DAV INSTITUTIONS,ODISHA, ZONE-I

DAV PUBLIC SCHOOL, PPL TOWNSHIP, PARADEEP.

CLASS – IV

SUBJECT- MATHEMATICS

TOPIC- ANGLES

prepared by:

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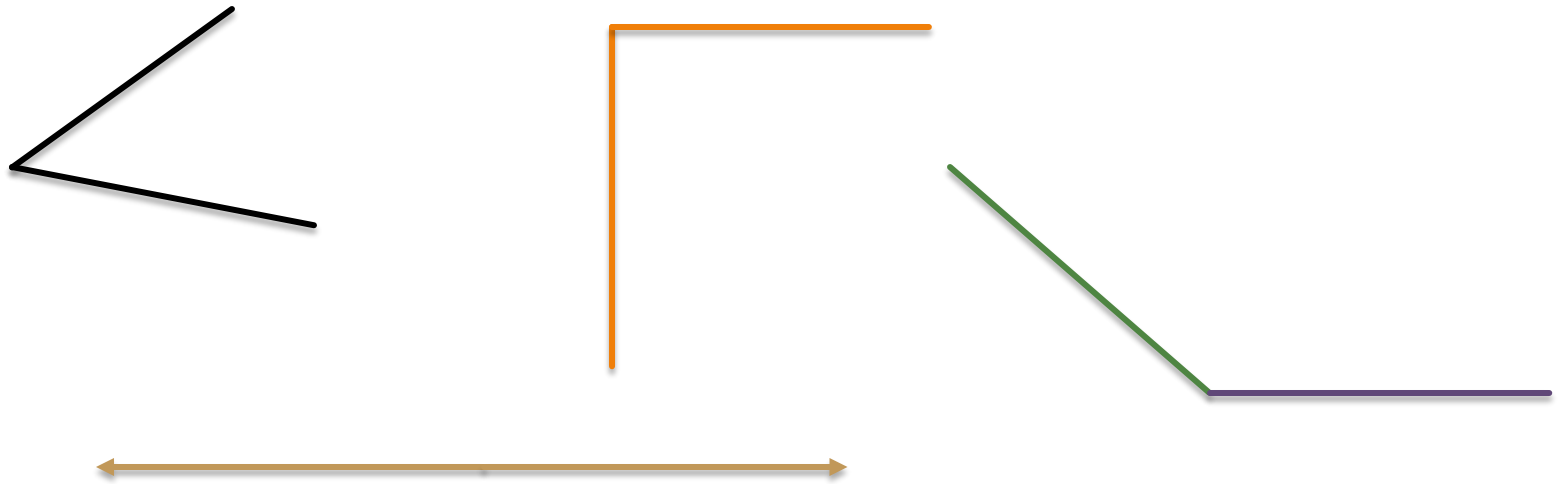
Learning objectives

After learning this chapter, the students will be able to

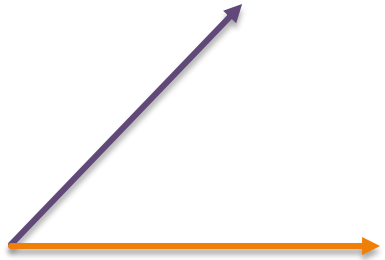
- Relate basic concepts like rays to angles .
- Define an angle.
- Identify the arms and vertex of an angle.
- Name an angle .
- Draw an angle.
- Measure an angle using protractor
- Know the different types of angles like acute, obtuse, right and straight angles
- Differentiate between acute, obtuse,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

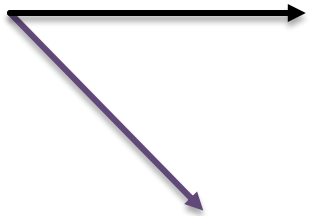
ANGLES



DEFINITION

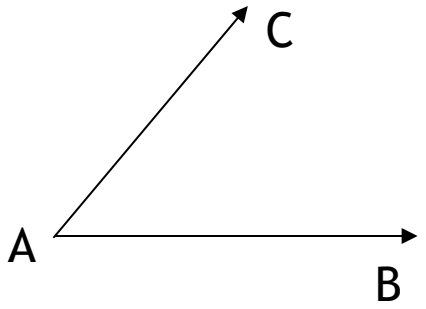
- AN ANGLE IS FORMED WHEN TWO RAYS MEET AT A COMMON POINT





Arms and vertex

An angle has two arms and one vertex.



The two rays are AB and AC

End point of AB is A

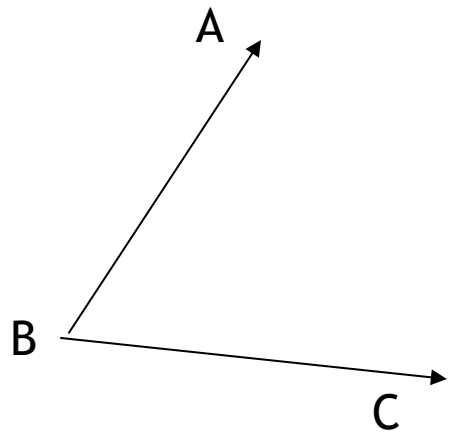
End point of AC is A

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.

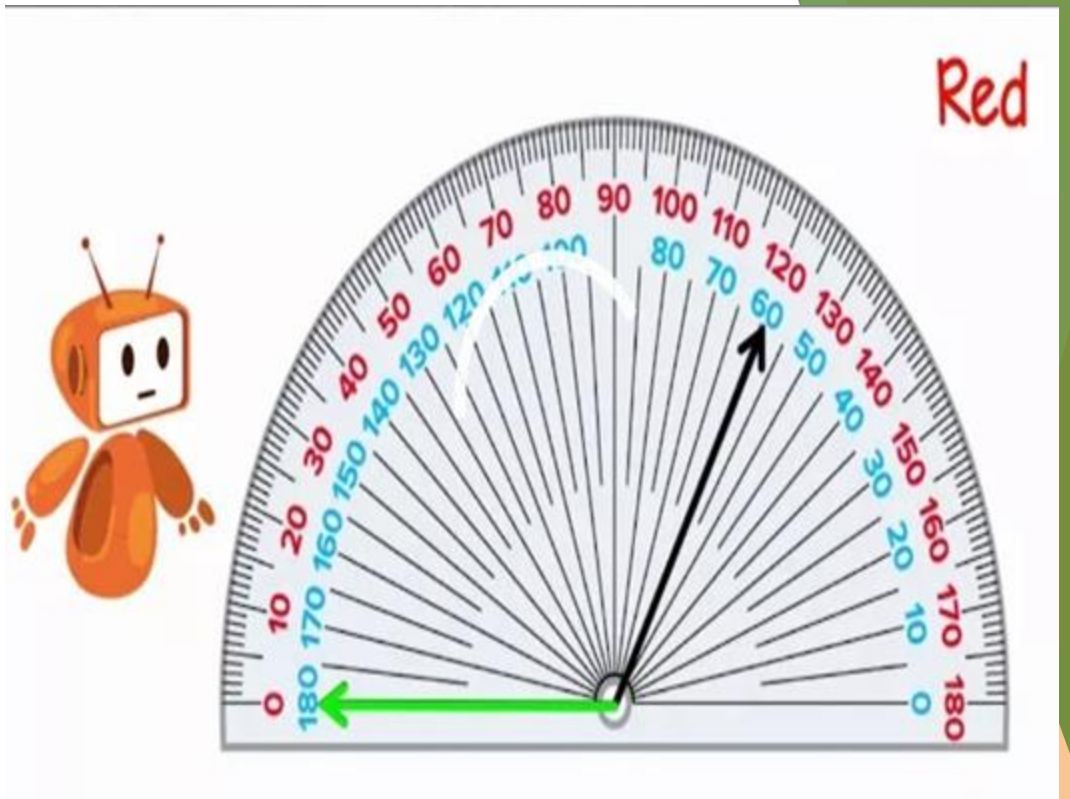
It can be named as angle ABC or $\angle$ ABC

