

# RWE 3<sup>rd</sup> Grade Unit 5:

## Attributes & Partitioning of Polygons

**Essential Question:** How can knowledge of geometry and fractions be used when designing a pizza?

**Scenario:** Pizza Hut is looking to change the shape of their pizza. Everyone has a round pizza, and they want to be different. The problem is that Pizza Hut is concerned that if pizza is not in the shape of a circle, they will not be able to serve their patrons equal slices. Your job is to use your knowledge of quadrilaterals and fractional parts to show the Pizza Hut Corporation that serving pizza in shapes other than a circle will or will not work.

**Task 1:** You need to know all the geometric names of the various pans that Pizza Hut is trying out. The first task is to label the template which you will also use in task 2. Remember to use **all** the names that apply for each pan.

**Task 2:** Use the template and the geometric pieces from the class set to create equal sized slices of pizza. This will help you show Pizza Hut if they can cut the different shaped pizzas equally. Some pans may be divided more than one way using the shapes from the kit. (Remember, pieces need to be equal and the same shape) Next, label the shape of the various pizza slices you made.

**Task 3:** Analyze and determine how many friends could share the various shaped pizzas equally with the new shaped pizza slices.

**Task 4:** Show various ways to divide equally the parallelogram shaped pizza that Pizza Hut wants to use. Using the parallelogram shaped pizza and the various ways you divided the pizza, figure out the **greatest** amount of people and the **least** amount of people that could eat whole pieces of pizza.

**Task 5:** The new shaped pizzas fit into the oven differently than the traditional round pizza. Calculate for Pizza Hut how long it will take to cook multiple pizzas.



## Unit 5: Task 1 & 2

**TASK 1:** On the template below, write the name of each new shape pan on the line. Notice that some pans have more than one name. Label the pans with **all** the appropriate names!

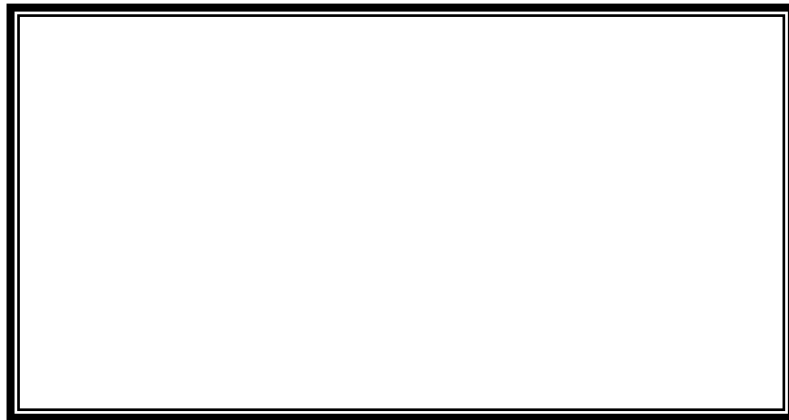
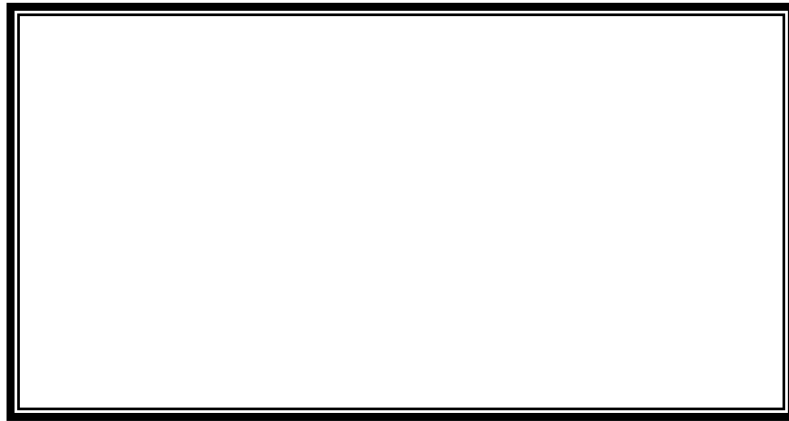
**TASK 2:** Use the geometric shapes from the class set to find how Pizza Hut can slice the new shaped pizza into equal slices. Trace your geometric shapes to show the shape of the pieces you chose. In the table, write the name of the slices you chose for each pan and how many equal pieces of that shape fit into the new shape pan.

