

DAV INSTITUTIONS, ODISHA, ZONE-I

DAV PUBLIC SCHOOL, PPL TOWNSHIP, PARADEEP.

CLASS - IV

SUBJECT- MATHEMATICS

TOPIC- ANGLES

prepared by:

Mrs Niyati Priyadarsini Nayak

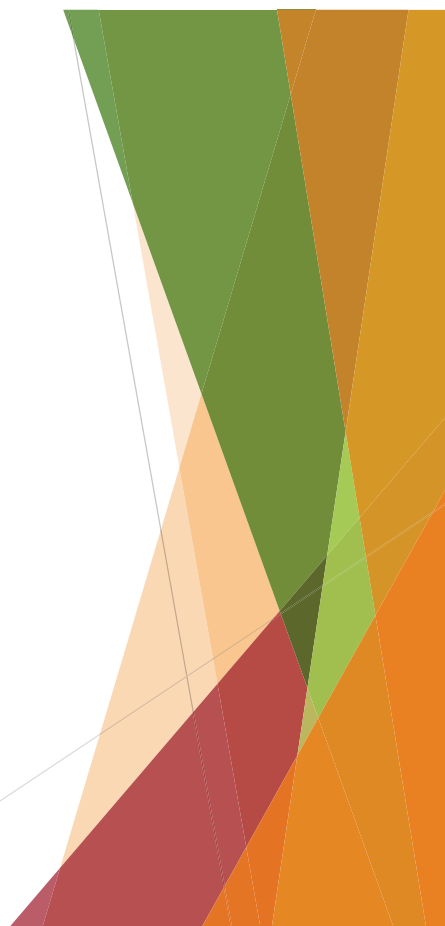
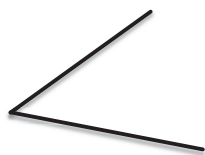
Learning objectives

After learning this chapter, the students will be able to

- ▶ Relate basic concepts like rays to angles .
- ▶ Define an angle.
- ▶ Identify the arms and vertex of an angle.
- ▶ Name an angle .
- ▶ Draw an angle.
- ▶ Measure an angle using protractor
- ▶ Know the different types of angles like acute, obtuse, right and straight angles
- ▶ Differentiate between acute, obtuse, right and straight angles.
- ▶ Compare different types of angle.
- ▶ Identify angles in the surrounding.
- ▶ Relate angles to yoga postures.

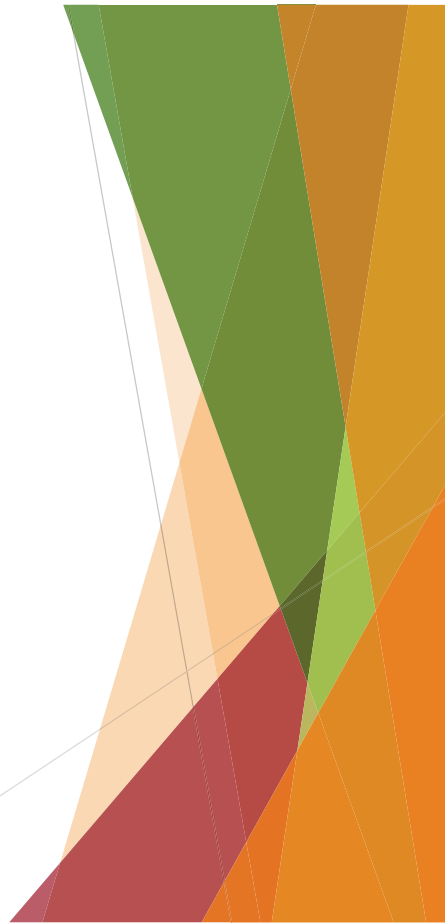
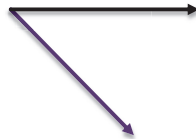
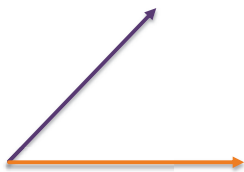


ANGLES



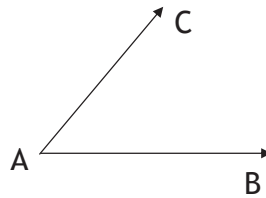
DEFINITION

- ▶ AN ANGLE IS FORMED WHEN TWO RAYS MEET AT A COMMON POINT



Arms and vertex

An angle has two arms and one vertex.



