

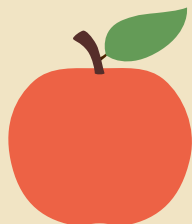


# KITCHEN FIELD TRIP LESSON PLAN

Grade 3

# Mathematics

Unit 5



# Grade 3 Mathematics (Unit 5)

## UNIT ESSENTIAL QUESTION:

How do you calculate fractions when using real life objects? Example: Using fractions when baking and when dividing up parts of a whole.

## BENCHMARK DESCRIPTION:

**MAFS.3.NF.1.1** Understand a fraction  $1/b$  as the quantity formed by 1 part when a whole is partitioned into  $b$  equal parts; understand a fraction  $a/b$  as the quantity formed by a parts of size  $1/b$ .

**MAFS.3.NF.1.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram

**MAFS.3.NF.1.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.

## VOCABULARY DEVELOPMENT:

Denominator	Fraction	Sixths	Compare
Eighths	Halves	Thirds	Equivalent fractions
Equal parts	Mixed number	Unit fraction	Greater than ( $>$ )
Fourths	Numerator	Standard numbers	Less than ( $<$ )

## ASSESSMENT:

Can students identify the meaning of the vocabulary words?

Are students able to answer probing questions during discussion?

Follow up worksheet and observation sheet

Can students identify how many parts equal a whole?

## INSTRUCTIONAL:

Read through the lesson plan. Take note of prep instructions in each exercise labeled “Before the students arrive.”

Introduce yourself and staff to students. Describe the lesson and what they will be doing.

Review behavior expectation and safety rules. Stress **NO TOUCHING** of equipment because it may be **HOT** or **SHARP**.

## KITCHEN TOUR:

Give students hairnets. Take students on a tour of the kitchen taking time to introduce fractions and how they are used in the kitchen. Show all the different tools we use to measure with and their related fractions such as  $\frac{1}{2}$  cup spoodle. When tour is complete give each student an observation sheet and pencil.

## Exercise I – Oatmeal Bars

### Before the students arrive:

- Preheat oven to  $350^{\circ}$  at the start of the class
- Pull allergy list for class and check for allergens against the recipe
- Gather the following items and have them laid out at a station in your kitchen
  - o Sugar
  - o Applesauce
  - o Canola oil
  - o Honey
  - o Oats
  - o Whole wheat flour
  - o Baking soda
  - o Salt
  - o Cinnamon
  - o Raisins
  - o Mixing Bowl
  - o Spatula
  - o Measuring cups and spoons
  - o Sheet pan
  - o Pan release spray



### After the students arrive:

- Give students gloves
- Pass out recipe for Oatmeal Bars. Explain to students that they will be using their knowledge of fractions to bake oatmeal bars today
- Explain fractions using specific measuring cups as they are used. Have students help measure ingredients. Use different measuring cups like two  $\frac{1}{4}$  cups to make a  $\frac{1}{2}$  cup. Have students write down on the observation sheet the different measuring cups and spoons that were used
- Allow the students to mix the ingredients together
- Spread the mixture evenly onto prepared pans
- Place pans into the oven (have a staff member remove from oven and cool) while you continue on to Exercise II
- After completing Exercise II - Explain to students that the oatmeal cooking in the pan is a whole. In order for everyone to get a piece of the oatmeal bar, it must be broken up (into a fraction)
- Ask students how many will be eating the oatmeal bars
- Review the multiples with students for example  $18 = 9 \times 2$  or  $6 \times 3$
- Have students draw different ways to cut the pan and decide the best way to cut the bars
- As the bars are cut to pieces, explain how many part of the whole there is (when the pan is cut in half, one half of the pan is  $\frac{1}{2}$ , when that half is cut in half, it is  $\frac{1}{4}$  of the whole)
- Have students draw on their observation sheet how the pan of granola bars were cut
- Give each student a piece of the oatmeal bar or pack them up to send back with the class

