Mathematics Alignment Lesson
Grade 2 Quarter 3 Day 95

SCOS Objective(s)

1.02 Use area or region models and set models of fractions to explore part-whole relationships in context.
1.02a Represent fractions (halves, thirds, fourths) concretely and symbolically.
1.02b Compare fractions (halves, thirds, fourths) using models.
1.02c Make different representations of the same fraction.
1.02d Combine fractions to describe parts of a whole.

Materials Needed:

- Transparency *"Pattern Block Fractions"*
- Transparency/Blackline Master *"How Much Corn?"*
- Book- *Eating Fractions* by Bruce McMillan
- Counters- 24 per student

Homework Reference Day 95

None Referenced

Assessment Reference Day 95

None Referenced

Vocabulary

None Referenced

Alignment Lesson
Pattern Block Fractions

1. Read *Eating Fractions* by Bruce McMillan to the class to show samples of wholes and fractional parts.

2. Distribute pattern blocks to each student (1 yellow hexagon, 2 red trapezoids, 2 orange squares, 2 tan parallelograms, 3 green triangles and 3 blue rhombus).

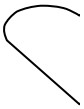
3. Instruct students to find the yellow hexagon. Tell students that this is one whole. Display Transparency *"Pattern Block Fractions"* and read the top section about one-half. Ask students to find the shapes that are one-half of the yellow hexagon (red trapezoids). "How many trapezoids does it take to cover the hexagon?" (2) "So $\frac{1}{2}$ and $\frac{1}{2}$ makes one whole." Ask students to share their thoughts and knowledge about one half. Next, display and discuss the bottom section of the Transparency "Pattern Block Fractions". Ask students to find the shapes that are one-third of the yellow hexagon (blue rhombus). "How many blue rhombus does it take to cover the hexagon?" (3). "So $\frac{1}{3}$ and $\frac{1}{3}$ and $\frac{1}{3}$ makes one whole." Ask students to share their thoughts and knowledge about one third.

4. Distribute Transparency/Blackline Master *"How Much Corn?"* and 24 counters to each student. There are two parts to this activity. For the first part, students will place half of the corn in each animal's bowl (circle). Discuss as a class. For the second part, students will place one third of the corn in each animal's bowl (circle). Discuss as a class.

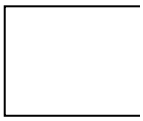
Source: Teacher Created, Adapted from Classroom Strategies, Grade 2

Pattern Block Fractions

<u>One-half,</u> $\frac{1}{2}$

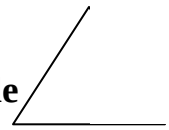
It takes two halves to make one whole. This is half of a heart 

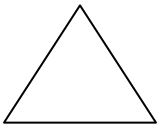
This is a whole heart 

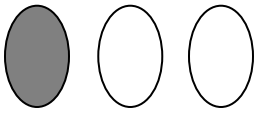
This is one-half of a rectangle. 

This is a whole rectangle 

<u>One-third,</u> $\frac{1}{3}$

It takes three thirds to make one whole. This is one third of a triangle 

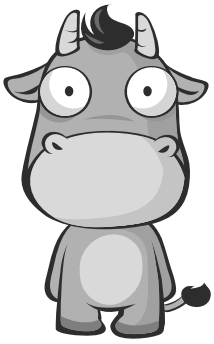
This is a whole triangle. 

One third of these jellybeans are shaded. 

Name: _____ **Date:** _____

How Much Corn?

One-half $\frac{1}{2}$



One-third $\frac{1}{3}$

-Adapted from Classroom Strategies, Grade 2

Mathematics Alignment Lesson
Grade 2 Quarter 3 Day 96

SCOS Objective(s)

1.02 Use area or region models and set models of fractions to explore part-whole relationships in context.
1.02a Represent fractions (halves, thirds, fourths) concretely and symbolically.
1.02b Compare fractions (halves, thirds, fourths) using models.
1.02c Make different representations of the same fraction.
1.02d Combine fractions to describe parts of a whole.

Materials Needed:

- Transparency *"Halves, Thirds, and Fourths"*
- Cardstock – *"What is it?"*
- Overhead counters
- 15 two-color counters for each student
- Four sheets of paper for each student (all sheets need to be the same size, like copier paper or construction paper).

