



## **Practice Task: Be an Expert!**

### **STANDARDS FOR MATHEMATICAL CONTENT**

**MCC. 4.G.1** Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.

### **STANDARDS FOR MATHEMATICAL PRACTICE**

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

### **BACKGROUND KNOWLEDGE**

In previous lessons, students should have been introduced to the geometric objects that make up the parts of various figures. Therefore, they should be able to identify an example of each. Student should also be able to sort and classify the objects and use simple graphic organizers.

### **ESSENTIAL QUESTIONS**

- What properties do geometric objects have in common?
- How are geometric objects different from one another?

### **MATERIALS**

- “Be an Expert! Geometric Characteristics Graphic Organizer” student recording sheet
- Electronic version or poster of “Be an Expert! Geometric Characteristics Graphic Organizer” student recording sheet
- “Geometric Objects” cards

### **GROUPING**

Small group task

## **TASK DESCRIPTION, DEVELOPMENT, AND DISCUSSION**

### **Comments**

As an introduction, each group of students can be given a set of geometric object cards. Students can sort the cards into groups. They may also be asked to identify additional items in or out of the classroom that might fit into each group they create. Students can describe their sort to their classmates, defending their placement of each figure. (Students could draw a circle around each group so that other students can see the objects and how they were sorted.)

Once groups have finished their graphic organizer, allow each group to share what they learned about their figure and post their work in the classroom as a reference for the students.

### **Task Directions**

Students will follow directions below from the “Be an Expert! Geometric Characteristics Graphic Organizer” student recording sheet.

Your task is to become an expert on a geometric object. Each group will have a geometric object. You will need to complete the following parts of this task in order to become an expert on your geometric object. Then you will need to share your expertise with your classmates.

You will be given a picture of your geometric object. With your materials, determine the following:

- Write the name (names) of your geometric object in the center of your graphic organizer.
- Complete the graphic organizer for your figure.
- For “Examples” and “Non-examples” think about objects in the real world.
- Be able to defend any information on your graphic organizer.
- Post your graphic organizer in the classroom, plan how you will share your expertise with your classmates.

Geometric Characteristics Graphic Organizer:

<b>Essential (Must Have) Properties</b>	<b>Nonessential (Might Have) Properties</b>
<b>Examples</b>	<b>Non-examples</b>



### **FORMATIVE ASSESSMENT QUESTIONS**

- What characteristics did you use to group your objects?
- What other items could be added to this group? Why?
- What are the properties of your geometric objects?
- Where do you see your geometric objects in the real world?
- Would a (triangle, rectangle, circle) have an example of your objects? Why? Why not?
- Can students consider more than one attribute at a time?
- Can students justify the placement of the objects in their groups?
- Which students can complete the graphic organizer accurately?
- Which students can show how their object is similar to/different from other objects?
- Are students able to recognize the difference between essential and non-essential properties for their geometric object?

### **DIFFERENTIATION**

#### **Extension**

- Have students identify the geometric objects in various figures. Students can create a list of figures which have their objects and ones that do not.

#### **Intervention**

- Have students create Venn diagrams between several of the objects to focus on their similarities and differences.

Name \_\_\_\_\_ Date \_\_\_\_\_

**Be an Expert!**  
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You will be given a picture of your geometric object. With your materials determine the following:

- Write the name (names) of your geometric object in the center of your graphic organizer.
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- Be able to defend any information on your graphic organizer.
- Post your graphic organizer in the classroom, plan how you will share your expertise with your classmates.

Geometric Characteristics Graphic Organizer:

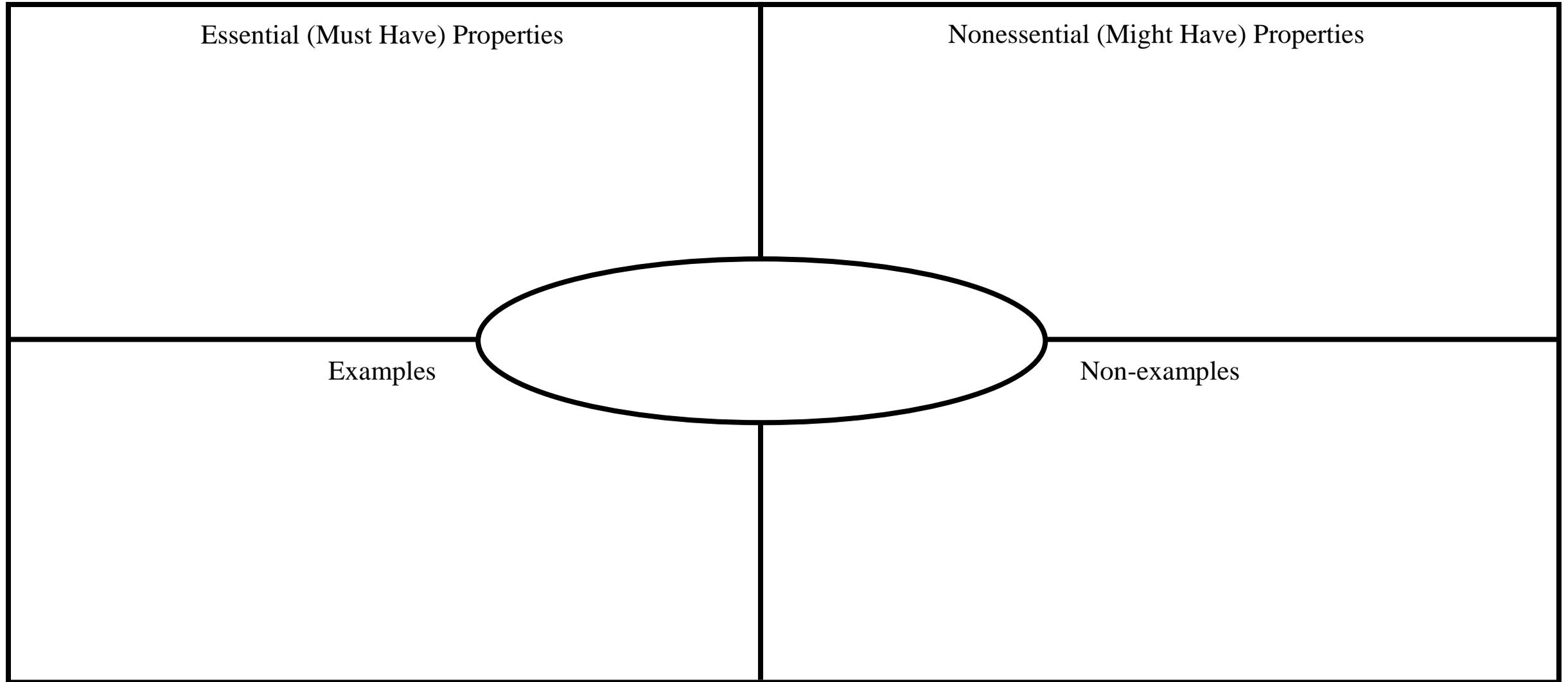
<b>Essential (Must Have) Properties</b>	<b>Nonessential (Might Have) Properties</b>
<b>Examples</b>	<b>Non-examples</b>

An oval shape is drawn in the center, overlapping the four quadrants of the graphic organizer.



Group Members \_\_\_\_\_ Date \_\_\_\_\_

### Be an Expert!



Geometric Object Cards

point	line
line segment	ray
angle	acute angle
obtuse angle	right angle
parallel lines	perpendicular lines