The two rays are AB and AC

End point of AB is A

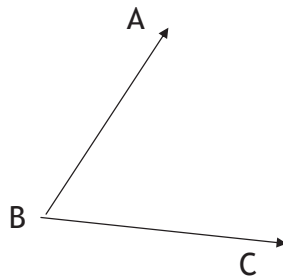
End point of AC is A

An angle is formed.

The two rays forming an angle are called its arms. (here AB and AC are the arms)

The common point where the two rays meet is called vertex. (here the vertex is A)

Naming an Angle



Look at this angle. Its arms are BA and BC. Its vertex is B.

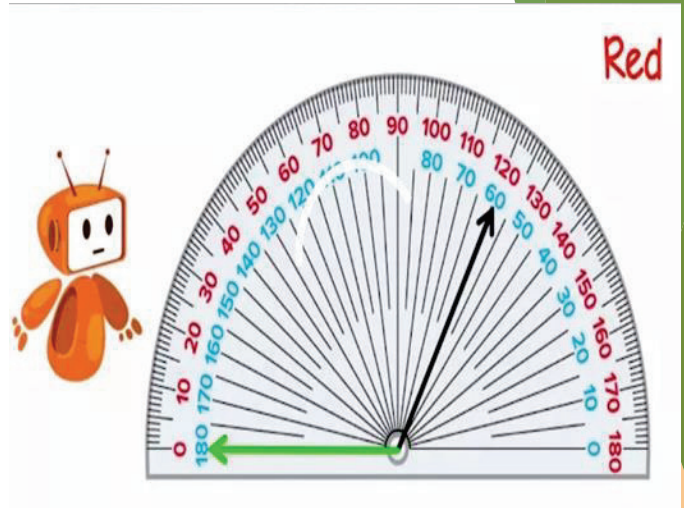
It can be named as angle ABC or $\angle ABC$

It can also be named as angle CBA or $\angle CBA$. See that the letter denoting the vertex is always in the middle.

The symbol used for an angle is \angle

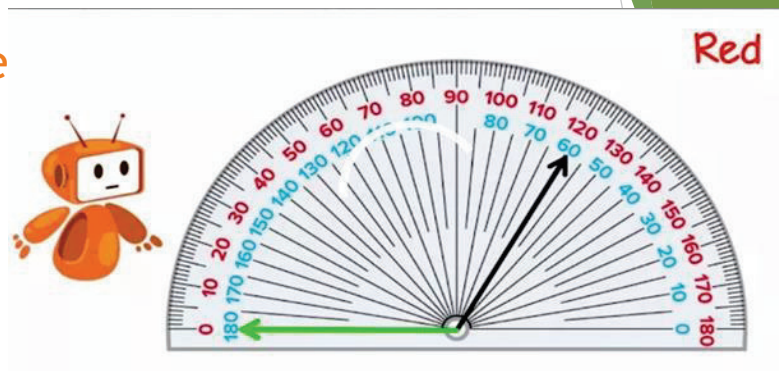
Measuring Angles

https://www.youtube.com/watch?v=Gzd_lsNwTOI



- ❖ The instrument that we use to measure angles is called **Protractor**.
- ❖ The standard unit of measuring an angle is degrees. The special symbol ($^{\circ}$) is used for it.
- ❖ There two rows of numbers marked in the protractor. The numbers are marked from 0 to 180.
- ❖ Here the set of numbers written in red are to measure angles facing left to right.
- ❖ The set of numbers written in blue are to measure angles facing right to left.

