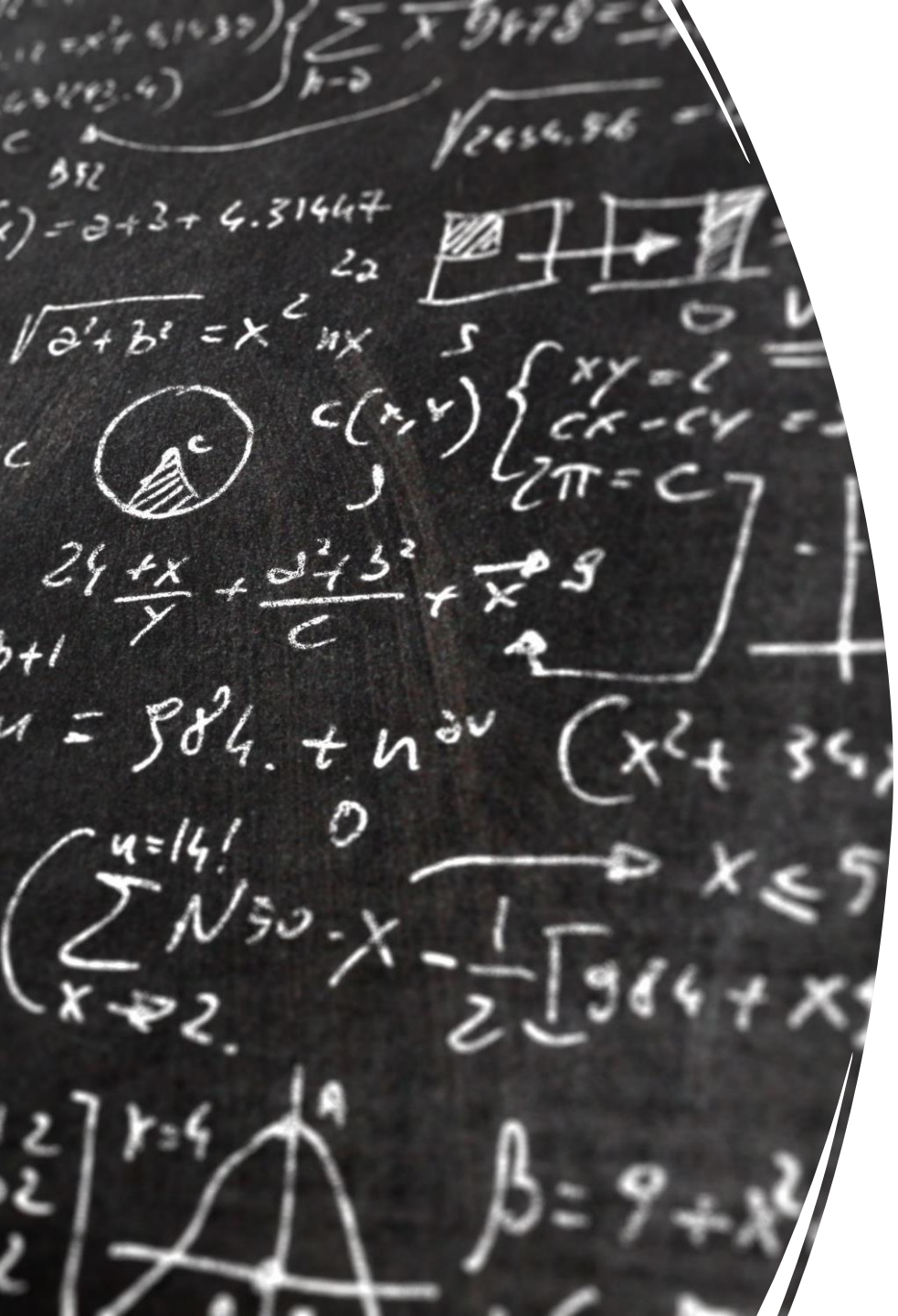


Parent Math Workshop

Powder Springs Elementary

January 21st, 2023

Agenda

- Introductions
- Fraction Models
- Equivalent Fractions
- Comparing Fractions
- Adding and Subtracting Fractions
- Multiplying and Dividing Fractions
- Math Games
- Questions

Introductions

- Ms. Rone
  - 5th grade teacher at PSE
  - I didn't always like math as a child, but now I do!
  - I love all things food, foodie enthusiast!
  - Beach Lover

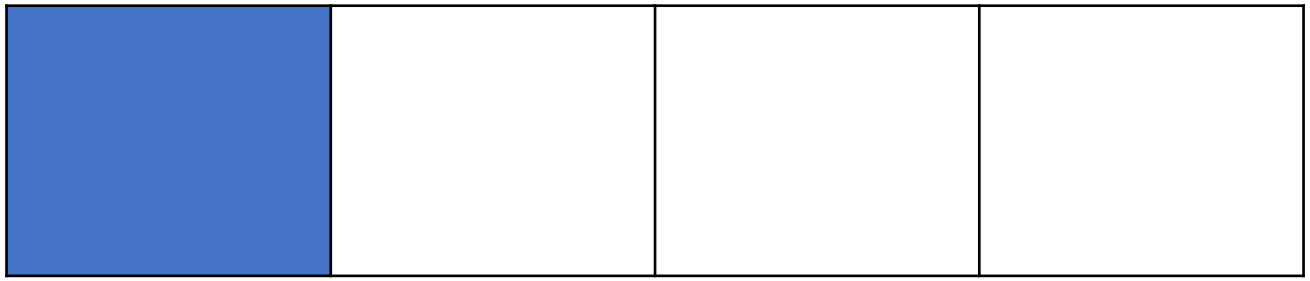
- Mrs. Tincher
  - 4th grade teacher at PSE
  - Teaching math is my passion
  - Die-hard Philadelphia Eagles fan

Fraction Models

STUDENTS NEED TO KNOW AND BE ABLE TO:

explain and show that a fraction is a part of a whole.

