Lesson 3

Objective: Find and name three-dimensional shapes including cone and rectangular prism, based on defining attributes of faces and points.

Related Topics:
More Lesson Plans for Grade 1 Common Core Math

Suggested Lesson Structure

- Fluency Practice (10 minutes)
- Application Problem (5 minutes)
- Concept Development (35 minutes)
- Student Debrief (10 minutes)

Total Time (60 minutes)

Fluency Practice (10 minutes)

- Grade 1 Core Fluency Differentiated Practice Sets 1.OA.6 (5 minutes)
- Count by 10 or 1 with Dimes and Pennies 1.NBT.5, 1.MD.3 (5 minutes)

Grade 1 Core Fluency Differentiated Practice Sets (5 minutes)

Materials: (S) Core Fluency Practice Sets from G1–M4–Lesson 23

Note: This activity assesses students’ progress toward mastery of the required addition fluency for Grade 1 students. Give the appropriate Practice Set to each student. Students who completed all questions correctly on their most recent Practice Set should be given the next level of difficulty. All other students should try to improve their scores on their current level.

Students complete as many problems as they can in 90 seconds. Assign a counting pattern and start number for early finishers, or tell them to practice make ten addition and subtraction on the back of their papers. When time runs out, collect and correct any Practice Sets that are completed.

Count by 10 or 1 with Dimes and Pennies (5 minutes)

Materials: (T) 10 dimes and 10 pennies

Note: This activity uses dimes and pennies as abstract representations of tens and ones to help students become familiar with coins while simultaneously providing practice with counting forward and back by 10 or 1.

- First minute: Place and take away dimes in a 5-group formation as students count along by 10.
- Second minute: Begin with 2 pennies. Ask how many ones there are. Instruct students to start at 2
and add and subtract 10 as you place and take away dimes.

- Third minute: Begin with 2 dimes. Ask how many tens there are. Instruct students to begin at 20 and add and subtract 1 as you place and take away pennies.

### Application Problem (5 minutes)

Rose draws 6 triangles. Maria draws 7 triangles. How many more triangles does Maria have than Rose?

Note: Let students know that today’s problem is a little different from past problems because today they are comparing Rose’s triangles with Maria’s. Suggest that they draw two different tapes with the same endpoint on the left, so that they can more easily compare the two numbers. As you circulate, support students in aligning their shapes and bars to assist in solving this compare with difference unknown problem type.

### Concept Development (35 minutes)

Materials: (T) Set of three-dimensional shapes, (sphere, cone, cube, rectangular prism, and cylinder), three-dimensional shapes found around home or school, shape description cards, tape

Note: If you do not have a kit of three-dimensional shapes, they might be borrowed from other grade levels, such as Kindergarten (used in GK–M2 and GK–M6). Another option is to collect three-dimensional shapes from students’ homes as suggested below.

- Spheres: balls (e.g., tennis balls) and marbles
- Cylinders: paper towel and oatmeal containers
- Cubes: small tissue boxes, gift boxes, and large dice
- Rectangular prisms: large tissue boxes, crayon boxes, marker boxes, and pencil holders
- Cones: ice cream cones and party hats

Before the lesson, place examples of three-dimensional figures around the room. Gather students in the meeting area in a semi-circle.

T: (Place one example of each three-dimensional shape on the floor.) Today, we are going to talk about three-dimensional shapes, like these. What do you know about three-dimensional shapes?

S: They are not flat. They have different faces or surfaces. They are solid. That one is called a cube. (Points to cube.) You can touch them on different sides.
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T: Great! Yes, three-dimensional shapes have faces (touch each face on a cube) and they have different types of corners or points (touch the vertices). Often times they are solid and can be called 3-D solids. There are lots of three-dimensional shapes around our room. Some look just like the materials we have here, and some look different. Can anyone think of an item in the room that looks like these?

S: Our party hat on the teddy bear looks like that one. (Points to cone.) → (Points to cube.) That one looks like our dice. → That one looks like the container for our alphabet game! (Points to cylinder.)

T: Find one item in the room that is three-dimensional—an object that has faces, not a flat two-dimensional shape. You have 30 seconds. Walk and find your item.

S: (Search room and bring back one item each to the carpet.)

T: Someone told us the name of this shape earlier. Who remembers the name of this shape?

S: A cube! (Place cube in the middle of the meeting area.)

T: What are the attributes, or characteristics, that make this a cube?

S: It has six faces, and every face is a square. (Ask student to demonstrate this using the cube, then tape the appropriate shape description card to the cube.)

T: (Place the cube on the carpet.) Let’s count the faces of the cube. Track the number with your fingers. The bottom. How many faces is that?

