

CHAPTER 6: Simple Fractions

MINI-MODULE E

Equivalent Fractions

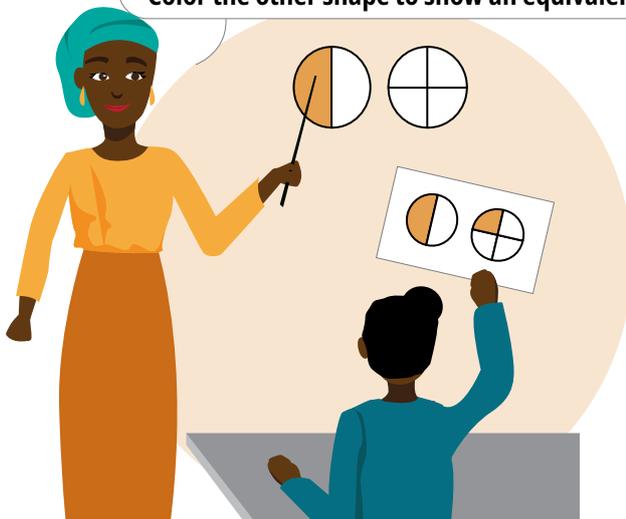
Objectives

This mini-module aims to help teachers:

- Explain and demonstrate equivalent fractions using various fraction representations.
- Teach how to create and identify equivalent fractions.
- Practice a new teaching activity.

Illustration of Teaching

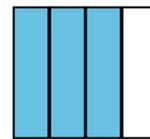
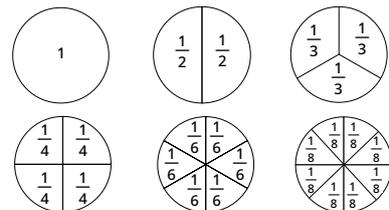
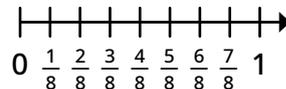
Color the other shape to show an equivalent fraction.



REFLECT:

- What mistake did the student make?
- What do you think the student has misunderstood about equivalent fractions?
- What questions could you ask this student to help them understand?

Recommended Materials



Ideas to Consider

The student colored one part of the circle showing fourths, which represents $\frac{1}{4}$. They should have colored two parts to show $\frac{2}{4}$, which is equivalent to $\frac{1}{2}$. The student may not know the term “equivalent fraction,” or they may not understand the concept well yet. The teacher could explain equivalent fractions in simple language and using examples. She could ask the student questions to guide them, like *How much of the first circle is colored? (one-half)* or *How many parts of the second circle do we need to color so that the same amount of the circle is covered? (two parts)*

In this mini-module, you will explore what children learn about equivalent fractions in the early grades.



ACTIVITY: CREATE EQUIVALENT FRACTIONS

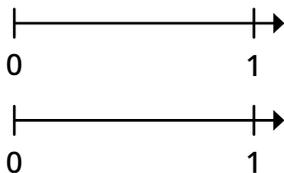
This activity can be completed alone, in pairs, or with a group of teachers. Each participant may draw their own number lines, or participants may work together. Discuss your responses to the questions.

Purpose: Create equivalent fractions on number lines.

Materials needed: Writing materials for all participants.

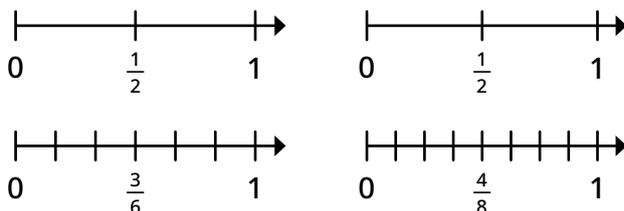
Instructions

- Draw two matching number lines from 0 to 1, aligned vertically as shown.



- How could these be used to show equivalent fractions?**
- Draw a tick mark for $\frac{1}{2}$ on the top number line.
- What are some fractions that are equivalent to $\frac{1}{2}$? How can we use the second number line to show equivalent fractions?**
- Choose one equivalent fraction, and complete the other number line to show an equivalent fraction of your choice.

