

Fraction Action

Pillar: Active Living

Division: II

Grade Level: 6

Core Curriculum Connections: Math

I. Rationale:

In this activity, students will review what an improper fraction and a mixed number are and how they relate to one another using shapes. By manipulating shapes to build mixed numbers, students will be provided with a very visual and tactile method of conceptualizing an abstract concept. Then, students will relate improper fractions to mixed numbers and mixed numbers to improper fractions by playing "Fraction Action Bingo". Fraction Action Bingo incorporates physical activity by assigning actions for numerators and denominators as an interactive way to practice converting mixed numbers to improper fractions and vice versa.

Background For Teachers:

Before teaching this lesson, mixed and improper fractions should be introduced. The students need to know the definition of numerator, denominator, and whole number.

II. Active Living Focus:

The students will:

- engage in physical activity to reinforce learning in a kinesthetic manner.

III. Curriculum Outcomes: Mathematics 6

Number

General Outcome

Develop number sense.

Specific Outcome:

4. Relate improper fractions to mixed numbers and mixed numbers to improper fractions.[CN, ME, R, V]

IV. Materials:

Student handouts:

- *Shape Shift Sheet*
- Assorted Shape Tiles
- *Improper Instructions #1*
- *Improper Instructions #2*
- *Blank Fraction Bingo Card*
- *Improper Fraction Answers*

- *Mixed Number Squares*
- Paper bag
- Bag of raisins or nuts
- *Fraction Quiz*

Web Sites

- *Graphic Organizers*

V. Procedure:

i. Introduction:

Shape Shifting: Hand out the *Shape Shift Sheet*. Split the class in pairs and randomly give small shapes to each pair that can be manipulated and combined to make larger shapes (hand out enough for the pair to be able to make at least two big shapes). Explain that students cannot combine different shapes: triangles will need to be combined with the other triangles, squares with the squares, and rectangles with rectangles. After students have created larger shapes with the smaller counterparts, ask them how many small shapes it took to make the larger shape. Have each pair write down their mixed number and draw a picture on the *Shape Shift Sheet* provided. The groups that have not formed whole shapes will need to write them down as fractions. Discuss how one small shape is a fraction of the larger shape.

i. Instructional Procedures:

1. Hand out *Improper Instructions #1* and *Improper Instructions #2*, and have students use their shapes as they you work through the instructions together as a class.
2. Pass out *Blank Fraction Bingo Cards* to students.
3. Put the *Improper Fraction Answers* on the overhead and have students fill in their *Blank Fraction Bingo Cards*.
4. The *Mixed Number Squares* should be cut up and ready to use.
5. Assign a certain type of physical activity for the numerators and another type of exercise for the denominators. For example, numerators could be jumping jacks and denominators could be sit ups.
6. Students will take turns pulling a mixed number out of the bag and call out the number. If the mixed number $3 \frac{1}{4}$ was pulled out of the bag, students would first convert that mixed number to an improper fraction of $\frac{13}{4}$ and then perform the corresponding number of repetitions to show that they understand how to convert the mixed number to an improper fraction - 13 jumping jacks and 4 push ups before marking $\frac{13}{4}$ on their bingo.
7. Students will place a raisin or nut (healthy snack) to mark the space on their card that has the appropriate improper fraction.
8. Students will take turns until a student covers a line (horizontally, vertically, or diagonally). Part way through the game, change the exercises for the numerator and denominator or have the student calling out the mixed number indicate what they want the rest of the class to do.
9. For the next round have students use the mixed number squares to fill in their blank fraction cards and pull out improper fractions to practice conversion in the reverse format. Assign an addition activity for whole numbers.

VI. Extensions and Variations:

- Have students work with healthy recipes and experiment with making conversions.
- Student would go on a fraction hunt and find and record real life situations where they observe improper fractions/mixed numbers.

- Write word problems using improper fractions/mixed numbers

VII. Assessment Ideas:

- Observation of correctly converting fractions during the activity
- Fraction Quiz

Shape Shift Sheet

Write the mixed number on the line		
Write the mixed number on the line 		

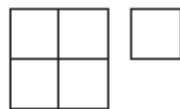
Improper Instructions # 1

Improper Fractions are just fractions that have a larger numerator than denominator.

Like this one: $5/4$

Use your unit blocks to make a model. $5/4 = 1 \frac{1}{4}$

Remember, $5/4$ is the same as 1 whole with 1 extra.



Try another one $9/6$

Use your triangle blocks to make a hexagon.

Remember, $9/6$ is the same as 1 whole with 3 extra.



