

The In-Betweens

Purpose

Students will name and write mixed numbers, both in mixed number notation and improper fraction notation, using objects or pictures.

Materials

For the teacher: 20 unifix cubes, chalk, chalkboard

For each student: 20 unifix cubes, copy of Black Line Master (BLM)
The In-Betweens

Activity

A. Introduction

1. Connect five unifix cubes. Show the unifix bar to the class and tell students that it represents one whole.
2. Pull one of the cubes off. Ask students what fractional part the cube represents. [$\frac{1}{5}$]
3. Create two unifix bars of five cubes each. Ask students how many wholes the two bars represent. [2]
4. Pull two cubes off one of the bars and hold up the whole bar and the $\frac{3}{5}$ bar. Tell students that they will be learning two different ways to name numbers that are *in-between* whole numbers.

B. Class Activity

1. Ask for student input on how the *in-between* numbers might be named.
2. Explain to students that one way to name an *in-between* number is to count the number of wholes and then find the name for the fractional part that is left: the name for the *in-between* number is the total wholes and the fractional part (e.g., “two and one-fifth”). Demonstrate with the unifix cubes, and explain that when an *in-between* number is named this way, it is called a *mixed number*, because it is a mix of wholes and fractions.
3. Have students create a few *in-between* numbers with the unifix cubes, using five fractional parts per whole. On the chalkboard, write the mixed numbers for the *in-between* numbers that students create.

(continued)

connecting
across the
curriculum



English/ Language Arts

In their math journals, have students write whether they think it is easier to find the improper fraction or the mixed number representation for an “in-between” number and why. Have students include examples in their explanations.

EXTENDING
THE
ACTIVITY



Create a deck of cards with shapes that show various fractions of objects shaded in and cards with the corresponding mixed number or improper fraction written on them. Allow students to play a memory game matching the graphic representations to the numbers.

Standards Links
4.2.8, 4.7.3

Activity (continued)

4. Explain to students that another way to name an *in-between* number is to simply count the number of fractional parts. Tell students that that number becomes the numerator and the denominator is the number of fractional parts in one whole. Tell students that this is the same procedure that is used when writing the fraction for a number that is less than one whole (e.g., $1\frac{3}{5} = \frac{8}{5}$, $2\frac{1}{5} = \frac{11}{5}$).
5. Explain to students that when writing a number that is in between whole numbers in this manner, the result is called an *improper fraction*.
6. Refer to the mixed numbers that are written on the chalkboard. Have students re-create each of the mixed numbers with the unifix cubes and find the improper fractional name for each using the method detailed in step 4.


C. Individual Activity


Distribute a copy of the BLM *The In-Betweens* to each student. Have students work on the BLM in class. Allow students to use the unifix cubes to assist them in finding answers, and discuss answers when students have finished.


Questions for Review


Basic Concepts and Processes


During the Individual Activity, discuss the following questions with students to gauge their understanding of the Standard Indicators:

 What is the denominator that would be used for this unifix bar [*indicate a specific unifix bar*]?

 How do you know that is the denominator?

 How would you find the mixed number for this number [*indicate a specific unifix representation*]?

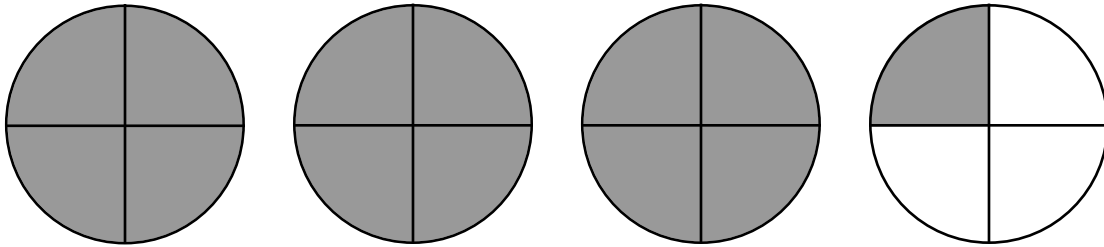
 How would you find the improper fraction for this same number?

 Why is it not possible to have an improper fraction with a smaller numerator than denominator?

The In- Betweens

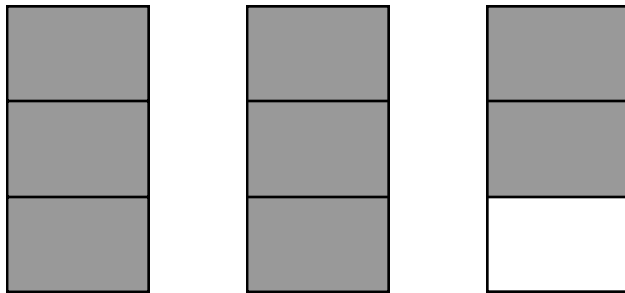
Name: _____

Write the mixed number and improper fraction for the shaded portion of each picture below.



1. Mixed Number _____

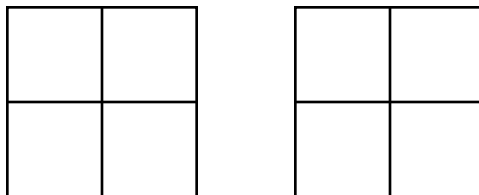
Improper Fraction _____



2. Mixed Number _____

Improper Fraction _____

3. Shade in $1\frac{3}{4}$ of the squares.



Write the improper fraction that represents the portion of the squares you shaded:

4. Use your unifix cubes to create two bars that are $\frac{3}{4}$ and $\frac{3}{4}$ of a whole. "Add" them together by joining them together and separating them again so that you have one whole and part of another whole. Write the mixed number and the improper fraction that shows what $\frac{3}{4} + \frac{3}{4}$ equals.

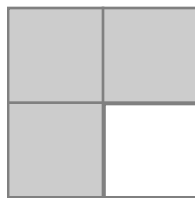
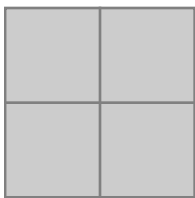
The In-Betweens

Teacher Directions

Distribute copies of the BLM *The In-Betweens*, and review the directions. Allow students to use the unifix cubes to complete their BLMs, and work through problem 4 with students who need assistance.

Answer Key

1. $3\frac{1}{4}$; $\frac{13}{4}$
2. $2\frac{2}{3}$; $\frac{8}{3}$
- 3.



4. $1\frac{1}{2}$ or $1\frac{2}{4}$; $\frac{3}{2}$ or $\frac{6}{4}$