Name .....

Number and Operations — Fractions

M.4.14

Lesson 10
Mixed Numbers and Improper Fractions

ESSENTIAL QUESTION
How can different fractions name the same amount?

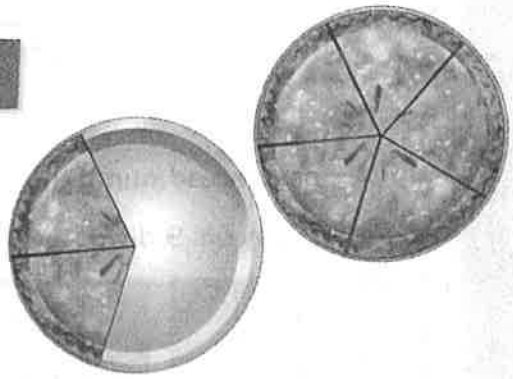
Thurs. March 26th

An **improper fraction** has a numerator that is greater than or equal to its denominator. Mixed numbers can be written as improper fractions.

Mixed Numbers	Improper Fractions
$1\frac{1}{2}$ $2\frac{3}{4}$ $3\frac{5}{6}$	$\frac{3}{2}$ $\frac{11}{4}$ $\frac{23}{6}$

Math in My World

Tools Tutor

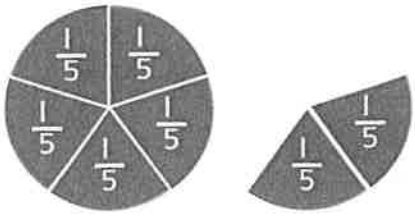


Example 1

Nyoko is selling pies at a bake sale. Each pie has 5 slices. There are 7 slices left. What fraction of the pies is left?

One Way

Count the wholes and the parts.



$1\frac{5}{5} + \frac{2}{5} = 1\frac{2}{5}$

whole part

Another Way

Count the parts.

$\frac{7}{5}$

So, $1\frac{\square}{5}$, or $\frac{\square}{5}$, of the pies is left.

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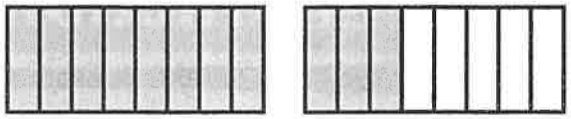
You can change a mixed number to an improper fraction.
You can also change an improper fraction to a mixed number.

Example 2

Write $1\frac{3}{8}$ as an improper fraction.

The model shows $1\frac{3}{8}$.



1 Write $1\frac{3}{8}$ as a sum of a whole and a part. → $1\frac{3}{8} = 1 + \frac{3}{8}$

$1\frac{3}{8} = \frac{8}{8} + \frac{3}{8} = \frac{\square}{\square}$

2 Write the whole as a fraction.

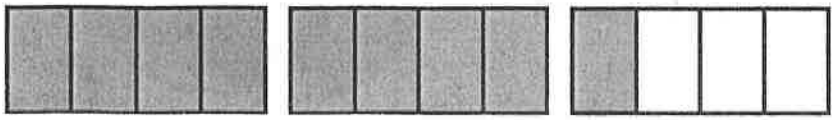
3 Add the parts.
8 parts + 3 parts = 11 parts
11 parts are shaded on the model.

So, $1\frac{3}{8} = \frac{\square}{8}$.

Example 3

Write $\frac{9}{4}$ as a mixed number.

The model shows 9 divided into groups of 4.

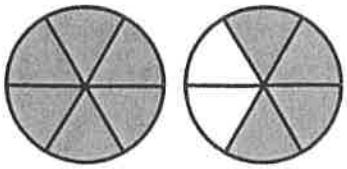


There are 2 wholes and 1 out of 4 left over.

So, $\frac{9}{4} = \square\ \frac{\square}{\square}$.

Guided Practice

1. Write a mixed number and an improper fraction for the shaded model.



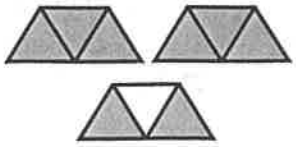
Talk MATH

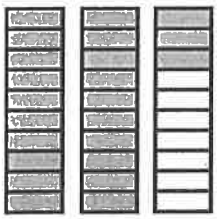
Why do the improper fraction and mixed number in Exercise 1 have the same denominator?

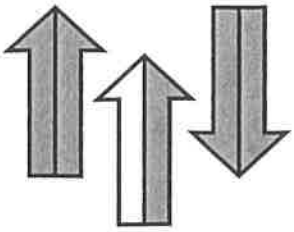
Name _____

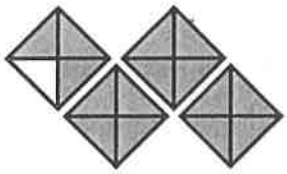
Independent Practice

Write a mixed number and an improper fraction for each shaded model.

2.  _____

3.  _____

4.  _____

5.  _____

Draw models to write each mixed number as an improper fraction.

