**Standards for days 87-99**

|  |  |
| --- | --- |
| 1.G.1 | Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) ; build and draw shapes to possess defining attributes. |
| 1.G.2 | Compose two dimensional shapes (rectangles, squares, trapezoids, triangles, half circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. |
|  |  |
|  |  |
| Learner Objective(s) | Language Objective(s) |
| * [Students[http://cdncache1-a.akamaihd.net/items/it/img/arrow-10x10.png](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046)](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046) will be able to sort a set of shapes based on a variety of attributes. * [Students[http://cdncache1-a.akamaihd.net/items/it/img/arrow-10x10.png](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046)](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046) will be able to describe, build, and draw shapes based on attributes. * Students will combine shapes to make new shapes (6 triangles to make 1 hexagon). * Students will be able to identify, build and name cylinders, cones and rectangular prisms. * Students will be able to differentiate between two-dimensional and three-dimensional figures. * Students will be able to identify, name, describe, and build 3 dimensional shapes. | * [Students[http://cdncache1-a.akamaihd.net/items/it/img/arrow-10x10.png](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046)](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046) will explain how they can sort shapes by their attributes. * [Students[http://cdncache1-a.akamaihd.net/items/it/img/arrow-10x10.png](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046)](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046) will write about descriptive and non-descriptive attributes in their math journals. * Students will listen to others describe shapes during Math Talk. |
| **Essential Question(s)** | |
| * Describe the attribute of the shape you chose. * Decide if my shape will fit in your sort. Why or why not? * Explain how the triangles in the sort are alike and different. * Explain how you combined figures to make a new complex figure. Show your example. * Explain how 2D and 3D shapes are partners. What relationships do you notice? * Explain why some 3d figures have more than on partner (i.e. square based pyramid and has square and triangles), whereas others (i.e. cube has only squares) have only one. * Explain the strategy did you use when counting the shapes in the design? * Explain the strategy you used when recreating the design. How could you revise your shape to be more accurate? | |
| **Evidence of Student Learning: Assessment(s)** | |
| * As [students[http://cdncache1-a.akamaihd.net/items/it/img/arrow-10x10.png](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046)](http://cmapp.wcpss.net/guide/instructional/id/7213/ref/10046) sort shapes observe their strategies and have them explain why they sorted the way they did. * What similarities do 2D and 3D figures have? Show figures as you explain. * Check geo-dot paper for accuracy when recreating teacher's design. | |

|  |
| --- |
| **Enrichment:**   * *· Please refer to the Enrichment Investigations posted to the Resources tab on C-MAPP.* * Students create complex figures and trace the outline of the shape. A partner decomposes the complex figure using pattern blocks and shows multiple ways to decompose the complex figure.   **Remediation:**   * Separate out only a few Van de Walle shapes to use with students who are having difficulty identifying shapes using characteristics. Have students work to find a shape to go in the sort with your target shape and explain why they chose the shape they chose. * Use vocabulary frequently so students will become familiar with terms. Many students may not have prior knowledge of some of these words. (vertex, edge, etc.) * Use real-world objects in which students have familiarity to practice identification, describing attributes including edges, vertices, etc. |
| **Comments/Notes** |
| Embed the 8 Mathematical Practices within instruction.  ***DPI Unpacking Document***  TEACHER NOTE: In the U.S., the term "trapezoid" may have two different meanings. Research identifies these as inclusive and exclusive definitions. The inclusive definition states: A trapezoid is a quadrilateral with *at least* one pair of parallel sides. The exclusive definition states: **A trapezoid is a quadrilateral with *exactly* one pair of parallel sides**. With this definition, a parallelogram is not a trapezoid. North Carolina has adopted the exclusive definition.  First Grade students use their beginning knowledge of defining and non-defining attributes of shapes to identify, name, build and draw shapes (including triangles, squares, rectangles, and trapezoids). They understand that defining attributes are always-present features that classify a particular object (e.g., number of sides, angles, etc.). They also understand that nondefining attributes are features that may be present, but do not identify what the shape is called (e.g., color, size, orientation, etc.).  As first graders create composite shapes, a figure made up of two or more geometric shapes, they begin to see how shapes fit together to create different shapes. They also begin to notice shapes within an already existing shape. They may use such tools as pattern blocks, tangrams, attribute blocks, or virtual shapes to compose different shapes.  First graders learn to perceive a combination of shapes as a single new shape (e.g., recognizing that two isosceles triangles can be combined to make a rhombus, and simultaneously seeing the rhombus and the two triangles). Thus, they develop competencies that include:  • Solving shape puzzles  • Constructing designs with shapes  • Creating and maintaining a shape as a unit  As students combine shapes, they continue to develop their sophistication in describing geometric attributes and properties and determining how shapes are alike and different, building foundations for measurement and initial understandings of properties such as congruence and symmetry. |

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 91

**Materials Needed:**

**\*\*\* note from donna(copies are already made and sent from central office-also on CMAPP)**

* Cardstock, *“Shape Cards”* (Teacher

Only 2 sets each)

* Blackline Master, *“Attribute Mat-*

*Always, Sometimes, Never”,*

*“Riddle Report”*

* Transparency- *“Riddle Report*

*Example”*

* Chart paper (optional)

**Assessment**

* Blackline Master, *“Riddle Report”*

**Homework**

* Blackline Master, *“All About Shapes”*

Vocabulary

* Vertex (vertices)- where sides and edges meet on a polygon (often called the corners)
* Attribute - characteristic of a shape (size, color, number of sides,etc.)
* Square- polygon with four sides of equal length,2 sets of parallel sides, and 4 right angles
* Rectangle- polygon with four sides, opposite sides are equal in length, 2 sets of parallel sides
* Trapezoid- polygon with four sides, 1 set of parallel sides
* Half circle- half of a circle
* Quarter circle- ¼ of a circle
* Edge- a line segment joining two adjacent vertices

***Alignment Lesson***

***Sometimes, Always, Never***

Note: Cardstock *“Shape Cards”* will need to be pre-cut prior to teaching the lesson.

1. Quickly review the shapes you have been studying.  Next, tell the class that you are going to make a list of attributes for the shapes.  Explain that attributes are characteristics of a shape.
2. Create a list with the students of attributes that are defining and those that are non-defining.  Explain to the students that defining attributes are features that define a shape, such as a triangle has three sides.  Non -defining attributes describe the shape, but these attributes can vary, such as size color. The attribute shapes that are part of the DPI Math Kit or geoboards would be a great way to quickly show the shapes and prompt students’ thinking.  The list should be a general list of defining attributes (ex: number of edges, number of vertices).
3. Use this time to introduce specific vocabulary words such as vertices.  Also, parallel lines and right angles will need to be explained so that students can differentiate between squares and trapezoids.
4. Divide the students into small groups of 3-4 students. Give each group one a of the pre-cute Cardstock, *“Shape Cards”* and each students, a Blackline Master, *“Attribute Mat Always, Sometimes, Never.”*
5. Have each group fill out the chart by writing attributes that are always true about the shape, sometimes true about the shape, and never true about the shape. Discuss the work with the groups as they complete the chart.
6. When groups are finished, have groups pair up and discuss their findings. Have each group share what is on the chart, and then have both groups look for ways that their shapes are alike and different. *(For example, when the group that did rectangles shares with the group that did squares, they should see that both shapes always have four sides, but rectangles sometimes have sides of equal length while squares always have sides of equal length.)*
7. Bring the students back together to share ideas that they have learned.
8. Distribute Blackline Master, *“Riddle Report”* example with the students and have them guess the shape.
9. Have students write their own Riddle Reports and share.