Homework Reference Day 96

None Referenced

Assessment Reference Day 96

None Referenced

Alignment Lesson
Halves, Thirds and Fourths

1. Distribute 16 two-color counters to each student. Display Transparency *"Halves, Thirds, and Fourths"*. There are 2 pages of this Transparency. Work through each problem together as a class. Use overhead counters to model how to arrange the counters in columns to make finding fractional parts of a whole easier.

2. Distribute four pieces of paper to each student (all sheets need to be the same size). Have students write **1 Whole** on one piece. Have students fold the second piece in half (so that the shorter sides of the paper are now the top and the bottom). Students will write $\frac{1}{2}$ **One-Half** on each half of this paper. Next students will fold the paper in thirds (again so that the shorter sides of the paper are the top and bottom). Students will write $\frac{1}{3}$ **One-Third** on each section of this piece. Students will fold the final piece in fourths and write $\frac{1}{4}$ **One-Fourth** on each section. As a class, compare the four pieces of paper and discuss.

3. Name each corner of the classroom (or other areas as space allows) each of the following: One whole, one-half, one-third, and one-fourth. Distribute one *"What is it?"* card to each student. Have students look at the picture on their card and move to the corner of the room that has the fraction that matches the picture. If time allows, have students trade cards and repeat.

Source: Teacher Created, Adapted from Classroom Strategies, Grade 2

Vocabulary

None Referenced

Halves, Thirds and Fourths (3 pages)

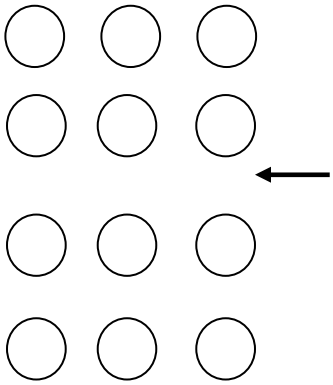
1. Count out 10 two-color counters. Listen to the problem and use your counters to solve.

   Meghan bought 10 jellybeans at the store. Half of the jellybeans were red and half were yellow. How many jellybeans were yellow?

2. Count out 12 two-color counters. Listen to the problem and use your counters to solve.

   Mr. Anderson is planting 12 tulips in his garden. He wants half of them to be yellow and half of them to be red. How many tulips will be yellow?

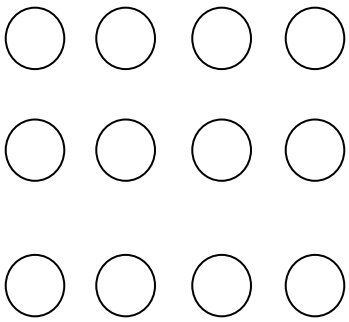
3. Mr. Anderson's neighbor is planting daisies in her garden. She also has 12 flowers. She wants one-third of her daisies to be red. Since she is working with thirds, make 3 columns of daisies (counters).



There are 3 columns of daisies because Mr. Anderson's neighbor wants one **third** of her garden to be red daisies. Each column has 4 daisies. Each column is one third of 12. So, one third of the daisies will be 4 daisies.

4. Mr. Anderson's other neighbor wants **two-thirds** of her 12 flowers to be yellow. If one third of 12 is 4, how many is two thirds?

5. Jenny has 12 marbles. Her brother wants to borrow one fourth of them. Since we are working with fourths, let's arrange the 12 marbles in 4 columns.



How many marbles are in each column? (columns go up and down, rows go side to side). How many marbles will Jenny's brother borrow? (What is one fourth of 12?)

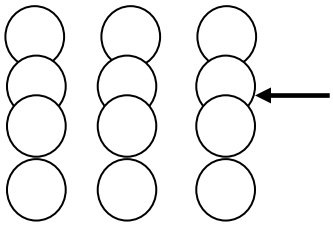
6. Would you rather have one-third of 12 cookies or one-half of 8 cookies? Why?

