

**THIRD TERM
WEEKLY LESSON NOTES
WEEK 10**

Week Ending: 01-09-2023	DAY:	Subject: Mathematics
Duration: 60MINS		Strand: Geometry & Measurement
Class: B8	Class Size:	Sub Strand: Position & Transformation
Content Standard: B8.3.3.1 Perform a single transformation (i.e. rotation) on a 2D shape using graph paper.		Indicator: B8.3.3.1.1 Understand rotation and identify real-life situations involving rotation.
		Lesson: 1 of 2
Performance Indicator: Learners can understand rotation and identify real-life situations involving rotation.		Core Competencies: Communication and Collaboration (CC) Critical Thinking and Problem solving (CP)
References: Mathematics Curriculum Pg. 150		
Phase/Duration	Learners Activities	Resources
PHASE 1: STARTER	Revise with learners on the previous lesson. Share performance indicators with learners and introduce the lesson.	
PHASE 2: NEW LEARNING	Start by spinning a bottle top or use the clock. Engage learners with a question: "Have you noticed how things rotate around us every day?" Define rotation in mathematical terms, relating it to a central point. Using a clock, explain how the hands move in a particular direction. Introduce the terms "clockwise" and "anti-clockwise". Use the whiteboard to draw examples of both rotational movements. Discuss everyday scenarios where rotation is evident: <ul style="list-style-type: none"> • Turning a doorknob • Spinning a bicycle tire • Opening a jar lid • The rotation of a ceiling fan Ask learners to identify the nature of the rotation for each example as clockwise or anti-clockwise. Use interactive digital tools or apps to show different items rotating.	Counters, bundle and loose straws base ten cut square, Bundle of sticks

	<p>Let learners change the direction of rotation to see the difference between clockwise and anti-clockwise movements.</p> <p>Discuss why understanding the direction of rotation might be important in certain situations.</p> <p><u>Assessment</u> Divide learners into small groups.</p> <p>Task them with identifying 3-5 objects or scenarios in the classroom or their memory where rotation is essential and determining the nature of that rotation (clockwise or anti-clockwise).</p> <p>Allow learners a few minutes to discuss and list down their observations.</p>	
<p>PHASE 3: REFLECTION</p>	<p>Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.</p> <p>Take feedback from learners and summarize the lesson.</p>	

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Class: B8	Class Size:	Sub Strand: Position & Transformation
Content Standard: B8.3.3.1 Perform a single transformation (i.e. rotation) on a 2D shape using graph paper.	Indicator: B8.3.3.1.2 Draw rotation image in a coordinate plane and determine the angle of rotation.	Lesson: 1 of 2
Performance Indicator: Learners can draw rotation image in a coordinate plane and determine the angle of rotation.		Core Competencies: Communication and Collaboration (CC) Critical Thinking and Problem solving (CP)
References: Mathematics Curriculum Pg. 152		
Phase/Duration	Learners Activities	Resources
PHASE 1: STARTER	<p>Revise with learners on the previous lesson.</p> <p>Share performance indicators with learners and introduce the lesson.</p>	
PHASE 2: NEW LEARNING	<p>Give a brief review of what rotation means in math.</p> <p>Introduce the concept of rotating a shape on a coordinate plane.</p> <p>Explain the importance of a center of rotation.</p> <p>Show how the angle of rotation is measured using a protractor.</p> <p>Discuss the most common angles of rotation: 90°, 180°, and 270°.</p> <p>Highlight the difference between clockwise and anti-clockwise rotations.</p> <p>Introduce the rules for rotating points on a coordinate plane:</p> <ul style="list-style-type: none"> • 90° clockwise: (x, y) becomes $(y, -x)$ • 90° anti-clockwise: (x, y) becomes $(-y, x)$ • 180°: (x, y) becomes $(-x, -y)$ • 270° clockwise: (x, y) becomes $(-y, x)$ • 270° anti-clockwise: (x, y) becomes $(y, -x)$ <p>Use the whiteboard to demonstrate a few examples. Distribute graph paper and protractors to each student.</p> <p>Plot a simple shape (e.g., a triangle) on the coordinate plane on the whiteboard or projector. Ask learners to draw the same shape on their graph paper.</p>	<p>Counters, bundle and loose straws base ten cut square, Bundle of sticks</p>

