CHAPTER 6: Simple Fractions
MINI-MODULE A

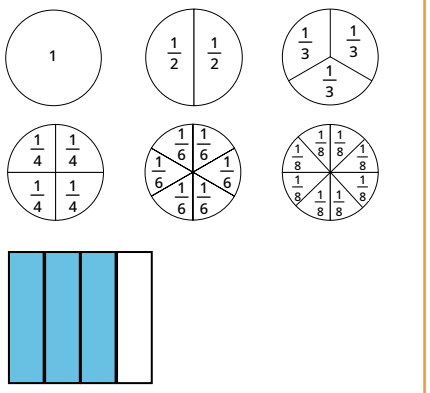
Fractions as Part of a Whole

Objectives

This mini-module aims to help teachers:

- Explain and demonstrate fractions as part of a whole.
- Teach fractions as part of a whole using fraction circles.
- Practice a new teaching activity.

Recommended Materials



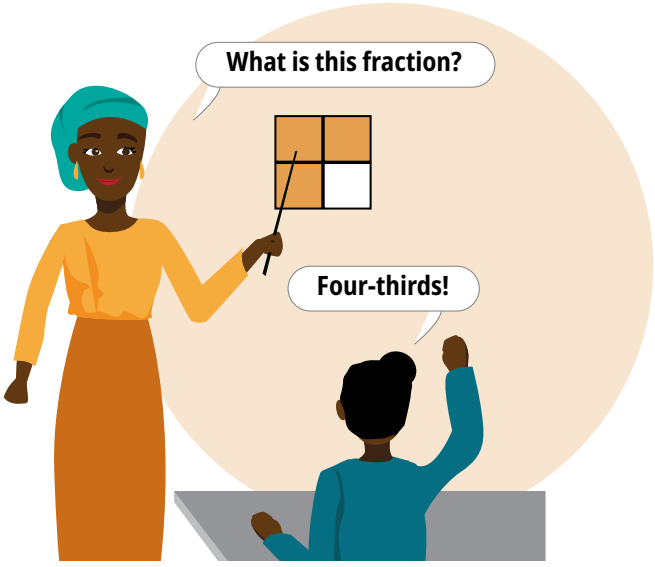


Illustration of Teaching

REFLECT:

- What mistake did the student make?
- Why do you think the student made this mistake?
- What activities or materials could you use to help this student understand?

Ideas to Consider

The shape shows the fraction for "three-fourths," but the student answered "four-thirds." The student may not have a good understanding of fractions yet. Or they might misunderstand the language used to talk about fractions. The teacher should try to find out what the student misunderstands. The teacher could ask the student to identify how many equal parts the shape is divided into (four) and remind them that each part is a "fourth." They could give the student more practice identifying fourths in different shapes and examples.

In this mini-module, you will explore what children learn about fractions as part of a whole and how shapes can be used to build their understanding.

ACTIVITY: REPRESENTATIONS OF FOURTHS

This activity can be completed alone, in pairs, or with a group of teachers. If you have colleagues to work with, you may take turns folding papers in different ways. Discuss your responses to the questions.

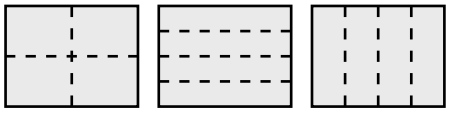
Purpose: Identify different ways to represent fourths.

Materials needed: Several sheets of paper of the same size.

Instructions

- Fold a piece of paper into fourths any way you like. Unfold it. It should have four sections of equal size.
- ***How can you tell if all four parts are equal in size?***
- Fold another piece of paper into fourths a different way.
- ***In how many different ways can a piece of paper be folded into fourths?***

  Examples:

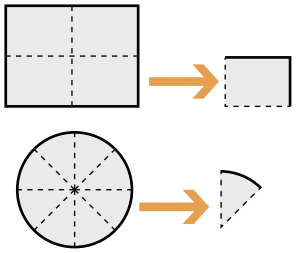
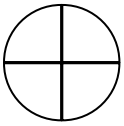
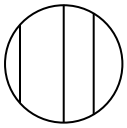
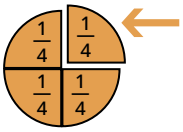
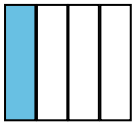
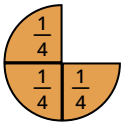
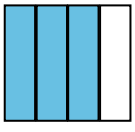


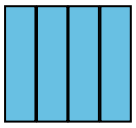
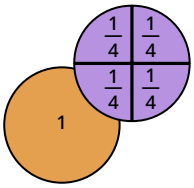
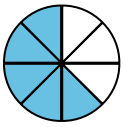
- ***What could this exercise help your students understand about fractions?***

What Do Children Learn about Fractions as Part of a Whole?