Notes: Chart paper can be used for the Attribute Mat Activity so that it can be hung in the classroom for students to refer to as needed. Students can draw their shape on the bottom of the Riddle Report – place a small post-it note on top of the shape. Students can read the riddle, solve, and then peek under the post it note to see if they guessed the shape correctly

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 92

**Materials Needed:**

* Cardstock- *“Large Attribute Cards”*

– Teacher Only, *“Small Attribute*

*Cards”* -7 copies (in central office copies and CMAPP)

Blackline Master, *“The Attribute Train Game- Journal Prompt*

**Assessment**

* Observation of students’ work and discussions as they work in small groups to create trains.

**Homework**

* Blackline Master, *“Comparing*

*Shapes”*

Vocabulary

Attribute - characteristic of a shape (size, color, number of sides,etc.)

Square- polygon with four sides of equal length,2 sets of parallel sides, and 4 right angles

Rectangle- polygon with four sides, opposite sides are equal in length, 2 sets of parallel sides

Trapezoid- polygon with four sides, 1 set of parallel sides

Half circle- half of a circle

Quarter circle- ¼ of a circle

***Alignment Lesson***

***Attribute Train***

**Note: Prior to teaching this lesson, Cardstocks, *“Large Attribute Cards”* and *“Small Attribute Cards”* should be pre-cut.**

**Activity 1- Building a Class “Train”**

1. Have students sit in a circle on the floor. Place Cardstock, *“Large Attribute Cards”* in the middle of the circle. If there are too many shapes, you can remove some of cards*. (If you choose to remove some card remove all of the same shape i.e., all the trapezoids or all the circles.)*
2. Tell the students that you are going to make an attribute train. Remind students that attributes are characteristic of a shape. *(Students use attribute language to describe a given two-dimensional shape: number of sides, number of vertices/points, straight sides, color, size, closed etc..)*
3. Begin by choosing one shape to start the train. Describe the attributes of the train. Ask a child to choose a card that has a shape that has only 1 attribute that is different. The attribute that is different could be size, shading, number of sides, vertices, etc. Keep encouraging students to add a card one at a time and name the attribute that is different.
4. After making a long train, start again with a different card. For variety, students can hold a card and come to the front and hold the card and stand in a line to form the train. If not all the cards are used for each train, vary the ones that are being used so trains are different.

**Activity 2- The Attribute Train Game**

Students will use the small cards with the shapes on them to make attribute trains. Students can play in small groups of four. Students make play either of the following variations of the game.

***Variation 1***

* Place the cards in the center of the 2 players so that all the shapes are visable.
* Player 1 takes a card and puts it down to start a train.
* Player 2 chooses a card that has a shape that has only 1 attribute that is different from the first shape and adds it to the train.
* Players take turns until no more cards can be played.

*Variation 2*

* The blocks are shared equally among all the players in the group.
* Player 1 begins the train by laying down a card on the playing surface.
* Player 2 adds a card with a shape on it that is different in only one way.
* Players take turns.
* Any player who does not have a card with a shape on it that is different in only one

way loses that turn.

* Players continue until no more cards can be played.

Activity 3

Students complete Blackline Master, *“The Attribute Train Game- Journal Prompt.”*

Sample Attribute Train

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 93

**Materials Needed:**

* Transparencies- *“Reviewing*

*Attributes”, “Shape Riddles”*

* Blackline Master- *“More Shape*

*Riddles”*

* Student whiteboards & pens
* Rulers

**Assessment**

***Informal assessment*** – take anecdotal notes on whether students can identify shapes based on attributes as well as drawing shapes with attributes given.

**Homework**

Blackline Master, *“Drawing with Attributes Journal Prompt”*

Vocabulary

triangle, square, rectangle, trapezoid, hexagon, shapes, polygons, closed figure, two-dimensional, attributes, straight lines, curvy, vertices or corners, sides, parallel, angles, etc.

**Note: It is important for students to have concrete experiences to understand these vocabulary terms.**

###### **Alignment Lesson**

###### **Drawing with Attributes**

1. Review defining attributes and non-defining attributes with the class. To begin, display Transparency *“Reviewing Attributes”. (Before displaying, color the two squares different colors, for example: Figure A green, Figure B purple)*  Ask students to draw a line down the middle of their whiteboards. Allow time for students to individually answer the questions on their whiteboards. Give them 3-5 minutes to do so on their own. Then have students pair up and discuss the shapes and the attributes. As a class record the attributes of each. Ask *“Now that we have named all the attributes, circle the defining attributes for each.”* Students should come to the conclusion that the figures are both squares; therefore have the same defining attributes. Remind students that we name shapes only by their defining attributes.

***The chart below features some defining/non-defining attributes you will discuss throughout the Geometry Unit.***

|  |  |
| --- | --- |
| **Defining Attributes** | **Non-Defining Attributes** |
| Number of sides | Orientation (right side up, upside down, any slides, flips, or turns) |
| Number of angles | color |
| Number of vertices/corners | Size (small, big, etc.) |
| Numbers of faces |  |
| Number of edges |  |
| Straight sides |  |
| Open or closed figure |  |
| Solid or plane figure (flat surface) |  |

2. Display Transparency *“Shape Riddles”*. Only show one at a time. Ask students to read the description and with a partner work to draw a shape that will fit the attribute description. (They can draw on their whiteboards or paper). As students draw, ask the questions *“What shape did you draw?” “How do you know your shape is correct?” “Is there another shape you can draw that would also be correct?” (You may want to write the questions on the board and have partners discuss together before having them share whole group).* As a whole class, have students share their drawings and facilitate whole class math talk discussion. Encourage students to answer the questions above as they talk as well as use appropriate vocabulary. Repeat with second and third example.

3. Students should now work with a partner or small groups to complete Blackline Master *“More Shape Riddles”*. As modeled in previous activity, make sure students are discussing and proving their thinking as they draw shapes to fit the riddle. When students are finished, go over as a class. You may want to have a student leader lead the class for each example as you continue to facilitate discussion.

4. Assign Blackline Master *“Drawing with Attributes Journal Prompt”* for homework. You can use some of students riddles for class review on later days.