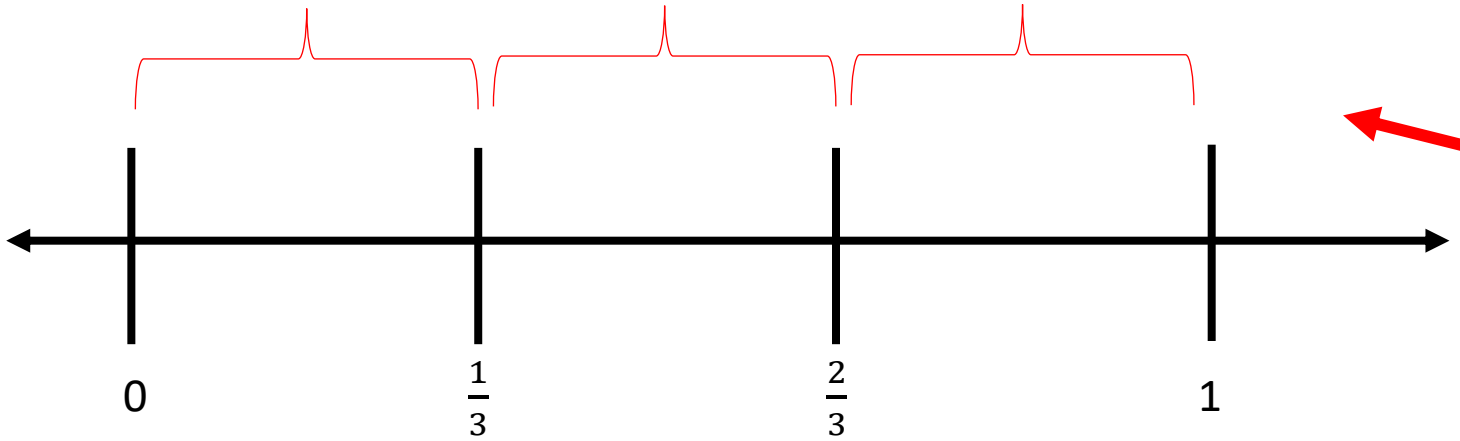
explain how a fraction is a number on the number line.



$$\frac{1}{4}$$

Numerator- the number of parts out of the whole

Denominator- the number of equal parts an item (the "whole") is divided into

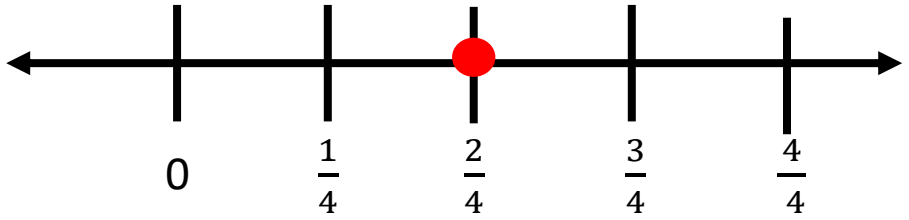


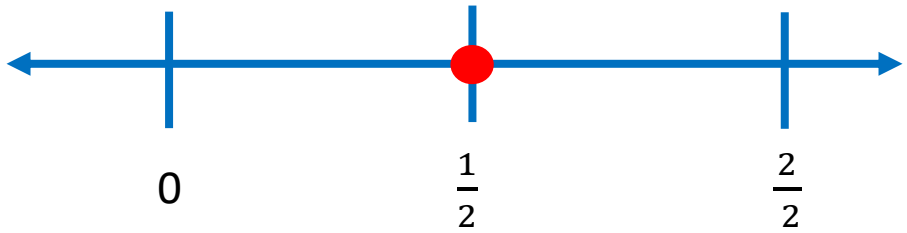
Because the whole number (from 0 – 1) is split into 3 equal parts, our fractional pieces are thirds.

Equivalent Fractions

3RD THIRD GRADE

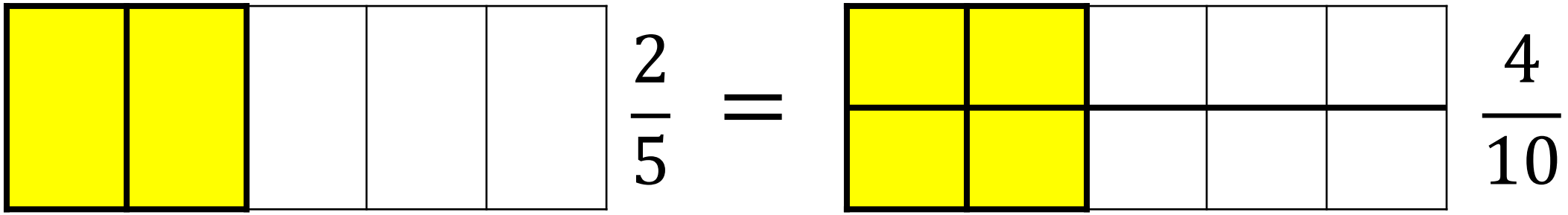
- show two fractions as equivalent (equal) if they are the same size.
- write whole numbers as fractions and recognize that they are equivalent (equal).