Pan 1:

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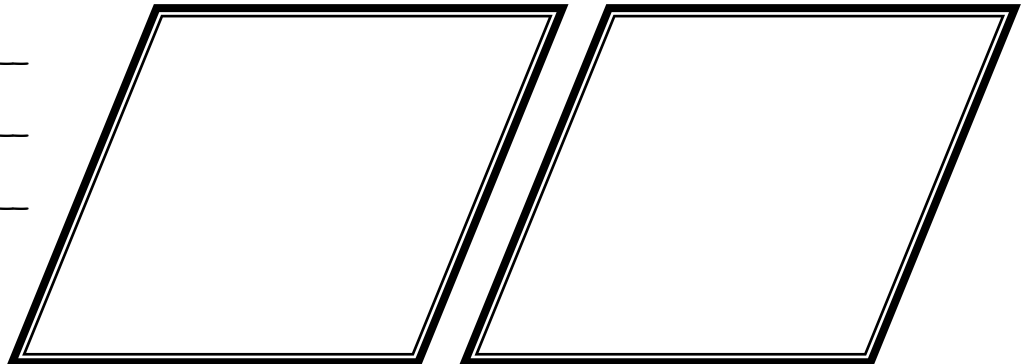


Pan 2:

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## Unit 5: Task 1 & 2 (continued)

Pan 3:

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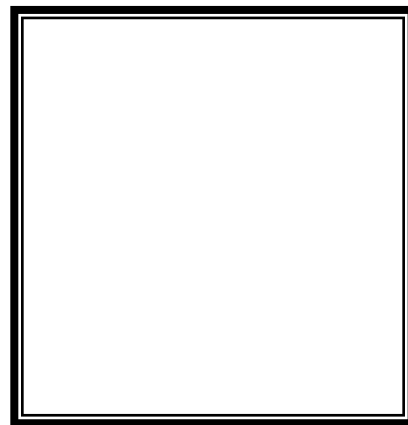
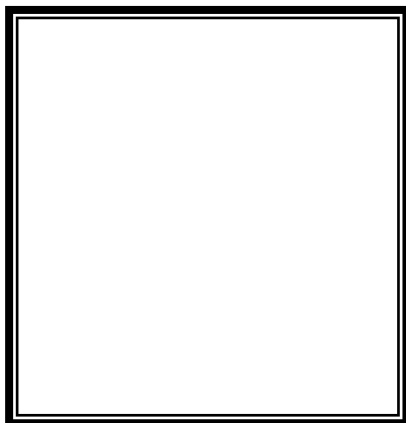
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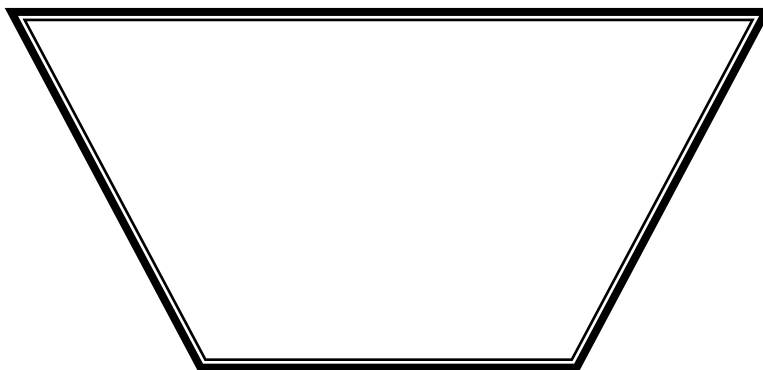
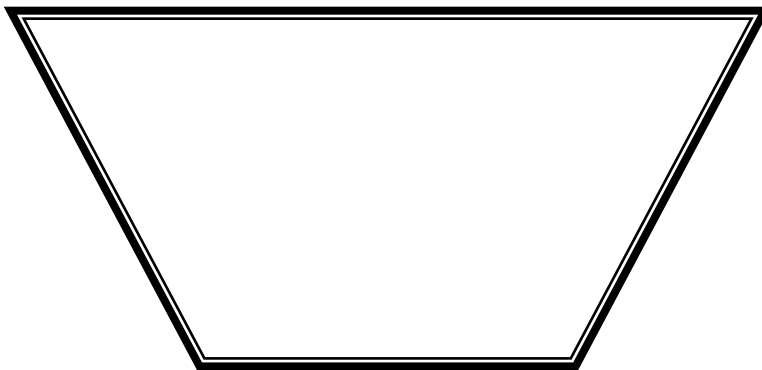
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Pan 4:

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## Unit 5: Task 2 (continued)

1. Complete the table.

[illegible]

2. Did any pan have more than one geometric shape that was used to divide it equally? Use mathematical vocabulary to explain which pan(s) and which shapes were used.

