

Gillian Kutches  
CEP 842, Section 730  
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Unit Plan: *Plane (2-D) and Solid (3-D) Shapes*

**Grade Level:** First

**Setting:** Whole Group, Small Group, Pairs, Independent

**The topic of the instructional unit:**

The topic of my instructional unit is plane and solid (2-D and 3-D) shapes. Students will be able to identify two and three dimensional shapes. Students will understand the following Georgia standards:

**M1G1. Students will study and create various two and three-dimensional figures and identify basic figures (squares, circles, triangles, and rectangles) within them.**

- a. Build, draw, name, and describe triangles, rectangles, pentagons, and hexagons.
- b. Build, represent, name, and describe cylinders, cones, and rectangular prisms.
- c. Create pictures and designs using shapes, including overlapping shapes.

**M1G2. Students will compare, contrast, and/or classify geometric shapes by the common attributes of position, shape, size, number of sides, and number of corners.**

**Describe your learners:**

My students are in first grade and are either six or seven years old. My school is a Title I school in Decatur, Georgia. Most of my class is on free or reduced breakfast and lunch. My school also has a very high English Language Learner population; I have 14 ELL students within my classroom. Some of these students speak fluent English; others speak no English at all. I have several students who were born in America; however I also have students from different countries around the world. I have three students from Burma, two from Mexico, and several Napali and Arabic students as well. I receive ELL services from a certified ELL teacher for one hour a day during my literacy block. During that time we utilize a Station Teaching model. I work with students for guided reading and she works with ELL students on language skills.

I have 24 students, 15 girls and 9 boys. Most of my students are Level 1 students, meaning they are performing below grade level. I have five students that are working at a first grade level or beyond. Most of my students are not readers yet; they are still learning to read. Some of my students have excellent support from home, while others receive little to no help from their parents or older siblings. I have two boys in my classroom with ADHD, and neither is medicated.

Although I could discuss each learner in great detail, I will describe two unique students in my classroom. I have a student named "Barry" in my classroom who has difficulties staying on task

throughout the day. He often needs many reminders during independent times of what he should be doing. Barry often talks when I am teaching, which causes me to stop the lesson to redirect his behavior. Barry is a low reader (reading at a mid-Kindergarten level) but he is very smart. He is able to answer questions efficiently when he is asked about any topic. I recently inquired about getting Barry into the gifted program because of his unique ability to transfer interesting information. Barry also has an excellent memory and tells me specific stories about his Kindergarten year often. I think the gifted program could help ensure Barry is engaged and interested in his learning.

Another student in my classroom is "Ko". Ko is an ELL student from Burma. She speaks very little English. The challenge with Ko is that she has been in the country for over a year now, and has made very little progress. Her parents do not speak English, so communication is very hard. She often relies on copying off other students' papers to get by (a skill every ELL in my classroom has mastered). I feel that she is selling herself short and not performing at the level I think she can. I do not have the personal relationship with Ko that I have with most every other student in my class because of the lack of communication. Ko loves to listen to stories during reading time and seemingly has powerful relationship with the other Bermese students in the class. When speaking in her native language, Ko is animated and engaged which I feel is a great strength of hers.

One strength of my class is their excitement and willingness to learn. They love to use hands-on manipulatives and complete activities in centers and small groups. Most students love to come to guided reading and guided math to get more individualized attention from their teacher. On the flip side, my students are only six and seven years old, so their attention span is quite small. I have found I have to limit my mini-lessons to fifteen minutes or less and then provide them with an opportunity to "do" the learned task using materials.

One major challenge I face with my students is the language barrier. I do not have an ELL teacher in my classroom during my math block, therefore I am teaching and working with students alone. Out of my 14 English language learners, five of them are new to the country and cannot understand English. When they need to use the restroom or get a pencil, they point to it with their hand. This is challenging because they are required to learn the standards and material presented, however, they cannot adequately learn something in a language they do not understand. I have very little information about their school backgrounds, so I am unaware if they were fluent or literate in their native language. Some of my ELL students are more successful because they were already readers in their home language and therefore it has been easier for them to transfer those skills to English.

An additional challenge is finding a balance between the standards that need to be taught, and my students' differing ability levels. As described above, I have students who are non-English speaking, and I have students who show gifted behaviors. It is difficult to ensure that my English speaking students are challenged and engaged, while also making sure my more fluent ELL students are not feeling incredibly overwhelmed and confused.