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 $\angle$

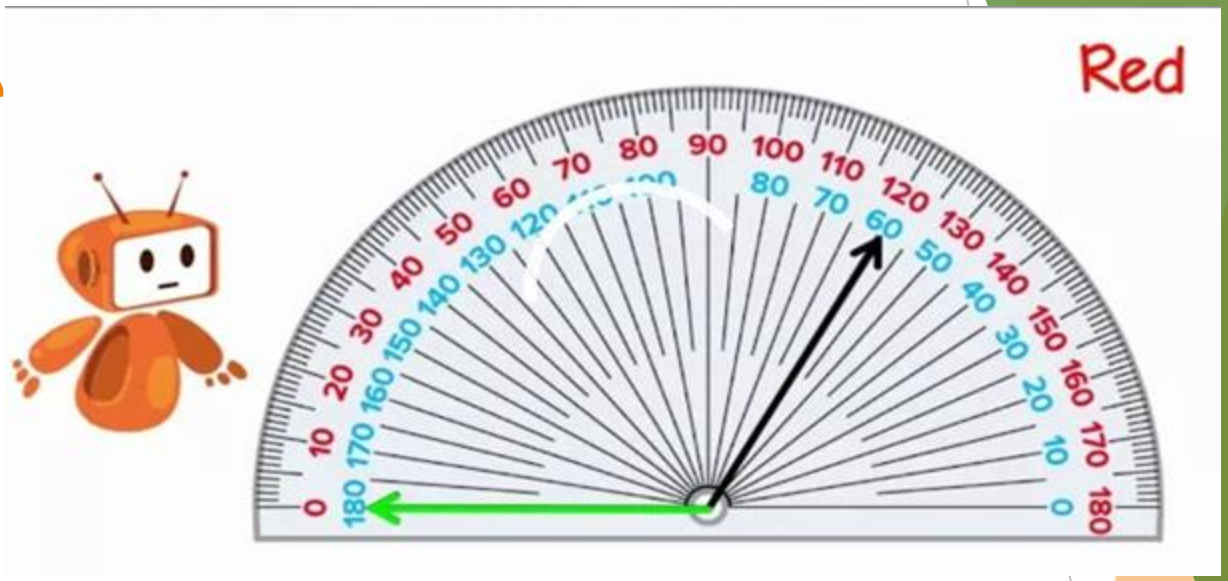
Measuring Angles

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 (°) 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 proctractor on the vertex of the angle and adjust the protractor so that the base line of the proctor 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.

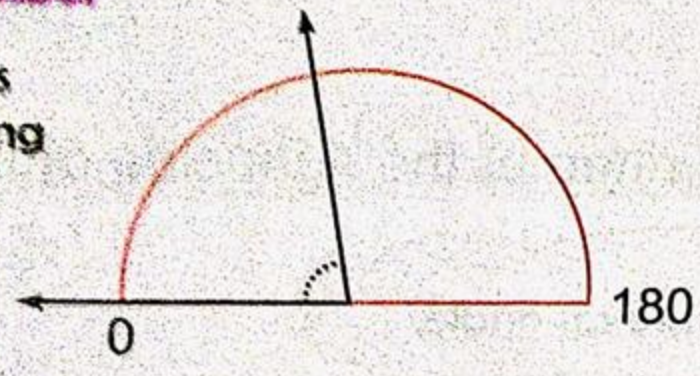
Step 3: Read the mark on the protractor where the other arm of the angle crosses the same scale (red scale here) on the proctractor.

Here as shown in the figure the angle measures 120°

Measuring angles

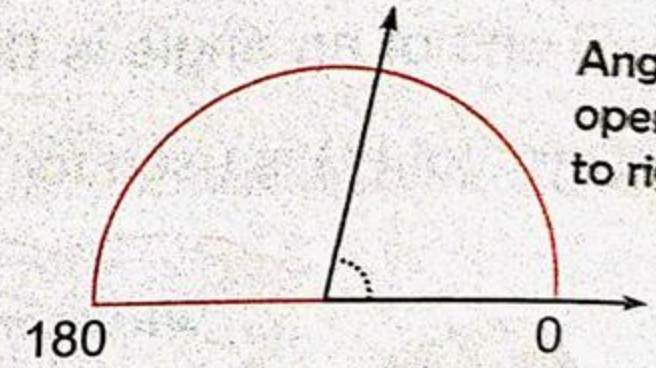
Remember

Angles opening to left



Angles opening to the left are measured on the scale which increases from left to right.

Angles opening to right



Angles opening to the right are measured on the scale which increases from right to left.

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.

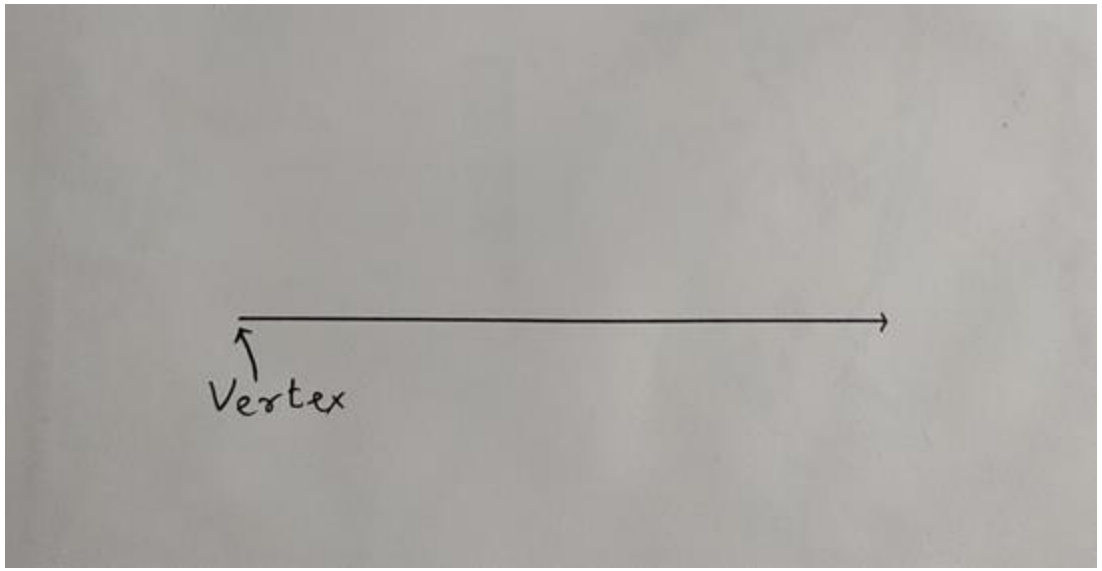
Step 4: Look at the scale which reads zero along the ray which coincides with the base line.