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## Unit 5: Task 3

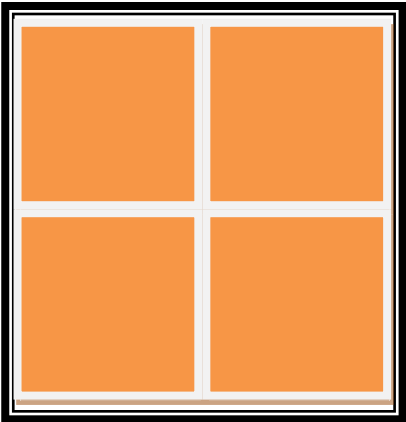
What are all the ways people can share whole pieces of pizza from each type of pan?

Represent all possibilities of people sharing equally whole slices of the new shaped pizzas.

Use the table to show the number of people and the fractional piece they will eat.

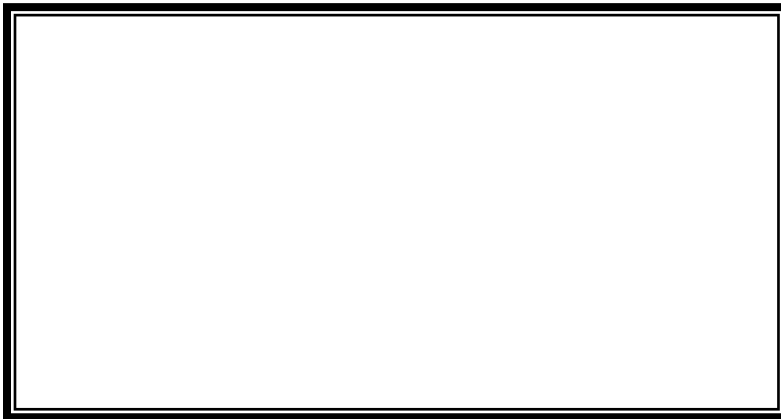
*(pan 3 is completed for you as an example)*

Pan 3:



Number of people sharing pizza	Fractional Part of Pizza Each Person Gets
4	$\frac{1}{4}$
2	$\frac{2}{4}$ or $\frac{1}{2}$
1	$\frac{4}{4}$ or 1 whole

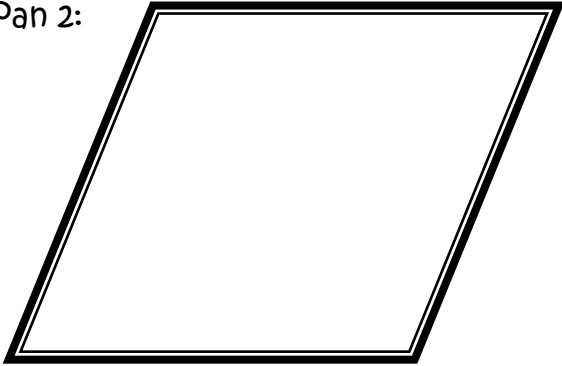
Pan 1:



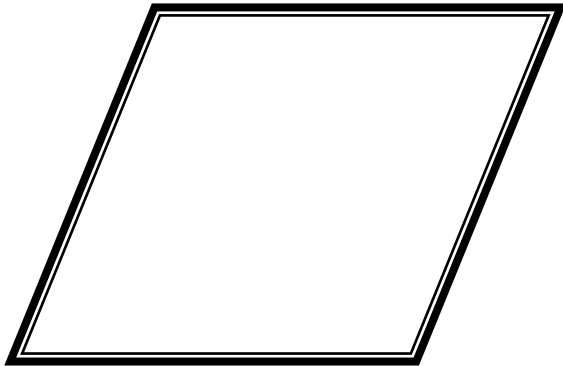
Number of people sharing pizza	Fractional Part of Pizza Each Person Gets