## Exercise II - Orange

### Before the students arrive:

- Gather enough oranges for the class

### After the students arrive:

- Give each student an orange and have them peel it
- Allow students to separate the orange wedges and count them
- Have students draw and describe what the peeled orange looks like on their observation sheet
- Explain that the orange is 1 whole. Each wedge of the orange is a fraction of the whole orange. Example: if the orange has 8 wedges, and the student eats 1 wedge of the orange then they have just eaten  $\frac{1}{8}$  of the orange
- Explain what a fraction greater than one is. For example have to students put together two oranges. How many is that? 2. Now take away 1 wedge from 1 orange. How much is left?  $1 \frac{7}{8}$
- Let the students practice making their own fractions with their oranges as the model. Record what fractions they created on their observation sheets
- Have students brainstorm other ways fractions are used in the kitchen
- Go back to oatmeal bars

## RESOURCES:

- Observation Sheets
- Pencils
- Oranges
- Copies of the oatmeal bar recipes
- Oven
- Measuring cups
- Large and medium mixing bowl
- 13" x 9" baking pan
- Cooking spray
- Knife

## TAKE AWAYS:

- Worksheet
- Teacher aid
- Orange
- Oatmeal bar slice

## TOPICS:

Talk about how fractions are a part of everyday life. Real life situations rely on the ability to correctly calculate and understand fractions

Talk about how fractions affect the way we cook and bake. Using the correct fractions is essential in properly executing a recipe.



# Oatmeal Bars Recipe

Yield: 20 servings

## INGREDIENTS

- o 2/3 cup sugar
- o 1/2 cup unsweetened applesauce
- o 1/3 cup canola oil
- o 1 tablespoon honey
- o 2 cups quick-cooking oats
- o 1 cup whole wheat flour
- o 1 teaspoon baking soda
- o 1/2 teaspoon salt
- o 1/2 teaspoon ground cinnamon
- o 1/2 cup raisins



## DIRECTIONS

1. In a large bowl, beat the sugar, applesauce, oil and honey until well-blended.
2. In a small bowl, combine the oats, flour, baking soda, salt and cinnamon; gradually beat into applesauce mixture until blended. Stir in raisins.
3. Spread batter into a 13" x 9" baking pan coated with cooking spray.
4. Bake at 350° for 15-20 minutes or until edges begin to brown. Cool completely on a wire rack. Cut into bars.

## NUTRITIONAL FACTS

1 bar equals 127 calories, 4 g fat, 0 g cholesterol, 123 mg sodium, 21 g carbohydrate, 1 g fiber, 2 g protein

# Observation Sheet

## Exercise I – Oatmeal Bars

1. Measuring cups and spoons:

2. Draw how the pan of granola bars were cut:



3. Draw the peeled orange:

4. What fraction did you make?

# Worksheet

1. List as many examples of how you can/do use fractions in everyday life:

2. Explain what a fraction greater than one is. Give one example:

3. Order the following fractions on the number line from least to greatest:

$1 \frac{7}{8}$ ,  $\frac{1}{8}$ ,  $\frac{1}{1}$ ,  $\frac{1}{6}$ ,  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $1 \frac{1}{2}$



4. Use one of the following symbols to make the equation true < > =

a.  $\frac{1}{6}$  \_\_\_\_\_  $\frac{1}{4}$

b.  $1 \frac{1}{2}$  \_\_\_\_\_  $1 \frac{2}{4}$

c.  $\frac{1}{8}$  \_\_\_\_\_  $\frac{7}{8}$

5. How many eighths ( $\frac{1}{8}$ ) equal a whole?

# Teacher's Aid

## Quiz Questions:

1. You make a pizza for 6 people and they all want a piece. What fraction of the pizza would they each get?
2. You and a friend share an apple. You cut the apple into 10 sections. How many pieces of apple would each of you get if you each ate  $\frac{1}{2}$  of the apple?
3. True or False:  $\frac{1}{2}$  of an orange is more than  $\frac{1}{8}$  of an orange?
4. There are 16 tablespoons in a cup. What fraction of a cup is 1 tablespoon?

## Writing Questions:

1. Describe a time when you had to divide something between yourself and your friends. How did you do it?
2. Write about a time that you baked something and the kind of measuring tools you used.

