



Investigating the Use of Cooking to Teach Mathematics

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Introduction

The purpose of this QEP funded project was to create four cooking inspired mathematics lessons for elementary and middle school students.

Lesson 1: How Does Your Slime Measure Up?

Objective:

- Measure the same object/distance with units of two different lengths.
- Use non-standard measurements to record lengths.

Collaborative Practice:

- With a partner, measure each slime line using non-standard measurements and discuss differences.

Lesson 2: Equivalent Fraction Fun: Trail Mix Mania

Objective:

- Generate equivalent fractions using real-world applications.
- Convert units within a measurement system.

Guided Practice:

- Determine the conversion factor to make enough trail mix for the entire class from the original recipe.

Collaborative Practice:

- The measuring cups have been misplaced and there is only a $\frac{1}{4}$ cup left. As a group, convert each ingredient to be measured with $\frac{1}{4}$ of a cup.

Independent Work:

Lesson 3: Slime Time Yoga: Stretch It Out!

Objective:

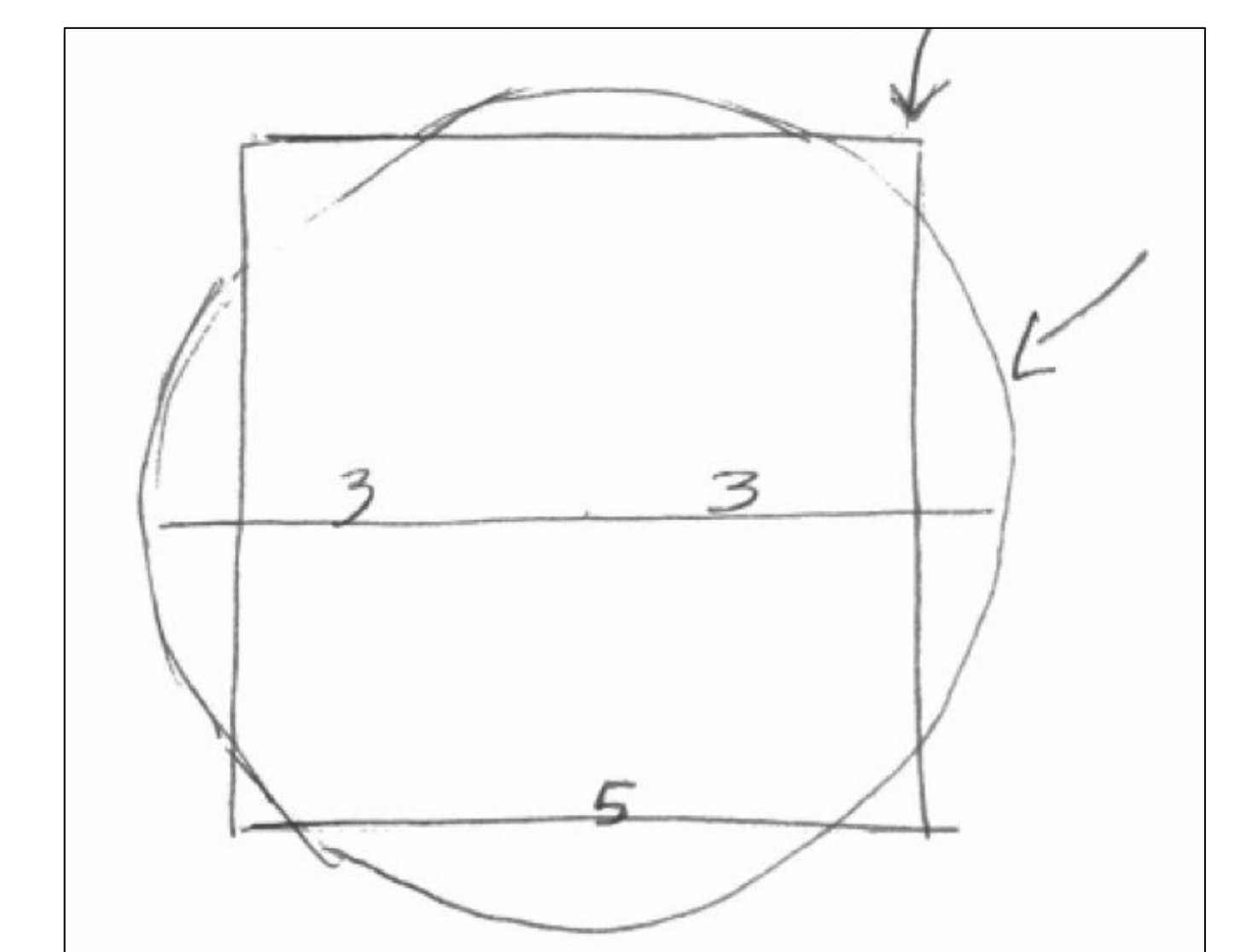
- Use numerical and graphical representations to analyze problems.
- Record data to organize the information into numerical data and create graphs, including a dot plot.

Collaborative Practice:

- Analyze student measurement data by answering critical thinking questions.



Sample Student Work



Lesson 4: Slimeballs

Objective:

- Apply mathematical process standards to solve problems involving the volume of cylinders, cones, and spheres.

Collaborative Practice:

- Use slime to concretely manipulate the concept of volume of 3-Dimensional shapes.


Independent Practice:


- Fill the given cube/cylinder with slime. Predict (in cm) how big a ball you could make from the slime.


NAME _____ DATE _____

Measuring Length in Non-Standard Units

Directions: Measure each object using paper clips.


1. Length of the candy bar: _____ 



2. Length of your pencil: _____ 

3. Length of the spoon: _____ 

Slime Time!!!

Directions: Stretch your slime and measure it using the objects below.

4. Length in  : _____ 5. Length in string: _____


6. Length in  : _____ 7. Length in  : _____

Extension

Directions: Find a partner. Draw pictures of your pencils below. Then, measure each pencil using paper clips.

Pencil #1

Pencil #2

How much longer is the longest pencil? _____ 



Cupcake Time with Equivalent Fractions

Directions: You have been given a cupcake recipe that creates **2 dozen cupcakes**. You need **6 dozen cupcakes** to feed every student in the 6th grade. Use these numbers to determine how much of each ingredient we need to make our cupcakes.

Cupcake Recipe		
<i>Ingredients</i>	<i>Work</i>	<i>Final Answer (with units)</i>
4½ cups of flour		
3½ cups of sugar		
¾ cups of brown sugar		
1 egg		
2¼ teaspoons of baking powder		

2. Explain which measurement unit is the most common. Why did you choose this measurement more than others?

3. Go to the teacher station and create your trail mix!!



$5 \times 5 \times 5 = 125$
 actual
 $\frac{4}{3} \pi r^3$
 $\frac{4}{3} \pi 9^3$
 $\frac{4}{3} \pi 27$
 36π
 113.04
 my guess was
 a little too small

$125 = \frac{4}{3} \pi r^3$
 $\sqrt[3]{\frac{125 \times 3}{4\pi}} \approx r$
 3.1 m
 The correct radius would have
 been 3.1 not 3.0 like I guessed