

Introduction to Fractions

Standard:

3.NF.A.1: Understand and recognize fractions as parts of a whole.

A. GRADE LEVEL: 3rd–4th Grade

B. SUBJECT: STEM/Math

C. DATE:

D. DURATION: Three days

E. LESSON FOCUS: Understanding fractions as parts of a whole and recognizing their representation using real-life objects and mathematical models.

F. MATERIALS:

- Paper circles, rectangles, and squares (representing pies, chocolate bars, etc.)
- Colored pencils or crayons
- Scissors (safety scissors for younger students)
- Fraction flashcards
- Fraction tiles or manipulatives (optional)
- Interactive whiteboard or chart paper

G. LESSON OBJECTIVES:

By the end of the lesson, students will:

1. Define and identify fractions as parts of a whole.
 2. Recognize and represent fractions using visual models and real-life objects.
 3. Demonstrate understanding by solving simple problems involving fractions.
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H. PROCEDURES:

1. INTRODUCTION:

- Begin with a discussion: “Have you ever shared a pizza, chocolate bar, or a cake with friends or family? How do you divide it so everyone gets a fair share?”
- Show a visual example of a pizza or circle divided into equal parts.
- Introduce the concept of fractions, explaining that a fraction represents a part of a whole. Define the numerator and denominator and explain their roles in a fraction.

2. EXPERIMENT:

- Provide students with paper circles or rectangles.
- Guide them to fold or cut the shapes into equal parts (halves, thirds, fourths).
- Have students color one or more parts and write the corresponding fraction (e.g., $\frac{1}{2}$, $\frac{1}{4}$).
- Use fraction flashcards to match the fractions to their visual representations.
- Incorporate a hands-on activity with fraction tiles or manipulatives to show how different fractions compare in size.

3. OBSERVATION:

- Ask students: “What do you notice about the size of each piece as the number of parts increases?”
- Encourage them to explain their observations, such as how dividing into more parts makes each piece smaller.

4. GENERALIZATION:

- Summarize: "Fractions show parts of a whole. The numerator tells how many parts we are looking at, and the denominator tells how many total equal parts the whole is divided into."
- Show fractions on a number line and relate them to their visual models (e.g., $\frac{1}{2}$ is halfway between 0 and 1).

5. ASSESSMENT:

- Provide students with diagrams of divided shapes and ask them to write the fraction for the shaded part.
- Ask students to create their own visual fraction models using paper or drawings and explain the fraction they represented.
- Pose real-world problems, like dividing a sandwich or sharing a bag of candies, and have students determine the fraction of each share.

Note 1: Safety Precautions

Ensure scissors are used safely during the cutting activity. Provide blunt-tip scissors for younger students and supervise the activity to prevent accidents. Avoid using materials that may pose a choking hazard or other risks.

Note 2: Accommodation for ELL, ESE, etc.

- Use visuals and hands-on materials to support comprehension for ELL students. Provide bilingual fraction labels if applicable.
- Break instructions into smaller steps and use repeated modeling for ESE students. Allow additional time for tasks.
- Pair students with peers for collaborative activities to encourage peer learning and support. Use digital fraction tools for students who may benefit from interactive, tech-based resources.