6. $1\frac{3}{5} =$ _____

7. $2\frac{3}{4} =$ _____

8. $1\frac{7}{10} =$ _____

Draw models to write each improper fraction as a mixed number.

9. $\frac{11}{8} =$ _____

10. $\frac{9}{6} =$ _____

11. $\frac{7}{3} =$ _____

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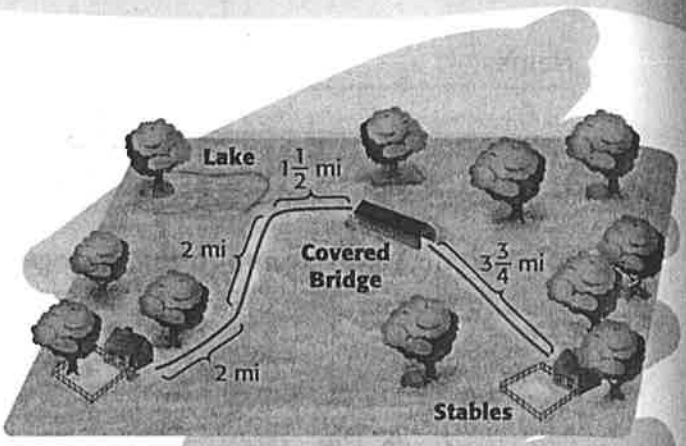
Problem Solving

A diagram of a horseback riding tour is shown. There are resting stops along the trail.



12. Write the distance from the Covered Bridge to the Stables as an improper fraction.

13. Joaquin reached the end of the trail in 2 hours and 15 minutes. Write the amount of hours he spent on the trail as a mixed number and as an improper fraction.

14. HABITS of Mind **Model Math** Kelly walked 3 miles. Abby walked $\frac{3}{4}$ mile. How far did they walk in all?

Brain Builders

15. HABITS of Mind **Use Number Sense** Name an improper fraction that can be written as a whole number. Include a model to support your answer.

16. **Building on the Essential Question** How are improper fractions and mixed numbers alike? How are they different? Give an example of each type of number and describe what each part of the number represents.

Name .....

MY Homework

Number and Operations — Fractions
M.4.14

Lesson 10
Mixed Numbers and Improper Fractions

Homework Helper

eHelp

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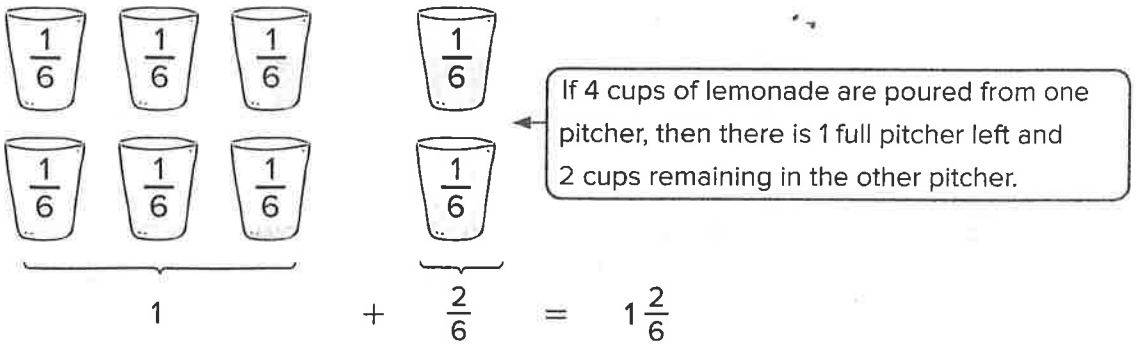
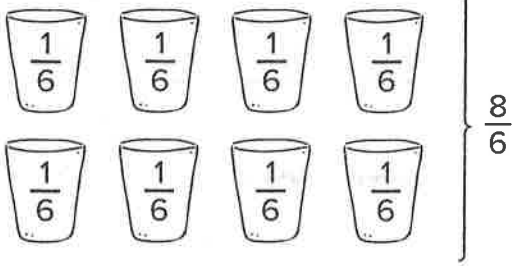
Kelsey made 2 pitchers of lemonade. Each pitcher holds 6 cups. She poured 4 cups of lemonade from one pitcher. What fraction of the lemonade is left?

One Way **Count the wholes and the parts.**



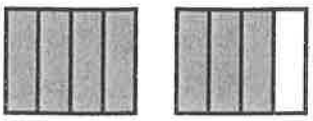
Another Way **Count the parts.**

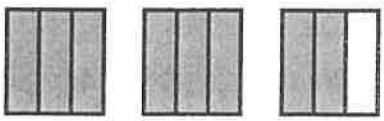


So, there are $1\frac{2}{6}$, or $\frac{8}{6}$, pitchers of lemonade left.

Practice

Write a mixed number and an improper fraction for each shaded model.

1. 

2. 