steps to measure an angle



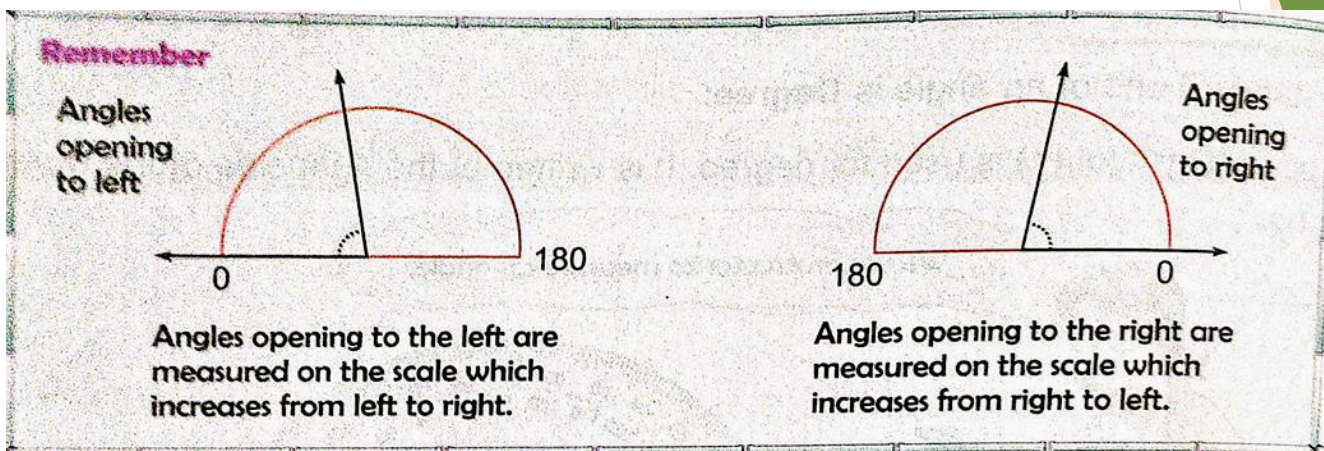
Step 1: place the centre of the protractor on the vertex of the angle and adjust the protractor so that the base line of the protractor falls along one arm of the angle.

Step 2: Look for the scale which begins with zero. Here the arm coinciding the base line points towards zero in the scale which is written in red.

Step 3: Read the mark on the protractor where the other arm of the angle crosses the same scale (red scale here) on the protractor.

Here as shown in the figure the angle measures 120°

Measuring angles



Constructing an angle

Step 1: Draw a ray. The end point of the ray will be the vertex of the angle.

Step 2: Place the centre of the protractor on the end point of the ray (vertex).

Step 3: Coincide the ray with the base line of the protractor.

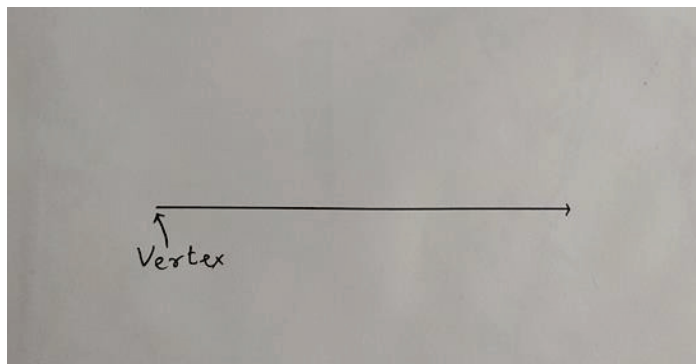
Step 4: Look at the scale which reads zero along the ray which coincides with the base line.

Step 5: Move along that scale and mark a point at the required number of degrees.

Step 6: Remove the protractor and join the point you have marked now with the vertex of the **angle**. (Remember, the end point of the ray is the vertex of the angle.)

