

# Match My Fraction

## Summary

The students will be able to use pattern blocks to demonstrate fractions and equivalent fractions.

## Main Core Tie

Mathematics Grade 3

[Strand: NUMBER AND OPERATIONS - FRACTIONS \(3.NF\) Standard 3.NF.3](#)

## Additional Core Ties

Mathematics Grade 3

[Strand: NUMBER AND OPERATIONS - FRACTIONS \(3.NF\) Standard 3.NF.1](#)

## Materials

Fraction Pattern Block manipulative pieces for the teacher

Fraction Pattern Block pieces for each cooperative group

- [Equivalent Fraction Card Game: Match My Fraction](#) (pdf)
- [Recording sheet for Equivalent Fraction Card Game: Match My Fraction](#) (pdf)
- Set of laminated [fraction cards](#) (pdf)
- Set of laminated [equivalent fraction cards](#) (pdf)
- Set of Fraction Pattern Blocks
- Dry erase markers and eraser
- Dice for extension
- [Recording sheet for Equivalent Fraction Card Game](#) (pdf)

## Books:

- *The Hershey's Milk Chocolate Fractions Book*  
by Jerry Pallotta; ISBN: 0-439-13519-2.
- *The Doorbell Rang*  
, by Pat Hutchins; ISBN: 0-395-45989-3
- *Fraction Action*  
, by Loreen Leedy; ISBN: 0-8234-1244-X
- *Fraction Fun*  
, by David A. Adler; ISBN: 0-618-43610-3
- *Give Me Half*  
, by Stuart J. Murphy; ISBN 13:978-0-06-446701-8
- *Jump, Kangaroo, Jump*  
by Stuart J. Murphy; ISBN: 0-06-446721-X
- *Picture Pie*  
, by Ed Emberley; ISBN: 0-316-78982-8
- *Pizza Counting*  
, by Christina Dobson; ISBN: 0-439-63243-9

## Background for Teachers

Students should know what fractions are, understand denominator/numerator, and have already modeled benchmark fractions

According to Aims Educational Foundation, "Students need many and varied experiences with recognizing fractional parts in the real world as the basis for building a strong conceptual base and

developing mental images. Many activities involving appropriate manipulatives and objects should be used to nurture understanding so that when operations with fractions are performed, students have a mental image of what is transpiring and what constitutes a realistic answer. Such mental imagery is useful in estimating the result."

The concept of equivalent fractions is needed in many applications involving fractions. Many students of all ages experience difficulties in their attempt to find equivalent fractions. Students either do not know how to find equivalent fractions or do not make the connection between equivalence and size. Other misconceptions might include students applying whole number rules to their work with fractions. Some students also believe that the bigger the denominator, the bigger the piece. When teaching a fraction unit, we need to be sure we are aware of the "Essential Questions" from the core standards that our students need to be able to answer. Here are the questions for enduring understanding for the concept of fraction.

What is a fraction?

What are the parts of a fraction?

What is the difference between parts of a whole and parts of a set?

What are halves, thirds, fourths, sixths, and eighths?

How can fractions be placed in order?

What are equivalent fractions?

Why are fractions important? How are fractions used in your world? Today we will be focusing in on Question 5 -- What are equivalent fractions?

### Intended Learning Outcomes

2. Become effective problem solvers by selecting appropriate methods, employing a variety of strategies, and exploring alternative approaches to solve problems.
3. Reason logically, using inductive and deductive strategies, and justify conclusion.
4. Communicate mathematical ideas and arguments coherently to peers, teachers, and others using the precise language and notation of mathematics.

### Instructional Procedures

#### Invitation to Learn:

Read *The Hershey's Milk Chocolate Fractions Book*. Talk about and discuss the vocabulary word "equivalent."

Have students identify times they have had to share and what items were shared. How did they know the sharing was "fair"? What do they think the word "fair" means in THIS situation? (fair means "equal" shares)

Ask students if there were enough items, when they shared, so everyone got the same amount. Were there any "leftovers"? Why didn't they share them? Was there a way they could have shared the "leftovers"?

Ask students if they have gone to the store with some friends and had only enough money to buy one item, like a candy bar. How did they decide to share it? How were they able to decide if the candy bar was shared fairly?

#### Candy Bar Activity

Give each pair of students several brown "candy bars" ( [Candy Bar Sheet](#) (pdf)) and the instruction sheet for the activity [Sharing](#) (pdf).