4TH FOURTH GRADE

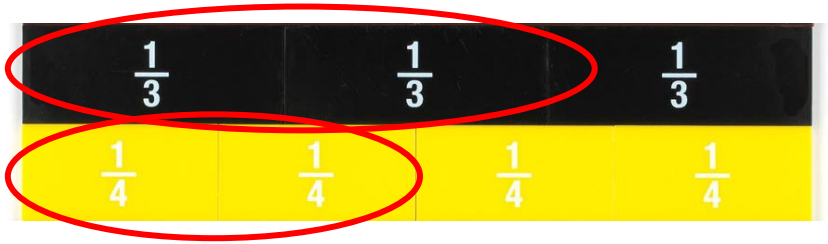
- recognize and create equivalent fractions.



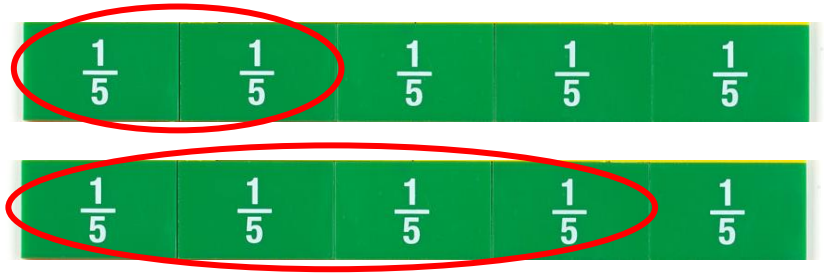
Comparing Fractions

3RD THIRD GRADE

- compare two fractions with the same numerator or the same denominator using <, >, or =.



$$\frac{2}{3} > \frac{2}{4}$$

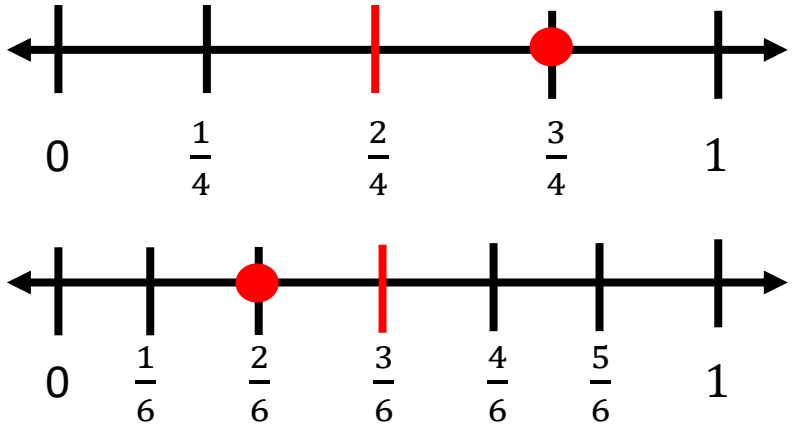


$$\frac{2}{5} < \frac{4}{5}$$

4TH FOURTH GRADE

- compare two fractions with different numerators and denominators using >, <, and =.

$$\frac{3}{8} < \frac{2}{3}$$



$$\frac{3}{4} > \frac{2}{6}$$

Adding Like Fractions

- add fractions with like denominators

$$\frac{4}{5} + \frac{3}{5} = \frac{7}{5} = 1\frac{2}{5}$$

- add mixed numbers with like denominators.

$$1\frac{2}{3} + 1\frac{2}{3} = 2\frac{4}{3} = 3\frac{1}{3}$$

Adding Unlike Fractions

- use equivalent fractions to add fractions with unlike denominators.

$$\frac{3}{8} + \frac{3}{4} = ?$$

We have to find equivalent fractions to make common denominators in order to add these fractions.

Adding Unlike Fractions

- use equivalent fractions to add fractions with unlike denominators.

$$\frac{3}{8} + \frac{3}{4} = ?$$

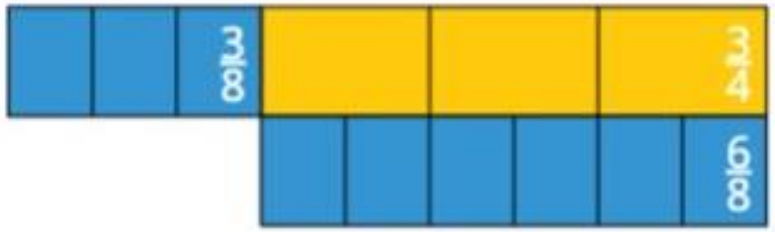
$\frac{3}{4}$ is the same as $\frac{6}{8}$.

Now we can add the fractions together!