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.)

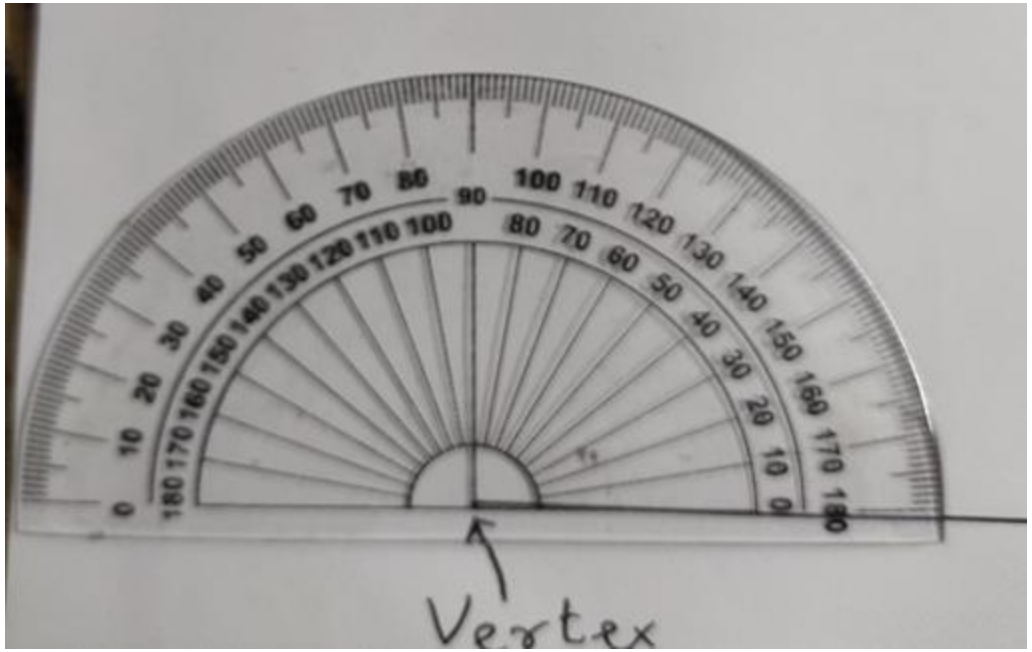
Lets see the steps one by one …….

