

Essential Question How can you use models to name equivalent fractions?

The 5 Es



Go Lesson Opener

Making Connections

Review what students have learned about fractions.

What models can you use to show ¹/₂? (number line, fraction strip) How many thirds are in 1? (3) What is a unit fraction? (It's a fraction that names 1 equal part of a whole. The numerator is a 1.) How can you write $\frac{3}{2}$ as the sum of unit fractions? $(\frac{1}{2} + \frac{1}{2} + \frac{1}{2})$ What are equivalent fractions? (fractions that name the same amount)

Using the Digital Lesson

Pick a group of six students and have the class write fractions that represent the number of students in the group of six who are wearing glasses (or another student attribute of your choice). Try this with different sized groups of students.

Learning Task

- What information are you given in the problem? (A spider web has three equal parts. One part is divided into two smaller, equal parts.)
- What problem are you asked to solve? (to name a fraction that is equivalent to $\frac{1}{3}$)
- In the problem, ¹/₃ of the web was divided into 2 equal parts. Tell whether each of the two parts is greater than or less than $\frac{1}{3}$. (less than $\frac{1}{3}$)

Literacy and Mathematics

- Have students research spiders and spider webs. Have them write a short paragraph about what they learn and share their information with others in the class.
- Have students use dot paper or grid paper to draw a triangle in the shape of the spider web in the story. Have them divide the triangle into three equal parts and shade $\frac{1}{3}$. Ask them to name the fraction that shows the part of the triangle that is not shaded.



TEKS Number and Operations—3.3.A

Represent fractions using concrete objects and pictorial models

3.3.G Explain that two fractions are equivalent if they are both represented by the same point on the number line or represent the same portion of a same size whole

Also 3.3.B, 3.3.E, 3.3.F

MATHEMATICAL PROCESSES

3.1.A Apply mathematics to problems

3.1.E Create and use representations

3.1.G Display, explain, and justify mathematical ideas and arguments

Are You Readu?

Access Prior Knowledge

Use the Are You Ready? 3.5 in the Assessment Guide to assess students' understanding of the prerequisite skills for this lesson.

Vocabulary



Multimedia eGlossary at DIGITAL thinkcentral.com



For the student



Student Edition provides students with an interactive learning environment!

For the teacher

Digital Management Center organizes program resources by TEKS!







Video Tutor





Soar to Success Math **Online Intervention**

Unlock the Problem

How can you describe part of a whole in two ways? Read the problem. You can use a model to solve the problem.

Check to be sure students understand that they need to follow the directions to write two different fractions that name the amount of the sandwich each friend ate.

- How does the model show two ways to describe the part of the sandwich each friend ate? The model shows 4 circles, which shows that each friend ate $\frac{1}{4}$ of the whole sandwich. The model also shows 8 pieces grouped into twos, which shows that each friend ate $\frac{2}{8}$ of the whole sandwich.
- Explain how you know how many eighths each friend ate. There are 2 eighths in each group.
- Compare the fractions ¹/₄ and ²/₈. What do you notice about the numerators and denominators?
 Possible answer: both values double.

Example

• Which symbol would you write to compare the equivalent fractions? Explain. the equal to symbol; possible explanation: equivalent fractions name the same amount.



Differentiated Instruction

ELL Language Support

Verbal/Linguistic

ELPS 1.B.1, 4.C.3, 4.F.6

Strategy: Model Language

- Words with multiple consonants are especially challenging for English learners to say and read.
- Write these words on the board: halves, thirds, fourths, sixths, eighths
- Pronounce each word slowly, singling out letters that make up individual sounds.
- Then say the word quickly as you run your finger under the word.
- Repeat and have students echo.



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ELL English Language Learners

Leveled Activities	ELPS			
Beginning: Activity 2	2.I.4, 3.C.4, 3.G.2			
Intermediate: Activity 3	2.D.2, 2.E.3, 3.F.2			
Advanced: Activity 47	2.D.2, 2.I.5, 3.D.1			
Advanced High: Activity 60	2.I.3, 4.F.7, 4.G.3			
Go to <i>thinkcentral.com</i> for the ELL Activity Guide containing these leveled activities.				





 Have students use their understanding of equivalent fractions to solve the following problem.

There was $\frac{1}{2}$ of a pie left after a family dinner. Suppose 4 friends want to share the leftover pie equally. What fraction of the whole pie will each friend get?

- Ask students to explain how they solved the problem and illustrate their explanations. Check students' work.
- Have students write similar problems and exchange with a partner and solve.

EXPLAIN

Share and Show

The first problem connects to the learning model. Have students use the MathBoard to explain their thinking.

Math Talk 🔛 Mathematical Processes

Use Math Talk to focus on students' understanding of equivalent fractions.

Use the checked exercises for Quick Check. Students should show their answers for the Quick Check on the MathBoard.



COMMON ERRORS

Error Students may write the number of equal parts in one whole as the numerator.

Example Students might write $\frac{2}{2}$ as an equivalent fraction for $\frac{2}{4}$.

Springboard to Learning Remind students that the numerator tells the number of parts that are being counted and the denominator tells how many equal parts are in one whole. Also encourage students to check their work. In this case, they should recognize that $\frac{2}{2}$ is equal to one and cannot be equivalent to $\frac{2}{4}$, which is less than one.

GO DIGITAL

ELABORATE

Problem Solving

HOT Problems

Problem 8 requires students to design a strategy to divide $\frac{2}{3}$ of a whole into 4 equal pieces.