Adding Unlike Fractions

- use equivalent fractions to add fractions with unlike denominators.

$$\frac{3}{8} + \frac{3}{4} = ?$$

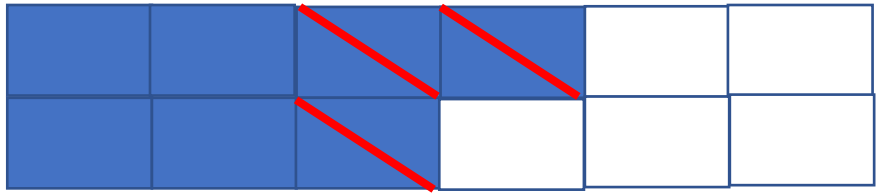


$$\frac{3}{8} + \frac{6}{8} = \frac{9}{8} = 1\frac{1}{8}$$

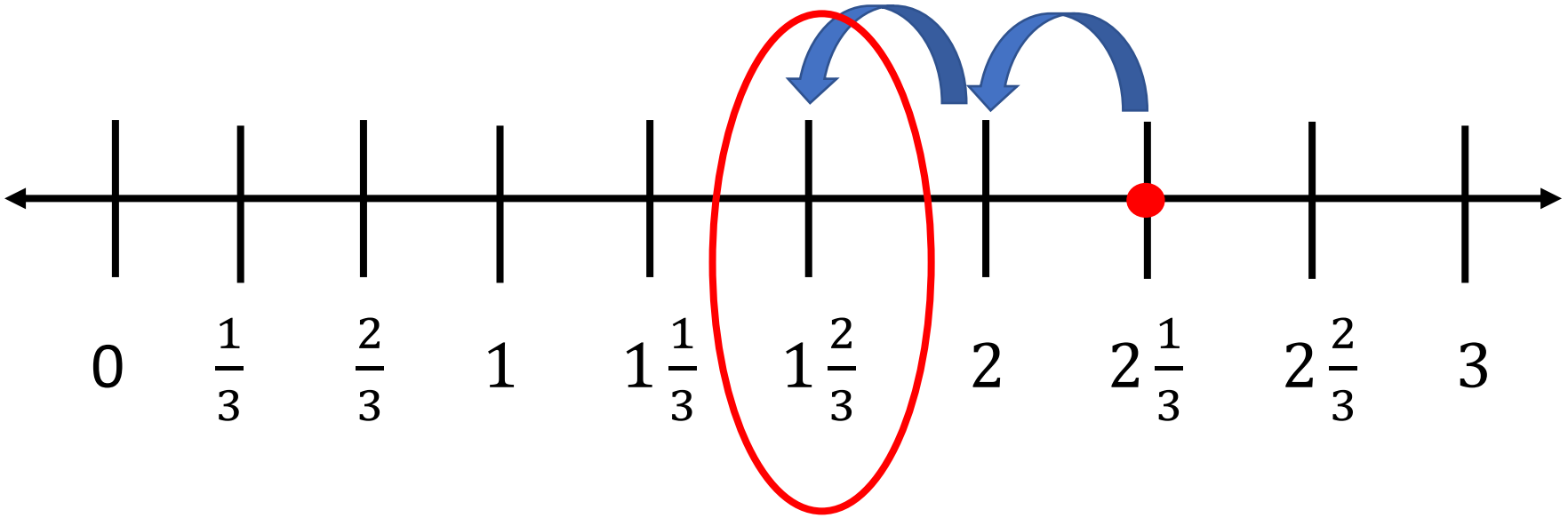
Subtracting Like Fractions

- subtract fractions with like denominators.

$$\frac{7}{12} - \frac{3}{12}$$



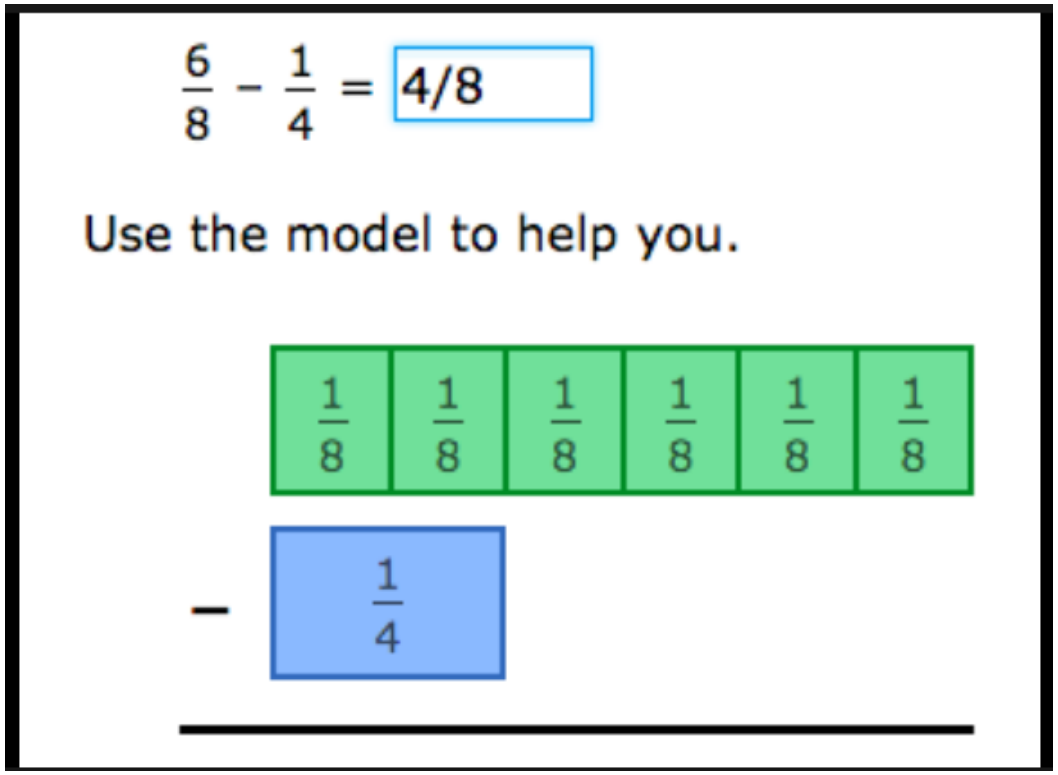
- subtract mixed numbers with like denominators.



