

Module on Geometry

For Grades 5-6

By: Andi Foster

Green City R-1 School District

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Math Module Outline

Strand: Geometric and Spatial Relationships

Grade Level: 5

Concepts Included:

- ✓ Transformations
 - Rotation/turn
 - Translation/slide
 - Reflection/flip
- ✓ Rotational Symmetry
- ✓ Net
- ✓ 2- and 3-D shapes

Author: Andi Foster – 5th and 6th grade Math teacher

Statement of Basis for Selection of Strand/Concepts:

I chose to do my module on geometry because our test scores have shown students are low in this area. Geometry can be a wonderful hands-on experience for students and I wanted to improve my lessons so that students are excited to do math and the geometry aspect of it.

Module Resources:

<http://www.senteacher.org/wk/3dshape.php>

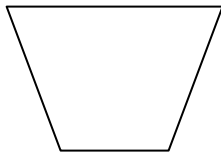
www.superteacherworksheets.com

<http://catchupmath.com/math-games/>

Name: _____

5th Grade Geometry Test

1. Put an X on the parallel lines of the trapezoid below.



Explain why the figure is a trapezoid.

G1A: DOK 2

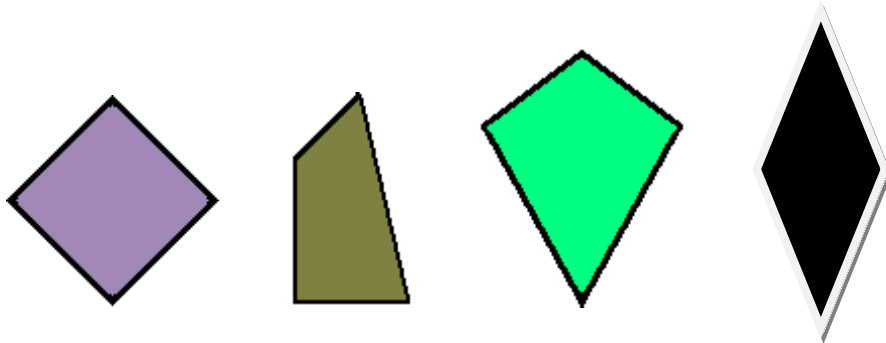
2. Match the terms below.

- A. Flip
- B. Turn
- C. Slide

- _____ rotation
- _____ translation
- _____ reflection

DOK 1: G3A (check)

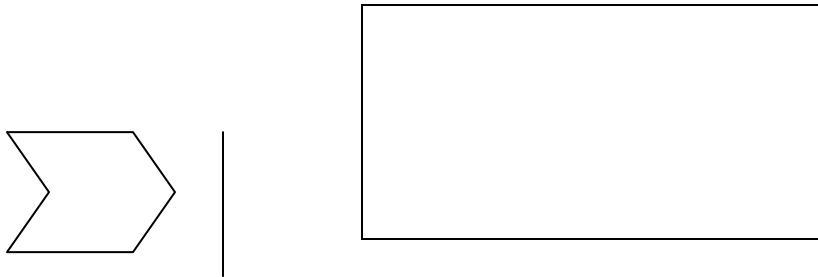
3. **Circle the following figure(s) that have rotational symmetry?** G3C: DOK1



4. **If the figure below is translated across the line shown and then reflected, draw one possible reflection and the line of reflection used.**

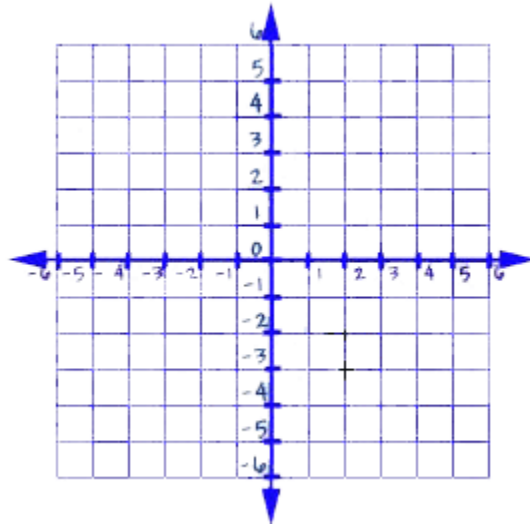
G1C: DOK 3

G3A?:DOK3



1. Using the grid below plot the following points: (1,1) (1,2) (2,3) (3,2) (3,1). Then connect the points in the same order to draw a figure. What is the distance between point (1,2) and (3,2)?