Currently, I teach whole group math for about 20 minutes. In the first five minutes of that block, I begin by reviewing what we learned the day before. Then I teach a 15 minute mini-lesson based on the skill to be learned (taken directly from GA State Standards). After the mini-lesson, students meet in small groups for reinforcement of what was taught, and also to practice fundamental math skills (such as addition, place value, skip counting by 2s, 5s, etc.) During small groups, I meet with students and either extend their learning or remediate with more examples.

**Explain how you would use co-teaching and co-planning in the unit:**

Although I do not have the opportunity to work with another teacher during my mathematics block, I would welcome the chance. I would use co-teaching in the following ways:

1. During the whole group portion of the lesson, I would use the One Teach, One Assist model. This way, I would be teaching to the whole group, while the other teacher would circulate the room to ensure that students are on task. The other teacher could also help students who were struggling by pulling them aside to ask them specific questions about the concept they are learning (similar to what was seen in the Co-Teaching YouTube video).
2. During small groups, I would use the Station Teaching model. Students would be split into homogenous groupings based on their ability level. During this small group time, both teachers would work with different groups on either reinforcement or enrichment activities. After the mini-lesson was taught, students would retreat to their small groups for more intimate instruction about subtraction. In this model, students would have the opportunity to work independently at a third station.

Dave Haney (2009) states, "Like a marriage, the success of the co-teaching model depends on how well the two teachers work together, school officials and educators say. Partners must establish trust, work on communication and share in the work to overcome the inevitable challenges, anticipate conflict and handle it in a constructive way". It is absolutely imperative to employ co-planning when using a co-teaching model. I would want to ensure that both teachers have the same goals for their students. It would also be important to discuss possible accommodations that need to be addressed for various learners within the classroom. It would also be important to teach students how to react to having two teachers within one classroom. Students need to understand the expectations of both teachers and how a co-teaching model is going to work in their classroom.

In order to co-teach effectively, co-planning must occur. Specifically, using the BASE model for co-planning would be worthwhile. Identifying big ideas would allow both teachers to understand the overall goals for that lesson or unit of instruction. Analyzing the areas of difficulty would let teachers be proactive in their instructional approach and plan for any possible problems within the lesson. Creating strategies and supports is crucial so that all students' needs are being met. This would mean discussing specific students and how they might react to certain portions of the lesson. It would also be helpful to know exactly which strategies or extensions each teacher is going to use with each group of students. One of the most beneficial parts of teaching is evaluating the lesson after you have taught it. Doing this

with another teacher would allow you to decide which portions of the instruction went well and which can be improved for next time (Hawbaker, BASE of Support article).

**BASE Planning Tool**

<p><b>B</b> <b>BIG IDEAS</b></p>	<p><b>A</b> <b>ANALYZING DIFFICULTIES</b></p>	<p><b>S</b> <b>STRATEGIES AND SUPPORTS</b></p>	<p><b>E</b> <b>EVALUATION</b></p>
<ul style="list-style-type: none"> <li>• Understand the difference between plane and solid shapes</li> <li>• Build, draw, name, and describe triangles, rectangles, pentagons, and hexagons.</li> <li>• Build, represent, name, and describe cylinders, cones, and rectangular prisms.</li> <li>• Create pictures and designs using shapes.</li> <li>• Compare, contrast, and/or classify geometric shapes by the common attributes of position, shape, size, number of sides, and number of corners.</li> </ul>	<ul style="list-style-type: none"> <li>• This is most likely students first experience with solid shapes, although they should have been exposed to plane shapes in Kindergarten (students may need more opportunities to touch and look at these shapes)</li> <li>• Students may have difficulty distinguishing the difference between plane and solid shapes</li> <li>• Students may have a hard time counting the number of sides, edges, faces, corners, etc.</li> </ul>	<p><b>Learning Strategies</b></p> <ul style="list-style-type: none"> <li>• Movement</li> <li>• Constructing shapes</li> <li>• Partner activities</li> <li>• Small group activities</li> <li>• Manipulatives</li> <li>• Literature (books about shapes)</li> </ul> <p><b>Assessment Strategies</b></p> <ul style="list-style-type: none"> <li>• Performance assessments</li> <li>• Mini assessments</li> <li>• Observation</li> <li>• Discussion</li> <li>• Questioning</li> </ul>	<p><b>Big Ideas Evaluation*</b></p> <p><b>Areas of Difficulty Evaluation*</b></p> <p><b>Strategies Evaluation*</b></p> <p><i>*To be completed after teaching the unit.</i></p>

**Lesson Plans:**

**DAY ONE**

**Instructional Goal(s) for the Day:**

**M1G2. Students will compare, contrast, and/or classify geometric shapes by the common attributes of position, shape, size, number of sides, and number of corners.**

**M1D1. Students will create simple tables and graphs and interpret them.**

- a. Interpret tally marks, picture graphs, and bar graphs.
- b. Pose questions, collect, sort, organize and record data using objects, pictures, tally marks, picture graphs, and bar graphs.