Constructing an angle



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

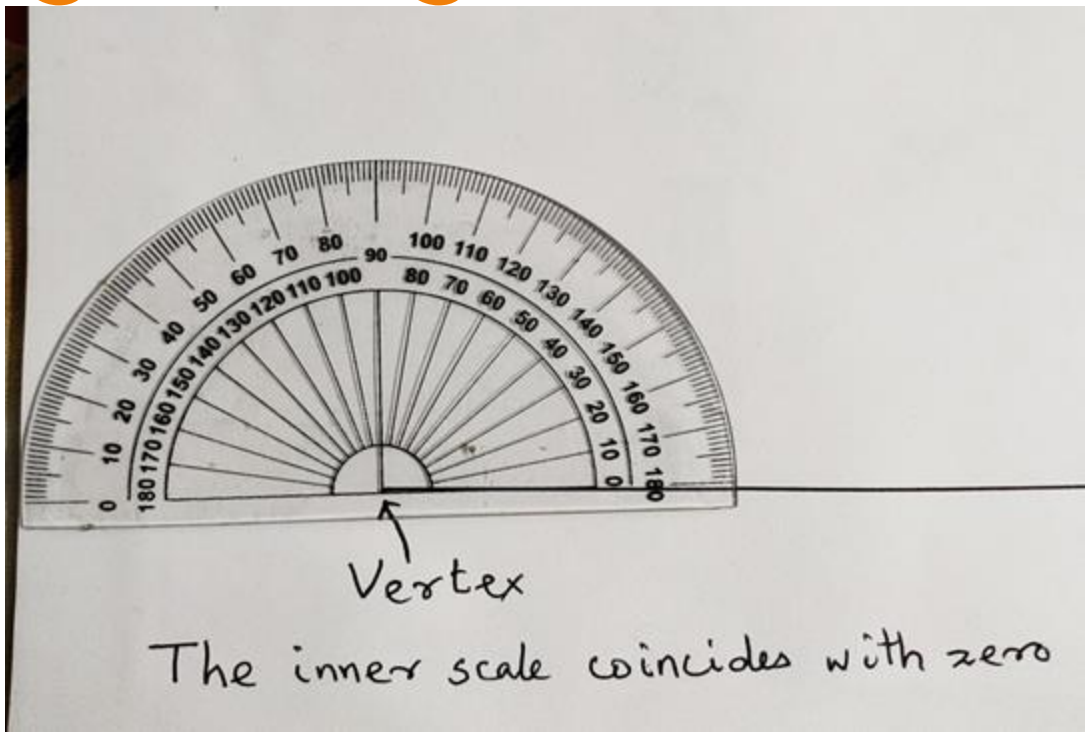
Constructing an angle



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

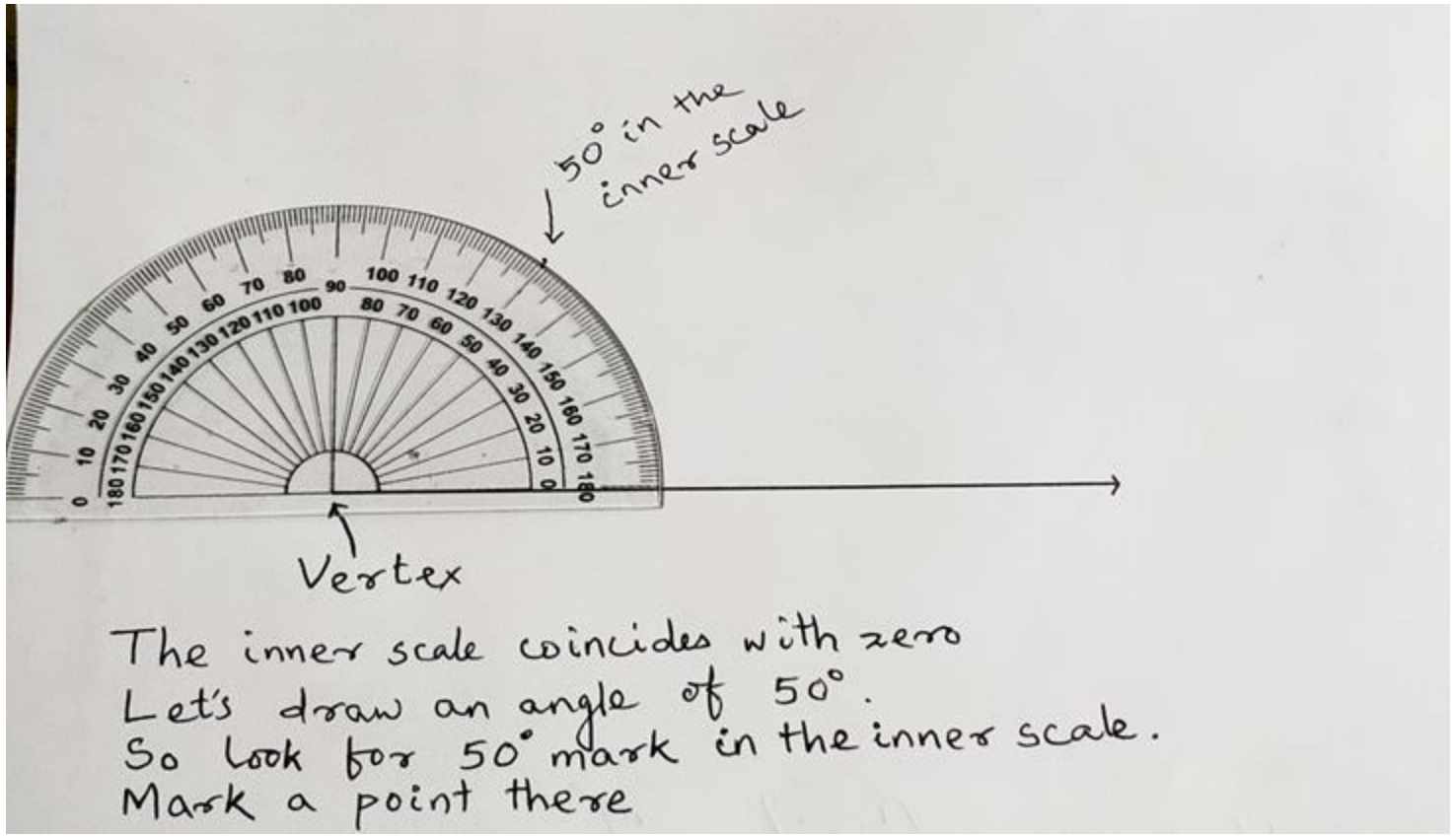
Step 3: Coincide the ray with the base line of the proctractor.

Constructing an angle



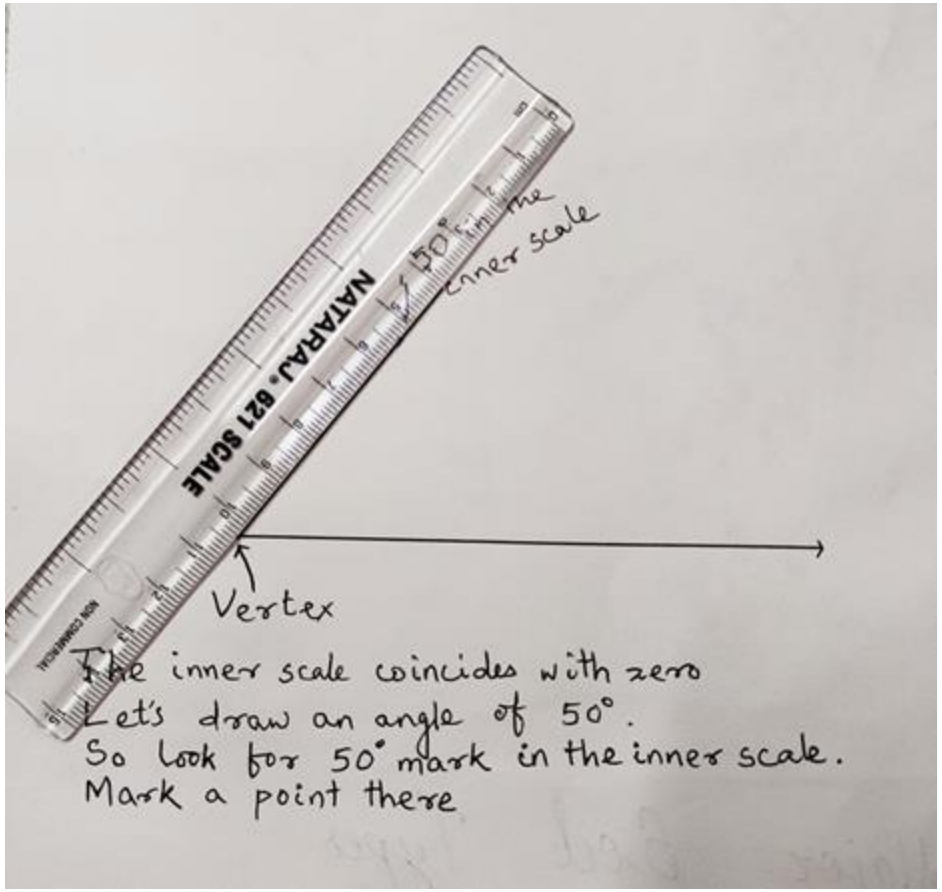
Step 4: Look at the scale which reads zero along the ray which coincides with the base line.