Halves, Thirds and Fourths Answer Key

1. Count out 10 two-color counters. Listen to the problem and use your counters to solve.
Meghan bought 10 jellybeans at the store. Half of the jellybeans were red and half were yellow. How many jellybeans were yellow? Answer - 5

2. Count out 12 two-color counters. Listen to the problem and use your counters to solve.
Mr. Anderson is planting 12 tulips in his garden. He wants half of them to be yellow and half of them to be red. How many tulips will be yellow? Answer – 6

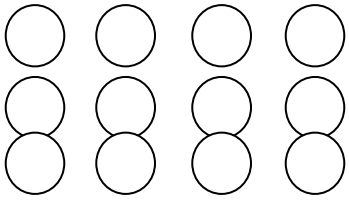
3. Mr. Anderson's neighbor is planting daisies in her garden. She also has 12 flowers. She wants one-third of her daisies to be red. Since she is working with thirds, make 3 columns of daisies (counters).



There are 3 columns of daisies because Mr. Anderson's neighbor wants one **third** of her garden to be red daisies. Each column has 4 daisies. Each column is one third of 12. So, one third of the daisies will be 4 daisies.

4. Mr. Anderson's other neighbor wants **two-thirds** of her 12 flowers to be yellow. If one third of 12 is 4, how many is two thirds?
One-third = 4 so one-third (4) and one-third (4) equals 8 yellow flowers. Using the diagram above, it would be two columns of counters.

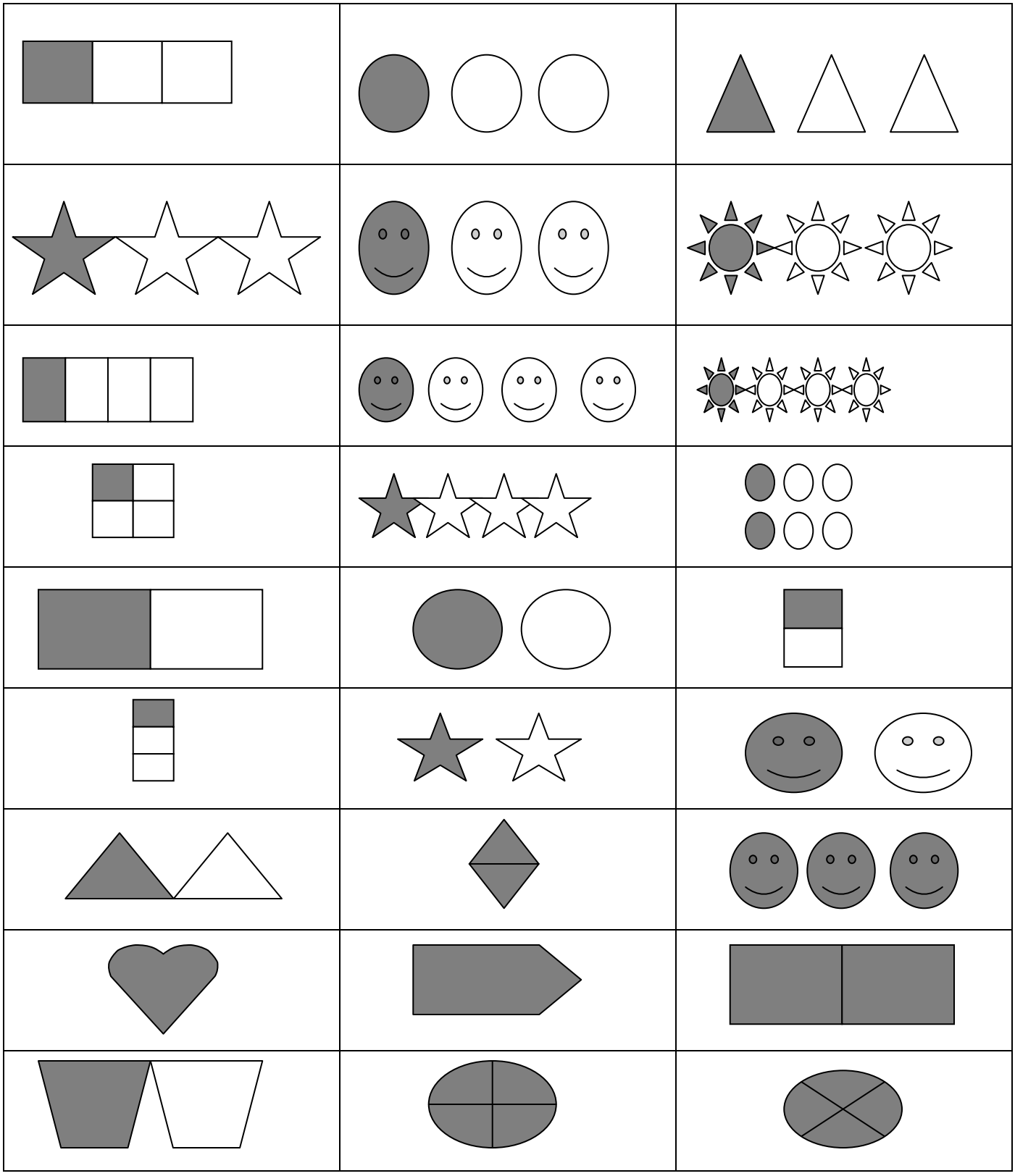
5. Jenny has 12 marbles. Her brother wants to borrow one fourth of them. Since we are working with fourths, let's arrange the 12 marbles in 4 columns.