**M1P3. Students will communicate mathematically.**

- a. Organize and consolidate their mathematical thinking through communication.
- b. Communicate their mathematical thinking coherently and clearly to peers, teachers, and others.
- c. Analyze and evaluate the mathematical thinking and strategies of others.
- d. Use the language of mathematics to express mathematical ideas precisely.

**Materials Used to Achieve the Goal:**

- Student shape page
- Large drawing paper or construction paper
- Scissors
- Glue

**Grouping:** Whole Group

**Outline of Instructional Objectives:**

**Part I**

Display a variety of the shapes from the task sheet on an overhead or chart. Have the students brainstorm ways to describe the shapes. Chart their responses. (Please save this for further shape studies.) Guide students to look for ways other than color and size when describing the shapes such as by number of sides, number of corners, or no corners. Have students give examples of things they have seen in their environment that have some of these same shapes. Some examples may be badges, buttons, awards, stickers, signs, etc.

*Note:*

*You can save time by cutting out the shapes on the student page in advance. Store each set in a zippered plastic bag, paperclip, or envelope. Another idea would be to have a set copied onto cardstock*

and laminated so that they could be used again for activities or in a center.

## Part II

Students should organize their shapes into groups for a graph. Students will be able to create various ways to display their information (picture graph, bar graph, or tally charts.) They should create these graphs on their own and then write what they know about their graphs.

As students sort shapes and make their graph, make sure to ask open-ended questions so the students can verbalize how they are thinking. Questions may include:

- What can you tell me about the way you sorted your shapes?
- Can you think of another way to sort them?
- Why do you think there is more than one way to sort the shapes?
- Where do you see these kind of shapes (listen for and encourage examples from in your classroom, outside, at home, etc.)
- What helped you decide how you were going to make your graph?
- How will you describe your graph to the class?
- What question can you write for the rest of the class to answer using your graph?

## Evaluation of What Students Learned Today:

-Informal observation

-Students' sorting page

-Class discussion/questioning:

- How can shapes be sorted?
- How are shapes used in our world?

-Questions for Teacher Reflection:

- Am I allowing students to make their own sorting discoveries? *Too often we want to tell a student how to get an answer and miss out on opportunities for them to show other valid ways to solve a problem.*
- How are the students sorting the shapes?
- Are students recognizing how these shapes are used in our world?
- Does their graph make sense? Can they explain it to the class?
- Did the student write a question for the class to answer (using the graph they made)?

## Elements of Differentiation/ UDL:

Extension:

- For students who are easily sorting the shapes into two groups try having them sort the shapes into three or four groups. Have them create a graph for each of the groupings.

Intervention:

- For students who are having difficulty sorting the shapes, give them a set of attribute blocks

they can pick up and feel.

- The teacher can choose the type of graph for the student. Premade graph template could also be available.

Other elements of UDL:

- BrainPop video
- Repeat directions orally for students
- Written and verbal discussion
- Making a list on the board of different ways to sort shapes (done at close of the lesson)
- If needed, meet with special needs students to help clarify information
- Teach the following song about shapes to students as a closing activity:

**Shape Song ([www.canteach.ca.org](http://www.canteach.ca.org))**

(to the tune of: "The Farmer in the Dell")

A circle's like a ball,  
A circle's like a ball,  
Round and round  
It never stops.  
A circle's like a ball!

A square is like a box,  
A square is like a box,  
It has four sides,  
They are the same.  
A square is like a box!

A triangle has 3 sides,  
A triangle has 3 sides,  
Up the mountain,  
Down, and back.  
A triangle has 3 sides!

A rectangle has 4 sides,  
A rectangle has 4 sides,  
Two are long, and  
Two are short.  
A rectangle has 4 sides!

**Technology:**

Before teaching the lesson, show the BrainPopJr video about plane shapes ([www.brainpopjr.com](http://www.brainpopjr.com)- Specific video title: Plane Shapes). Explain to students that they will be working with plane shapes and



the video will explain some of the concepts they will learn. This short video will serve as the introduction to the lesson.