	<p>Guide learners in rotating the shape 90° clockwise, plotting the new points based on the rotation rules. Let learners verify the rotation using protractors.</p> <p>Repeat with other angles and directions.</p> <p><u>Assessment</u> Plot the point A(2,3) on graph paper. Now, rotate it 90° clockwise about the origin. Plot the new point and label it A'. What are the coordinates of A'?</p> <p>Using a protractor and graph paper, plot the point B(4,2). Rotate this point 180° about the origin. Mark and label the new position B'. What are the coordinates of B'?</p> <p>Plot a triangle with vertices at C(1,1), D(4,1), and E(2,5). Rotate the triangle 270° anti-clockwise about the origin. Draw the new triangle and label its vertices C', D', and E'. What are their coordinates?</p>	
<p>PHASE 3: REFLECTION</p>	<p>Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.</p> <p>Take feedback from learners and summarize the lesson.</p>	

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Class: B8	Class Size:	Sub Strand: Position & Transformation
Content Standard: B8.3.3.1 Perform a single transformation (i.e. rotation) on a 2D shape using graph paper	Indicator: B8.3.3.1.3 Investigate the concept of congruent shapes.	Lesson: 1 of 2
Performance Indicator: Learners can investigate the concept of congruent shapes.		Core Competencies: Communication and Collaboration (CC) Critical Thinking and Problem solving (CP)
References: Mathematics Curriculum Pg. 152		

Phase/Duration	Learners Activities	Resources
PHASE 1: STARTER	<p>Revise with learners on the previous lesson.</p> <p>Share performance indicators with learners and introduce the lesson.</p>	
PHASE 2: NEW LEARNING	<p>Show how the angle of rotation is measured using a protractor.</p> <p>Discuss the most common angles of rotation: 90°, 180°, and 270°.</p> <p>Highlight the difference between clockwise and anti-clockwise rotations.</p> <p>Introduce the rules for rotating points on a coordinate plane:</p> <ul style="list-style-type: none"> 90° clockwise: (x, y) becomes $(y, -x)$ 90° anti-clockwise: (x, y) becomes $(-y, x)$ 180°: (x, y) becomes $(-x, -y)$ 270° clockwise: (x, y) becomes $(-y, x)$ 270° anti-clockwise: (x, y) becomes $(y, -x)$ <p>Use the whiteboard to demonstrate a few examples.</p> <p>Distribute graph paper and protractors to each student. Plot a simple shape (e.g., a triangle) on the coordinate plane on the whiteboard or projector.</p> <p>Ask learners to draw the same shape on their graph paper. Guide learners in rotating the shape 90° clockwise, plotting the new points based on the rotation rules. Let learners verify the rotation using protractors. Repeat with other angles and directions.</p> <p>Divide learners into pairs or small groups. Assign each group a different shape and angle of rotation.</p>	<p>Counters, bundle and loose straws base ten cut square, Bundle of sticks</p>

	<p>Allow groups a few minutes to draw the original and rotated shapes.</p> <p><u>Assessment</u> On graph paper, draw two seemingly congruent trapezoids, with one trapezoid's orientation different from the other. By rotating one of them, prove if they are congruent or not.</p> <p>Plot a square with vertices at $F(1,1)$, $G(3,1)$, $H(3,3)$, and $I(1,3)$. Now, plot another square with vertices at $J(-1,-1)$, $K(-1,-3)$, $L(-3,-3)$, and $M(-3,-1)$. By rotating one of the squares, determine if the two squares are congruent.</p> <p>Draw a rhombus on the coordinate plane. Next to it, draw another rhombus that looks congruent but is oriented differently. Using the rules of rotation, demonstrate (by rotating and marking the new coordinates) whether or not the two shapes are congruent.</p>	
<p>PHASE 3: REFLECTION</p>	<p>Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson.</p> <p>Take feedback from learners and summarize the lesson.</p>	