Have students cut the "candy bar" in two pieces, using the lines of the "candy bar" as cutting lines, so that it will be shared fairly by TWO people.

Have them find three different ways to cut the "candy bar" so that it is shared fairly between TWO people.

Have students glue their "candy bar" solutions on plain paper and write an explanation of how

they know each of their solutions is fair or equivalent and label each part with the fraction one half.

Instructional Procedures:

### Making Equivalent Fractions

Pass out a set of fraction pattern block pieces to each cooperative group. Show students the fraction pattern block pieces. Identify the yellow hexagon as the whole. Have them discuss in their cooperative groups what the other pieces are equivalent too. (This should be just a quick review, since students should have already modeled the benchmark fractions using these pattern blocks).

Model the fraction  $\frac{1}{2}$ . Next model how to create a fraction that is equivalent to  $\frac{1}{2}$  using different pattern block pieces. For example, you could choose to model  $\frac{2}{4}$ . Be sure to name the new fraction, and talk about how you know that  $\frac{1}{2}$  and  $\frac{2}{4}$  are equivalent fractions.

The teacher should model several fractions and their equivalent fraction. Be sure to include your "thinking aloud" as you continue to do this.

After you have modeled several equivalent fractions, give a fraction for your cooperative groups to use to model an equivalent fraction. (A different fraction could be given to each group, but be sure to have students explain what how they got their equivalent fraction.)

Examples of fractions that could be used in groups are  $\frac{2}{3}$ ,  $\frac{3}{4}$ ,  $\frac{5}{8}$ ,  $\frac{4}{6}$ ,  $\frac{2}{8}$ .

After the cooperative groups have had a few minutes to model the fractions they believe are equivalent to the initial fractions choose someone to come up and represent the fractions his/her team made. Be sure to ask whether another group came up with a different solution.

Always be sure to ask the students how they know the fractions are equivalent.

Once you have observed that students are feeling comfortable modeling equivalent fractions, assign students partners to work with.

Students are now ready to participate in an Equivalent Card Game Activity.

### Equivalent Card Game Activity: "Match My Fraction"

Run off 2 sets of the cards labeled *Fraction Cards* on cardstock and laminate.

Run off 6 sheets of the cards labeled *Equivalent Fraction Cards* on a different color of cardstock than the cards above and laminate.

Give each set of partners the following supplies:

The cards from instruction steps 1 and 2.

Fraction Pattern Block Set

Dry erase marker and eraser

Recording sheet

1 die if extension idea is being used

Student A draws a card from the *Fraction Cards* stack. He/she then builds a fraction with the *Fraction Pattern Block Set*, covering the white portion of the hexagon only, and labels the fraction created in the box below with a dry erase marker.

Student B draws a card from the *Equivalent Fraction Cards* stack. He/she then builds a fraction that is equivalent to the fraction built by Student A. Student B cannot use the same Fraction Pattern Block pieces as Student A.

Both students record the equivalent fractions they made on their recording sheet *Match My Fraction*.

Students then trade jobs. Student B will now be the one to draw first from the *Fraction Cards* and Student A will draw from *Equivalent Fraction Cards*, and match the fraction that Student B made.

Recording sheets can be turned in as a formative assessment.

### Lesson and Activity Time Schedule:

Each lesson is 55 minutes.

Each activity is 35 minutes.

Total lesson and activity time is 90 minutes.

Activity Connected to Lesson:

Equivalent Fraction Card Game: Match My Fraction

This activity is designed for partners. Each item listed in the materials is for each group of partners.

### Extensions

Use the multiplication chart and colored transparent strips showing equivalent fractions.

Identify a different pattern block to be the whole.

Use dice with card games to control the number of pattern block pieces used.

Family Connections:

Assignments to do with parents:

Look for ways they use fractions at home: cooking, dividing pizza, look in newspaper or bring in examples from magazines, etc, that show fractions.

What foods do you eat at home that could easily be divided into fractions

### Assessment Plan

Observation during lesson

Recording sheet from Equivalent Fraction Card Game: Match My Fraction

- *How do you know? Tell me more, Explain how you got that,* and *Can you prove it?* are good questions to ask students to assess if they are where they need to be in understanding for the lesson. This can be done as you walk around and observe how the students are doing.
- [Pizza Swap](#) (pdf)

### Authors

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