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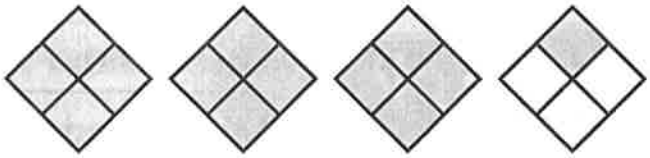
Write a mixed number and an improper fraction for each model.

3.



4.

5. Draw a model to write $2\frac{3}{5}$ as an improper fraction.

6. Draw a model to write $\frac{30}{4}$ as a mixed number.

Brain Builders

7. **HABITS of Mind** **Use Number Sense** Ana walked $\frac{13}{3}$ miles. How many whole miles did Ana walk? What portion of an additional mile did she walk?

8. There are $5\frac{4}{5}$ cups of milk left in a carton. Write $5\frac{4}{5}$ as an improper fraction. Explain what the improper fraction represents in this situation.

Vocabulary Check

9. Is $\frac{10}{3}$ an improper fraction? Explain.

10. **Test Practice** Amelia needs $3\frac{2}{3}$ cups of sugar to make cupcakes. Which improper fraction names this amount?

Ⓐ $\frac{5}{3}$ cups Ⓑ $\frac{8}{3}$ cups Ⓒ $\frac{11}{3}$ cups Ⓓ $\frac{18}{3}$ cups

Thurs. March 26th 2020

Please complete

Reading a-z

INTERMEDIATE

Graphic Organizer

Make Inferences

Name _____

Instructions: Use clues from the book and what you already know to make inferences about the events or characters in the book.

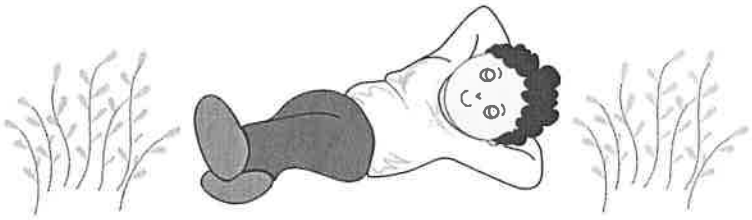
Book Title: Hansel and Gretel

Story Clues	+	What I Know	=	Inference
For three summers, frost killed the apples and froze the wheat. Hansel and Gretel's family had nothing to eat but last year's moldy potatoes.		The family has had no good food for years.		The family is starving.
Hansel's stepmother glared at him from the window. His father takes them deeper into the woods.		The family is starving.		
				The old woman is going to eat Hansel.

Thurs. March 26th

Name _____ Date _____

The Sound of Silence at Home

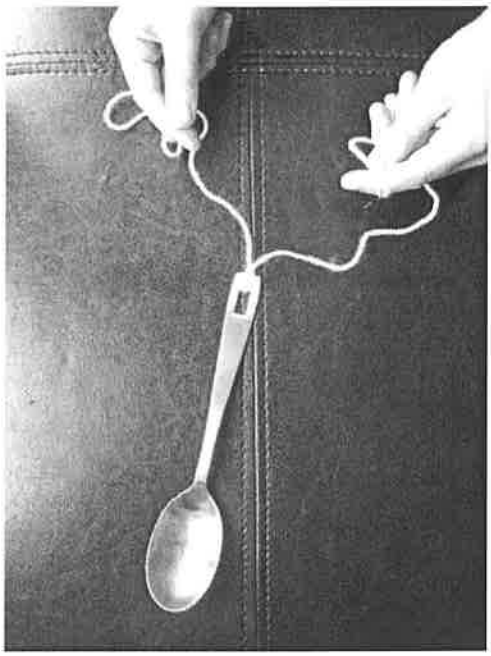


Take some time outside. Bring your body to stillness, close your eyes or lower your gaze and listen to the sounds around you. Now take some time to listen to the silence in between the sounds around you. Draw and/or write your answers to the questions below.

1. What was your experience like listening to **sounds** outside? What did you hear, what did you notice?

2. What was your experience like listening to **silence** outside? What did you notice?

Experiment With Sound Waves



Every time a sound is produced it emits a sound wave. You can picture the shape of sound as a wave on the ocean: the sound starts at one end of the wave and spreads out. By the time the wave reaches the shore you can hear it.

For a home example of this phenomenon, take a rubber band and spread it tightly between your fingers. Now strum the rubber band. The movement of the band creates vibration, or sound waves. This experiment will demonstrate how sound travels, using nothing more than a spoon and a string.

What You Need:

- Metal spoon
- 30 inches of kite string (40 inches for an adult)

What You Do:

1. Tie the handle of the spoon at the midpoint of the string.
2. Wrap the ends of the string around your index fingers (pointer fingers).
3. Place your fingers in your ears.
4. Lean over so that spoon hangs freely and swing the spoon so it taps against a door.
5. Hit the door again, this time harder.

What did you hear? Was it a soft sound like a bell, and then a louder sound like a church bell? The sound came because the spoon vibrated, causing sound waves to travel up the string and into your ears. The loudness or quietness of the sound depends on the amplitude (height of the wave).

* Extra Activity