Answer Key-Reviewing Attributes

*Some attributes students might include….*

Figure A Figure B

*Big Small*

*Green (or the color you used) Purple (or the color you used)*

*Right side up Slanted or crooked*

4 equal angles 4 equal angles

4 equal sides 4 equal sides

4 vertices 4 vertices

4 sided figure 4 sided figure

4 straight sides 4 straight sides

Closed figure Closed figure

Plane figure Plane figure

Bold are defining attributes; *italics represent non-defining attributes*

Answer Key-Shape Riddles

*See students’ drawings and listen to their proof.*

1. a hexagon (it just has to be a 6 sided figure, does not have to be a regular hexagon like the yellow hexagon pattern block)

2. rectangle

3. triangle

Answer Key-More Shape Riddles

*See students’ drawings and listen to their proof.*

1. triangle

2. trapezoid

3. square, rectangle, trapezoid, or any non-regular quadrilateral

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 94

**Materials Needed:**

* Teacher Guide- *“Making Hexagons”*
* Blackline Masters- *“Build A Shape”*
* Pattern blocks
* Magnetic tape to put on back of pattern blocks
* Blank Paper
* Colored Pencils

**Assessment**

See notes on Teaching Guide

**Homework none**

Vocabulary

triangle, square, trapezoid, hexagon, shapes, polygons, closed figure, two-dimensional, attributes, straight lines, curvy, vertices or corners, sides, parallel, angles, rhombus (*Note: 1st grade students are not expected to use the term “rhombus”, however, they can refer to it as a 4-sided closed figure. You can introduce the term rhombus but please note that students should not be assessed on the term.)*

###### Alignment Lesson

###### Shapes Out of Shapes

1. *Making Hexagons –*

*Making Hexagons*

**Theoretical Foundation:** This activity helps students begin to classify polygons by given attributes. By focusing on a class of shapes, the students are moving away from classifying polygons based on their looks alone (it is a rectangle because it looks like a rectangle) and are now considering all of the properties of the polygon.

**Materials:** pattern blocks for each students, blank paper, colored pencils

**Description:**

1. Review the vocabulary words: sides and angles.
2. On the overhead or under the document camera, show a yellow hexagon pattern block and ask the students to tell you everything they notice about it. Record what they say – including if they say *“yellow.”* Trace the hexagon on to paper.
3. Then **without seeing you build it**, let students see a hexagon that is made of two trapezoids.

Ask them; *Does it still have 6 sides? 6 angles? What is different about it from the last hexagon?* Trace this hexagon next to the last one. Now remove the trapezoids. Ask; *Do they both still have 6 sides and 6 angles?* **This will help to eliminate color as being one of the attributes – erase yellow from the list of attributes.** Ask students; *How many sides do hexagons have? How many angles?*

Give each student pattern blocks, blank paper, and colored pencils. Ask them to make and trace as many different hexagons as they can.

1. After each student has done one or two regular hexagons, go back to the overhead/document camera. Show students an irregular hexagon. Ask them if this is a hexagon. **Most first graders will say “no” since it does not look like the pattern block hexagon.** Challenge the students to look back at the rules for what makes a hexagon – 6 sides and 6 angles. *Does the new hexagon fit the rule?* Tell them since it fits the rules, now do you think it is a hexagon?
2. Challenge students to create more hexagons that don’t look just like the yellow hexagon in the pattern blocks.
3. Once students have the new hexagons made with the pattern blocks, they are to trace them onto their papers.
4. Share the different hexagons by allowing students to come to overhead/document camera and show how they built theirs.

**Differentiation Suggestions:**

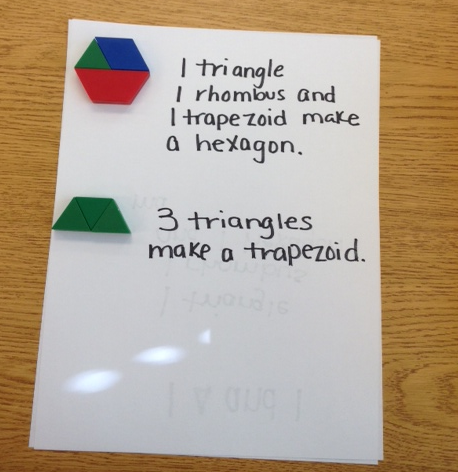
1. Have students trace using a number two pencil. Then color in the blocks according to the color of the pattern blocks used to build it.
2. Allow students to work with partners or in groups.

**Probing Questions:**

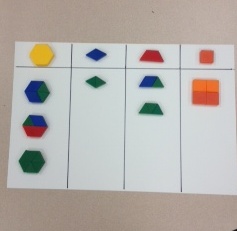
1. *What do all of your hexagons have in common?*
2. *Can you put your hexagons in order somehow?*
3. *What made you put the blocks together that way?*
4. *How did you decide that block went with this one to make a hexagon?*
5. *Do you think there are any more ways to make hexagons using the pattern blocks?*

**Assessment:**

1. Can the student tell you why the hexagon is a hexagon?
2. Can the student show the hexagon using a variety of blocks?
3. Is the student making both regular and irregular hexagons?
4. Can the student look at another student’s paper and explain how that student made their hexagon?
5. *Build A Shape* – Students will combine shapes to make new shapes. Example: They may use 3 triangles to make a trapezoid (see photo). Students use Blackline Master, “*Build A Shape”* to trace the shapes and record (I used 3 triangles to make a trapezoid). Facilitate discussion whole group by having students share their findings. Encourage students to use correct vocabulary and describe the attributes (especially the defining attributes of the shapes (the individual shapes and the composite shape).



\*\* Use a graphic organizer to show all the ways to put together shapes to make new shapes. Place magnets on the back of pattern blocks to create an awesome visual for this.



**Facilitating Classroom Discussion**

**Students should begin to understand the difference between defining and non-defining shapes. Students should understand that defining attributes are always present and are used to classify a shape or object. Non-Defining attributes may be present but do not identify what the shape is called.**

***The chart below features some defining/non-defining attributes you will discuss throughout the Geometry Unit.***

|  |  |
| --- | --- |
| **Defining Attributes** | **Non-Defining Attributes** |
| Number of sides | Orientation (right side up, upside down, any slides, flips, or turns) |
| Number of angles | color |
| Number of vertices/corners | Size (small, big, etc.) |
| Numbers of faces |  |
| Number of edges |  |
| Straight sides |  |
| Open or closed figure |  |
| Solid or plane figure (flat surface |  |

**Facilitate discussion by asking questions to promote math talk such as:**

* *Can you repeat what \_\_\_\_\_\_\_just said in your own words?*
* *Would someone like to add on?*
* *Do you have another way to explain your thinking?*
* *Does anyone have the same answer but a different way to explain it?*
* *Do you agree or disagree with \_\_\_\_\_\_\_ and why?*
* *Does anyone else have comments or questions for \_\_\_\_\_\_\_\_\_\_?*

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 95

**Materials Needed:**

* Cardstock *“Shapes” (baggies optional)*
* Transparency/Blackline Master-

*“Creating Composite Shapes”*

* Transparency- *“Shape Activity*

*Questions”*

* Teacher Guide *“A Model of a Composite*

*Shape”*

* Construction Paper
* Glue
* Scissors
* Crayons or Colored pencils

**Assessment**

A completed composite shape

**Homework**

Blackline Master *“Composite Shape Journal Prompt”*

Vocabulary

A composite shape or figure is made up of 2 or more geometric shapes.

two-dimensional, rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles, any attribute vocabulary, etc.