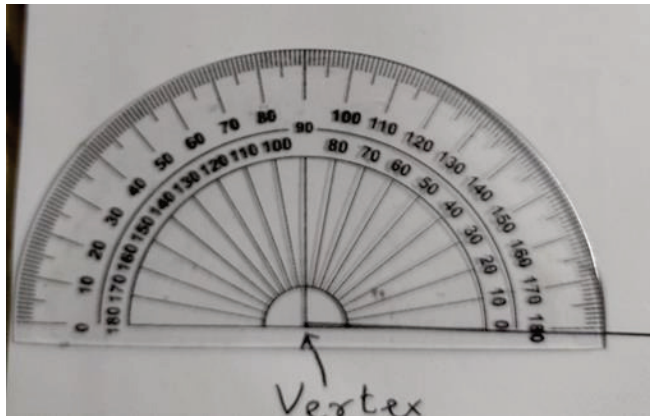
Lets see the steps one by one

Constructing an angle



Step 1: Draw a ray. The end point of the ray will be the vertex of the angle

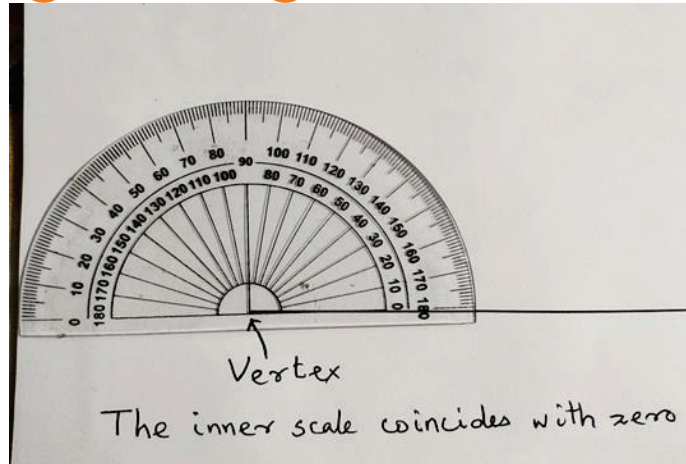
Constructing an angle



Step 2: Place the centre of the protractor on the end point of the ray (vertex).

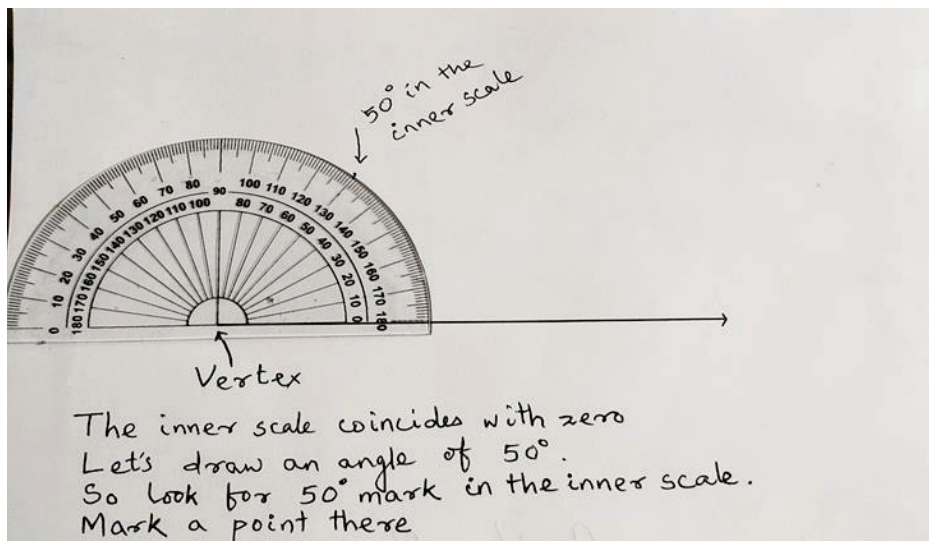
Step 3: Coincide the ray with the base line of the protractor.

Constructing an angle



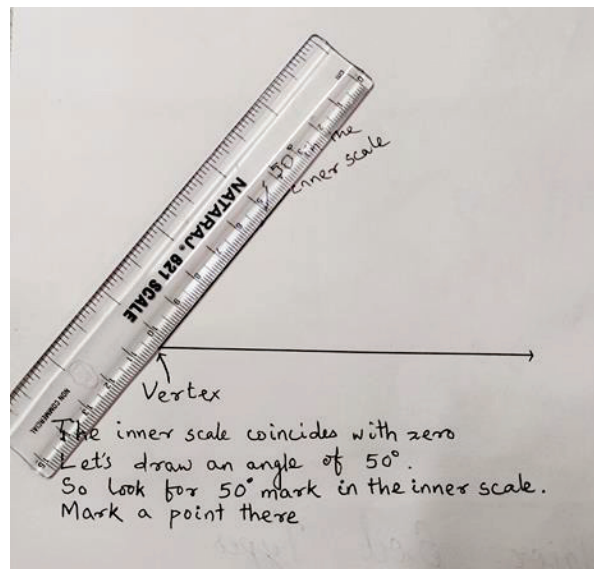
Step 4: Look at the scale which reads zero along the ray which coincides with the base line.

Constructing an angle



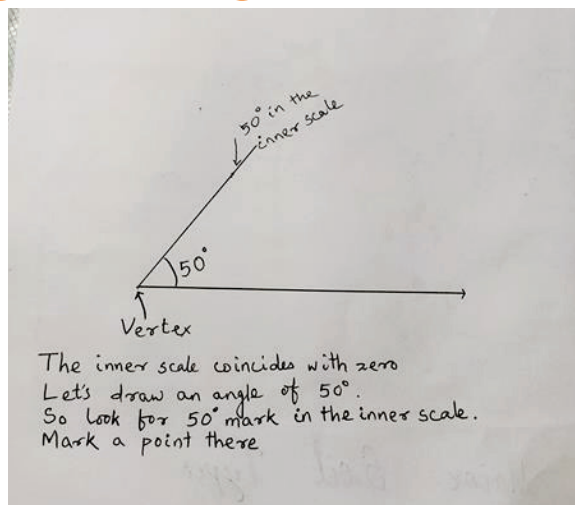
Step 5: Move along that scale and mark a point at the required number of degrees.