Constructing an angle



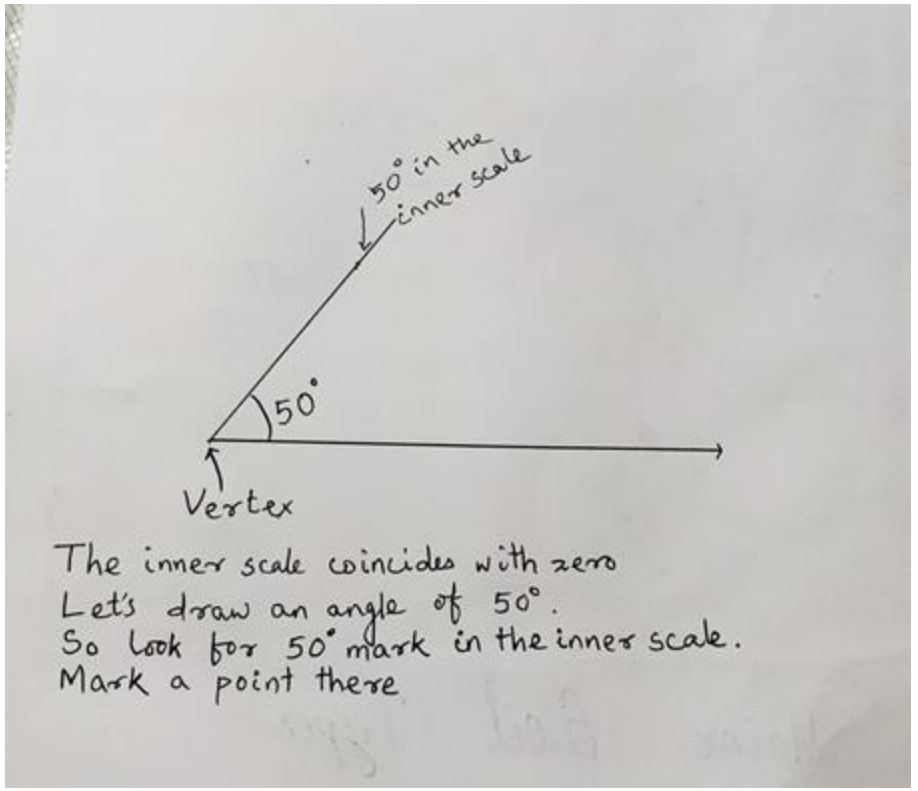
Step 5: Move along that scale and mark a point at the required number of degrees.

Constructing an angle



Step 6: Remove the proctractor 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

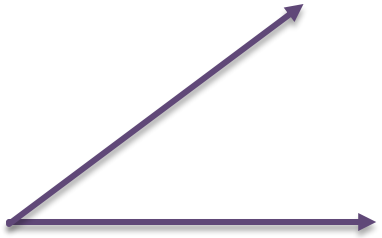
Based on the degree measure, the angles are classified as:

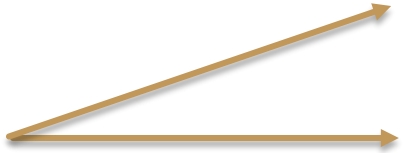
- **Acute angle**
- **Right angle**
- **Obtuse angle**
- **Straight angle**

Types of angles https://www.youtube.com/watch?v=NVuMULQjb3o

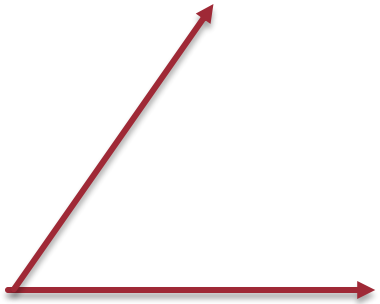
- Acute angle- Angles which measure more than zero degree but less than 90 degree are called acute angles.
- Right angle- Angles which measure exactly 90° are called right angles
- Obtuse angle- Angles which measure more than 90°but less than 180°are called obtuse angles.
- Straight angle- Angles which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