###### **Alignment Lesson**

###### **Creating Composite Shapes**

1. Students will need to color and cut out shapes on Cardstock *“Shapes”* to use for this lesson. You may want to have students work on this **during morning work for several days prior to the lesson** to use time efficiently during the lesson. Provide a baggie to hold their shapes for the lesson. *(You may need to help them identify the right triangles and the equilateral triangles so they know how to color – students are only responsible for identifying triangles, not types of triangles.)*

2. Ask students to identify the shapes on Transparency/Blackline *“Creating Composite Shapes”.* Since shapes are named by their defining attributes, this would be an appropriate time to review those attributes as students identify the shapes *(especially for the two trapezoids in 7 & 8)*. You may also have to discuss the half-circle in *3* since students experience with this shape may be limited at this point.

3. Students will use their cut out shapes to create the shapes given on Transparency/Blackline *“Creating Composite Shapes”*. You may want to lead students through this by asking questions from Transparency *“Shape Activity Questions”* one by one or allow time for students to investigate on their own prior to going over the questions whole class. It is best to choose the option that meets the needs of your students. After you have finished discussing all 8 as a class, **pose the question *“We used 3 red equilateral triangles to create a trapezoid. We also used one square and one blue right triangle to create a trapezoid. Can you create a trapezoid with just blue right triangles? If so, how many do you need?” (Answer: 4)***

4. After students have investigated how shapes can make other shapes, students can use their cut out shapes to make their own composite shape on construction paper. Students should name their created composite shape (For example: “Jack’s Shape”) and name the attributes of their new composite shape. They should also identify how many and kinds of shapes they used in their composite shape. Creating your own model or example of this will help students know their expectations. See Teacher Guide *“A Model of a Composite Shape”*. **Teacher Note: You may want to assign a minimum number of shapes that students must use, for example, *“You must use at least 10 shapes which must include at least 1 half circle, 1 quarter circle, 1 triangle, and 1 square.”***

5. Have students share their composite shapes with a small group. Ask groups to examine and discuss some of their peers’ composite shapes. You may want to provide guiding questions on the board to assist with the group talk.

6. Assign Blackline Master *“Composite Shape Journal Prompt”* for homework. This may be an assignment you give more than one day to complete.

***Note: You may want to collect all unused cut shapes and use for review/remediation later.***

**Answer Key-Shape Activity Questions**

1. How many half-circles does it take to make one whole circle? ***2; You may need to discuss the vocabulary half-circle.***

2. How many quarter-circles does it take to make one whole circle? ***4; You may need to discuss the vocabulary quarter-circle.***

3. How many quarter-circles does it take to make this half-circle? ***2; You may need to discuss the vocabulary quarter-circle***

4. How many triangles does it take to make this square? ***2; Students should use the blue right triangles here. Students do not need to know formal language, just that triangles are 3 sided figures and can look different. The blue and red figures are both types of triangles.***

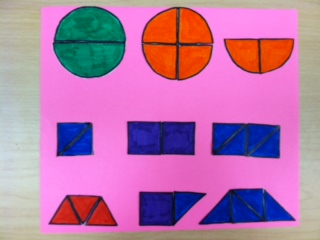
5. How many squares does it take to make this rectangle? ***2***

6. How many triangles does it take to make this rectangle?  ***4; Students should use the blue right triangles here. Students do not need to know formal language, just that triangles are 3 sided figures and can look different. The blue and red figures are both types of triangles.***

7. How many triangles does it take to make this trapezoid? ***3; Students should use the red equilateral triangles here. Students do not need to know formal language, just that triangles are 3 sided figures and can look different. The blue and red figures are both types of triangles.***

8. What shapes can you use to make this trapezoid? How many? ***Square and triangle (the right triangle or blue one); 1 of each***

\*\*\*Can you make a trapezoid with just using the blue right triangles? If so, how many do you need? Prove your thinking.\*\*  **4**

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# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 96

***\*\*\*Note from Donna***

**There are also some good 3D videos on Discovery Education**

**I made a “Board”-look on *School Content* under “*1st grade*”- “*Math/Shapes*”**

**Materials Needed:**

* Blackline Master- *“Look-Alikes Recording*

*Sheet”*

* Solid figures (cones, rectangular prisms, cylinders)
* Chart Paper
* Book- ***Look-Alikes: The More You look, The More You See***, by Joan Steiner

**Assessment**

Using the book, **Look-Alikes: The More You Look, The More You See** (or newspaper/magazines), students can record three-dimensional shapes that they see in the photographs on the *Look-Alikes Recording Sheet.*

###### **Alignment Lesson**

###### **3-D Shape Look-Alikes**

1. Introduce the three-dimensional shapes to students, one at a time (cylinder, cone, and rectangular prism). After introducing a three-dimensional shape, write the shape name at the top of a piece of chart paper and draw it. Pass around examples of each solid figure so students can make observations about each of the shapes. Be sure to discuss important characteristics of each shape, and use geometric vocabulary. For example, the **cone** has a circular **base** and an **apex**. The **rectangular prism** has six **faces** and eight **vertices**. The **cylinder** has two circular **bases**.
2. Read ***Look-Alikes: The More You Look, The More You See***, by Joan Steiner. During reading, ask students to identify examples of cylinders, cones, and rectangular prisms in the photographs on each page. You may wish to record these ideas on the chart paper. Engage students in a discussion of the shapes' attributes. Ask: *How do you know that is a cylinder/cone/rectangular prism? How many faces/vertices does it have?* NOTE: This activity can be replicated as a center activity or for assessment purposes. Use Blackline *Master “Look-Alikes Recording Sheet”* and *Look-Alikes* book to provide students with additional practice identifying and naming the three-dimensional shapes.
3. Go on a Shapes Walk. Make a list of the three-dimensional shapes that you see on your walk. You may wish to take the Shapes Walk in the classroom, school, or outside. Encourage students to *name* the three-dimensional shapes that they see.
4. When you complete the Shapes Walk, record the cylinders, cones, and rectangular prisms that you saw on the Shapes Walk on the chart paper posters. Review the attributes of cones, cylinders, and rectangular prisms.
5. Display the chart paper posters in the room for future reference.