How many marbles are in each column? **3** (columns go up and down, rows go side to side). How many marbles will Jenny's brother borrow? (What is one fourth of 12?) **3**

6. Would you rather have one-third of 12 cookies or one-half of 8 cookies? Why? **Students should show that these are the same amounts (both are 4)**

What Is It? – cardstock



Mathematics Alignment Lesson
Grade 2 Quarter 3 Day 97

SCOS Objective(s)

1.02 Use area or region models and set models of fractions to explore part-whole relationships in context.
1.02a Represent fractions (halves, thirds, fourths) concretely and symbolically.
1.02b Compare fractions (halves, thirds, fourths) using models.
1.02c Make different representations of the same fraction.
1.02d Combine fractions to describe parts of a whole.

Materials Needed:

- Transparency/Blackline Masters
  "Fraction Game Board"
  "Brenda's Brownie Dilemma"
- Cardstock- *"Fraction Spinners"*- 4 copies per class
- 12 pencils and 12 paper clips for Spinners
- 4 connecting cubes for each student
- Crayons for shading/coloring

Homework Reference Day 97
None Referenced

Assessment Reference Day 97
None Referenced

Alignment Lesson
Fraction Games

1. Distribute Fraction Game pieces – spinner, pencil, paper clip, and Transparency/Blackline Master *"Fraction Game Board."*

2. Students will play the Fraction Game in small groups. On their turn, students will spin and then shade or color in that fraction piece. The goal is to fill in all five fraction bars first. Students can make trades. Trade $\frac{1}{2}$ for two $\frac{1}{4}$ pieces, trade $\frac{2}{4}$ for two $\frac{1}{4}$ pieces or one $\frac{1}{2}$ piece, trade $\frac{3}{4}$ for three $\frac{1}{4}$ pieces, trade $\frac{2}{3}$ for two $\frac{1}{3}$ pieces. Model a trade on the Transparency before students begin. After the game, discuss as a class.

3. Distribute four connecting cubes to each student. Display the Transparency/Blackline Master *"Brenda's Brownie Dilemma"*. Read the first problem and solve as a class. Read the second problem and let students solve individually or in pairs. Students will draw pictures to show their solution.

Source: Teacher Created, Adapted from Classroom Strategies

Vocabulary
None Referenced

Name: _____ **Date:** _____

Fraction Game Board

Directions: When it is your turn, spin the fraction spinner. Shade in that fraction amount on your game board. The first person to complete the game board (making five complete whole bars) wins that round. You can also make trades:

- Trade $\frac{1}{2}$ for two $\frac{1}{4}$ pieces
- Trade $\frac{3}{4}$ for three $\frac{1}{4}$ pieces
- Trade $\frac{2}{4}$ for two $\frac{1}{4}$ pieces or one $\frac{1}{2}$ piece
- Trade $\frac{2}{3}$ for two $\frac{1}{3}$ pieces

One-fourth $\frac{1}{4}$	**One-third** $\frac{1}{3}$	**One-half** $\frac{1}{2}$	**One-half** $\frac{1}{2}$	**One Whole**
One-fourth $\frac{1}{4}$	One-third $\frac{1}{3}$			
One-fourth $\frac{1}{4}$	One-third $\frac{1}{3}$	One-half $\frac{1}{2}$	One-half $\frac{1}{2}$	
One-fourth $\frac{1}{4}$				

Name: _____ **Date:** _____

Brenda's Brownie Dilemma

Problem 1:
Brenda has a delicious brownie to share with her two best friends Amanda and Christine. Show how Brenda can divide her brownie into 3 equal parts so that she and her friends can get the same amount of brownie. Use 3 of your cubes to help you and draw a picture of your solution. Label your picture with fractions ($\frac{1}{3}$, $\frac{2}{3}$, and $\frac{3}{3}$).