Constructing an angle



Step 6: Remove the protractor and join the point you have marked now with the vertex of the **angle**. (Remember, the end point of the ray is the vertex of the angle.)

Constructing an angle



Now you have constructed an angle of 50°. Give it a name.

Types of angles

Based on the degree measure, the angles are classified as:

- ❖ Acute angle
- ❖ Right angle
- ❖ Obtuse angle
- ❖ Straight angle



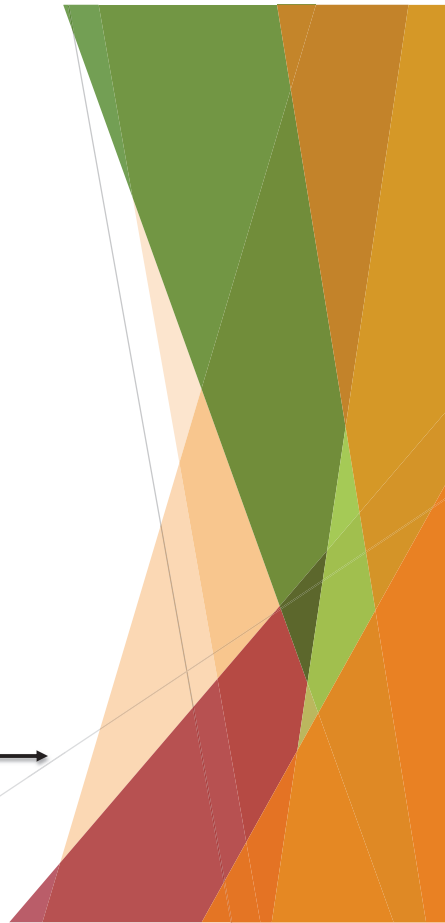
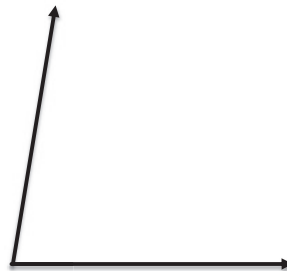
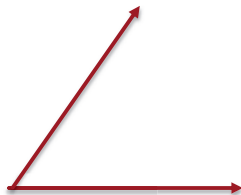
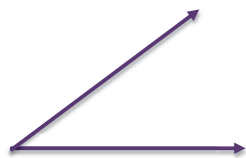
Types of angles

<https://www.youtube.com/watch?v=NVuMULQjb3o>

- ❖ Acute angle- Angles which measure more than zero degree but less than 90 degree are called acute angles.
- ❖ Right angle- Angles which measure exactly 90° are called right angles
- ❖ Obtuse angle- Angles which measure more than 90° but less than 180° are called obtuse angles.
- ❖ Straight angle- Angles which measure exactly 180° are called straight angles.

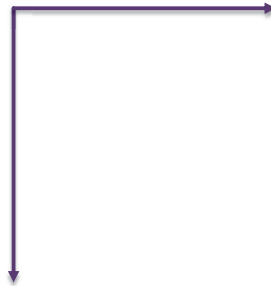
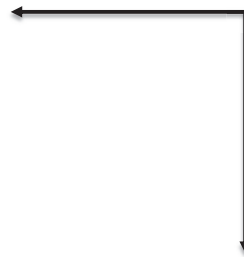
Types of angles