**Co-Teaching Model for the Lesson:**

Teaming approach: This way, both teachers would walk around and facilitate student discussion and questions. Both teachers would be available to help students sort their shapes into groups. If needed, one teacher would meet with a small group of students having difficulty.

**DAY TWO**

**Instructional Goal(s) for the Day:**

**M1G1. Students will study and create various two and three-dimensional figures and identify basic figures (squares, circles, triangles, and rectangles) within them.**

- a. Build, draw, name, and describe triangles, rectangles, pentagons, and hexagons.
- c. Create pictures and designs using shapes, including overlapping shapes.

**M1G2. Students will compare, contrast, and/or classify geometric shapes by the common attributes of position, shape, size, number of sides, and number of corners.**

**Materials Used to Achieve the Goal:**

- *The Greedy Triangle* by Marilyn Burns or other similar book
- Toothpicks
- 1 piece of construction paper for each student
- Glue or mini marshmallows (see task for choice)

**Grouping:** Whole Group

**Outline of Instructional Objectives:**

**Part I**

Read *The Greedy Triangle*, a book about a shape that wanted to be something else (or other similar book about various shapes). As you are reading, record any new information from the story to be used for the second part of the task.

**Part II**

Compare and contrast information from *The Greedy Triangle* and the chart made in Graphing Attributes task. Ask students to use this information to create new more specific statements on sentence strips. Record student responses about these shapes: rectangle, square, triangle. Save these statements to be used later in the unit.

Possible students questions for formation assessment:

- How many sides are in a triangle, rectangle, pentagon, etc.? Can you show me?
- How are these shapes different from one another?
- How are they alike?

### Part III

Students will use toothpicks to recreate a triangle, rectangle, square, pentagon, and a hexagon. These shapes are to be glued to a sheet of paper and labeled with the correct shape name and the number of toothpicks used to make the shape. As the students work, ask the students if they see a relationship between the number of toothpicks they used and the number of sides in the shape.

As an alternative to gluing them on paper, students could use small marshmallows and toothpicks.

### Evaluation of What Students Learned Today:

-Class discussion/questioning:

- What makes shapes different from each other?
- How do shapes fit together and come apart?
- Do students see this activity as just a geometry lesson or do some recognize the built-in addition and subtraction concepts as strips or toothpicks are added or taken away to make new shapes?

-Informal observation

-Students' completed construction of shapes

### Elements of Differentiation/ UDL:

Extension

- Challenge students to make larger shapes that use more toothpicks but still have the same characteristics. Ask students: "Would you still have a triangle if two sides were longer than the third side? Why or why not?"
- Ask students, "What kind of shapes would be created by making 2 cuts?" New shapes could include: quadrilaterals that are not rectangles and hexagons.

Intervention

- Allow students who may be having a difficult time describing or making the shapes extra time with the toothpicks and pattern or attribute blocks as a model. Also students could use tangram pieces if they are having difficulty with the cuts.

Other elements of UDL:

- Repeat directions orally for students
- Show students images on Promethean board of different shapes to help them visualize what their constructions need to look like
- Written and verbal discussion
- Small groups based on ability level (Parallel teaching model; see below).

- Read Aloud: *The Greedy Triangle*
- While reading *The Greedy Triangle*, on the board, make a list of attributes for each shape. Draw a picture of each shape to help students visualize.

**Co-Teaching Model for the Lesson:**

Parallel Teaching Model: Students will be broken up into homogenous groups based on their ability and understanding of shapes (these groups would be considered during Day One of the unit, as students are putting shapes into groups). Each teacher could move as fast or as slow as necessary with their group of students. If some children need more experience with manipulatives, that will be given to them.

**DAY THREE**

**Instructional Goal(s) for the Day:**

**M1G1. Students will study and create various two and three-dimensional figures and identify basic figures (squares, circles, triangles, and rectangles) within them.**

- Build, draw, name, and describe triangles, rectangles, pentagons, and hexagons.
- Create pictures and designs using shapes, including overlapping shapes.

**M1G2. Students will compare, contrast, and/or classify geometric shapes by the common attributes of position, shape, size, number of sides, and number of corners.**

**M1D1. Students will create simple tables and graphs and interpret them.**

- Interpret tally marks, picture graphs, and bar graphs.
- Pose questions, collect, sort, organize and record data using objects, pictures, tally marks, picture graphs, and bar graphs.