• Why isn't the answer $\frac{1}{4}$? Possible answer: each person gets $\frac{1}{4}$ of the pie that is left, but $\frac{1}{6}$ of the whole pie.

Problem 10 requires students to find an equivalent fraction for $\frac{10}{2}$.

• What do you notice about the fractions? Possible answer: the amount of fourths is double the amount of halves.

Go Deeper

Challenge students to write equivalent fractions for the following numbers.





Math on the Spot **Video Tutor**

Through the *Math on the Spot Video Tutor*, students will be guided through an interactive solving of this type of H.O.T. problem. Use this video to also help students solve the H.O.T. problem in the Interactive Student Edition. With these videos and the H.O.T. problems, students will build skills needed in the TEXAS assessment.

Math on the Spot videos are in the DIGITAL Interactive Student Edition and at thinkcentral.com.

Name _

Problem Solving World

8. **(HOT.) Write Math** After dessert, $\frac{2}{3}$ of a cherry pie is left. Suppose 4 friends want to share it equally. What fraction names how much of the whole pie each friend will get? Use the model on the right. Use Math Language to explain your answer.



1/2; Possible explanation: I divide each third into 2 equal

pieces to get 4 pieces in all. Each piece is $\frac{1}{6}$ of the whole pie.

- 9. Apply There are 16 people having lunch. Each person wants $\frac{1}{4}$ of a pizza. How many whole pizzas are needed? Draw a picture to show your answer. Check students' drawings. Students' drawings should show 4 pizzas, divided into fourths. 4 pizzas
- 10. **10.** Lucy has 5 brownies. Each brownie is cut 10 in half. What fraction names all of the brownie halves?

What if Lucy cuts each part of the brownie into 2 equal pieces to share with friends? What fraction names all of the brownie pieces now? $\frac{1}{4}$



11. Multi-Step Christy bought 8 muffins. She chose 2 chocolate, 2 banana, and 4 blueberry. She and her family ate the chocolate and banana muffins for



Check students' drawings

breakfast. What fraction of the muffins did they eat? Write an equivalent fraction. Draw a picture. Possible answer: $\frac{4}{8}$ of the muffins; $\frac{1}{2}$ is an equivalent fraction.

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Differentiated Instruction

3.3.6

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RtI RtI Tier | Lesson |2

LESSON Equivalent Fractions

 $\frac{3}{4} = \frac{6}{8}$

valent to $\frac{3}{4}$.

Each shape is 1 whole. Shade the model to find the equivalent fraction.

 $\frac{1}{3} = \frac{2}{6}$

So, 🔓 is equ

Number and Operation

Kaitlyn used $\frac{3}{4}$ of a sheet of wrapping paper Find a fraction that is equivalent to $\frac{3}{4}$. $\frac{3}{4} = \frac{3}{8}$

Step 2 The bottom strip is divided into 8 equal parts. Shade parts of the strip until the same amount is shaded as in the top strip. 6 parts of the bottom strip are shaded

Step 1 The top fraction strip is divided into 4 equal
parts. Shade $\frac{3}{4}$ of the strip to show how much
paper Kaitlyn used. $\boxed{\frac{1}{4} \quad \frac{1}{4} \quad \frac{1}{4} \quad \frac{1}{4}}$

 $\frac{4}{2} = \frac{16}{8}$







Differentiated Centers Kit



Literature **Pizza Parts!** Students read about how to find equal parts to write fractions.

Fraction Action Students complete blue Activity Card 11 by finding fractional parts of a group of pattern blocks.

Activities

the 5 Es EVALUATE



TEXAS Test Prep Coach

Test Prep Coach helps teachers to identify common errors that students can make.

In the Test Prep exercise, if students selected:

- **B** They incorrectly calculated the numerator.
- They may not understand one half. С
- **D** They found the part of the pie that was eaten.



How can you use models to name equivalent fractions? Possible answer: I can shade models and draw pictures to show equal parts.



Homework and Practice

Use the Homework and Practice pages to provide students with more practice on the concepts and skills of this lesson.



Formative Assessment

Use the Module Assessment to assess students' learning and progress. The formative assessment provides the opportunity to adjust teaching methods for individual or whole class instruction.

V Data-Driven Decision Making 🧍 Rtl

Based on the results of the Module 3 Assessment, use the following resources to strengthen individual or whole class instruction.

ltem	Lesson	TEKS*	Common Error	Intervene With RtI* Tier 1 Lessons	Soar to Success Math
3–8	3.1, 3.2, 3.3	3.3.A, 3.3.H	May consider only the numerator, or consider only the denominator	13, 14, 15	9.29, 9.30
9–11	3.4, 3.5	3.3.A, 3.3.B, 3.3.F, 3.3.G	May incorrectly identify the numerator of the equivalent fraction	11, 12	9.32

*TEKS—Texas Essential Knowledge and Skills; RtI—Response to Intervention

Depth of Knowledge				
DOK Level	ltems			
1	3–8, 9–11, 12, 15			
2	13, 14			



V Data-Driven Decision Making

ltem	Lesson	TEKS*	Common Error	Intervene With RtI* Tier 1 Lessons	Soar to Success Math
12	3.2	3.3.A, 3.3.H	May think the fraction with the greater denominator is the greater fraction	14	9.29
13, 14	3.5	3.3.A, 3.3.F, 3.3.G	May incorrectly identify the numerator of the equivalent fraction	12	9.32
15	3.4	3.3.A, 3.3.B, 3.3.F, 3.3.G	May incorrectly identify the numerator of the equivalent fraction	11	9.32

*TEKS—Texas Essential Knowledge and Skills; RtI—Response to Intervention