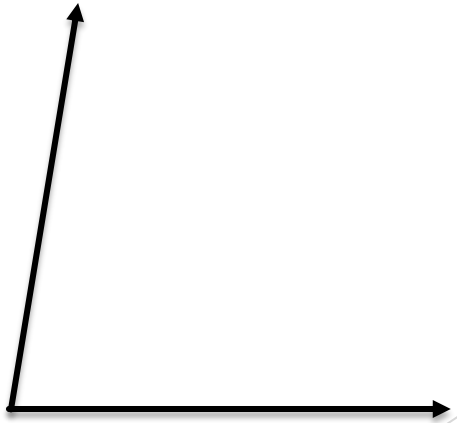
Types of angles



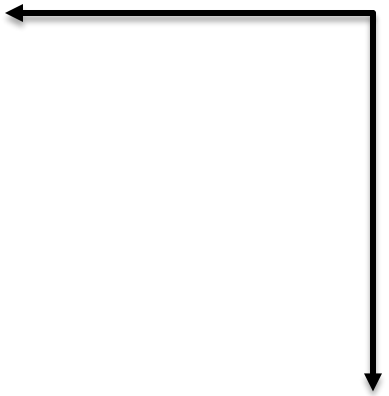


Acute Angles

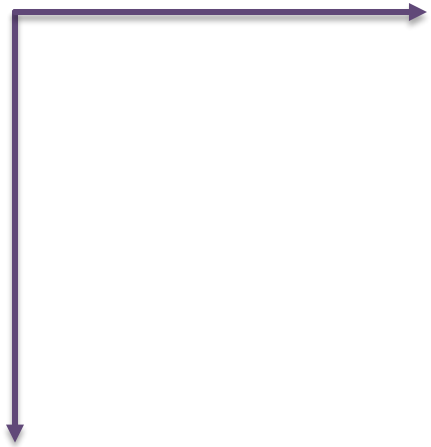




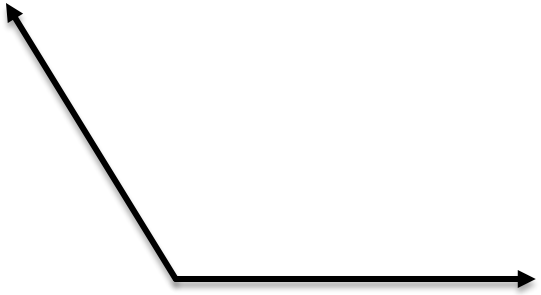
Types of angles



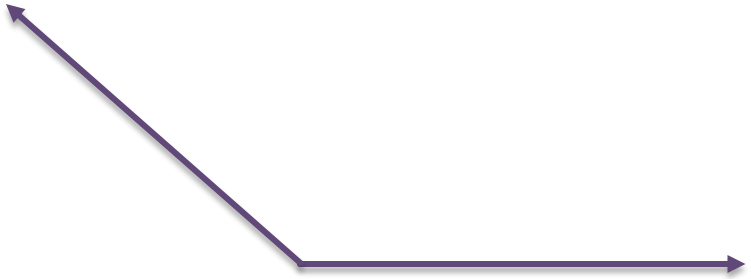
Right Angles



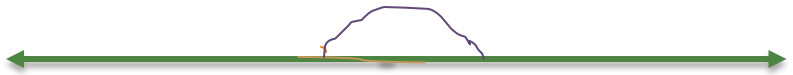
Types of angles



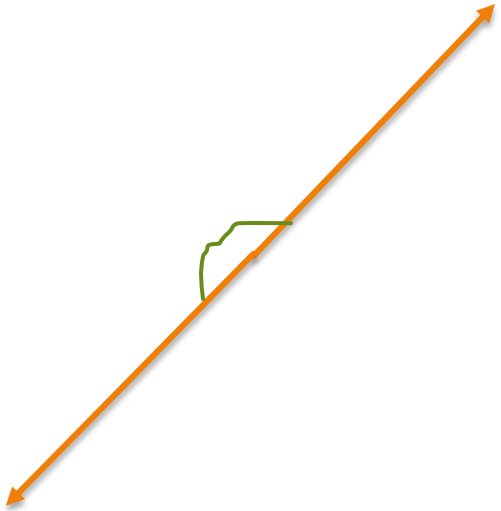
Obtuse Angles



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

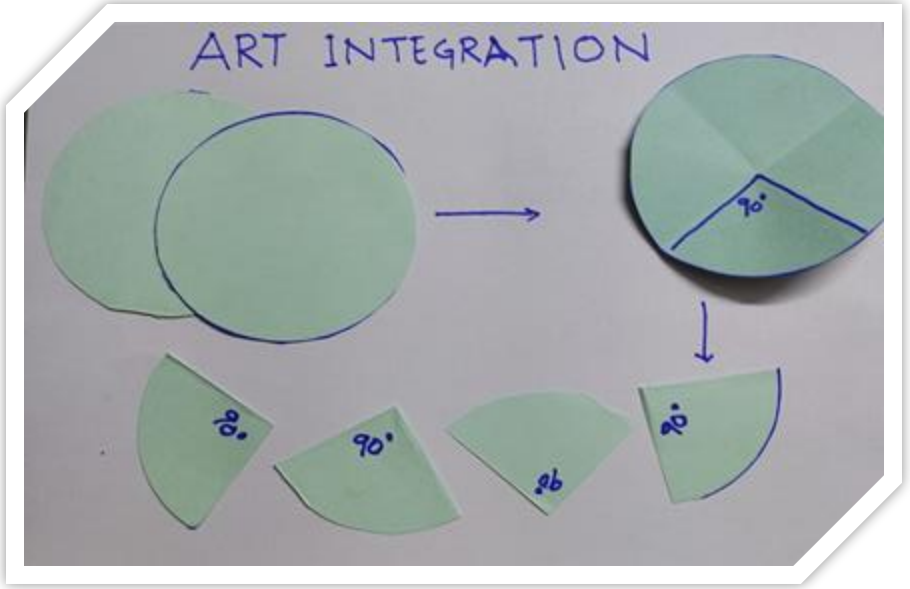
Coloured paper

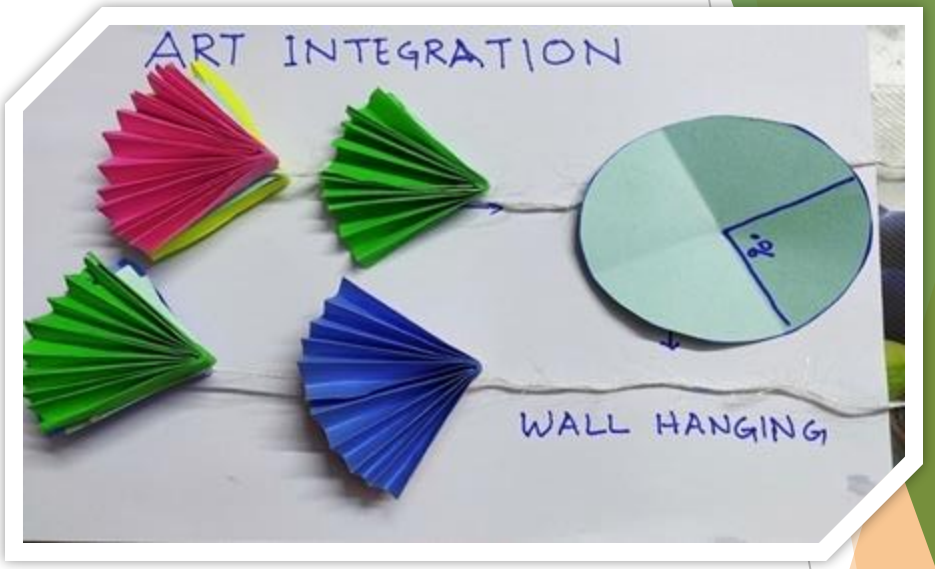
Glue

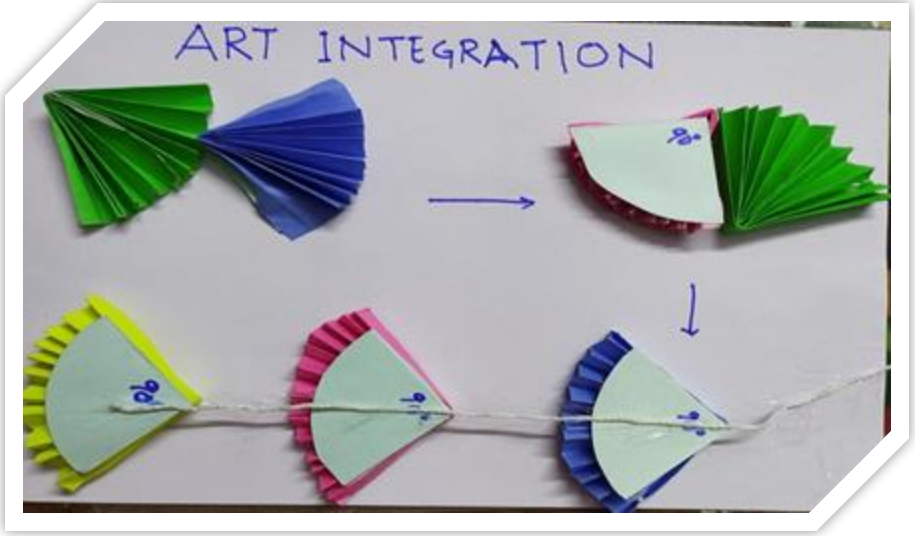
Thread

Scissors

ART INTEGRATION







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SUBJECT – MATHEMATICS

CLASS – IV CHAPTER- ANGLES

WORKSHEETS(Basic) FM-20

Choose the correct option **(2×1=2)**

1.The common point where the two arms of an angle meet is called the_____.

i)Vertex ii) degree iii) rays iv) straight

2.The angle of measure _____is an obtuse angle?

i)89° ii) 90° iii) 91° iv) 50°

Fill in the blanks **(2×1=2)**

3.The two rays forming an angle are called the _____of the angle.

4. 75° angle is an _____ angle.

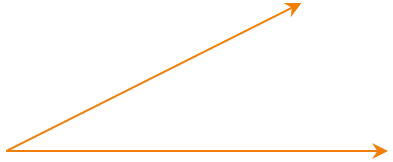
Answer the following questions **(2×1=2)**

5.Write the number of arms and vertices present in an angle.

6.What is a straight angle?

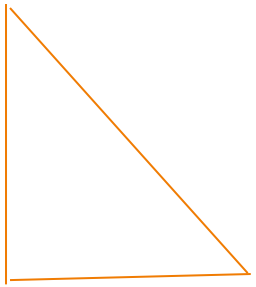
Short answer type questions-I **(2×2=4)**

7.Measure the given angle using your protractor



8.How many angles are there in the following figure?