**Materials Used to Achieve the Goal:**

- Pattern blocks (in bags for each student)
- Construction paper or die cutouts of pattern blocks (1 bag per student with enough to create picture)
- Construction paper
- Pattern Block Picture recording sheet
- Glue sticks (1 for each student)

**Grouping:** Whole Group and Partners

**Outline of Instructional Objectives:**

**Part I**

Gather students on class meeting area. Display a picture of a triangle, rectangle (that is not a square), and a square rectangle. Use sentence strips from previous task and have students place statements under the correct shape. You need to add pentagon and possibly hexagon to your

display.

*Comment*

*Many statements will fit under square will also fit under rectangle because again, all squares are rectangles. Additional statements could be added about where we find these shapes in the real world.*

## **Part II**

*Comment*

*Formal discussions about a trapezoid and rhombus have not necessarily occurred in kindergarten; therefore the red, blue and tan pieces may not be familiar to your students. They were probably introduced to these shapes as quadrilaterals. It is okay to introduce the more specific name for these shapes, but please keep in mind, first graders do not have to master identification of these shapes. Keep in mind a first grader does not have to be able to identify a shape as a parallelogram, rhombus or trapezoid.*

Next give each student a zippered plastic bag of pattern blocks. Have students trace pattern blocks on paper and discuss attributes of each shape. Be sure to name the number of sides, number of corners, as well as shapes that can be combined to create other shapes. For example “I combined two squares to make a rectangle.”

*Special Note*

Students will likely combine a trapezoid and a triangle, which will create a parallelogram. You can choose to introduce the term parallelogram or stick with term quadrilateral.

Allow students a few minutes to practice tracing shapes. Collect pattern blocks. Then distribute zippered plastics bags that contain the cutout paper pattern blocks. Have students create a picture using at least a dozen of the pattern block shapes. Encourage students to combine multiple pieces together so that the picture is made up of pattern block shapes touching. You may want to provide an example for students to see how pattern blocks can be combined.

Once students have created their pictures, glue the picture onto a sheet of construction paper.

Ask questions such as:

- Which shape did you use the most of? Least of?
- What are you noticing about these shapes? What do they have in common? How are they different?
- Did any of your shapes combine to form other shapes?
- Which shapes are easy to combine? Why do you think this? Are any hard to combine? Why?
- What else did you discover?

### **Part III**

Using the Pattern Block Recording Sheet, have students place a tally mark to record the number of each shape used to create their picture. Then students should write a story about their picture.

### **Part IV**

As a class, students share their individual shape totals in order to create a class shape total. This could be started in picture graph format. At some point (probably after 8 to 10 students have placed their shapes on the graph,) students will notice that they are running out of space; therefore, this may not be the best way to record this information. Discussion about this not being the best way to record this information needs to occur. Then ask students what other kind of graph they could create. You are leading them into creating a bar graph. Create class bar graph. Students could then generate questions that could be answered using this information.

### **Evaluation of What Students Learned Today:**

-Class discussion/questioning:

- How can a shape be described?
- How do shapes fit together and come apart?
- What makes shapes different from each other?

-Informal Observation

-Students picture shapes

### **Elements of Differentiation/ UDL:**

Extension

- Have students create questions about their own shape tally chart and create a graph about their picture. "Which shape did you have more/fewer of? How many more/fewer?"
- Students could glue shapes down and create shape again on top. This would help them as they count tallies for the chart.

Intervention

- If tracing is too time consuming for some students, skip this part and give them the precut shapes. Ask the student to identify the name of the shape and the number of sides it has verbally.
- Students may also make their pattern block picture and tally the number of shapes before gluing them down. This will allow the student to sort them into like groups first.

Other Elements of UDL:

- Repeat directions orally for students
- If needed, meet with special needs students to help clarify information
- Show students different pictures of shapes to help them visualize

- Written and verbal discussion
- Allow students to show their information in different ways: tally chart, bar graph, pictograph

**Co-Teaching Model for the Lesson:**

Station Teaching: One teacher will be the “Picture” station, and one teacher will be the “Graph and Explanation” station. This way the class is split into smaller groups and they can have more individualized instruction.

**DAY FOUR**

**Instructional Goal(s) for the Day:**

**M1G2. Students will compare, contrast, and/or classify geometric shapes by the common attributes of position, shape, size, number of sides, and number of corners**

**M1P2. Students will reason and evaluate mathematical arguments.**

- Recognize reasoning and proof as fundamental aspects of mathematics.
- Make and investigate mathematical conjectures.
- Develop and evaluate mathematical arguments and proofs.
- Select and use various types of reasoning and methods of proof.

