

FRACTIONS AND FAIRNESS

A FRESHFARM FOODPRINTS LESSON PLAN

Theme: Conservation and Social Justice

1ST GRADE / LESSON 6 / WINTER / FEBRUARY

LESSON SUMMARY

The purpose of this lesson is for students to practice partitioning and creating equal parts through real-world applications in the garden and kitchen. In the garden, students will prepare raised beds for planting by dividing them into equal parts. In the kitchen, they will work on creating equal parts from fruits and vegetables of different sizes for sharing. They will explore the terms fair and equal and consider if equal is always fair.

Objective: At the end of the lesson, students will be able to divide produce and a garden bed into equal parts and discuss the differences between equality and fairness.

BIG IDEA

Sometimes what is equal is not fair.



GUIDING QUESTIONS

What does it mean to be fair and equal?

Is equal always fair?

TIME

This lesson can be taught in a 90-120-minute block or divided into multiple shorter lessons using small group activities from the Explore section.

NATIONAL STANDARDS

Common Core Math

1.G.3 Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares.

Common Core ELA

SL.1.1 Participate in conversations with diverse partners about grade 1 topics and texts with peers and adults in smaller and larger groups.

National Food Education Standards (FES)

Standard 6: We can make positive and informed food choices.

Standard 7: We can advocate for food choices and changes that impact ourselves, our communities, and our world.

MATERIALS LIST

1. 2 apples, cutting board, and knife
2. *What is the Difference Between Equal and Equitable image (attached)*
3. *Fairness in Our World worksheet (attached)*
4. Vegetables such as apples, pears, potatoes, or onions that can easily be cut into halves and fourths
5. *Drawing and Dividing Vegetables worksheet (attached), pencils, colored pencils*
6. Knives and cutting boards for cutting vegetables
7. *Dividing Garden Beds worksheet (attached)*
8. Recipes and materials for cooking

CONNECTED TEXTS

Peg + Cat: The Pizza Problem
by Jennifer Oxley and Billy Aronson

Eating Fractions
by Bruce McMillan

RECIPES

[Carrot and Spice Cake](#)

[Kale Quesadillas](#)

[Leek and Swiss Chard Tart](#)

[Mini Green Pizzas](#)

All FoodPrints recipes available here:
freshfarm.org/recipes

VOCABULARY

fair: following rules; just

equal: the same

equality: everyone getting the same thing; an equal share

equity: everyone getting what they need to succeed

half: one portion of a shape divided into two equal pieces

fourth: one portion of a shape divided into four equal pieces



To learn more about the FoodPrints program and access the full curriculum, visit freshfarm.org/foodprints

WASHINGTON, DC STANDARDS AND UNITS

DCPS Units of Study

Math - Identifying, Composing and Partitioning Shapes

DC Social Studies Standards

1.2.4: Describe the meaning of words associated with civic values, such as *fairness, responsibility, and rules*.

DC Health Standards

K-2.5.7.14: Recognize a nutritious meal or snack.

ENGAGE

The goal of this portion of the lesson is to engage students in learning by activating prior knowledge and experiences, piquing their interest, and building curiosity. Use this time to guide students through thinking about the Big Idea and Guiding Questions.

- Welcome students to the FoodPrints classroom. Share that throughout the lesson today we will be exploring the ideas of **fair** and **equal**.
- Show students two apples and explain that you are going to divide them into pieces. Cut one into equal pieces and the other randomly so that there are pieces of different sizes.
- Ask students which of the cut apples would be fair to distribute to the class and to explain why one would be fair and the other not fair.
- Draw pictures of different shapes and show how to divide or partition them into halves and fourths, making each piece equal. Use math words such as **equal**, **half**, **fourth**, and **fraction**. Explain to students that when we cook, we will practice dividing what we make into equal portions, and when we eat our snack, we will be sure to cut things equally, so it is fair for everyone.
- Share that in our small groups today, we will be dividing things fairly. We'll also be thinking about this question: *are there are times when unequal portions could be fair?*



EXPLORE

In this section, students work as a class or in small groups to explore the Guiding Questions through hands-on and minds-on investigations, along with experiences in the garden and kitchen. The adult leading each small group acts as a facilitator to assist students in coming to their own understanding. Please choose from the activities below that fit best with your students, class time, and learning goals.

- 1. Classroom - Literacy: Equality and Fairness.** Remind students of the guiding questions of the lesson: *What does it mean to be fair and equal?* and *Is equal always fair?* Show students the attached image, *What is the Difference Between Equal and Equitable*, and spend a few minutes discussing the two images.