$$2\frac{1}{3} - \frac{2}{3}$$

Subtracting Unlike Fractions

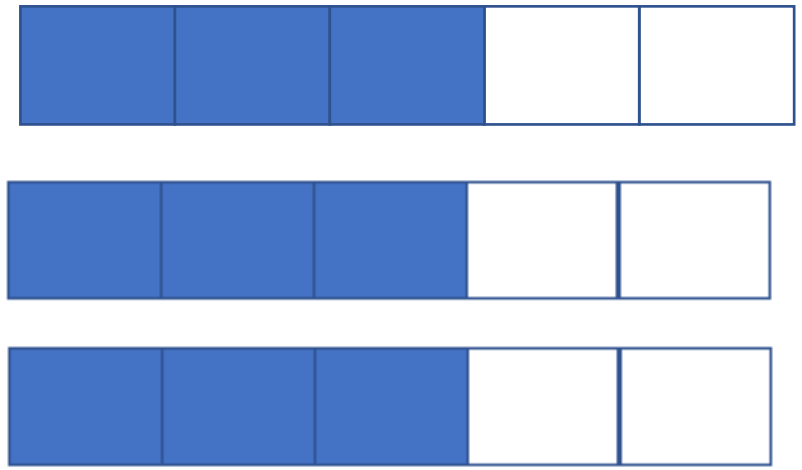
- use equivalent fractions to subtract fractions with unlike denominators.



Multiplying Fractions

- can use a fraction model to multiply a fraction by a whole number.
- explain the product of a whole number and a fraction using a visual fraction model.

$$3 \times \frac{3}{5}$$



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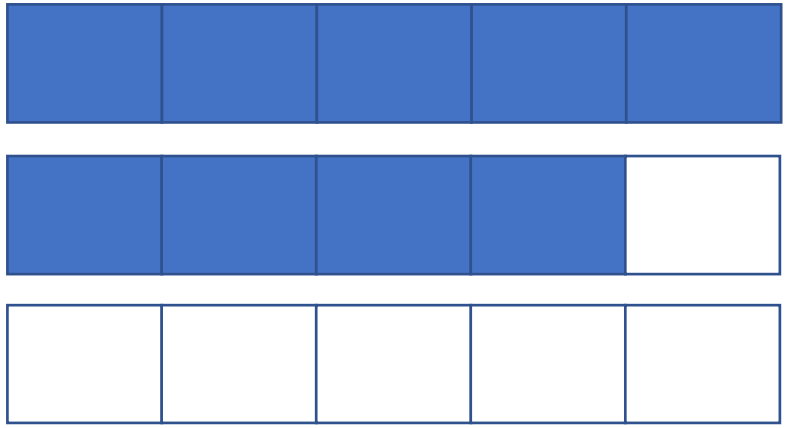


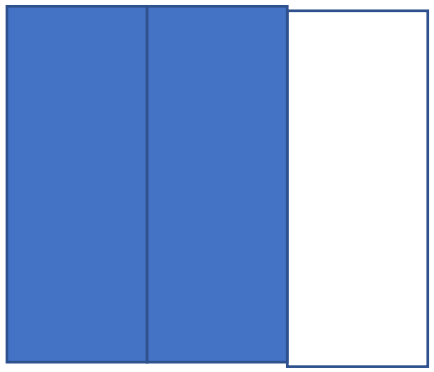
$\frac{3}{5} + \frac{3}{5} + \frac{3}{5} = \frac{9}{5}$

$\frac{9}{5}$ is equal to $1\frac{4}{5}$

Multiplying Fractions

- explain the product of two fractions using a visual fraction model.
- multiply fractional side lengths to find the area of rectangles.

$$\frac{2}{3} \times \frac{1}{4} =$$



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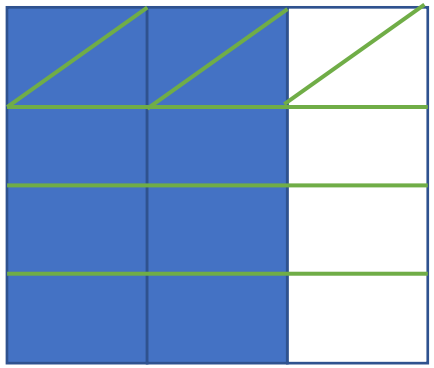
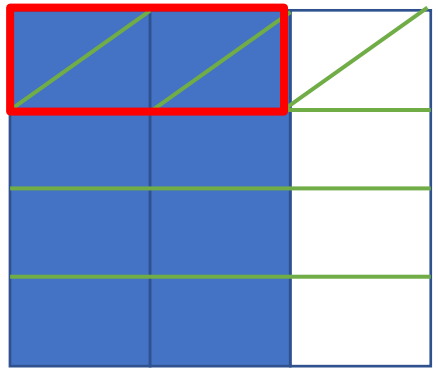


Multiplying Fractions

- explain the product of two fractions using a visual fraction model.
- multiply fractional side lengths to find the area of rectangles.

$$\frac{2}{3} \times \frac{1}{4} = \frac{2}{12}$$



Dividing Fractions

STUDENTS NEED TO KNOW AND BE ABLE TO:

01

explain a fraction as division of the numerator by the denominator.