What about this? $19/8$

$19/8$ is the same as $2 \frac{3}{8}$



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Improper Fraction Answers

Make transparency or copy to board.

$\frac{17}{6}$	$\frac{12}{7}$	$\frac{19}{4}$	$\frac{10}{3}$	$\frac{16}{6}$	$\frac{11}{4}$	$\frac{21}{7}$	$\frac{18}{5}$
$\frac{10}{6}$	$\frac{15}{3}$	$\frac{14}{3}$	$\frac{15}{2}$	$\frac{12}{7}$	$\frac{23}{6}$	$\frac{8}{6}$	$\frac{4}{3}$
$\frac{25}{4}$	$\frac{11}{6}$	$\frac{22}{4}$	$\frac{36}{7}$	$\frac{54}{7}$	$\frac{31}{9}$	$\frac{37}{6}$	$\frac{29}{7}$
$\frac{41}{8}$	$\frac{6}{6}$	$\frac{34}{5}$	$\frac{26}{8}$	$\frac{13}{5}$	$\frac{25}{4}$	$\frac{8}{3}$	$\frac{51}{8}$
$\frac{17}{4}$	$\frac{12}{7}$	$\frac{43}{5}$	$\frac{33}{6}$	$\frac{44}{9}$	$\frac{19}{4}$	$\frac{58}{9}$	$\frac{61}{6}$
$\frac{39}{9}$	$\frac{15}{7}$	$\frac{59}{7}$	$\frac{52}{5}$	$\frac{71}{8}$	$\frac{53}{4}$	$\frac{51}{6}$	$\frac{32}{9}$
$\frac{48}{6}$	$\frac{21}{6}$	$\frac{15}{4}$	$\frac{25}{3}$	$\frac{32}{7}$	$\frac{14}{6}$	$\frac{17}{6}$	$\frac{13}{6}$

Mixed Number Squares

Cut squares for bag.

$2\frac{5}{6}$	$1\frac{5}{7}$	$4\frac{3}{4}$	$3\frac{1}{3}$	$2\frac{4}{6}$	$2\frac{3}{4}$	3	$3\frac{3}{5}$
$1\frac{4}{6}$	5	$4\frac{2}{3}$	$7\frac{1}{2}$	$1\frac{5}{7}$	$3\frac{5}{6}$	$1\frac{2}{6}$	$1\frac{1}{3}$
$6\frac{1}{4}$	$1\frac{5}{6}$	$5\frac{2}{4}$	$5\frac{1}{7}$	$7\frac{5}{7}$	$3\frac{4}{9}$	$6\frac{1}{6}$	$4\frac{1}{7}$
$5\frac{1}{8}$	1	$6\frac{4}{5}$	$3\frac{2}{8}$	$2\frac{3}{5}$	$6\frac{1}{4}$	$2\frac{2}{3}$	$6\frac{3}{8}$
$4\frac{1}{4}$	$1\frac{5}{7}$	$8\frac{3}{5}$	$5\frac{3}{6}$	$4\frac{8}{9}$	$4\frac{3}{4}$	$6\frac{4}{9}$	$10\frac{1}{6}$
$4\frac{3}{9}$	$2\frac{1}{7}$	$8\frac{3}{7}$	$10\frac{2}{5}$	$8\frac{7}{8}$	$13\frac{1}{4}$	$8\frac{3}{6}$	$3\frac{5}{9}$
8	$3\frac{3}{6}$	$3\frac{3}{4}$	$8\frac{1}{3}$	$4\frac{4}{7}$	$2\frac{2}{6}$	$2\frac{5}{6}$	$2\frac{1}{6}$

Name _____ Date _____

Fraction Quiz

Change the improper fractions to mixed numbers.

$$\frac{17}{3} = \underline{\hspace{2cm}}$$

$$\frac{31}{6} = \underline{\hspace{2cm}}$$

$$\frac{7}{2} = \underline{\hspace{2cm}}$$

$$\frac{26}{4} = \underline{\hspace{2cm}}$$

$$\frac{42}{8} = \underline{\hspace{2cm}}$$

$$\frac{51}{9} = \underline{\hspace{2cm}}$$

$$\frac{19}{5} = \underline{\hspace{2cm}}$$

$$\frac{16}{3} = \underline{\hspace{2cm}}$$

$$\frac{68}{7} = \underline{\hspace{2cm}}$$

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$$\frac{16}{3} = \underline{\hspace{2cm}}$$

$$\frac{68}{7} = \underline{\hspace{2cm}}$$