc.

## **Application of drawing instruments**

1. Drawing board: This is a smooth wooden or plastic platform that enables us to place our drawing paper and carry-out our technical drawing exercises. The recommended size for O-level is 650 x 470mm.
2. Pair of compasses: This is used for circumscribing or inscribing an arc, circles and semi-circles etc.
3. Set-square: These are triangular instruments used with rule to draw vertical and inclined lines. There are  $30^{\circ}$ ,  $45^{\circ}$ ,  $60^{\circ}$  and  $90^{\circ}$  set-squares.
4. Protractor: This is an instrument used to obtain and measure angles.
5. Template: These are geometrical patterns of various shapes and sizes; circles, square, hexagons, ellipse etc.

## **ASSIGNMENT:**

1. **Sketch the following instruments;**
  - a. Protractor
  - b. pair of compasses
  - c. tee-square
  - d. meter rule and
  - e.  $60^{\circ}/30^{\circ}$  set-squares.
2. **Apart from the instruments listed above, list any other five you know.**