Subject: Mathematics

Topic: Symmetry and transformation

Sub-topic: Reflectional Symmetry and Rotational Symmetry

Level: S.1

Background information:
This is the third lesson in a series of 6.
Students have already learned how to describe the symmetric properties of plane figures.

Learning objectives:
1. Content:
Students should be able to describe the symmetric properties of plane figures.
2. Language:
Students should be able to describe the symmetric properties of plane figures orally and write the description using the following language form:
_____ *has the property of* _____*because* _____.
It has _____ *axes of symmetry.*
It has a/an _____ *- fold rotational symmetry.* OR *It has* _____ *folds of rotational symmetry.*

S.1 Mathematics

Symmetry and Transformation

Reflectional Symmetry and Rotational Symmetry

Worksheet 1

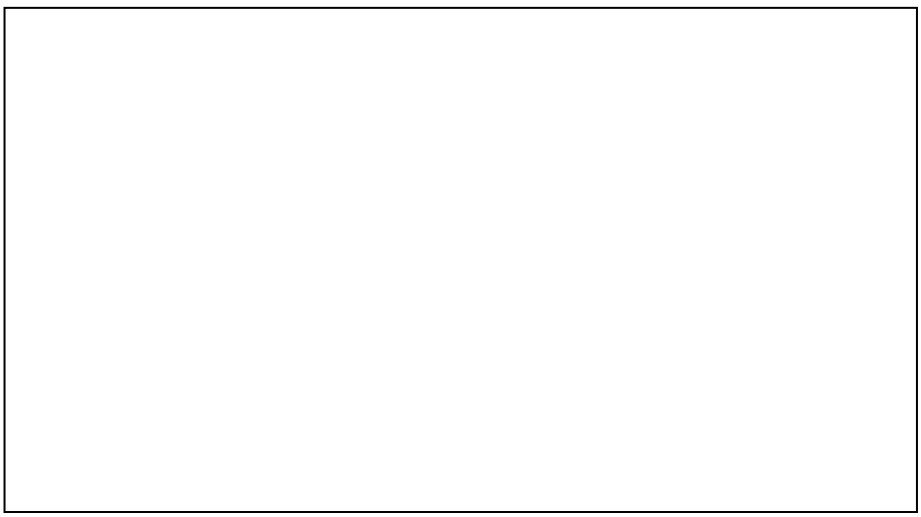
NAME:_____NO.: _____CLASS:_____DATE:_____

Student A's Worksheet

Activity 1

1. Take out the object or the logo you brought from home.
2. Describe the property of the object to Student B.
   Use the following sentences to help you:
   This _____ has the property of reflectional symmetry because its left-hand side matches its right-hand side. It has _____ axis(es) of symmetry.
   OR
   This _____ has the property of rotational symmetry because _____ coincides with the original _____ times when it rotates one complete turn about the centre of rotation. It has a/an _____-fold rotational symmetry.

3. Listen to Student B describing his/her object to you.
4. Draw the object or the logo in the box below as Student B describes it to you.



5. Now, write a few sentences to describe Student B's object.

(Your classmate's name) has brought a/an _____. It has ….

_____

_____

_____

_____

_____

S.1 Mathematics

Symmetry and Transformation

Reflectional Symmetry and Rotational Symmetry

Worksheet 1

NAME:_____NO.: _____CLASS:_____DATE:_____

Student B's Worksheet

Activity 1

1. Listen to Student A describing his/her object to you.
2. Draw the object or the logo in the box below as Student A describes it to you.

3. Take out the object or the logo you brought from home.
4. Describe the property of the object to Student A.

   Use the following sentences to help you:

   This _____ has the property of reflectional symmetry because its left-hand side matches its right-hand sid It has _____ axis(es) of symmetry.

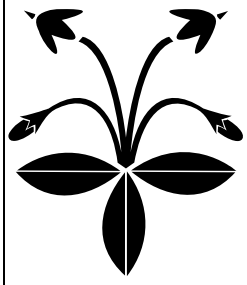
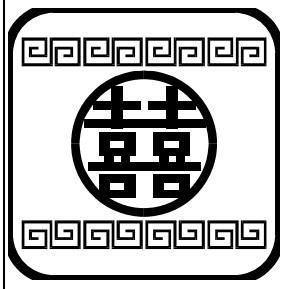
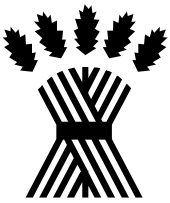
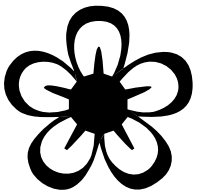
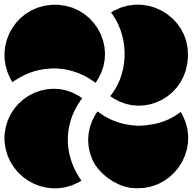
   OR

   This _____ has the property of rotational symmetry because _____ coincides with the original _____ times when it rotates one complete turn about the centre of rotation. It has a/an _____-fold rotational symmetry.

5. Now, write a few sentences to describe Student A's object.
   (Your classmate's name) has brought a/an _____. It has ….

Activity 2

Study the figures below.

1. 	**2.** 	**3** 	**4.** 	**5** 
6. 	**7.**	**8.** 	**9.** 	**10.** 

1. Pair up with your neighbour. Take turns to ask and answer questions, using the questions below. One of you is A and the other is B.

A: *Which of the figures have the property of reflectional symmetry?*

B: _____

B: *Which of the figures have the property of rotational symmetry?*

A: _____

A: *Which of the figures have the properties of both reflectional and rotational symmetry?*

B: _____

B: *How many folds of rotational symmetry does each of the figures with the property of rotational symmetry have? For example, Figure 9 has 2 folds of rotational symmetry.*

A: _____

_____

_____

_____

_____