**Note:** There is a YouTube Video: I See 3D shapes (8 minutes) if you students need more exposure to 3D shapes.

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 97

**Materials Needed:**

* Blackline Masters- *“Face Maps”*
* 3D Shapes
* Attribute Blocks

**Assessment**

As students work on activities, take anecdotal notes on student understanding and use of correct vocabulary.

**Homework none**

Vocabulary

shape, rectangle, square, trapezoid, triangle, hexagon, circle, two-dimensional, three-dimensional, shape, closed, side, cylinder, sphere, rectangular prism, cube, edges, vertices, faces

###### **Alignment Lesson**

###### **Shape Sorters**

**Activity 1: Shape Sorters –**

This activity is intended to teach children to differentiate between two-dimensional and three-dimensional figures.

1. Give each student a collection of geometric solids (include cubes, spheres, cylinders, cones, rectangular prisms) and attribute block pieces (include squares, circles, rectangles). Tell students they are to explore the shapes and categorize the collection in several different ways.
2. After a few minutes have students turn and talk with a partner about the way they grouped their collection. Then come together as a class to continue the discussion.
3. After talking with students about their sorts, direct students to sort by specific criteria *(ex. - find 2Dshapes that are faces for 3D shapes)*. Possible partner pairs are cube and square or circle and cylinder. Encourage students to explain why they think the 2D and 3D shapes are partners. Ask students to think why some 3D figures have more than on partner whereas others *(i.e. cube has only squares)* have only one.

Through this type of hands-on exploration and rich conversations among students and the teacher, new vocabulary will surface, correct observations and discussion can be confirmed, and incomplete observations can be expanded for the entire group.

**Activity 2- Blocks with Faces:**

1. Place students in groups at a table and give each group a set of 3D block shapes.
2. Ask students to trace around the faces on each block. When they trace around the faces, they should describe orally the attributes. Some may be ready to label each face as they trace. Circulate as students work and ask:

* *Are any of the faces the same?*
* *Are any of the faces different?*
* *How many faces does your block have?*
* *Can you match the faces you drew to the faces on other blocks?*
* *What is different about cones, cylinders, and spheres? (See Teacher Note Next page)*

**Activity 2- Blocks with Faces Continued:**

Teacher Note: Cylinders have two circular bases and a curved surface. When you unroll the curved surface it is a rectangle. A good model of this is students a cylindrical can and peels the label off. They will see it is a rectangle. Cones have one circular base and a curved surface that connects to the base of the vertex.

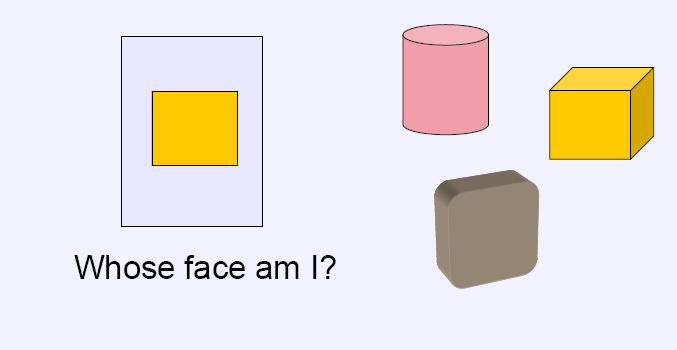
*Note: Children will begin by exploring and finding out what shapes are formed when they draw around various faces on different blocks. They will later move to a more systematic approach. At that point they will be able to draw around all the faces for a particular block and keep track of what they have done.*

**Activity 3- Face Maps:**

*A face map is a picture of three-dimensional shapes.*

1. Give each student a copy of Blackline Master, *“Face Maps”*. Have students read and respond to the question.
2. Allow students to turn and talk to a partner to share their thinking.

**Activity 4- Mystery Shape Maps:**

****

**To prepare mystery shape maps, prior to the lesson, the teacher should trace one face of different geometric solids on task cards. Only one face of each shape should be traced.**

1. Distribute the shapes and task cards to students. Challenge students with of solving the mystery by matching the shape to the face traced on the correct task card.
2. When the shape is matched, the student should name the solid. Once the student has solved their task card have them switch with another student.
3. Allow students to solve and switch several times before bringing the class back together for a concluding discussion.

*Differentiation: Students may also create additional cards by following the same steps as the teacher.*

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Days 98 & 99

**Materials Needed:**

* Blackline Masters- *“Compare Two Shapes”*
* Cardstock- *“Name My Shape Task*

*Cards” “Attribute Cards “2D Shapes”*

* Brown paper bag
* Variety of 3D shapes
* Picture books with 3D shapes
* Toothpicks, straws, playdough, gum drops (dots)
* 3x5 Blank Index Cards
* Whiteboards
* Glue, scissors, construction paper

**Assessment**

Monitor each station, probing students to discuss their work and to prove their thinking, using correct vocabulary. Take anecdotal notes as observing students work

Vocabulary

shape, rectangle, square, trapezoid, triangle, hexagon, circle, two-dimensional, three-dimensional, shape, closed, side, cylinder, rectangular prism, cube, edges, vertices, faces, etc.

###### **Alignment Lesson**

###### **Shapes Stations**

**Note: The following activities are great to use as math stations. However, you will need time to prep these stations since each station requires material gathering and organization. Be sure to model each activity before sending children to these stations. Setting clear guidelines and providing materials and probing questions to help with math talk is essential to this learning environment.**

**To allow enough time in each station, divide children into 5-6 groups (for 5 stations) and let them visit two - three stations each day. You should monitor and visit all stations as children work and take anecdotal notes (Having Volunteers is helpful when using this format). (You should not be a lead of a station. If students are not able to work in groups, you may choose to do one activity at a time with all students).**

**In addition, since some activities may take longer, you may want several of each around the room, therefore students can truly move at their own pace.**

**Activity 1: Name My Shape**

1. Place one of each 3D shape in a brown paper bag *(cylinder, cone, cube, sphere, rectangular prism)*. One child reaches in the bag, selects a shape *(but keeps it in his hand in the bag)* and describes the shape by saying *“My shape has curves and two faces, but no edges or vertices.”* The partner names the shape by saying, *“I think it is a cylinder because a cylinder had 2 faces and has curves but doesn’t have any edges or vertices.”* The first child pulls the shape out of the bag, determines if the correct shape was identified and then places it to the side. Partners switch roles and repeat until all the shapes have been identified.

Place Cardstock, “Task Cards” at the station to help partners remember what to say:

**Partner 1: My shape has \_\_\_\_\_\_\_\_\_\_\_.**

**Partner 2: I think it is a \_\_\_\_\_\_\_\_\_\_ because \_\_\_\_\_\_\_\_\_.**

*\*\* Once students are finished, they can look at shape picture books and match the 3D shapes from the bag to the shapes in the book.*

**Activity 2: Compare Two Shapes**

Place a set of 3D shapes in a bag. Student one selects a shape from the bag (without looking), pulls it out and names the shape. Student two does the same. Students compare the two shapes and tell all the ways the shapes are alike and different. Repeat.

