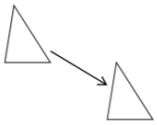
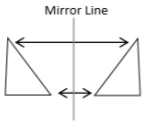
TERM THREE
WEEKLY LESSON NOTES
WEEK 7

Week Ending: 28th OCT, 2022	**DAY:**	**Subject:** Mathematics	
Duration: 60MINS		**Strand:** Geometry & Measurement	
Class: B7	**Class Size:**	**Sub Strand:** Position and Transformation	
Content Standard: B7.3.3.1 Perform a single transformation on a 2D shape using graph paper (including technology) and describe the properties of the image under the transformation	**Indicator:** B7.3.3.1.1 Determine shapes in real life that have reflectional (or fold) symmetries.	**Lesson:** 1 of 2	
Performance Indicator: Learners can determine shapes in real life that have reflectional		**Core Competencies:** Communication and Collaboration (CC) Critical Thinking and Problem solving (CP)	
References: Mathematics Curriculum Pg. 72-76			

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Point to the words on the board and read them aloud with pupils. Example: Reflection, Translation, Rotation, Enlargement, etc. Ask learners if they know the meaning of any of these words. Encourage pupils to share their ideas with the class. (For example, learners might recognize that 'enlargement' means to make something bigger.) Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Show an example of translation by dropping the board duster on the ground, showing that it is a translation from the position in your hand to on the ground. Brainstorm learners for the meaning of translation. *To move in any direction, but keep the same shape is translation*. Draw an example on the board and say: The triangle is still the same shape and size, but it moves to a new location.  Show an example of reflection. Demonstrate with your face with the mirror line drawn down the middle. Show that each side of your face is a reflection of the other side.  Guide learners to come up with their observations. The distance between the reflected shape and the mirror line is the same as between the original shape and the mirror line.	

Identify examples of designs (or objects) in everyday life that have reflectional (or fold) symmetries (e.g. adinkra symbols).

Show an example of rotation. For example, demonstrate that as you walk, your legs rotate about a fixed point (your hip). You can also place the tip of a pencil at the center point, and turn the pencil around to show how the triangle turns about the point.

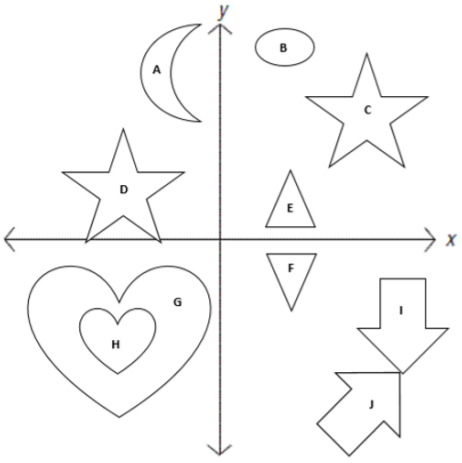
Show an example of enlargement. Hold up a small piece of chalk and a bigger piece of chalk. Say that the bigger piece of chalk is an enlargement of the smaller piece of chalk.

Write the following directions on the board:
a) Draw a star.
b) Draw a translation of your star.

Ask learners to work in pairs to draw the translation. Move around the classroom to make sure learners understand and are doing the task.

Invite one pair to stand and explain what they did.
(Example answer: We drew a star and moved it to the right. It kept the same size and shape, and only its location changed.)

<u>Assessment</u>
Study the diagram below and answer the following questions.



a) which shapes are translations.
b) which shapes are reflections.
c) which shapes are rotations.
d) which shapes are enlarged.

Write down the letters that answers each question.

PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	

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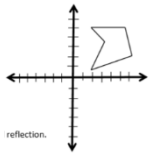
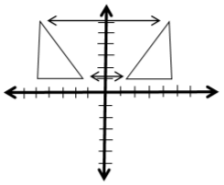
Class: B7	**Class Size:**	**Sub Strand:** Position and Transformation

Content Standard: B7.3.3.1 Perform a single transformation on a 2D shape using graph paper (including technology) and describe the properties of the image under the transformation	**Indicator:** B7.3.3.1.2 Plot points and shapes (i.e. plane figures) on a coordinate plane and draw their images under reflection in given lines	**Lesson:** 2 of 2

Performance Indicator: Learners can draw images under reflection in given lines.	**Core Competencies:** Communication and Collaboration (CC) Critical Thinking and Problem solving (CP)

References: Mathematics Curriculum Pg. 72-76

Phase/Duration	Learners Activities	Resources
PHASE 1: **STARTER**	Draw the Cartesian plane and shape to the right on the board. Ask pupils to draw the plane and shape in their exercise books.  Draw a translation of the shape. Invite a learner to draw the translation on the board. Make corrections if necessary. Share performance indicators and introduce the lesson.	
PHASE 2: **NEW LEARNING**	Revise the meaning and features of reflection. Draw a triangle on a co-ordinate plane on the board and draw the reflection of this triangle. Ask learners what that means? Let learners share their ideas and discuss as a class.  Let learners understand that to reflect a shape means to flip it over a mirror line. It means we will have the same shape, but it will be facing the opposite direction and it will move to the other side of the mirror line. Have learners draw the reflection of the triangle about the y-axis. Draw an arrow to show the movement. Write the following problem on the board: Draw a rectangle anywhere on the co-ordinate plane. Show its reflection across the x-axis and the y-axis. Ask learners to work in pairs and write their answers in their exercise books. Move around the classroom to make sure pupils understand and are doing the task.	

	Invite a pair to come to the front and share their answer on the board. Plot points and shapes (i.e. plane figures) with given coordinates in the number plane. i. Plot the points A (3, 1), B (3, 3), C (4, 3), D (4, 2), E (5, 2), F (5, 3), H (6, 3), and I (6, 1). Guide learners to identify points with given coordinates and lines (i.e. constant lines parallel to the x-axis or y-axis) in the number plane. Draw and label the axes of the coordinate plane and label the lines such as Line 1 is y-axis or x=0; Line 2 is x-axis or y=0; Line 3 is y=x; Line 5 is y=−1, etc.	
PHASE 3: **REFLECTION**	Use peer discussion and effective questioning to find out from learners what they have learnt during the lesson. Take feedback from learners and summarize the lesson.	Graph sheet, Protractor, Ruler