

Exploring Equivalence with Rational Numbers: Part 2

Extending to Improper Fractions

Learning Objectives - Students will be able to:



- Use understandings of equivalence with fractions less than 1 to extend understanding of equivalence to mixed numbers.
- Use different representations to make equivalent pairs of fractions and mixed numbers.
- Explain at least one strategy for knowing that two different representations model equivalent mixed numbers.

EXPLORE LEVEL 3

1. Open the ***Fraction Matcher*** simulation. Take **5 minutes** to explore the **Level 3** game. With a partner, talk about a) what is the same and different between this level and levels 1 and 2. (Note: you can play Levels 1 and 2 again if you need to). *Write your ideas in the space below and be ready to share your ideas in a class discussion.*

<i>Similarities</i>	<i>Differences</i>
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2. Before you play the Level 3 game, study the representations at the bottom of the screen and answer the following questions.
- a. In the columns below, draw the representations from the bottom of the screen that show fractions less than or equal to 1 and the fractions that are greater than 1.

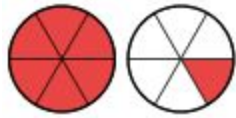
Fractions less than or equal to 1	Fractions greater than 1
Examples:  $\frac{3}{8}$	Examples: $\frac{5}{4}$ 
Your examples:	Your examples:

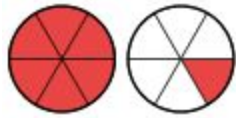
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b. In the space below, explain how you know when a fraction is great than 1.



c. If you see  at the bottom of the screen, how would you represent the number as **a)** and improper fraction and **b)** as a mixed number? Write your answers in the space below.


Improper fraction _____ Mixed Number _____

d. Now, Pair/Share! Compare and discuss your answers in questions a and b with your partner. You should both come to an agreement about how you know when a fraction is greater than 1. Be ready to share your reasoning with the class.

PLAY LEVEL 3

3. Now, play the **Level 3** game until you earn at least **10 out of 12 points**. If you don't



get at least 10 points, press the  to play a new game. Play as many times as necessary.

4. Complete the diagram below by drawing your own representation that is equivalent to $\frac{7}{4}$.



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5. Complete the diagram below by drawing your own representations of *fractions greater than 1* that are equivalent.



6. Explain one thing you learned while playing **Level 3**.

LEVELS 4-8

7. Now, continue playing the levels. Can you get to Level 8?

Challenge yourself to:

- a) get 12 out of 12 points on each level
- b) get to the highest level you can with at least 10 out of 12.

Once you have finished playing, complete the sentence to describe what you are most proud of in your games.

I am most proud of ...