**Differentiation:** This can be done orally, in their math journal or using the Blackline Master, *“Compare Two Shapes”*. (Have several copies of *“Compare Two Shapes”* available if you want students to use. You may ask that they complete together with one recorder)

**Activity 3: 3D Construction**

Partners work together to build 3D shapes. Partners select a shape to build and discuss how many edges, vertices, curves, and/or faces the shape has. Students then select the materials they want to use to build the shape. *Materials to choose from: toothpicks, straws with different lengths, coffee stirrers, playdough, dots (candy gum drops), clay, etc.* Have 3x5 blank cards available for partners to use to label their shape. Create a spot in the classroom to display the shapes made. After several are on display, place all the like shapes together (cubes, cones, etc.).

***Ask:*** *Do all the cubes look the same? Why or why not? Can they still be the same shape if they are a different size? Are they still the same shape if they have a different number of edges/vertices/faces etc.?*

***Technology*** – Use a flip camera and record students describing the 3D shape they build.

**Activity 4: Drawing 2D Shapes Riddles**

Each student will need a partner, a whiteboard and pen, and a bag of cut up Cardstock *“Attribute Cards”*. Partners should sit across from one another or so they cannot see each other’s board. Students should place the cards in a stack so they cannot see the card and draw one card. Next, the students read the card and then draw the 2D shape on their board. After each student has had time to draw their shape, they should share and discuss their drawings. Questions like *“How do you know your shape is correct, prove your thinking?” “Is there only one way to draw a figure to match the attributes given?” “Can we have different looking figures and both be correct?”* can promote thinking and discussion. Having questions posted in the station might help your students have productive conversations. Students will repeat by drawing another card. (You may also have students record on their own paper or in their journals).

**Activity 5: Creating a Composite Shape**

Students will need to cut out shapes from Cardstock *“2D Shapes”* to create a composite shape by gluing it on a piece of construction paper. The new shape can be a picture or abstract art. The only requirement is that students need to use at least one of each shape given (rectangle, square, trapezoid, triangle, half-circle, and quarter-circle). Students should write a description of their composite shape using shape and attribute vocabulary. If time permits, they can share and discuss their composite shape with a partner or small group. Extension: Have students take another students picture and add to it using more shapes.

DAY 100 -Assessment

Items on CMAPP**-** some are written and some are “performance task” style

**Standards for days 101-107**

|  |  |
| --- | --- |
| 1.G.1 | Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size) ; build and draw shapes to possess defining attributes. |
| 1.G.2 | Compose two dimensional shapes (rectangles, squares, trapezoids, triangles, half circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. |
| **Learner Objective(s)** | **Language Objective(s)** |
| * Students will be able to sort a set of shapes based on a variety of attributes. * Students will be able to describe, build, and draw shapes based on attributes. * Students will combine shapes to make new shapes (6 triangles to make 1 hexagon). * Students will be able to identify, build and name cylinders, cones and rectangular prisms. * Students will be able to differentiate between two-dimensional and three-dimensional figures. * Students will be able to identify, name, describe, and build 3 dimensional shapes | * Students will explain how they can sort shapes by their attributes. * Students will write about descriptive and non-descriptive attributes in their math journals. * Students will listen to others describe shapes during Math Talk. |
| **Essential Question(s)** | |
| * Describe the attribute of the shape you chose. * Decide if my shape will fit in your sort. Why or why not? * Explain how the triangles in the sort are alike and different. * Explain how you combined figures to make a new complex figure. Show your example. * Explain how 2D and 3D shapes are partners. What relationships do you notice? * Explain why some 3d figures have more than on partner (i.e. square based pyramid and has square and triangles), whereas others (i.e. cube has only squares) have only one. * Explain the strategy did you use when counting the shapes in the design? * Explain the strategy you used when recreating the design. How could you revise your shape to be more accurate? * Describe the strategy you used to recreate your partners design or pattern. * Explain how you recreated the teacher's design from the geoboard to the geo-dot paper. | |
| **Evidence of Student Learning: Assessment(s)** | |
| * As students sort shapes observe their strategies and have them explain why they sorted the way they did. * What similarities do 2D and 3D figures have? Show figures as you explain. * Check geo-dot paper for accuracy when recreating teacher's design.   **DPI Unpacking Document**  TEACHER NOTE: In the U.S., the term "trapezoid" may have two different meanings. Research identifies these as inclusive and exclusive definitions. The inclusive definition states: A trapezoid is a quadrilateral with at least one pair of parallel sides. The exclusive definition states: **A trapezoid is a quadrilateral with exactly one pair of parallel sides**. With this definition, a parallelogram is not a trapezoid. North Carolina has adopted the exclusive definition.  First Grade students use their beginning knowledge of defining and non-defining attributes of shapes to identify, name, build and draw shapes (including triangles, squares, rectangles, and trapezoids). They understand that defining attributes are always-present features that classify a particular object (e.g., number of sides, angles, etc.). They also understand that nondefining attributes are features that may be present, but do not identify what the shape is called (e.g., color, size, orientation, etc.).  As first graders create composite shapes, a figure made up of two or more geometric shapes, they begin to see how shapes fit together to create different shapes. They also begin to notice shapes within an already existing shape. They may use such tools as pattern blocks, tangrams, attribute blocks, or virtual shapes to compose different shapes.  First graders learn to perceive a combination of shapes as a single new shape (e.g., recognizing that two isosceles triangles can be combined to make a rhombus, and simultaneously seeing the rhombus and the two triangles). Thus, they develop competencies that include:  • Solving shape puzzles  • Constructing designs with shapes  • Creating and maintaining a shape as a unit  As students combine shapes, they continue to develop their sophistication in describing geometric attributes and properties and determining how shapes are alike and different, building foundations for measurement and initial understandings of properties such as congruence and symmetry. | |

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 101

**Materials Needed:**

* Three-Dimensional objects brought from home (i.e., cereal boxes, empty paper towel rolls, etc)
* Collection of books/images of various animals for students to reference as needed
* Craft supplies (i.e., construction paper, scrap paper, googly eyes, markers, crayons, tape, glue)

**Assessment**

**Ask students as they are building their Geo Animals questions about the shapes. Which shape are you holding? How many bases does it have? How many faces does it have? How many vertices does it have? (Have students point to these as they count- this will show they** **understand what each of these terms means and can count them) Record individual** **responses.**

**Homework**

Blackline Master *“3D Match*

Vocabulary

Cylinder- A three-dimensional figure with two parallel and congruent circles as bases, one curved surface, two curved edges, and no vertices.

Cone- A three-dimensional figure with one curved surface, one flat surface (usually circular), one curved edge, and one vertex.

Rectangular Prism- A prism with six rectangular faces.

Prism- A three-dimensional figure that has two congruent and parallel faces that are polygons. The remaining faces are parallelograms.

Face- A plane figure that serves as one side of a solid figure.