**Materials Used to Achieve the Goal:**

- Attribute blocks
- “Which One Doesn’t Belong?” task sheet

**Grouping:** Small Group

**Outline of Instructional Objectives:**

**Part I**

The students will be shown four attribute blocks, three of which have some similar properties or characteristics (based upon, shape, size, color, thickness.) Discuss which three belong together and why. Have students justify their reasoning. The teacher can decide how the students share their choices and their reasoning. Provide several examples, then allow students to work on their own to create their own examples. Then allow students time to share their example and have other students identify which one doesn’t belong and why.

**Part II**

Students complete “Which One Doesn’t Belong” task sheet.

*Comment: Having students explain WHY they respond to the answer that they give is extremely important. Encouraging student discussions about how or why other answers could also be correct will enrich student understanding. Once students are familiar with the game, they are able to*

*make-up their own questions. Please note there are some examples that could have multiple correct answers. Answers are correct as long as students are able to justify them.*

### **Evaluation of What Students Learned Today:**

-Informal observation

-Completed student “Which One Doesn’t Belong” sheet

-Class discussion/questioning:

- What makes a shape different from other shapes?
- How can we group certain shapes together? Why do they belong together?

-Suggested questions for summative student assessment:

- Are there any ways that all pieces are the same?
- What makes your one piece different from the other shapes?
- Is there more than one difference?
- Could you have grouped your shapes any other way?
- Can you think of another shape that would fit into the group with the other three shapes?

### **Elements of Differentiation/ UDL:**

Extension

- Have students create a booklet of their own problems. It could be placed in a center for future review.

Intervention

- Use a smaller simpler set of shapes, for instance a set of three where two of the shapes are obviously alike (square and rectangle) and one that is obviously different (circle).

Other Elements of UDL:

- Repeating directions orally for students
- Video: “The Number Crew: Shape Escape”
- Opportunity to meet in small groups with students having difficulty deciding which shape doesn’t belong
- Written and verbal discussion
- Special needs students: have students complete just one student page instead of all four, or make the shape options simpler

### **Technology:**

At the end of the lesson, students will view the video “The Number Crew: Shape Escape”

([www.discoveryeducation.com](http://www.discoveryeducation.com) ). This video explains the characteristics of a 2-D shape, including a “Which One Doesn’t Belong” song about plane shapes.

**Co-Teaching Model for the Lesson:**

Teaming: Both teachers will walk around the room and meet with small groups to discuss their thinking about which shapes belong and which shapes don’t belong.

**DAY FIVE**

**Instructional Goal(s) for the Day:**

**M1G1. Students will study and create various two and three-dimensional figures and identify basic figures (squares, circles, triangles, and rectangles) within them.**

- b. Build, represent, name, and describe cylinders, cones, and rectangular prisms.

**Materials Used to Achieve the Goal:**

- Geometric solid models for: cylinder, cone, and rectangular prism
- Graphic organizer chart
- Student copy of graphic organizer
- Names of geometric solids on index cards
- Index cards (for student labeling)
- Modeling clay or play dough
- *Captain Invincible* by Stuart J. Murphy

**Grouping:** Small Group

**Outline of Instructional Objectives:**

*Comment*

*Prepare a chart/graphic organizer to record the characteristics of the three-dimensional figures as you read the story.*

**Part I**

Read *Captain Invincible and the Space Shapes* by Stuart J. Murphy or other book about 3D shapes.

Pass solids (cylinder cone, and rectangular prism) around and ask students to describe how each one looks and feels and record these characteristics in the graphic organizer. Students will complete the Describe It, Chart It, Find It, Make It Task Sheet. Allow students to use solids to trace around with a pencil to determine the shape of its face.



## Comments

*One way to talk about how 3-D shapes are different than 2-D shapes is to refer to 3-D shapes as having a body. This is why it is easy to hold them in our hand. 2-D shapes do not have a body, which is why it is easy to draw them on paper. If you use the term "body" when talking about 3-D shapes then discussing "face" on the 3-D shape is a little easier. Our bodies have a face, and likewise most 3-D shapes have a face, some have more than one face. How funny would we look if we had more than one face?!*

It is natural for students to initially talk about the faces as "sides" but as you talk about them make sure to use the word faces not sides. Gradually the students will pick up on this and will start calling the "sides" face. This is important because "side" actually refers to a two dimensional shape. When you are talking about a three dimensional shape, for instance a cube, it has 6 faces but 12 edges! Each face has four sides.