When they learn about fractions, children learn that fractions divide a whole shape into equal sections. They begin to identify and discuss fractions using shapes and language before they learn to write them with numbers. First, they identify and demonstrate unit fractions (such as $\frac{1}{2}$ or $\frac{1}{4}$) in shapes. Then, they identify and demonstrate non-unit fractions (such as $\frac{2}{4}$ or $\frac{3}{4}$) by counting or shading parts of a whole.

After children have a good concept of fractions, they learn to read and write them with numbers. They learn that the bottom number is the denominator, which shows the total number of equal parts into which the whole is divided. The top number is the numerator, which represents the number of parts being considered or shaded.

Children should be able to . . .	What does this mean?	Example
Divide a whole into equal parts	Divide a whole into parts of equal size.	Divide one whole paper shape by folding it into equal parts. Fold it in half several times, and then cut the folds. The parts can be stacked to show that they are equal. *Shape:* *Stacked parts:* 
Identify equal parts of a whole	Identify equal parts of a whole.	These are equal parts:  These are not equal parts: 
Identify unit fractions	Identify unit fractions (e.g., $\frac{1}{2}$, $\frac{1}{5}$) represented as pictures, shapes, or objects.	Use fraction circles to show *one-fourth.*  Shade part of a shape to show *one-fourth.* 
Identify non-unit fractions	Identify non-unit fractions (e.g., $\frac{2}{3}$, $\frac{1}{5}$) represented as pictures, shapes, or objects.	Use fraction circles to show *three-fourths.*  Shade parts of a shape to show *three-fourths.* 

Children should be able to . . .	What does this mean?	Example
Identify fractions equal to 1	Identify fractions (e.g., $\frac{2}{2}$, $\frac{3}{3}$, $\frac{4}{4}$) that are equal to one whole.	Shade parts of the shape to show *four-fourths.* This is the whole shape.  Use fraction circles to show that *four-fourths* is equal to one whole. 
Identify and write fractions	Identify and write fractions (e.g., $\frac{1}{2}$, $\frac{2}{5}$) for given shapes.	Write a fraction for the shaded part.  Write: $\frac{5}{8}$

Reflection

Write your responses down or discuss your ideas with your colleagues:

- Why do you think it is important for students to identify and discuss fractions before they learn how to write them?
- What mistakes do your students make when they first learn how to write fractions? How could you use materials to address these mistakes?

Teaching Practice

This practice activity may be completed by teachers with their own class or with a smaller group of students.

ACTIVITY: USE FRACTION CIRCLES TO SHOW UNIT FRACTIONS

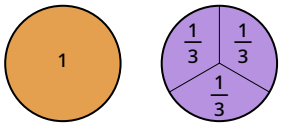
Purpose: Identify unit fractions.

Materials needed: Cutouts of fraction circles.

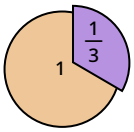
Note: Fraction circle materials are essential for students to be able to develop an understanding of fractions. Students can share materials if needed.

Instructions

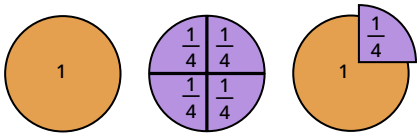
- Students should work in small groups and share materials. Make sure that groups have fraction circles.
- Discuss: ***I want to use these fraction circles to show $\frac{1}{3}$. How can I do that?***
- Put $\frac{1}{3}$ fraction circle pieces on the whole circle. Ask: ***How many equal parts is the circle divided into?***



- Remove two of the $\frac{1}{3}$ pieces so there is only one $\frac{1}{3}$ piece left, and ask: ***What do we call one of those parts?***