Base- A plane figure. If the solid is a cylinder or prism, there are two bases that are parallel and congruent.

Vertex (plural is *vertices*)- The point at which two line segments, lines, or rays meet to form an angle.

###### **Alignment Lesson**

###### **Geo-Animals! (Day 1 of 2)**

1. Review concepts from the previous day. Students should be able to identify, name, and describe cones, cylinders, and rectangular prisms.
2. Ask the students to share examples of objects they brought from home for today's Geo-Animals activity. Students should have brought in three-dimensional objects in the shapes of cones, cylinders, and rectangular prisms (cereal boxes, paper towel rolls, etc).
3. Explain that students will be creating their own "Geo-Animal" using the three-dimensional items they brought from home. **NOTE: You may want to collect all objects and distribute them equally among students/tables in case some students were unable to bring in their own objects.**
4. Provide students with a variety of craft supplies and allow them to create their animals. (If materials are limited, you can have students pair up or combine into groups.) Students may use construction paper, googly eyes, glue, tape, markers, and crayons to create and decorate their animals. Provide books and/or images of various animals for students to reference if they need help with ideas for their Geo-Animals.

**Note: As students build their animals, ask questions that keep the focus on the attributes of the shapes they are using. Encourage students to use more formal vocabulary as they understand attributes of 2D and 3D shapes.**

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 102

**Materials Needed:**

* Blackline Master *“Three-Dimensional*

*Geo-Animals”*

* Crayons to color graph

**Assessment**

**As students share their Geo Animals ask: How many more \_\_\_\_\_\_ did you use than \_\_\_\_\_\_? What is the total number of shapes you used to create your Geo-Animal? What shape did you use the least? What shape did you use the most? What attributes do your figures have? Record individual responses.**

**Homework**

Blackline Master *“Geo Animals Graph*

###### **Alignment Lesson**

***Geo Animals! (Day 2 of 2)***

1. Students discuss building the Geo Animals and review the 3-D shapes they used. Focus on attributes for the shapes: cones, cylinders, and rectangular prisms. Review bases, faces, vertices for each during a math talk. Encourage students to use correct vocabulary as they discuss their composite figures. Refer to vocabulary and attributes discussed in previous lessons.
2. Distribute Blackline Master *"Three-Dimensional Geo-Animal Graph"*. Students should graph the number of cones, cylinders, and rectangular prisms they used to create their animals.
3. Allow students to share their Geo-Animals and graphs with the class. Encourage students to use math vocabulary when describing their animals. Use Math Talk to ask questions about the graphs. Ask: *How many more [of one shape] did you use than [another shape]? What is the total number of 3-D shapes that you used? Which shape has the most/least?*
4. Distribute and assign homework Blackline Master, *“Geo Animals Graph”*

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 103

**Materials Needed:**

* Blackline Masters- *“Problem Solving*

*With Shapes”*

* 3D Geometric Solids
* Attribute Blocks
* Geoboards & Rubber Bands
* Craft Sticks

**Assessment**

Informal - Take anecdotal notes on students understanding of 2D & 3D shapes.

###### **Alignment Lesson**

###### **Problem Solving with Shapes**

**In this lesson you will find a variety of questions for students to solve related to 2D and 3D shapes. Below are a few ways to use these questions. Choose based on the needs of your class.**

1. You may choose to work on one question at a time with the whole class and then have students share their solutions.
2. You may assign students a specific question or set of questions based on their level and need (some are more difficult than others).
3. You may place children in small groups to visit math stations and use these problems with students as they rotate to you (you are one station).
4. You may use some of these questions as an assessment or for homework.

\*\* Students can use Blackline Master, *“Problem Solving with Shapes”* to show their work or on their own paper.

**Questions:**

1. *How many trapezoids can you build with 12 craft sticks? Have students solve the problem in their math journal or on the Journal Prompt page and describe the strategy they used to figure it out. Observe children as they work. Have several students share their strategy. Next, allow children to check their answer by using 12 craft sticks (straws or toothpicks) to build trapezoids.*
2. *If you trace the face of a cylinder, what shape would you get? Are there any other shapes that have that same face? Check answer by looking at all the 3D shapes.*
3. *What 2D shapes make up a rectangular prism? How many of each? Check you answer by looking at a rectangular prism?*
4. *How many different shapes can you make that have 4 sides? Draw and label the shapes you can make?*
5. *How many hexagons can you build with 14 toothpicks?*
6. *How many different designs can you make using 5 rectangles?*
7. *Use geoboards to make 3 different triangles. How are they alike? How are they different? (all have 3 sides, the sides aren’t the same length on all the triangles).*
8. *If I have one cube and one rectangular prism, how many edges, vertices, and faces do I see?*

# Mathematics Alignment Lesson

# Grade 1 Quarter 3 Day 104

**Materials Needed:**

* Transparencies- *“How Many Squares Do You*

*See?”, “How Many Triangles Do You See?”,*

*“Draw It!”*

* Dry-erase boards, dry-erase markers (or blank sheet of paper for each student)

**Assessment**

Ask: *What strategies did you use to recreate the designs on your board/paper?* What should you change? Record responses.

**Homework**

Blackline Master *“Draw It- Homework*

###### **Alignment Lesson**

***What Do You See?***

**"How Many Shapes Do You See?"**

1. Display Transparency, *"How Many Squares Do You See?"* Explain that students need to count how many squares they see. Discuss as a group, using Math Talk to explain their thinking. Make sure to include use of attribute vocabulary.
2. Repeat activity with Transparency, *"How Many Triangles Do You See?".*

**"Draw It!"**

1. Place the first *"Draw It!"* Transparency on the overhead projector, but keep the projector turned off. Explain that you will be flashing a design on the overhead projector for a couple of seconds, and then turning it off. Students will need to draw the image they saw on their dry erase boards (or on a blank sheet of paper).
2. When students are finished drawing, turn the overhead projector back on, and allow students to compare their drawings to the one on the overhead (Math Talk). Ask: *Does your drawing look just like the one on the overhead? If not, what would you need to change? What shapes can you identify? What are their attributes? How do you know?*
3. Repeat the process with the second and third *"Draw It!"* Transparencies.
4. Distribute and assign homework Blackline Master *“Draw It – Homework”*

# Mathematics Alignment Lesson

# Grade 1 Quarter 3 Day 105

**\*\*\*\*Note from Donna – there is a really neat app for the I Pad called GEOBOARDS I have it on mine if you want to try it out!**

**Also, other resources on www.mathlearningcenter.org/apps**

**Materials Needed:**

* Pattern Blocks
* Geoboard & rubber bands
* Blackline Masters *“Geo-dot Paper”,*

*“Recreate It!”*

* Blank Paper (to cover designs)

**Assessment**

Record if students are able to recreate the Geoboard design on dot paper. Ask students what strategy they used to accurately recreate the design.