## Part II

Have students go on a geometric solid shape hunt in the classroom to fill in the last column of the chart. Students tell the name of the solid it represents, write its name on an index card, and attach it to the item. Shapes can then be displayed in a "Solid Shapes Museum."

As you circulate, observe the student's choices and listen to their conversations. Help students to understand they can learn to recognize the shapes even though they are not exactly the same as the model. During their shape hunt and as students share their 3-D findings, ask the students questions like:

- Is this object exactly like our model? How is it the same? How is it different?
- Which solid is the hardest to find in the classroom? Why?
- What do you notice about the faces of the objects?

After their hunt, students will use modeling clay or play dough to create solids. As students work on their models, ask them to name and describe their solids. These can also be labeled and added to the museum display using notecards.

## Evaluation of What Students Learned Today:

-Informal Observation

-Students completed solid shape models

-Class discussion/questioning:

- Where can we find shapes in the real world?
- How can a shape be described?

## Elements of Differentiation/ UDL:

## Extension

- Students could determine attributes and then use that information to graph objects from the “Shape Museum”.
- Students could extend their search to the rest of the school and /or use cameras to take pictures of other items that represent 3-D solids.
- A home connection could be made by sending a parent letter asking for students to search for solids they could bring back to school to add to the “Shape Museum.”

## Intervention

- Give students who struggle cards with examples of 3-D solids that can be used when they are looking for objects for the “Shape Museum.”

## Other Elements of UDL:

- The Number Crew: Shape Sorting video
- Repeat directions orally for students
- Written and verbal discussion
- Read Aloud: *Captain Invincible and the Space Shapes* by Stuart J. Murphy
- Opportunity to meet in small groups for remediation
- Teach students a song about solid shapes to help auditory students remember what was learned:

**What Am I?** (solid figures) ([www.harcourtschool.com](http://www.harcourtschool.com))

(chorus) Sphere or cylinder, cube or cone.  
What am I? How do you know?  
Sphere or cylinder, cube or cone.  
What am I? How do you know?

I'm a circle at one end.  
I'm pointed at the other.  
I hold ice cream when turned one way.  
I'm a hat when turned another.  
A cone!

(chorus)

I can roll because I'm round,  
Whether I am big or small.  
If I'm full of air, you bounce me,  
And then I'm called a ball.  
A sphere!

(chorus)

I can stack, and I can roll.  
I can even slide.

I have circles at both ends,  
And I'm rounded on the side.  
A cylinder!

(chorus)

I have flat, straight sides  
That are all just the same,  
I look like a square-shaped box.  
Can you guess my name?  
A cube!

(chorus)

**Technology:**

Students will view the video "The Number Crew: Shape Sorting" ([www.discoveryeducation.com](http://www.discoveryeducation.com)). This video explains 3-D shapes and will be viewed at the end of the lesson. Students will then explain what they learned about 3-D shapes from watching the video.


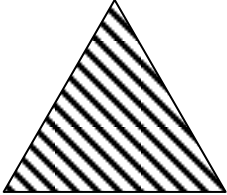

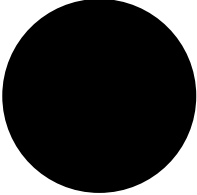
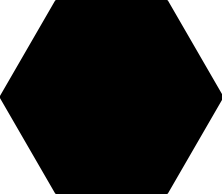
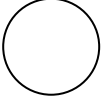



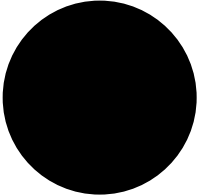
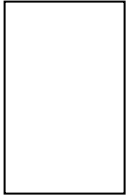
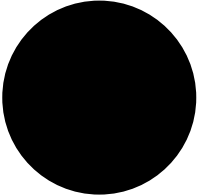
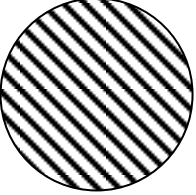



**Co-Teaching Model for the Lesson:**

**Alternative Teaching:** If there are students who are having difficulty understanding and classifying shapes around the room, one teacher will meet with these students to remediate and review. This teacher can also assess students to determine what skills still need to be reviewed further.

**Overall Assessment of Unit:**

- Mini-assessment: Students will draw a picture of a plane shape and a solid shape and label both shapes.
- Performance assessment: Students will be given a bag of shapes, including plane and solid shapes. Students will place the shapes into groups. This assessment will allow for differentiation because based on students' understanding and ability, students will put shapes into different groups. For instance, some students may simply group the shapes into two categories, 2-D and 3-D shapes. Other students may group them according to number of sides, faces, corners, etc. In this assessment, students are given the opportunity to show their understanding through discussion and explanation as well.