Acute Angles



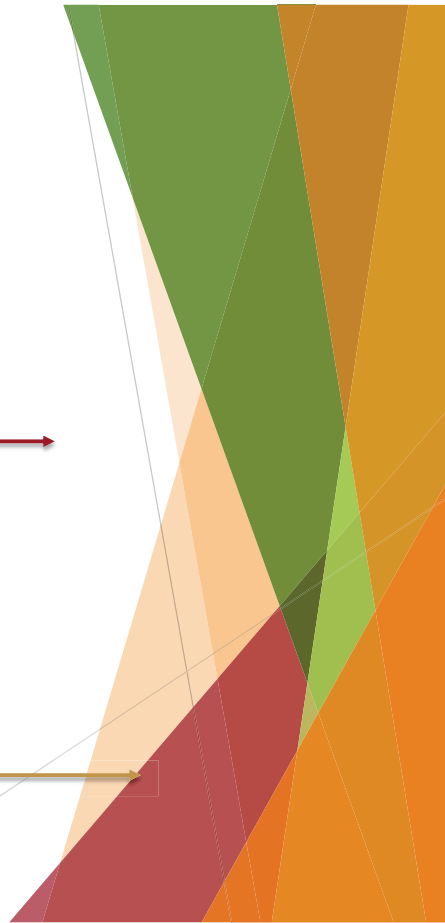
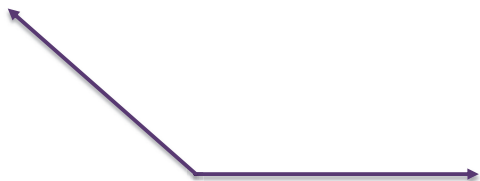
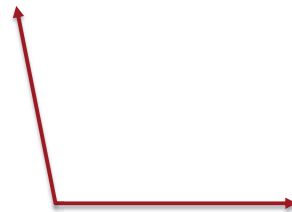
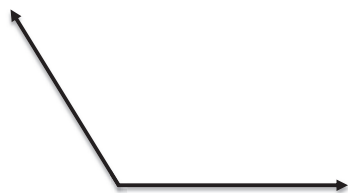
Types of angles

Right Angles



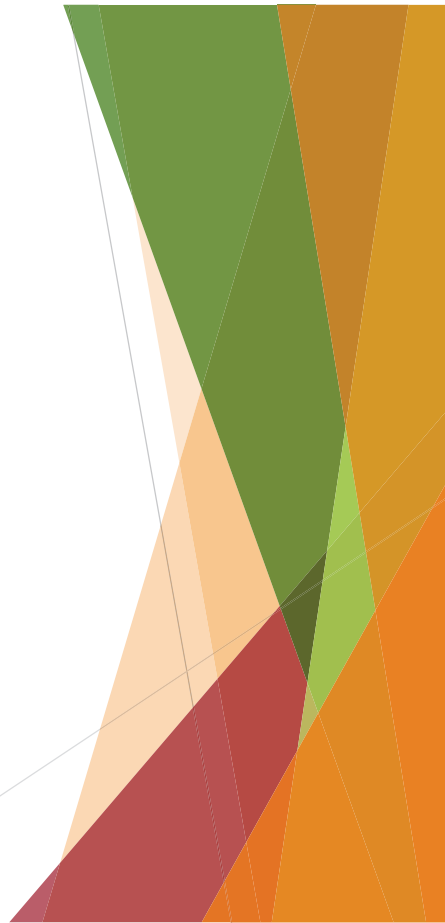
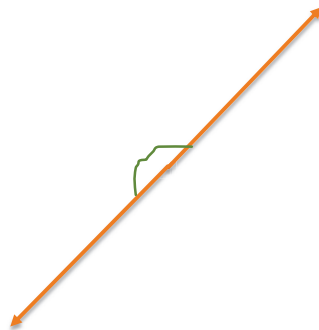
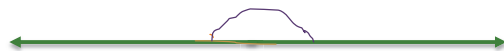
Types of angles