**Homework**

Blackline Master “*Recreate It!*”

Vocabulary

hexagon, trapezoid, parallelogram, triangle, square, same, different

###### **Alignment Lesson**

***Designs***

**Note: For Activity Geo-Designs students will need to receive a geo-board with a design already on it. In order to protect instructional time, the designs should be placed on the Geoboard prior to teaching the lesson.**

1. **Guess My Design:** Explain that students will be working with partners on a *"Guess my Design"* activity with pattern blocks. One partner will have their eyes closed while the other partner will create a pattern block design or pattern.
2. When the partner creating the design is ready, they will allow their partner to look at the design for a few seconds (count to 5 slowly) and then cover it up with a piece of paper. The partner who had their eyes closed will recreate the design or pattern. The partner should describe the design using attributes of figures. Encourage students to use correct vocabulary. Refer to previous lessons for defining and non-defining attributes.
3. When finished, they can lift the piece of paper and check for accuracy. Partners can repeat the "Guess my Design" game, taking turns with the two different roles.
4. **Geo-Designs:** Distribute one Geoboard (with a design already on it) to each pair of partners. Explain that students will recreate the Geoboard design on Dot Paper. Circulate and assist students who are having difficulty with this activity. For students who finish early, a new design can be created on their Geoboard, and they can recreate it in a new Geoboard on their Dot Paper. Ask: *What strategy did you use to make sure your drawing is accurate? What shapes can you identify? What are their attributes? How do you know?*
5. Distribute homework Blackline Master “*Recreate It!*”

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Days 106

**\*\*\*Note from Donna- Lots of Tangrams I Pad apps available! I have one on my I pad if you want to see it! Also a great book to share is *Grandfather Tang’s Story* we have it at Combs!!!**

**Materials Needed:**

* Black line Masters- *“Tangram Design”*
* Cardstock- *“Tangram Boat”, “Tangram Dog”, “Tangram House”, “Tangram Person” ,“Tangram Swan”, “Pattern Block Duck”, “Pattern Block Turtle”, “Pattern Block Penguin”, “Pattern Block Fish”, “Pattern Block Cat”.*
* Tangrams
* Pattern Blocks
* Bags for shapes
* Pencils
* Optional- Math journals

**Assessment**

* Monitor each student as they work on their designs and take anecdotal notes as observing students work. In addition, read students descriptions for any misconceptions and give detailed feedback.

**Homework**

* Blackline Masters*- “Tangram Design Homework”, “Design Description Homework”*, “*Tangram Pieces*

Vocabulary

* shape, rectangle, square, trapezoid, triangle, hexagon, circle, closed, side, edges, vertices, etc.

###### **Alignment Lesson**

###### **Tangram Designs**

**Activity 1:**

1. Begin lesson by bring students to carpet. Instruct students that they will be practicing their knowledge of shape attributes with tangrams and pattern blocks today.
2. Teacher will model filling a design with an online tool (<http://www.nctm.org/standards/content.aspx?id=25012>) to demonstrate to students how to use the tangrams and/or pattern blocks for this activity. ***Teacher Note: use a mat that you have practiced completing before lesson. Additionally, model vocabulary and thinking while filling in the design with tangrams.***
3. Students may work independently or in pairs for this activity. Each student will need one bag of tangrams/pattern blocks and one mat that matches their tool (tangrams or pattern blocks). Students will complete the design on the mat given. ***Teacher Note: to optimize instructional time have bags with tangrams or pattern blocks ready before the lesson begins.***
4. Students will then switch their design and bag of tools with a partner. Students will then complete that design.

**Activity 2:**

1. After completing their designs, students will trace their last shape on the Blackline Master “Tangram Design” and describe what shapes they used by naming the attributes of the shapes on the Blackline Master “Design Description”. ***Teacher Note: Instead of using the Blackline Masters students may also complete this activity in their math journals.***

**Activity 3:**

1. After students have completed their descriptions they may choose a partner that is also completed to take turns reading their description to.
2. In addition, students will use math talk to support this activity.

* *What strategy did you use to figure out the design?*
* *Do you think there is more than one way to solve the design? and why?*
* *What structures did you have to know and look for?*

Students will complete *“Tangram Design Homework”* and *“Design Description Homework”* for homework. Students will need either Blackline Master, *“Tangram Pieces”* or actual tangrams to complete their assignment.

# Mathematics Alignment Lesson

Grade 1 Quarter 3 Day 107

**Materials Needed:**

* Blackline Masters- *“Attribute Train”*
* Cardstock, *“Large Attribute Shapes”,* (Teacher Only) *“Small Attribute Shapes”* (15 copies)
* Folders/dividers
* Bags for shapes
* Pencils

**Assessment**

* Monitor each student as they work on their partners attribute train and take anecdotal notes as observing students work. In addition, read students descriptions for any misconceptions and give detailed feedback.

Vocabulary

* shape, rectangle, square, trapezoid, triangle, hexagon, circle, closed, open, side, edges, vertices, etc.

###### Alignment Lesson

***Choo Choo Attribute!***

**Activity 1: Thinking About Attributes-**

1. Begin the lesson by bringing students together to model the activity for the day. Model the attribute train with students by placing Attribute Train pieces on board/chalk ledge. Pick one as the beginning piece. Ask students to list all the characteristics and non-characteristics of that shape. List all of the students’ ideas on the board or chart paper for all students to view.
2. Prompt students to critique reasoning and construct viable arguments when listing the characteristics and non-characteristics.
3. Ask a student to pick a shape off the board, that has only ONE difference from the starting piece. Have the student place it on the floor next to the beginning piece. This will be “attribute train.”
4. Allow students to critique their reasoning, if they agree or disagree and why.
5. Continue to allow for 4 more students to add a shape to the attribute train following the one attribute difference rule. Assign students partners for Activity 2.

**Activity 2: Building Trains With Partners**

1. Ask students to take turns completing their own attribute train using Blackline Master, *“Small Attribute Shapes”.* Instruct them to place a folder in-between them and one of them will start an attribute train of only 3 shapes with the rule being the continuing shapes have two different characteristics.
2. Then, students may remove the divider/folder and the remaining partner will continue the pattern using the same rule by 3 shapes.
3. The student that started the train is only allowed to give supportive clues; however, is not allowed to tell their partner the rule.
4. Partners take turns doing this activity and completing the rules of their partners.
5. Students will choose one attribute train they needed to complete. They will record the shapes and write down their partners rule on the Blackline master *“Attribute Train”*.

**Activity 3: Attribute Puzzle**

1. After students have completed their descriptions of their partners attribute train on the Blackline Master *“Attribute Train”*, have students complete the Blackline Master *“Attribute Puzzle”*.
2. Once students have completed, allow them to check their reasoning with a partner.
3. Have students use Math Talk to support this activity. Encourage the following prompts.
4. *What strategy did you use to figure out the puzzle?*
5. *Do you think there is more than one way to solve the puzzle? and why?*
6. *What characteristics did you have to know and look for?*

**Day 108 Assessment**