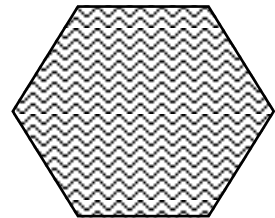
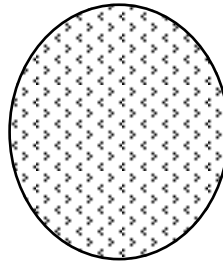
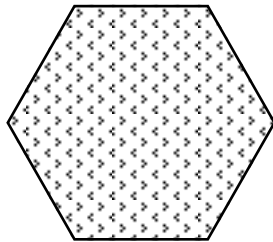
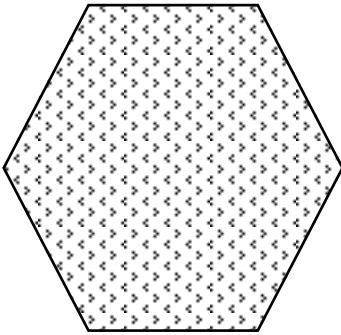
Day One Student Page:



Day Four Student Pages (4 Total):

Which One Doesn't Belong?



A

B

C

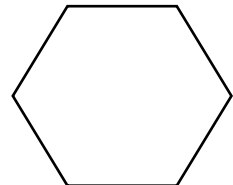
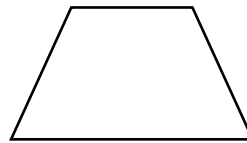
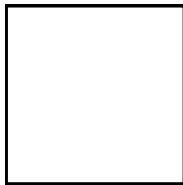
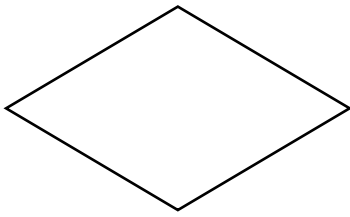
D

Shape \_\_\_\_\_ doesn't belong because \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_.

Which One Doesn't Belong?



A

B

C

D

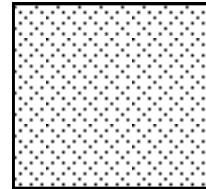
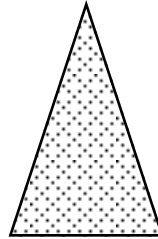
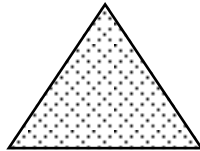
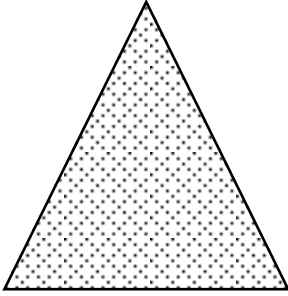
Shape \_\_\_\_\_ doesn't belong because

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Which One Doesn't Belong?



A

B

C

D

Shape \_\_\_\_\_ doesn't belong because

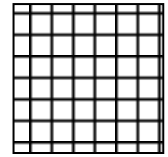
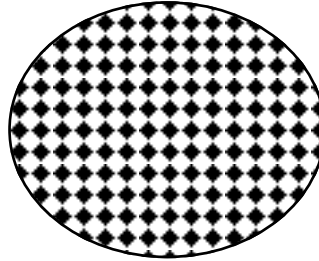
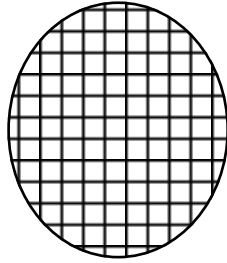
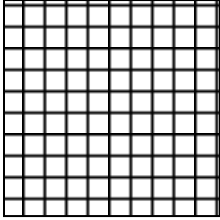
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Which One Doesn't Belong?



A

B

C

D

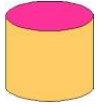

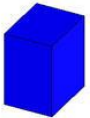
Shape \_\_\_\_\_ doesn't belong because

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## Describe It, Chart It, Find It, Make It Task Sheet

	Number of corners	Number of faces	Is the face a circle, square, or a rectangle?	Everyday object
Cylinder 				
Cone 				
Rectangular Prism 				

**Mini Assessment for Day Five:**

Name \_\_\_\_\_

Plane and Solid Shapes

Plane Shape (2-D)	Solid Shape (3-D)
Name of shape _____	Name of shape _____