Obtuse Angles



Types of angles

Straight Angles



Let's have some fun

<https://www.youtube.com/watch?v=lveeVnkc2k&feature=youtu.be>

For this activity, you need

Coloured paper

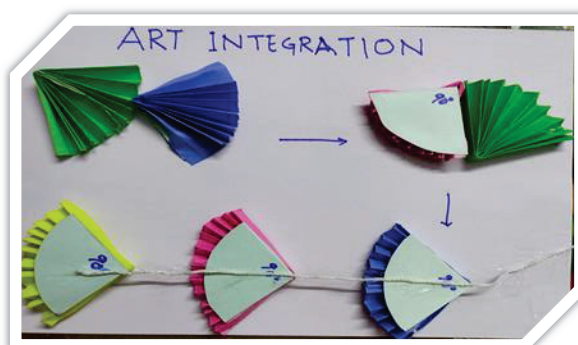
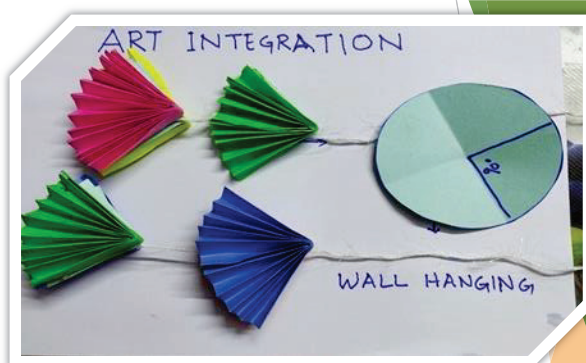
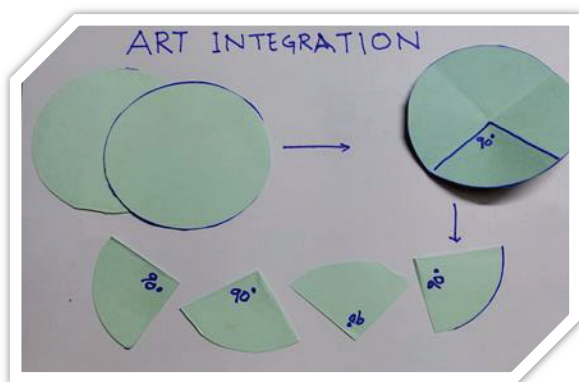
Glue

Thread

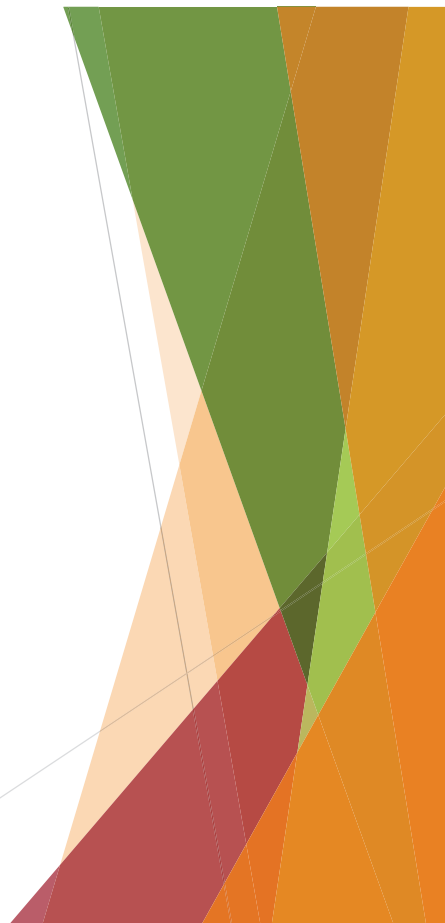
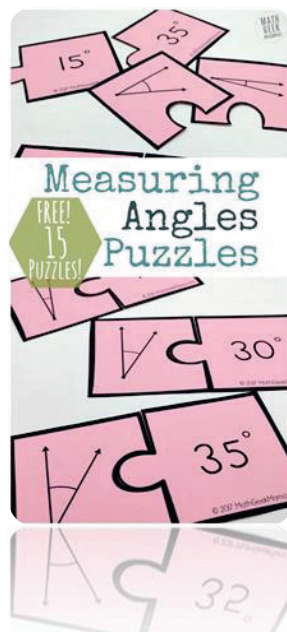
Scissors