Problem 2:
Brenda has another delicious brownie. She wants to share this brownie equally with her 3 brothers. Show two different ways she could divide her brownie into 4 equal parts. Use 4 of your cubes to help you and draw a picture of your solution. Label your picture with fractions ($\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$).

Problem 3:
Brenda and her family have finished all of the brownies. The next week, their neighbors brings over some cookies. Brenda's dad breaks the cookies into parts for Brenda and her brother to share. Brenda's brother gets more of the cookie than Brenda does. Draw a picture of how the cookie might have been broken apart. Use fractions to label the picture.

Brenda's Brownie Dilemma – Answer Key

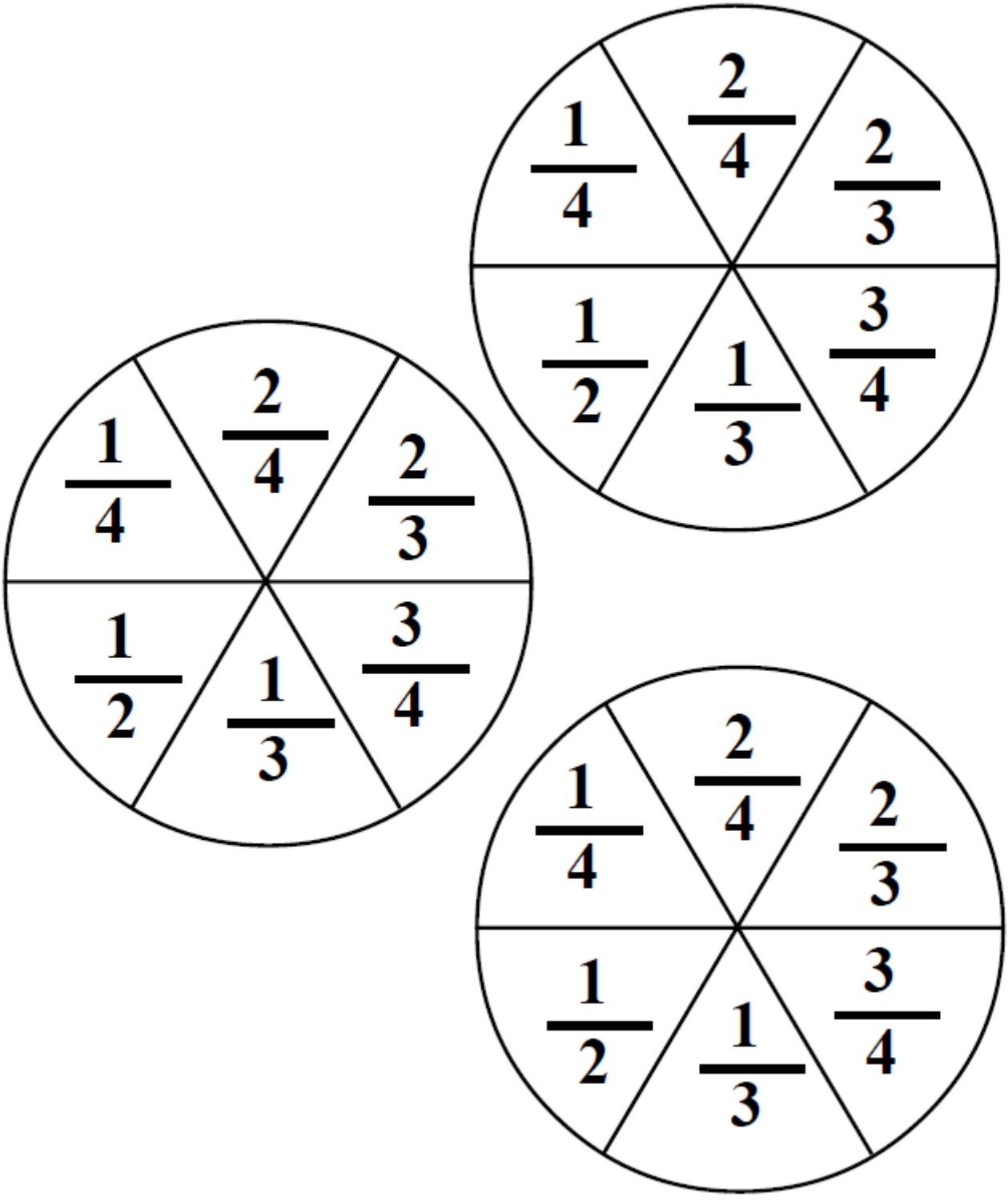
Problem 1:
Brenda has a delicious brownie to share with her two best friends Amanda and Christine. Show how Brenda can divide her brownie into 3 equal parts so that she and her friends can get the same amount of brownie. Use 3 of your cubes to help you and draw a picture of your solution. Label your picture with fractions ($\frac{1}{3}$, $\frac{2}{3}$, and $\frac{3}{3}$).