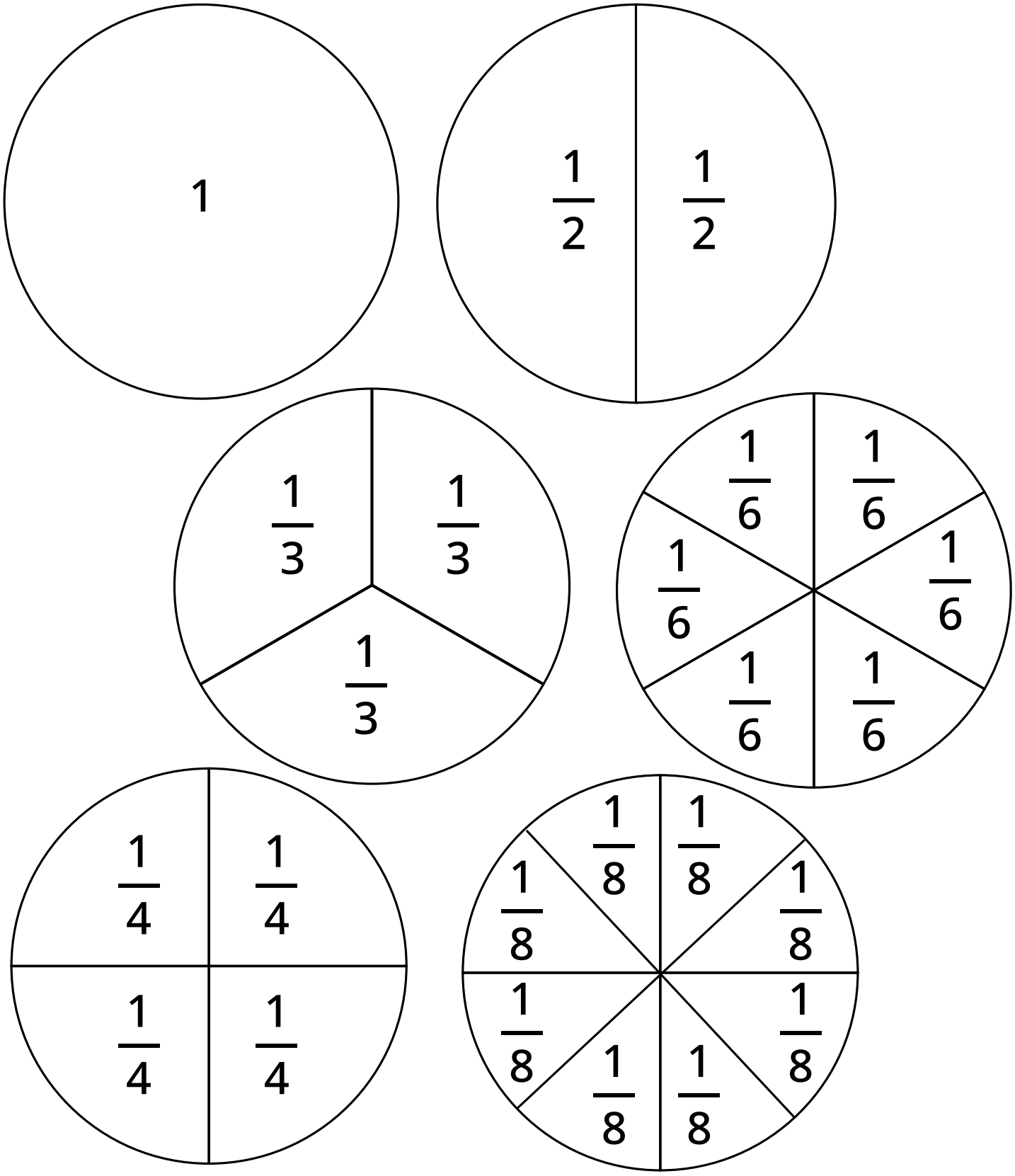


- Invite students to do the same, finding the pieces that can divide the circle into four parts and then showing and naming one of these pieces.



- Have different groups of students make different unit fractions (such as $\frac{1}{2}$, $\frac{1}{6}$, and $\frac{1}{8}$), following the same steps.
- Walk around to check for understanding.

Fraction Circle Cutouts



MAY 2025

AUTHORS: Brittany Meredith, Yasmin Sitabkhan, Wendi Ralaingita, Linda Akach