02

explain division of a unit fraction by a whole number

03

find the quotient of a division problem for a unit fraction and whole number.

04

explain the division of a whole number by a unit fraction

05

find the quotient of a division problem for a whole number and a unit fraction.

STUDENTS NEED TO KNOW AND BE ABLE TO:

- explain a fraction as division of the numerator by the denominator.

Fraction as Division

- 5 friends want to share 3 watermelons equally. What fraction of a watermelon will each friend get?

If 1 watermelon is cut into 5 pieces, each friend would receive 1/5.

STUDENTS NEED TO KNOW AND BE ABLE TO:

- explain a fraction as division of the numerator by the denominator.

Fraction as Division

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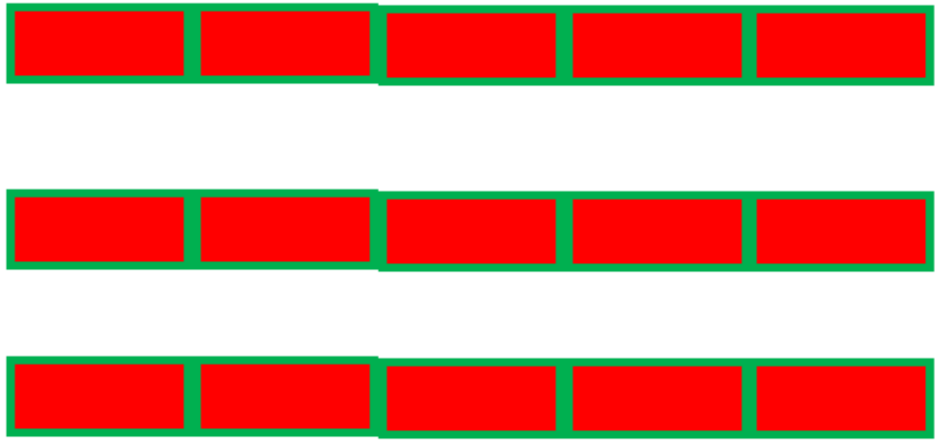

If 1 watermelon is cut into 5 pieces, each friend would receive 1/5.
Therefore, if 3 watermelons are shared by 5 friends, each friend would get 3/5.

STUDENTS NEED TO KNOW AND BE ABLE TO:

- explain a fraction as division of the numerator by the denominator.

Fraction as Division

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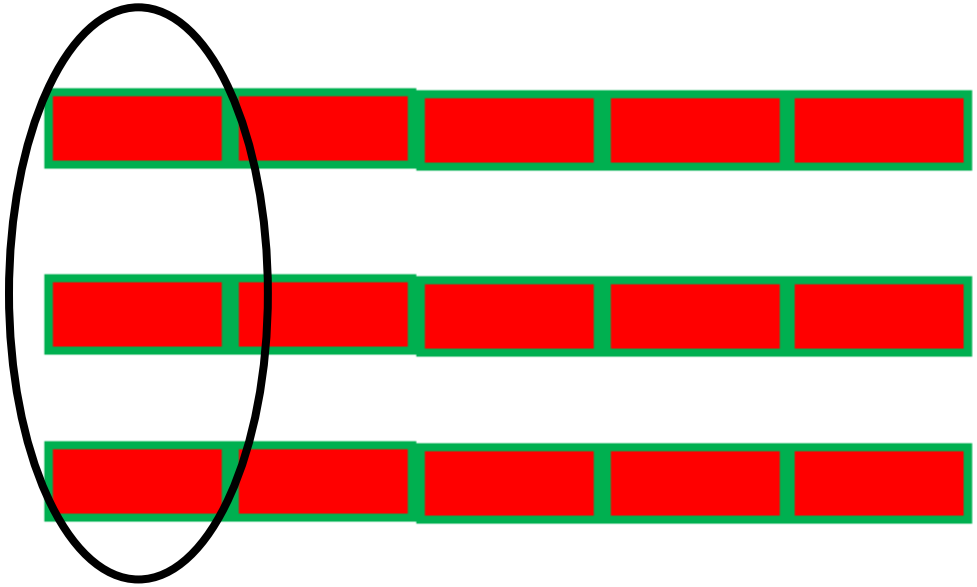
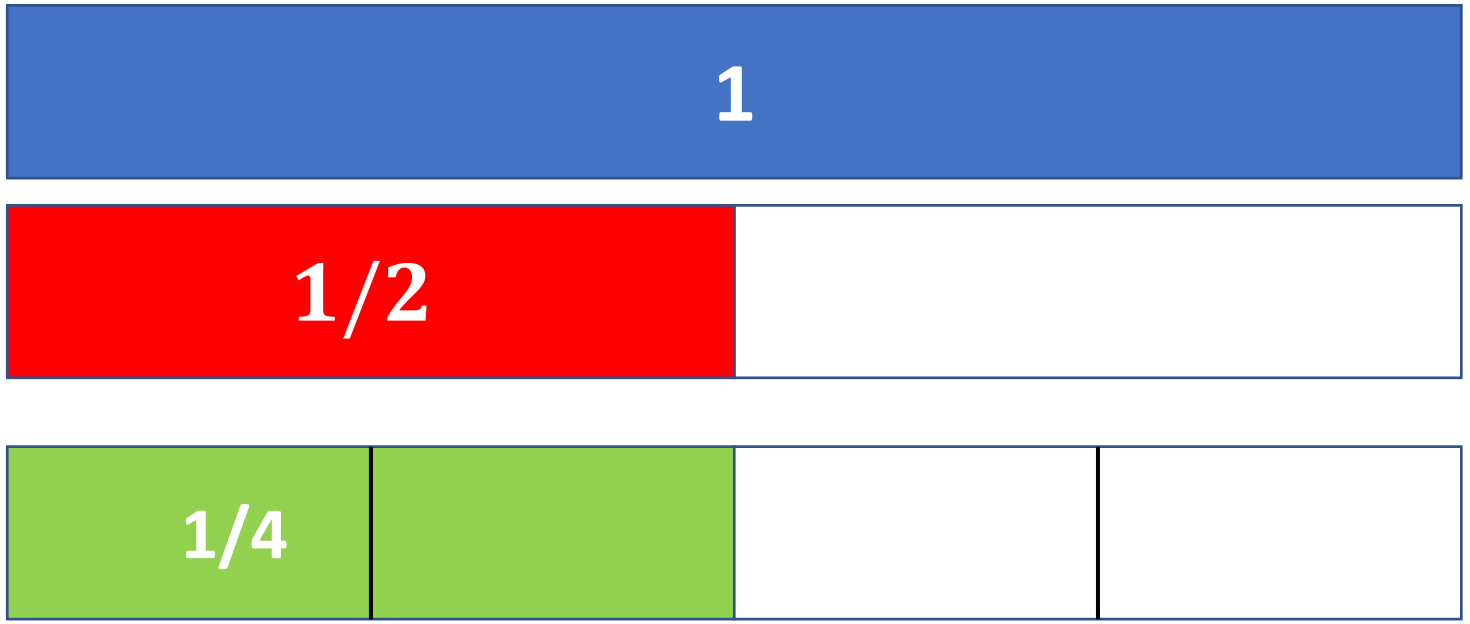