Ask students to explain why the images under **equitable** are in fact fairer than the **equal** ones. Explain that equality is treating everyone exactly the same, just as many of them thought that the apple slices should be distributed equally. **Equity** is giving people what they need-- what you might think of as fair. Can you think of a reason why it might be fair for some people to get a larger piece of apple? (Someone who didn't eat breakfast, for example.) Ask students for examples of equality and of equity in their classroom and lives. Here are some examples:

- high stools or chairs for shorter people
- a new pencil for someone whose pencil is broken but not for those who have a working pencil
- testing accommodations (extra time, headphones, quiet space) for students with different learning needs
- a new playground in a neighborhood that doesn't have one instead of a new playground in every neighborhood

Students can also complete the worksheet, *Fairness in Our World* to further their own thinking of fairness, equity, equality, and justice.

- 2. Classroom - Math/Art: Drawing and Dividing Vegetables.** Provide students with a variety of vegetables that are round and can be equal parts (e.g., potato, apple, onion, kohlrabi, cabbage). Use the attached worksheet as a guide to make drawings of the whole vegetable and then cut the vegetable cut into equal shares (both half and fourths) to match their drawing. As a challenge, you can also provide students with a vegetable that is not round, like a pear or squash.



EXPLORE, continued

3. Garden - Math: Partitioning a Garden Bed.

Explain to students that when planting the garden, it is important to give each plant an appropriate amount of space so that they can grow. Starting with the attached *Dividing Garden Beds* worksheet, students will practice dividing rectangles into halves or fourths for planting. They should be able to show how to divide the garden bed into four equal parts.

You can also take your students outside so they can measure and partition a bed into square feet for future planting:

- Measure or mark off each square foot along the edges of the bed.
- Either put a nail at each mark and tie twine across the bed to divide into square feet OR
- Put stakes or sticks on the soil to mark dividing lines between the square feet of soil in the beds.



4. Classroom - Cooking: Prepare a recipe that

can be divided into equal parts. Pizza, quesadillas, and bread are all good options.

Discuss how to divide up the finished product so that everyone can have some. Are there different ways you could do this? Do they feel it is most equitable to make all the pieces equal? Why or why not? See page 2 for suggested recipes.

EVALUATE AND CLOSE

The closing of the lesson is a time for students to reflect and synthesize what they have learned, and to share the food you have prepared together. Below are two ways to help students share and evaluate their learning at the end of each session.

- 1. Reflect and Share:** As a group, revisit the Big Idea and Guiding Questions introduced at the beginning of the lesson. Help students articulate how their understanding of these concepts has grown or changed, what questions they still have, and how they could continue to learn more.

Suggested ways to **reflect and share**:

- Ask students to share challenges in cutting vegetables into equal parts
- Ask students to share examples of when they think equal is and is not fair

- 2. Eat and Appreciate:** Eating the food you have prepared together and taking time to appreciate the food is an important part of the FoodPrints experience.

Suggested ways to **eat and appreciate**:

- Assure students who are hesitant to taste new foods that they are not required to eat.
- At the same time, explain that tasting new foods is the only way to find out if your taste buds are maturing and beginning to welcome new flavors!
- Ask that everyone takes the first bite together and remind them that it is okay if their taste buds aren't ready for these flavors yet.
- Take time to appreciate and recognize all the different people and natural resources involved in growing, harvesting, transporting, buying, and preparing the ingredients you are eating.
- Ask students to thank their classmates for helping to prepare the food and work as a team.
- Encourage students who are enjoying the taste of the food to express what they like and why.

BIG IDEA

Sometimes what is equal is not fair.

GUIDING QUESTIONS

What does it mean to be fair and equal?
Is equal always fair?

EQUALITY AND EQUITY



What is the Difference Between **EQUAL** and **EQUITABLE**?

We all need the same basic things to survive — but we might need slight variations in the conditions around us to truly thrive.

EQUAL

vs

EQUITABLE



All students are equally deserving and capable of responding to educational experiences and opportunities that prepare them for success.

What do your
students need
to thrive?



To learn more about equity,
sign up for Participate's free course:
go.participate.com/reduced-inequalities

participate.