Examples:

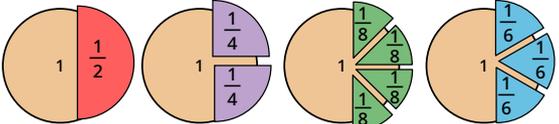
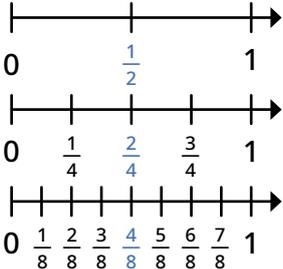
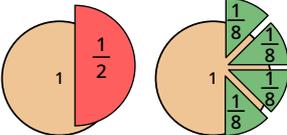
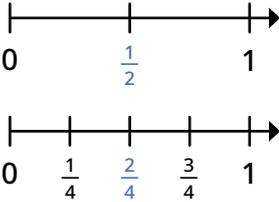


- What do you notice about equivalent fractions on the number lines?**
- What are some important things to keep in mind when drawing number lines for equivalent fractions?** (e.g., number lines should be the same size and drawn over one another vertically; equivalent fractions should be aligned vertically)

What Do Children Learn about Equivalent Fractions?

In the early grades, children rely on concrete or pictorial representations to identify equivalent fractions. They compare the fractions visually, using concrete materials such as fraction circles or a number line. It is possible to identify or create equivalent fractions using other methods, including with multiplication and division, but children do not learn about those methods until later.

Representations used to identify equivalent fractions should be the same type, shape, and size. For example, a teacher could use two fraction circles of the same size, or two number lines with the same distance between 0 and 1. It is important to not use two different types of representations (e.g., a shape and a number line) to compare or identify equivalent fractions.

Children should be able to ...	What does this mean?	Example
<p>Create equivalent fractions</p>	<p>Create equivalent fractions using representations.</p>	<p>Q: Use the fraction circles to find fractions that are equivalent to $\frac{1}{2}$.</p> <p>A: </p> <p>Q: On the number lines, identify fractions equivalent to $\frac{1}{2}$.</p> <p>A: </p>
<p>Identify equivalent fractions</p>	<p>Identify if two fractions are equivalent using models.</p>	<p>Q: Are these equivalent fractions?</p> <p></p> <p>A: Yes, $\frac{1}{2}$ and $\frac{4}{8}$ are equivalent fractions because the shaded parts are equal in size. I can put $\frac{4}{8}$ over the $\frac{1}{2}$ and they are the same.</p> <p>Q: Are these equivalent fractions?</p> <p></p> <p>A: Yes, $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent fractions because they are in the same position on the number line.</p>

Reflection

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

- What do you think your students will find challenging about equivalent fractions? How can you support them?
- Which material do you think is most useful for explaining equivalent fractions? Why?

Teaching Practice

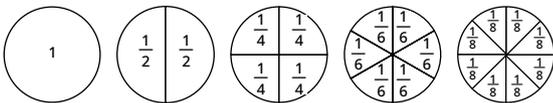
This practice activity may be completed by teachers with their own class or with a smaller group of students.



ACTIVITY: IDENTIFY EQUIVALENT FRACTIONS

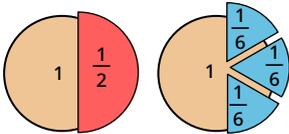
Purpose: Identify equivalent fractions.

Materials needed: A set of fraction circles cut out showing whole, halves, fourths, sixths, and eighths. For example:



Instructions

- Show students two fraction circles. For example:



- Ask: **What are these fractions?** (Example answer: $\frac{1}{2}$ and $\frac{3}{6}$)
- Discuss: **Are these equivalent fractions? How do you know?**
- Explain why the fractions are equivalent, or why not. Show how you can put $\frac{3}{6}$ on top of $\frac{1}{2}$ to confirm that they are the same.
- Repeat with different pairs of fraction circles, including equivalent fractions and non-equivalent fractions.

Examples:

Equivalent fractions:	Non-equivalent fractions:

- Discuss: **What are equivalent fractions? How can you tell if two fractions are equivalent?**



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