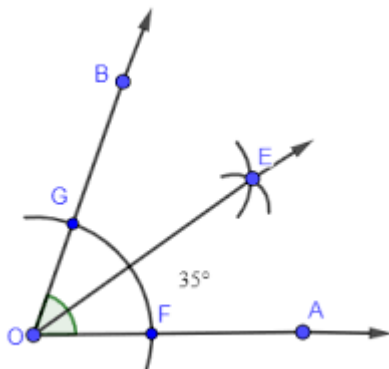| Strand:	Geometry and Measurement	Sub-Strand:	Lines and shapes
Content	B8.3.1.2 Demonstrate the ability to perform geometric constructions of the angles (75˚, 105˚, 60˚, 135˚ and 150˚), and construct triangles and find locus of points under given conditions		

or **0248043888**

BASIC 8

WEEKLY LESSON PLAN – WEEK 8

Standard:			
Indicator (s)	B8.3.1.2.1 Construct and bisect angles of 120˚, 105˚, 135˚ and 150˚ B8.3.1.2.2: Construct scalene triangles, isosceles triangles, equilateral triangles, obtuse-angled triangle, acute-angled triangles in different orientations under given conditions.		**Performance Indicator:** Learners can verify an angle with a protractor.
Week Ending	01-03-2024		
Class	B.S.8	**Class Size:**	**Duration:**
Subject	Mathematics		
Reference	Mathematics Curriculum, Teachers Resource Pack, Learners Resource Pack, Textbook.		
Teaching / Learning Resources	Poster, Pictures, Word Chart.	**Core Competencies:**	• Ability to select the most effective creative tools for working and preparedness to give explanations • Imagining and seeing things in a different way

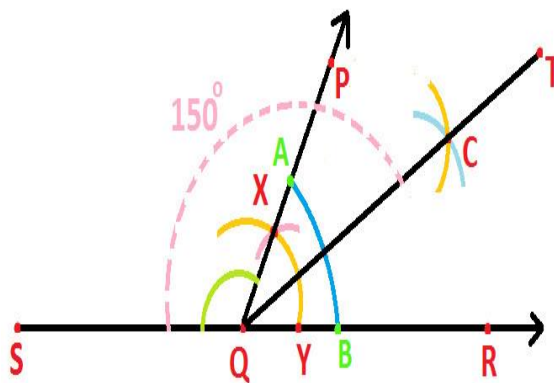| DAY/DATE	PHASE 1 : STARTER	PHASE 2: MAIN	PHASE 3: REFLECTION
MONDAY	Learners brainstorm to identify the six (6) basic constructions	1. Assist learners to use a pair of a compass and a ruler to construct angles of different degrees. 2. Demonstrate how to draw arcs on angles to construct another angle. 3. Learners practice constructing angles from angle by using a pair of compass and a ruler. 4. Assist Learners to verify angles formed by using a protractor. **six basic constructions:** • Copying a line segment. • Copying an angle. • Creating a perpendicular bisector. • Creating an angle bisector. • Creating parallel lines. • Creating a perpendicular line through a given point. **Constructing a 70° angle** **Steps:** 1. Draw a ray AB	Reflect on how to bisect angles to form another angle. **Exercise;** (i) Construct the following angles; a) 70° b) 100° c) 130° d) 124° (ii) Construct the bisector of each of the angles in question 1.