Image by Jim Kennedy, Durham, NC,
behance.net/JimKennedy

NAME _____

DATE _____

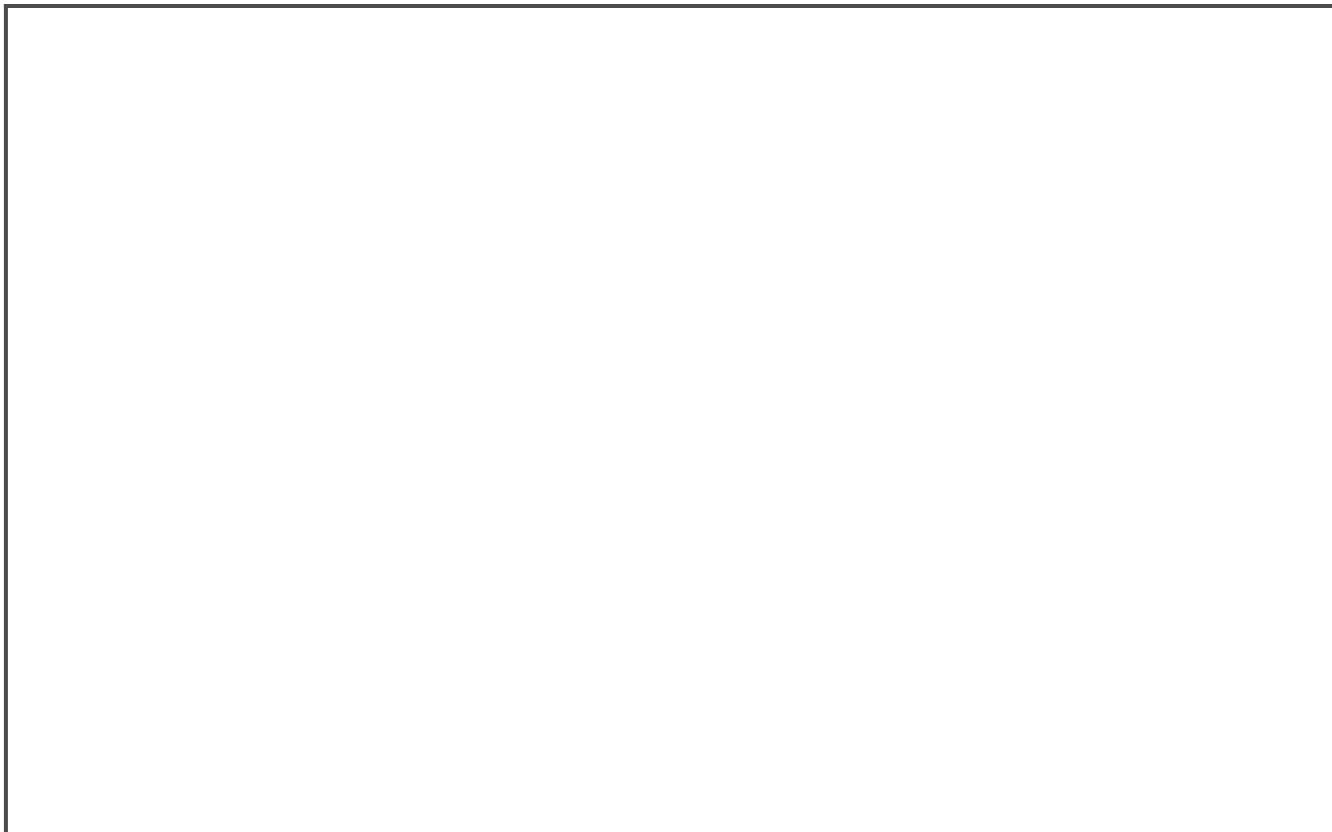
FAIRNESS IN OUR WORLD

Instructions: As you answer these questions, think about our discussion on Equality and Fairness, and the image, *What is the Difference Between Equal and Equitable?*.

What does the word fair mean?

What does the word equal mean?

Draw a picture of what the word equitable means to you.



DRAWING AND DIVIDING VEGETABLES

Instructions: Your teacher will give you a vegetable to observe and to divide into equal pieces. First, draw the whole vegetable. Then decide how you could cut it into two equal parts, cut the vegetable in half, and then draw it. Finally, decide how you can cut the vegetable into four equal parts, cut it into fourths, and then draw it.

WHOLE: Draw the vegetable you see and write the name of the vegetable.

HALVES: Draw the vegetable divided into **two** equal parts.

FOURTHS: Draw the vegetable divided in **four** equal parts.

NAME _____

DATE _____

DIVIDING GARDEN BEDS

Instructions: There are three different garden beds that are ready for planting. Each bed is to be divided into **four equal parts**. On the rectangles below, draw three different ways you can divide the garden beds. If you like, draw in pictures of some of the things you'd like to grow (fruits, veggies, flowers, and/or herbs!)