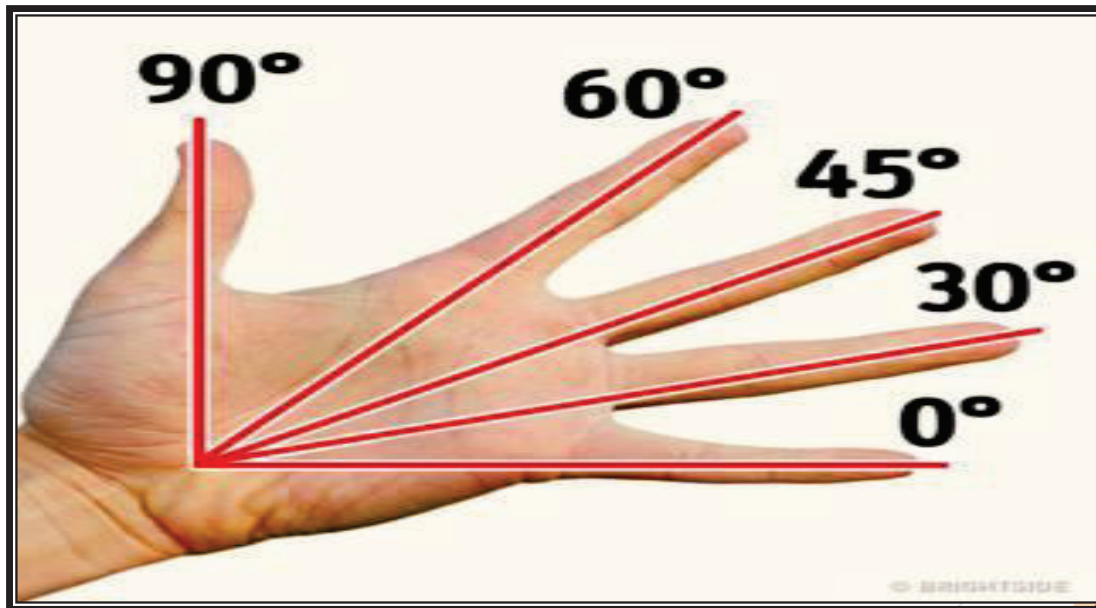
ART INTEGRATION



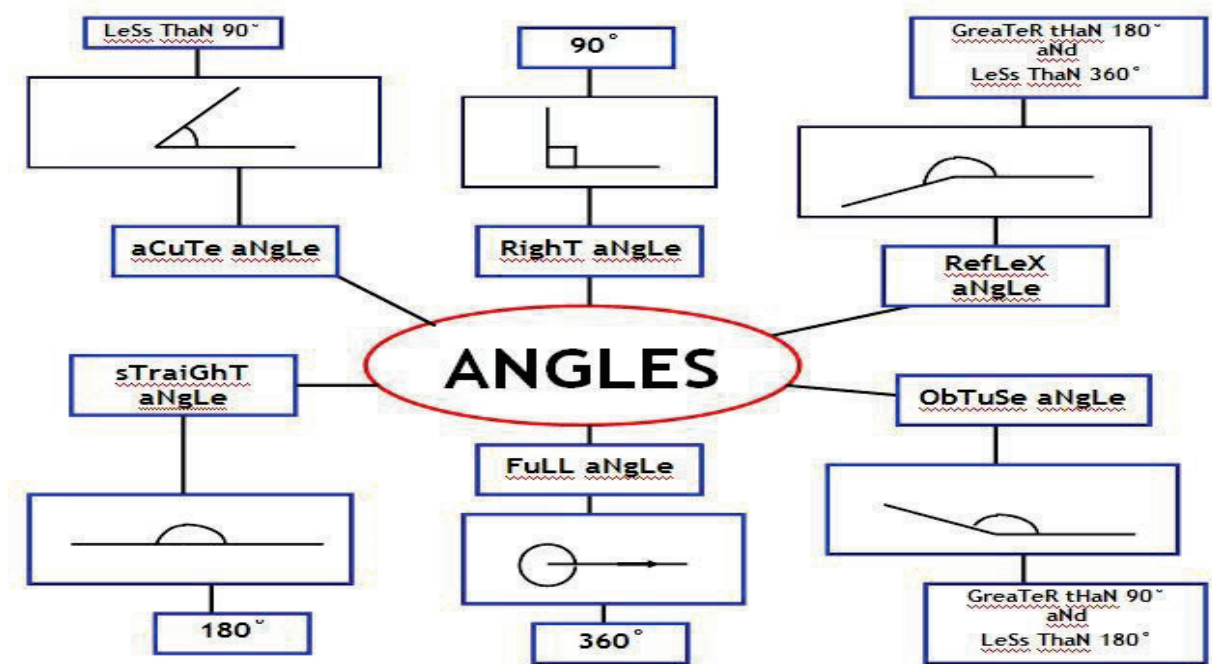
Projects to be given :
Prepare Mathematics Puzzle set



Project2: Prepare a model as shown below



Quick Review



ANGLES

An angle is formed when two rays meet at a common point. The two rays that form an angle are called arms and the common point is called vertex of the angle

An angle can be measured by using a protractor. The standard unit of measuring an angle is degrees.

Types of Angles

Acute angle- measures more than 0° and less than 180°

Right angle- measures 90°

Obtuse angles- measures more than 90° and less than 180°

Straight angle- measures 180°