S: One!

T: The top. How many now?

S: Two!

T: Now let’s go around the cube.

S: The side closest to me. How many is that?

S: Three!

T: The side to its right?

S: Four!

Keep going around systematically. Count again to increase their proficiency.

T: Look at your items. Who brought a cube to the meeting area?

S: (Students show items.)

T: Let’s check. Count the faces of the cube with your partner. (Pause.) Does your cube have six faces?

S: (Count faces.) Yes.

T: Are all six faces squares?

S: Yes.

Note: A cube is a special type of rectangular prism.

Repeat this process with all students who believe they have a cube. Some students will answer no to one or both of the questions. Explain that the item must have both attributes to be a cube. If they answer yes to one of the two questions, discuss how the object is like a cube in one way but unlike a cube in another way.
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Student Debrief (10 minutes)

Lesson Objective: Find and name three-dimensional shapes, including cone and rectangular prism, based on defining attributes of faces and points.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.
Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

You may choose to use any combination of the questions below to lead the discussion.

- Look at Problem 1. Which face did you color on each three-dimensional shape? How did coloring the face help you find the matching shape name?
- Look at Problem 2. Which materials from around the room could you add to each column on the chart? How are the items that are all spheres similar to each other? How are they different? Which attribute is the most important for naming the objects as spheres? (Repeat with each shape.)
- How are the party hat and paper towel roll different from the cylinder and cone in our three-dimensional shapes?
- What are the names of the three-dimensional shapes that we used today? Tell your partner the important attributes of each shape. (Cubes, spheres, cones, rectangular prisms, and cylinders.)
- Look at your Application Problem. How did you solve this problem? Share drawings and strategies for solving each question.
- Think about today’s Fluency Practice. What part of today’s fluency is easier for you now than when we first learned about it? Explain what is easier for you now.

**Exit Ticket (3 minutes)**

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help you assess the students’ understanding of the concepts that were presented in the lesson today and plan more effectively for future lessons. You may read the questions aloud to the students.
1. On the first 4 objects, color one of the flat faces red. Match each 3-dimensional shape to its name.

- Rectangular prism
- Cone
- Sphere
- Cylinder
- Cube
2. Write the name of each object in the correct column.

<table>
<thead>
<tr>
<th>Cubes</th>
<th>Spheres</th>
<th>Cones</th>
<th>Rectangular Prisms</th>
<th>Cylinders</th>
</tr>
</thead>
<tbody>
<tr>
<td>globe</td>
<td>block</td>
<td>tennis ball</td>
<td>tissue box</td>
<td>dice</td>
</tr>
</tbody>
</table>

3. Circle the attributes that describe ALL spheres.

- have no straight sides
- are round
- can roll
- can bounce

4. Circle the attributes that describe ALL cubes.

- have square faces
- are red
- are hard
- have 6 faces
Circle true or false. Write one sentence to explain your answer. Use the word bank if needed.

Word Bank

<table>
<thead>
<tr>
<th>faces</th>
<th>circle</th>
<th>square</th>
</tr>
</thead>
<tbody>
<tr>
<td>sides</td>
<td>rectangle</td>
<td>point</td>
</tr>
</tbody>
</table>

This can is a cylinder. True or False

This juice box is a cube. True or False
1. Go on a scavenger hunt for 3-dimensional shapes. Look for objects at home that would fit in the chart below. Try to find at least four objects for each shape.

<table>
<thead>
<tr>
<th>Cube</th>
<th>Rectangular prism</th>
<th>Cylinder</th>
<th>Sphere</th>
<th>Cone</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Cube" /></td>
<td><img src="image" alt="Rectangular prism" /></td>
<td><img src="image" alt="Cylinder" /></td>
<td><img src="image" alt="Sphere" /></td>
<td><img src="image" alt="Cone" /></td>
</tr>
</tbody>
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</tbody>
</table>
2. Choose one object from each column. Explain how you know that object belongs in that column. Use the word bank if needed.

Word Bank

<table>
<thead>
<tr>
<th>faces</th>
<th>circle</th>
<th>square</th>
<th>roll</th>
<th>six</th>
</tr>
</thead>
<tbody>
<tr>
<td>sides</td>
<td>rectangle</td>
<td>point</td>
<td>flat</td>
<td></td>
</tr>
</tbody>
</table>

a. I put the _____________ in the cube column because ________________________________.

b. I put the _____________ in the cylinder column because ________________________________.

c. I put the _____________ in the sphere column because ________________________________.

d. I put the _____________ in the cone column because ________________________________.

e. I put the _____________ in the rectangular prism column because ________________________________.
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