Short answer type questions-II **(2×3=6)**



9.Look at the figure and answer.

a)How many acute angles are there?

b)How many obtuse angles are there?

c)How many right angles are there?

10.What type of angles are the following whose measures are-

(a)35° b)90° c)120°

Long answer type question **(1×4=4)**

11.Draw the following angles of any measure.

(a) Angle ABC-acute angle

(b)Angle XYZ-obtuse angle

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SUBJECT – MATHEMATICS

CLASS – IV CHAPTER- ANGLES

WORKCHEETS (STANDARD) FM-20

Choose the correct option **(2×1=2)**

1.The measure of a right angle is always greater than _____angle.

i)acute ii) obtuse iii) straight iv) none of these

2.The angle of measure _____ is a straight angle.

i)100° ii) 90° iii) 180° iv) 50°

Fill in the blanks **(2×1=2)**

3.There are _____right angles in a straight angle.

4.The instrument we use to measure an angle is _____.

Answer the following questions **(2×1=2)**

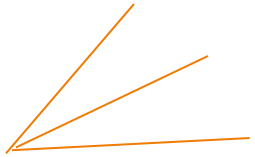
5.How many angles are there in a triangle?

6.Define an obtuse angle?

Short answer type questions-I **(2×2=4)**

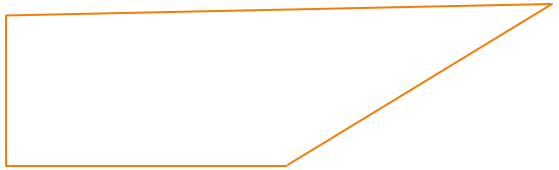
7.Draw an angle of 65° using your protractor.

8.How many angles are there in the following figure?



- **Short answer type questions-II** **(2×3=6)**

9.Look at the figure and answer.



(a)How many acute angles are there?

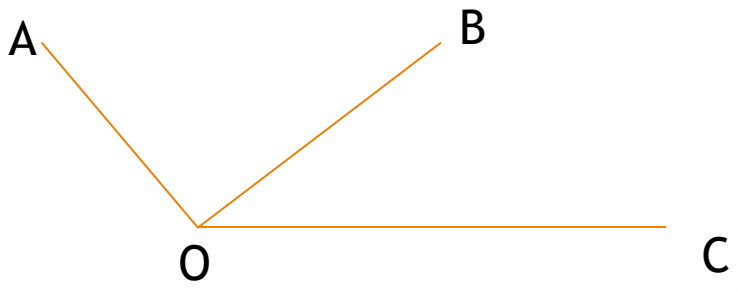
(b)How many obtuse angles are there?

(c)How many right angles are there?

10.Draw an angle whose arms are ML and MN and it is a right angle.

Long answer type question **(1×4=4)**

11. If angle AOB= 60° and angle BOC = 45°, then what will be the measure of angle AOC? What type of angle is it?



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SUBJECT – MATHEMATICS

CLASS – IV CHAPTER- ANGLES

WORKCHEETS (ADVANCE) FM-20

Choose the correct option **(2×1=2)**

1.The measure of an obtuse angle is always less than ____ angle.

i)straight ii) acute iii) right iv) none of these

2.If the angle between the minute hand and hour hand of a clock is a straight angle, then the time is____

i)10 o'clock ii) 6 o'clock iii) 9 o'clock iv) 5 o'clock

Fill in the blanks **(2×1=2)**

3.Sum of two right angles is equal to a_____ angle.

4.A rectangle has ___ right angles.

Answer the following questions **(2×1=2)**

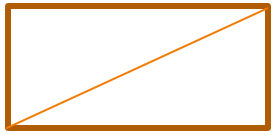
5.Define an acute angle.

6.What is the standard unit of measuring an angle?

Short answer type questions-I **(2×2=4)**

7.Draw an angle PQR= 100° using your protractor.

8.How many angles are there in the following figure?



Short answer type questions-II **(2×3=6)**

9.Look at the following alphabets and select two alphabets each which have

A Y Z N M V E H

a) acute angles only.

b)Right angles only.

c)Both acute angle and obtuse angle.

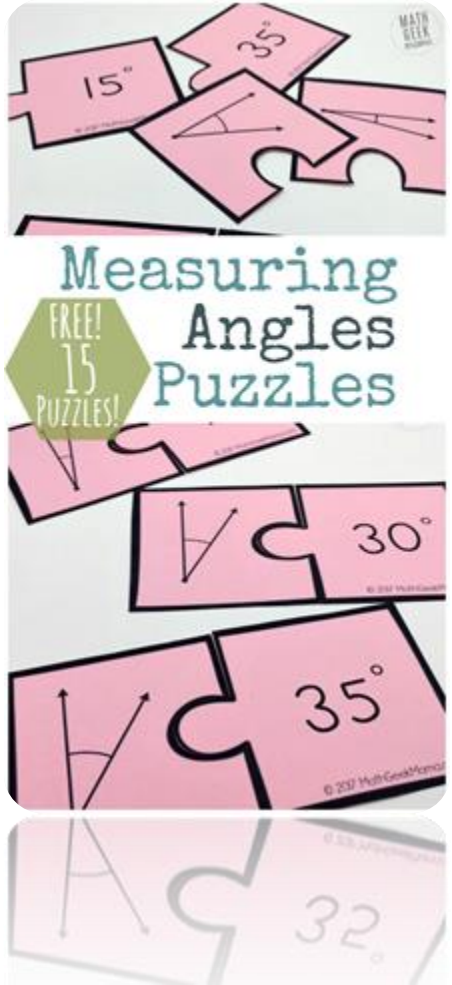
10.Construct an angle which is greater than an acute angle and smaller than an obtuse angle. Name it as XYZ.

