# WORKSHEET NO: 8

### INDUSTRIAL ARTS DEPARTMENT LESSON PLAN

| Subject: Basic Technology | | Year/Level: 9 |
|---|---|---|
| | | **Date: 19/07/21** |
| Topic:     Geometry (Ellipse) | | |

**LESSON NOTES:**

**Ellipse:**

An ellipse is a closed symmetrical curve with a changing diameter which varies between the major axis and the minor axis. An ellipse may be defined geometrically as the curve traced out by a point (P) which moves so that the sum of its distances from two fixed points (F and F') is constant and equal to the major axis.
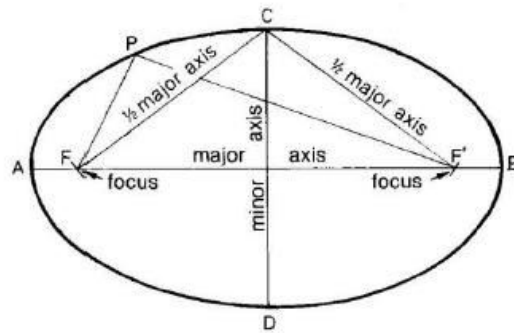
In the diagram shown on the right AB is the major axis; CD is the minor axis and F, $F^1$ are the focal points. To find the focal points, take half the major axis either from C or D then strike an arc to cut either side of the major axis.

An ellipse is also the true shape formed by an inclined cutting plane passing through both the sides of a cone or a cylinder.
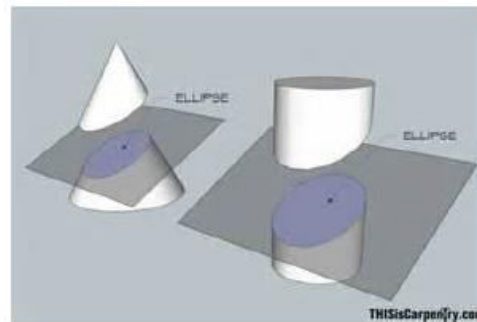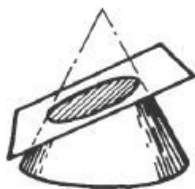






**1.**

**Construction of Ellipse:**

**Method 1: Concentric Circle Method**

**Step 1:**

Draw a circle from the center "O" using the radius OA of the major axis.

Major axis- the longest line that runs horizontally.

**Step 2:**

Draw a circle from the center "O" using the radius OC of the minor axis.

Minor axis- the shortest line that runs vertically.

**Step 3:**

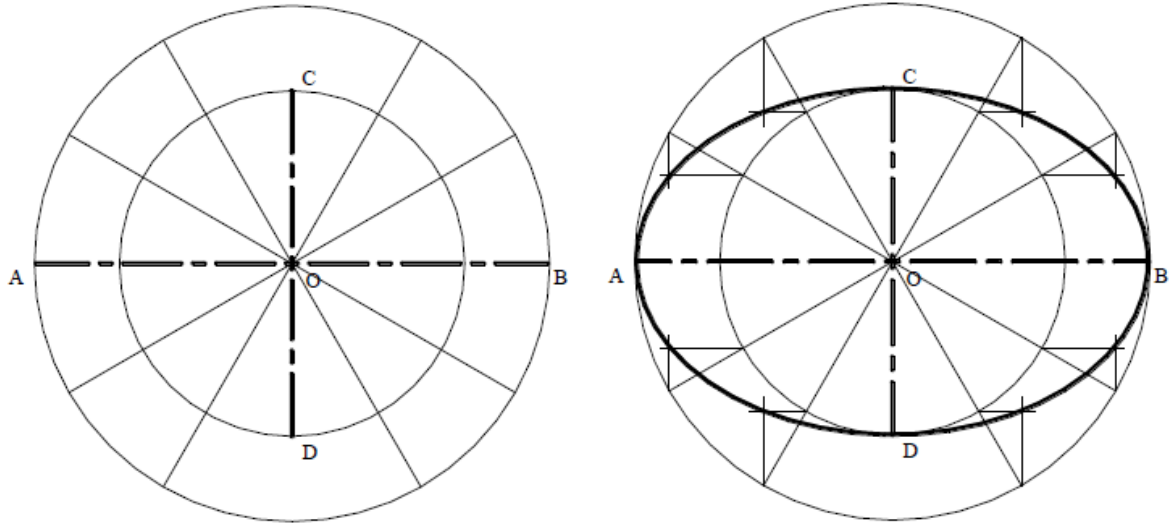Divide the large circle into twelve equal parts.

**Step 4:**

From the 8 points of the larger circle, draw line perpendicular to the major axis AB inwards.

**Step 5:**

From the 8 points of the smaller circle, draw lines perpendicular to the minor axis CD outwards.

**Step 6:**

From the intersection of the two lines of each divisor, draw a smoooth curve to get the ellipse.

2.

1. Given: A major axis AB and minor axis CD
   Required: Construct an ellipse using concentric method.



3