G2A: DOK 2



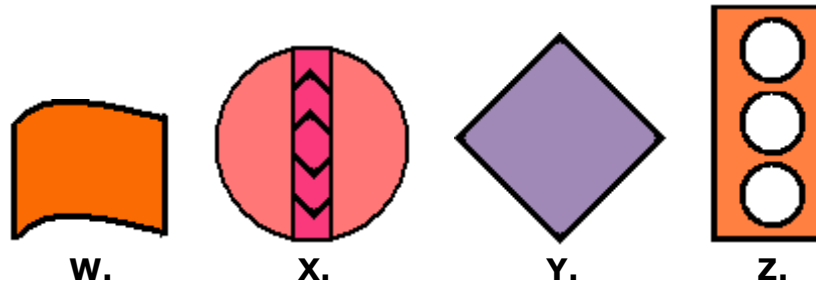
2. In the table below draw a shape in the first box. Apply two different transformations and draw a picture of the new shape in the second box.

G3A: DOK3

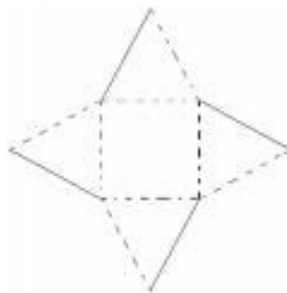
Draw	Transformation

Identify and explain the transformations you used to create the second shape.

3. Which figure has no rotational symmetry? G3C: DOK 1



4. What figure can be made by folding the net below?



- a. cube b. cone c. rectangle d. pyramid

If the base was switched to a triangle and all other faces remain the same would you be able to fold it into a 3-D figure? Justify your answer.

G4A: DOK 2

5. **Imagine that the shapes below are combined to make a 3-dimensional shape.**



What would that 3-D shape be?

- A. cone
- B. cylinder
- C. pyramid
- D. prism

Lesson 1: Introduction of 3-D Shapes

POWER POINT LESSON

To access the Power Point in Lesson 1, go back to Table of Contents of Teachers Units on the <http://publishthegecko.com> website and click on the Power Point link below title of this module.

Lesson 2:

Activity: Feely Bag

<http://www.teachingideas.co.uk/maths/feelybagshapes.htm>

Put one of the following in a bag:

Cube, rectangular prism, cylinder, cone, sphere.

One student comes to the front of the room and puts his hand in the bag. He/she then must describe the solid by feeling it and telling their classmates about its attributes (features)

Example: This solid has a point, I feel a circle on the opposite end.... Etc.

The other students then attempt to guess the solid their classmate is describing. You can have them guess individually or put them in groups and have them decide as a group and write it down after so many clues. The group with the most correct guesses wins.

After doing the Feely Bag activity, talk about everyday objects that fit into each category of the shapes they had to guess during the activity.

Cube, rectangular prism, sphere, cylinder, cone....

Introduce the vocabulary of 3-D shapes.

1. face- flat, 2-dimensional areas of the 3-D figure
2. edge- line segments where 2 faces meet
3. base- distinct top and/or bottom of a 3-D figure
4. vertex- corners of the shape

Students will make 4 note cards for their math binders.

The note cards will include:

Picture of a 3-D figure on each card

1 of the vocabulary words demonstrated on each card.

Example: Students can draw a picture of a prism on each card.

One card would have the vertex labeled; the other three cards would have one of the other vocabulary words labeled.

EXIT TICKET: NAME 2 ATTRIBUTES OF A 3-D FIGURE.

Lesson 3:

Net Activity:

Materials needed: Each student will need a pencil, piece of scrap or plain computer paper, and a 3-D figure.

Students will trace each face of the figure they are given and label the faces A, B, C, etc. until all are labeled.

After students have had time to complete their task, have them work in small groups to discuss the different shapes that were created.

As a whole group, discuss the shapes that were drawn from the 3-D shapes and review the attributes of the shapes.

Introduce nets:

Explain that the tracing/drawing activity they just did is almost like a net.

Explain what a net is. (Definition)

Give each student a note card and have them write **net** on one side and the definition on the other side.

Assign Practice pg. for checking of understanding of attributes and nets of 3-D figures.

Lesson 4:

Rotational Symmetry Power Point

You will need to be in the computer lab for this activity. Each child will go to the website addressed in the power point and work on an activity that shows how to create rotational symmetry.

Continued from Lesson 4-

Create a rotational symmetry picture.

Students use pattern blocks and objects in the room to create a design that has rotational symmetry.

Lesson 5:

Coordinate Grid-

<http://catchupmath.com/math-games/>

- Catch the Fly Game
- [Coordinate Pairs Worksheet](#)
- [Mystery Objects Graphing Activity](#)