Long answer type question **(1 ×4=4)**

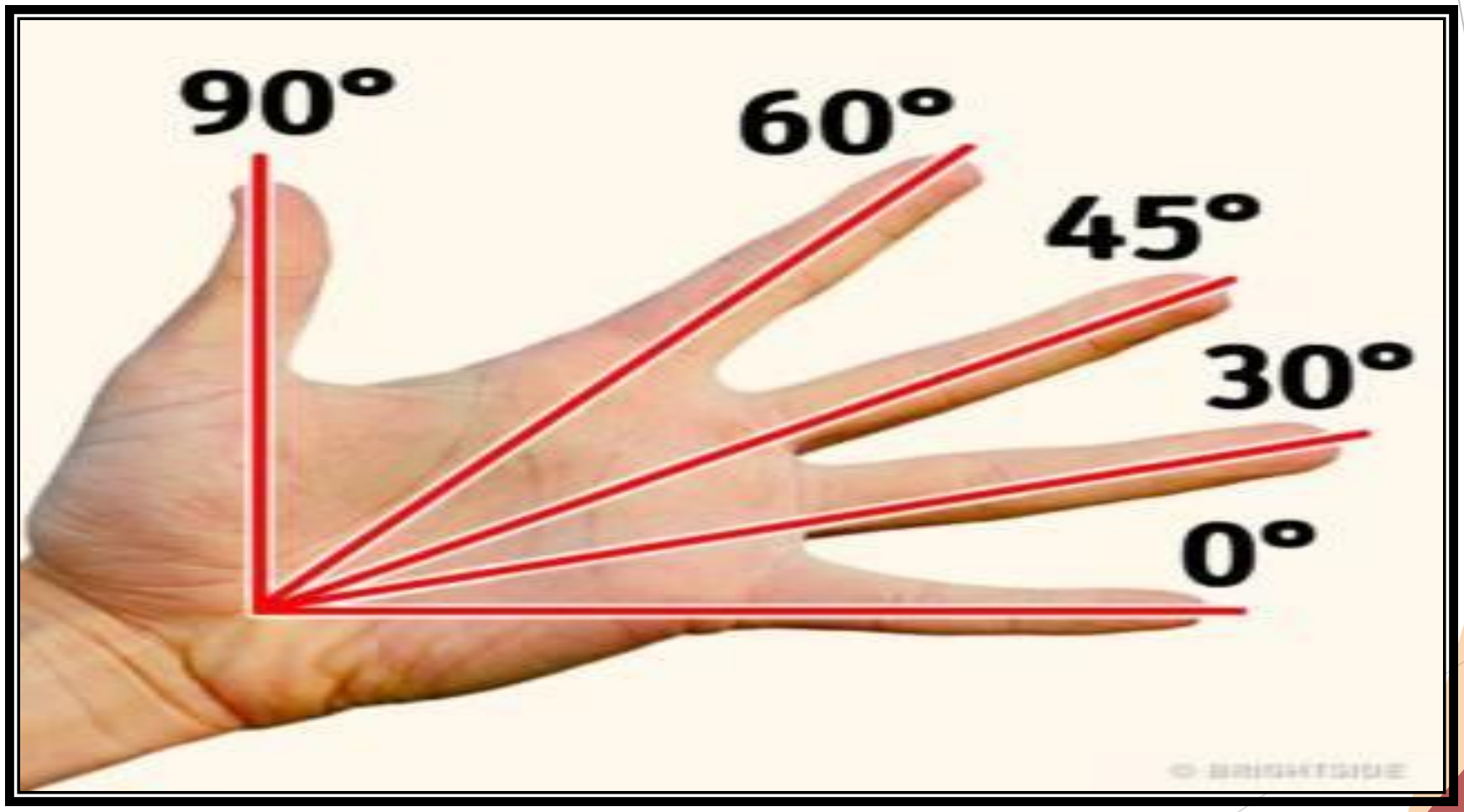
11.Draw a line segment PQ=6cm.With P as vertex, draw an angle RPQ = 125°.

What type of angle is it?

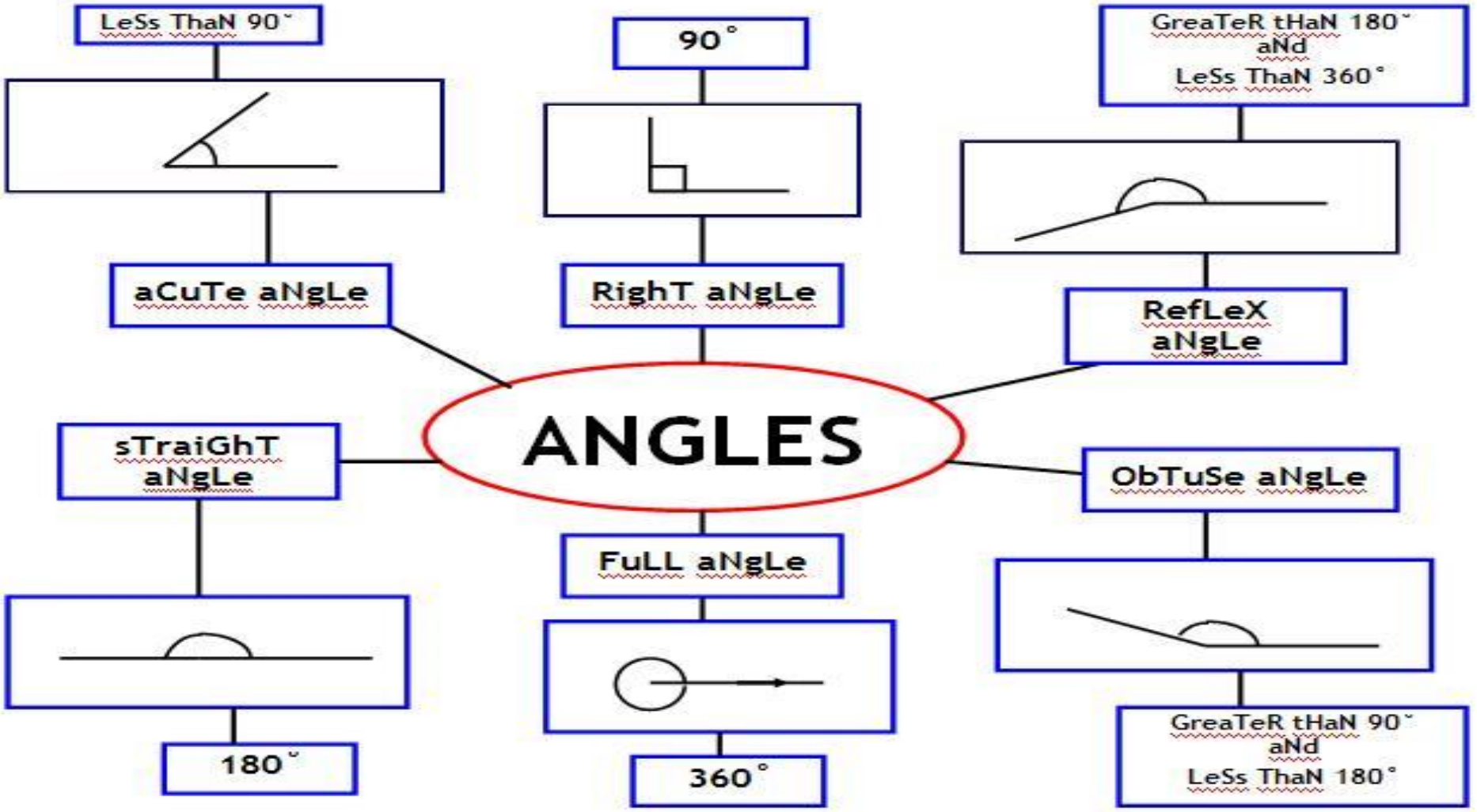
Projects to be given :
Prepare Mathematics Puzzle set



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- measures180°

THANK YOU