If 1 watermelon is cut into 5 pieces, each friend would receive 1/5.
Therefore, if 3 watermelons are shared by 5 friends, each friend would get 3/5.

Divide a unit fraction by a whole number

$$\frac{1}{2} \div 2 = \frac{1}{4}$$

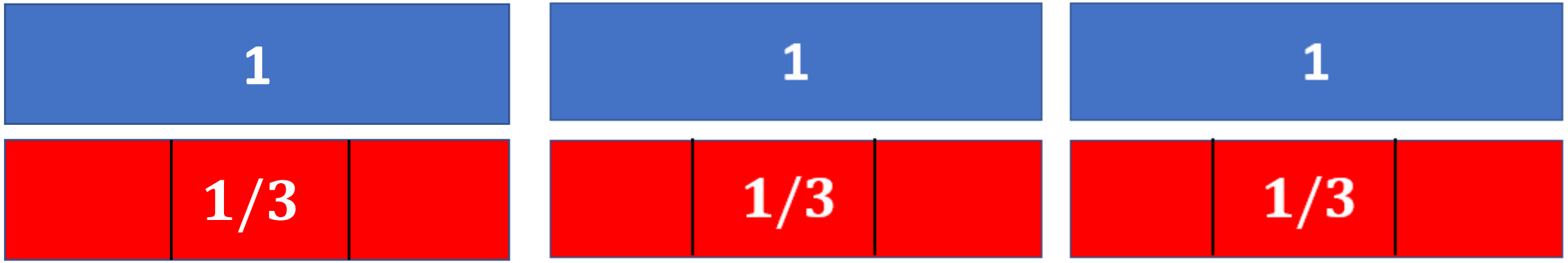


STUDENTS NEED TO KNOW AND BE ABLE TO:

- explain division of a unit fraction by a whole number
- find the quotient of a division problem for a unit fraction and whole number.

Divide a whole number by a unit fraction

$$3 \div \frac{1}{3} = 9$$



STUDENTS NEED TO KNOW AND BE ABLE TO:

- explain division of a whole number by a unit fraction
- find the quotient of a division problem for a whole number and a unit fraction.

Games to Play at Home

Roll a Fraction

Materials: Roll a Fraction boards, 2 dice marked 1-10 **Number of Players:** 2

1. Each player chooses a board. Take turns to roll two number cubes to create a fraction. You may decide which number will be the numerator and which number will be the denominator.

2. If the fraction you rolled belongs on a number line on your board write it below the appropriate point and explain your reasoning. If the fraction does not belong on any of your number lines you must wait until your next turn. You may use equivalent fractions. For example, if you roll $\frac{1}{2}$ you may record $\frac{2}{4}$, $\frac{3}{6}$, or $\frac{4}{8}$ because all these fractions are equivalent to $\frac{1}{2}$.