## Unit 5: Task 3 (continued)

Pan 2:



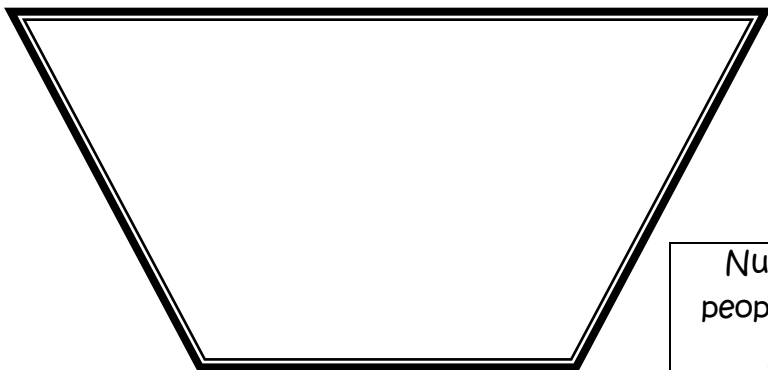
Number of people sharing pizza	Fractional Part of Pizza Each Person Gets



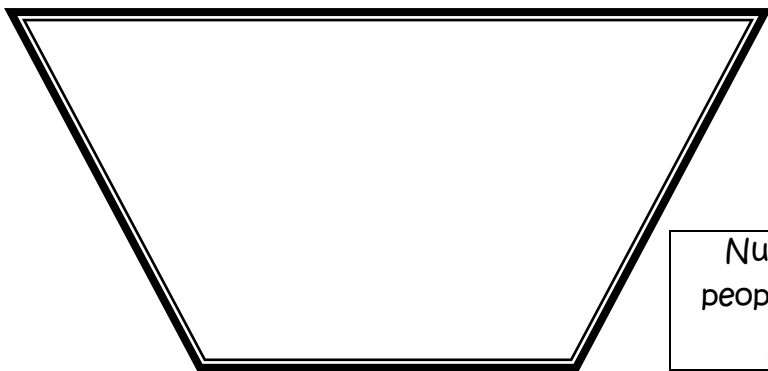
Number of people sharing pizza	Fractional Part of Pizza Each Person Gets

## Unit 5: Task 3 (continued)

Pan 4:



Number of people sharing pizza	Fractional Part of Pizza Each Person Gets

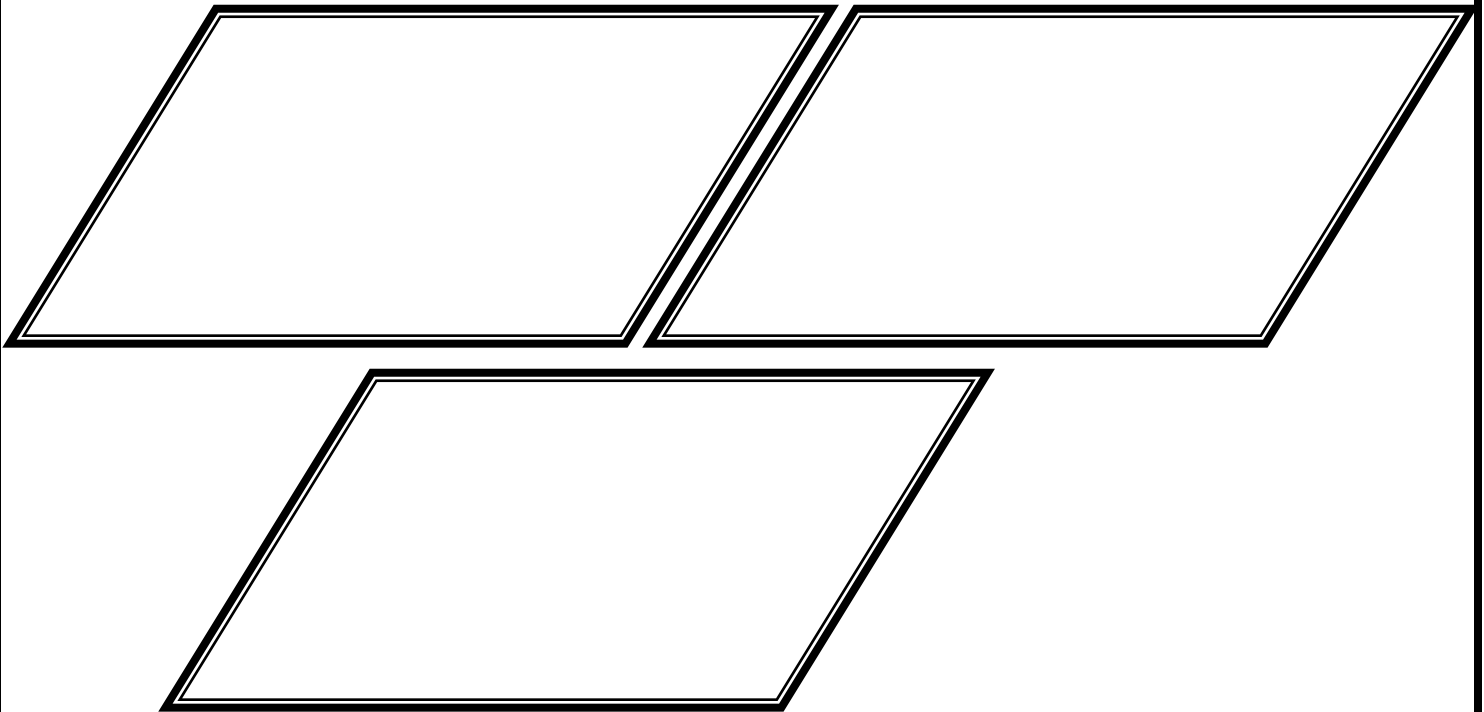


Number of people sharing pizza	Fractional Part of Pizza Each Person Gets

## Unit 5: Task 4

Using the classroom shapes, show Pizza Hut how to divide or cut the parallelogram shaped pizza.

Figure out the **greatest** number of kids and the **least** number of kids that could eat from this new shaped pizza. Show below the different ways to cut the new pizza shape.



Name of Slice Shape	Number of Slices per Pizza	Fraction for 1 Slice	Fraction for all Slices



## Unit 5: Task 4 (continued)

**Reflection:** Would you rather have  $\frac{1}{2}$  of a pizza or  $\frac{1}{8}$  of the same pizza? Does the shape of the pizza affect your answer? Explain your thinking using mathematical vocabulary.

[illegible]

## Unit 5: Task 5

The new shaped pizzas fit into the oven differently than the traditional round pizza. Three round pizzas could fit into the oven and would take 20 minutes to cook. Now with the new shaped pizzas, Pizza Hut can fit four pizzas in the oven at the same time. It now takes 20 minutes to cook four pizzas.

If Pizza Hut could cook 12 round pizzas in one hour and twenty minutes, how long will it take them to cook 12 of the new shaped pizzas?

If the 12 new shaped pizzas start cooking at 5:00 P.M., what time will all the pizzas be done?



## Task 5 (continued)

**Final Reflection:** Look over your work from earlier tasks. Remember what you learned about the number of slices per shape and how long it takes to cook the new shaped pizzas. Which shape pan should Pizza Hut use? Explain why you made your recommendation using mathematical language.

[illegible]

Name: \_\_\_\_\_

**3<sup>rd</sup> grade Unit 5**  
**Real World Experience Scoring Guide**

Pizza Pan Project

Meeting	<ul style="list-style-type: none"><li>• Student indicates preference for <math>\frac{1}{2}</math> or <math>\frac{1}{8}</math> of a pizza in Task 4</li><li>• Student explains reasoning for choice in Task 4 using math words and shows an understanding of <math>\frac{1}{2}</math> and <math>\frac{1}{8}</math></li><li>• Student indicates preference for shape of pizza</li><li>• Student explains reasons for preference</li><li>• Student calculates how long will it take cook 12 of the new shaped pizzas</li><li>• Student calculates what time will all the pizzas be done</li><li>• Student recommends which shape pan should Pizza Hut use</li><li>• Student explains the pizza shape recommendation using mathematical language.</li></ul>
Developing	Meets 6 of 8 criteria
Beginning	Meets less than 6 criteria

Comments: