

GRADE 5 MATH: Playing with Fractions in Recipes

Summary of Learning Opportunity

In this learning opportunity, students adapted recipes to use equivalent fractions for the written measurements. We played with “what if” scenarios in which students made up stories involving lost, dirty or broken cooking utensils. They solved these problems using equivalent fractions for various measurements. Students reflected on the usefulness of connecting math to real world scenarios.

Mathematics
Grade 5

Learning Standards

- Use reasoning to explore and make connections
- Develop, demonstrate and apply mathematical understanding through play, inquiry and problem solving
- Reflect on mathematical thinking
- Equivalent fractions

Numeracy Connections

Instruction and Assessment

Competencies Developed, Practiced and/or Assessed

NUMERACY: Interprets—
Understands the real-world
problem; Applies—Translates the
scenario into a mathematical
problem

1. Before doing this activity, students learned about equivalent fractions as a part of the fractions unit. They made and used fraction strips to compare the sizes of different fractions. Students were directly taught three additional strategies for equivalent fractions: fraction circles, making a common denominator and comparing numerators. Students also completed practice problems in their textbook.

2. I introduced this lesson by sharing my favourite recipe. I modeled going through the recipe and making up “what if?” scenarios, like a needed measuring spoon being broken, dirty or lost. I asked the students to help me brainstorm alternative cooking utensils to use, based on their knowledge of equivalent fractions.

NUMERACY: Solves—Solves the mathematical problem

3. Students chose their own recipe and created their own “what if?” scenarios to share. They completed a reflection about where they see equivalent fractions in real life.

- Use reasoning to explore and make connections
- Develop, demonstrate, and apply mathematical understanding through play, inquiry and problem solving
- Reflect on mathematical thinking

Demonstration of Student Learning, Teacher Assessment and Reflection

Student’s Recipe:

Ginger cookies

Ingredients:

- 2 and $\frac{1}{4}$ cups of all purpose flour
- 2 teaspoons of ground ginger
- 1 teaspoon of baking soda -Oh no my teaspoon cup is dirty so instead I am going to use 2 $\frac{1}{2}$ teaspoons.
- $\frac{3}{4}$ teaspoon of ground cinnamon -Oh no I don’t have a $\frac{3}{4}$ teaspoon instead I am going to use $\frac{2}{4}$ (half a teaspoon.) a teaspoon and $\frac{1}{4}$ (quarter teaspoon.) of a teaspoon.
- $\frac{1}{2}$ teaspoon of ground cloves - Oh no my $\frac{1}{2}$ teaspoon broke instead I’ll use 2 $\frac{1}{4}$ teaspoons.
- $\frac{1}{4}$ teaspoon of salt
- $\frac{3}{4}$ cup of margarine softened -Oh no I still don’t have a $\frac{3}{4}$ cup so instead I will fill a cup and take $\frac{1}{4}$ cups out of the cup.
- 1 cup of white sugar -Oh no my cat barfed on my cup instead I’ll use 2 $\frac{1}{2}$ cups.
- 1 egg
- 1 tablespoon of water
- $\frac{1}{4}$ cup of molasses -Oh no my dog ate my $\frac{1}{4}$ of a cup instead I will use 2 $\frac{1}{4}$ cups.
- 2 tablespoons of white sugar

Excerpt from Student’s Reflection:

“We did this project because since we are learning about equivalent fractions it is good to get a better understanding about them and problem solve. For example, if your $\frac{1}{2}$ a cup was dirty then you would have to figure out other ways that you could make $\frac{1}{2}$ a cup. We use fractions a lot in our daily life and here are just some of the examples baking; cooking; restaurants, like when you order a pizza maybe you only want half or a quarter; time, for example, half past is $\frac{1}{2}$, quarter to is $\frac{3}{4}$; and money, for example, 1 quarter would be $\frac{1}{4}$. Basically everything! Sometimes when I was younger I baked and we did not have this certain cup or this cup was dirty or something like that and I would always ask my mom but now I realize that life is so much easier because one day I would not have my mom so equivalent fractions are really useful to know!”

Teacher’s Observations and Assessment

This student is **proficient** in the curricular competencies of using reasoning to make connections and demonstrating and applying their mathematical understanding. They applied their learning from the fractions unit and related it to a real-world problem. They found reasonable solutions to the “what if” problems. The student also made connections to other real-world situations in their reflection. This also demonstrates their ability to apply math strategies to other scenarios.