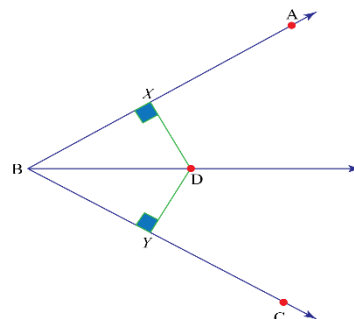|			
		2. Using a protractor, measure an angle of 70° at A 3. Placing the compass at A, draw the arc BC 4. With compass on C draw an arc 5. Without changing the width of the compass place, it on B and draw another arc 6. Mark the intersection point G 7. Join B to G 	
TUESDAY	Review Learners knowledge on the previous lesson.	1. Assist Learners to use a pair of compasses and a ruler to perform geometric construction of an angle of 150° 2. Learners brainstorm to measure the angle constructed using a Protractor. 3. Assign to small groups of Learners different angle degrees to construct and present to the class. **Steps to follow to construct a 150°angle;** (i) First draw a horizontal line AB of some appropriate distance as shown below. (ii) Now draw a semicircle from any point (O) on the line AB with some appropriate radius less than AB, which cuts the line AB at C and D as shown in the below figure.	Through questions and answers, conclude the lesson. **Exercise;** 1. In the figure below, BD bisects ∠ABC∠ 2. Construct a rectangle, ABCD, using the following measurements; (i) $\|AB\|$ = 12 cm, $\|CB\|$ = 4 cm (ii) $\|AB\|$ = 6 cm, $\|CB\|$ = 3·5 cm (iii) $\|AB\|$ = 2·8 cm, $\|CB\|$ = 6·6 cm
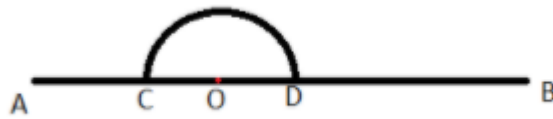
(iii) Now with same radius mark the arc on the semicircle from point D which cuts the semicircle at point E, now again with same radius mark the arc on the semicircle from point E which cuts the semicircle at point F as shown below.
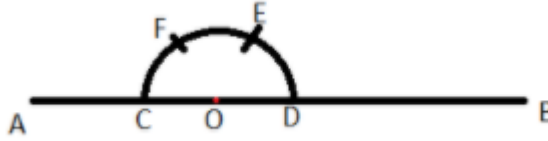
(iv) Now make an arc from point F with some appropriate distance and again with same distance mark an arc from point C which cuts the previous arc at point G as shown below, then join the points O and G as shown below
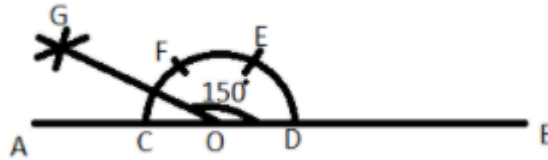
So angle GOB is the required 150 angle.

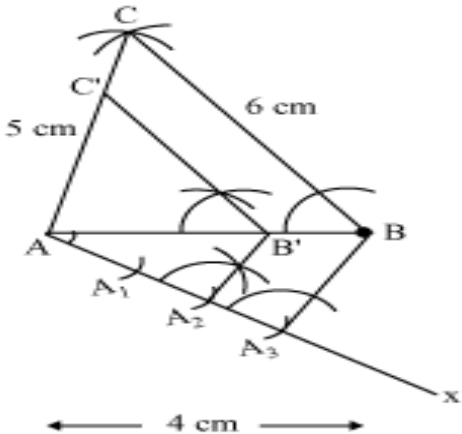| THURSDAY | Learners brainstorm to identify the types of Triangles. | 1. Assist Learners to use a pair of compass and a ruler to construct an equilateral triangle when a side is given.
2. Learners to practice measuring the size of the angle constructed with a protractor.
3. Demonstrate on how to use a pair of compass and a ruler to perform geometric construction of an isosceles right-angled triangle when the base line is given.
4. Discuss with learners on how to use a pair of compasses and a ruler to perform geometric construction of an isosceles an isosceles triangle when all the sides are given.

Example;

Construct triangle with sides 5 cm, 4 cm, and 6 cm. Then construct another triangle whose sides are 23 times the corresponding sides of triangle

Solution
   • Step 1 | Reflect on how to construct the various types of triangles.

Exercise;

1. Construct an equilateral triangle of sides 4 cm.
2. Construct an equilateral triangle of side 5.5 cm.
3. Construct an equilateral triangle ABC with side 7cm.
4. Construct an equilateral triangle ABC of side 6 cm.
5. Construct an equilateral triangle with each side 5 cm. Then construct another triangle whose sides are 2/3 times the corresponding sides of |

Draw a line segment AB = 4 cm. taking point A as centre, draw an arc of 5 cm radius.

Similarly, taking point B as its centre, draw an arc of 6 cm radius. These arcs will intersect each other at point C. Now, AC = 5 cm and BC = 6 cm and ΔABC is the required triangle

+ Step 2

Draw a ray AX making an acute angle with line AB on the opposite side of vertex C.

+ Step 3

Locate 3 points A1,A2,A3 (as 3 is greater between 2 and 3) on line AX such that AA1=A1A2=A2A3.

+ Step 4

Join BA3 and draw a line through A2 parallel to BA3 to intersect AB at point B'.

+ Step 5

Draw a line through B' parallel to the line BC to intersect AC at C'.

ΔAB'C' is the required triangle.