3. The first player to label ten points on the number lines on his or her board wins the game.

Games to Play at Home

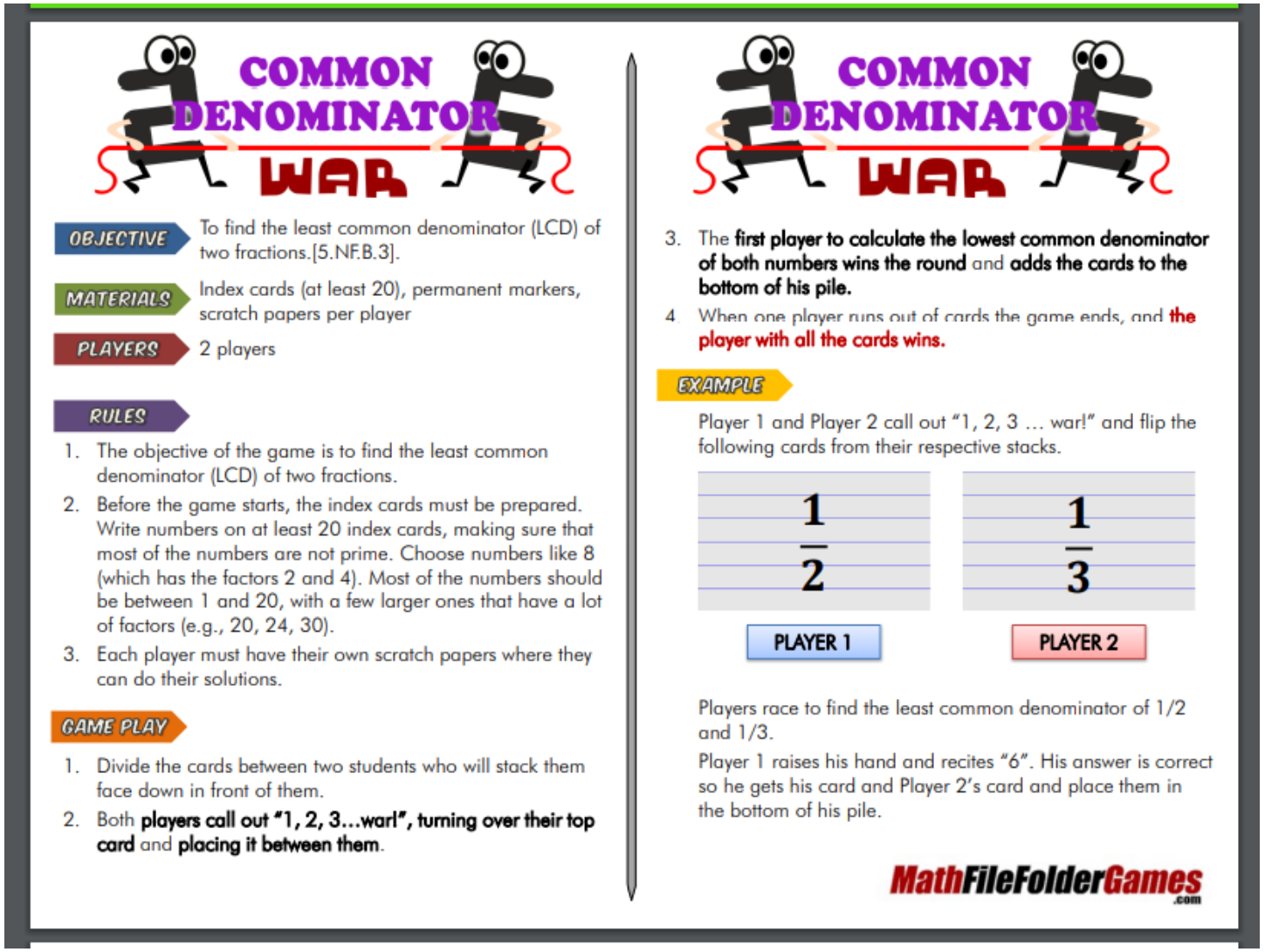
4.NF.1

Fraction Blackout

You will need: one game board for each player, fraction cards

1. Play with a partner.
2. Place the fraction cards facedown in a pile between you and your partner.
3. On your turn, choose a fraction card from the pile.
   - If you have that fraction on your game board, shade it in, once. You can also shade equivalent fractions. For example, if you choose ½, you can shade in four 1/8. You must tell your partner why that works.
   - If you cannot shade in that fraction or an equivalent fraction, your turn is over.
4. Continue taking turns until there are no more cards in the pile. The player with the greatest number of one wholes wins the game.

Games to Play at Home



COMMON DENOMINATOR WAR

OBJECTIVE To find the least common denominator (LCD) of two fractions.[5.NF.B.3].

MATERIALS Index cards (at least 20), permanent markers, scratch papers per player

PLAYERS 2 players

RULES

1. The objective of the game is to find the least common denominator (LCD) of two fractions.
2. Before the game starts, the index cards must be prepared. Write numbers on at least 20 index cards, making sure that most of the numbers are not prime. Choose numbers like 8 (which has the factors 2 and 4). Most of the numbers should be between 1 and 20, with a few larger ones that have a lot of factors (e.g., 20, 24, 30).
3. Each player must have their own scratch papers where they can do their solutions.

GAME PLAY

1. Divide the cards between two students who will stack them face down in front of them.
2. Both **players call out "1, 2, 3...war!", turning over their top card** and **placing it between them**.

COMMON DENOMINATOR WAR

3. The **first player to calculate the lowest common denominator of both numbers wins the round** and **adds the cards to the bottom of his pile.**
4. When one player runs out of cards the game ends, and **the player with all the cards wins.**

EXAMPLE

Player 1 and Player 2 call out "1, 2, 3 … war!" and flip the following cards from their respective stacks.

PLAYER 1	PLAYER 2
$\frac{1}{2}$	$\frac{1}{3}$

Players race to find the least common denominator of 1/2 and 1/3.

Player 1 raises his hand and recites "6". His answer is correct so he gets his card and Player 2's card and place them in the bottom of his pile.

MathFileFolderGames.com

Questions