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

Problem 2:
Brenda has another delicious brownie. She wants to share this brownie equally with her 3 brothers. Show two different ways she could divide her brownie into 4 equal parts. Use 4 of your cubes to help you and draw a picture of your solution. Label your picture with fractions ($\frac{1}{4}$, $\frac{2}{4}$, $\frac{3}{4}$, $\frac{4}{4}$).

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

Fraction Spinners



Mathematics Alignment Lesson
Grade 2 Quarter 3 Day 98

SCOS Objective(s)

1.02 Use area or region models and set models of fractions to explore part-whole relationships in context.
1.02a Represent fractions (halves, thirds, fourths) concretely and symbolically.
1.02b Compare fractions (halves, thirds, fourths) using models.
1.02c Make different representations of the same fraction.
1.02d Combine fractions to describe parts of a whole.

Materials Needed:

- Transparency/Blackline Masters *"Lots of Fractions!"*
- Blackline Master *"Fraction Trains"*
- Colored overhead markers or chips (need blue and red)
- Connecting cubes or one each tiles for each student – 8 blue, 4 red, 4 green and 3 yellow.
- 1 Marker or crayon for each student – blue, red, yellow and green.

Homework Reference Day 98

None Referenced

Assessment Reference Day 98

None Referenced

Alignment Lesson
Lots of Fractions

1. Display Transparency/Blackline Master *"Lots of Fractions!"*. Use a blue and a red overhead chip/marker. Explain that there are two markers, 1 is red, 1 is blue, so $\frac{1}{2}$ of the markers are red and half of the markers are blue. Record on the chart. Next, add 1 more blue and 1 more red marker. Now there are 4 markers and $\frac{2}{4}$ are blue and $\frac{2}{4}$ are red so $\frac{1}{2}$ is still blue and $\frac{1}{2}$ is still red. Continue the pattern and have students use connecting cubes or tiles in blue, red, yellow and green to try on their own and record on their chart. Students will need 8 blue, 4 red, 4 green and 3 yellow. Every block on the Transparency/Blackline Master needs to be completed. Zeros are already marked if a color is not used. Discuss as a class once everyone is finished. Students can work on the challenge problem at the bottom if they are waiting for classmates to finish.

2. Distribute Blackline Master *"Fraction Trains"*. Students will build "trains" with their cubes or tiles. They will color their trains on the Blackline Master and record the fractions.

Source: Teacher Created, Adapted from Classroom Strategies Grade 2

Vocabulary

None Referenced

Name: _____ **Date:** _____

Lots of Fractions!

Directions: Use your connecting cubes or tiles to make different fractions and then record on your chart.

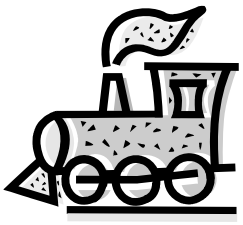
Total number of cubes or tiles	Number of blue cubes or tiles	What fraction of the total cubes or tiles are the blue ones?	Number of red cubes or tiles	What fraction of the total cubes or tiles are the red ones?	Number of green cubes or tiles	What fraction of the total cubes or tiles are the green ones?	Number of yellow cubes or tiles	What fraction of the total cubes or tiles are the yellow ones?
2	1	$\frac{1}{2}$	1	$\frac{1}{2}$	0	0	0	0
4	2				0	0	0	0
6			3		0	0	0	0
6	2		2		2		0	
9	3		3				0	
12	4		4		4		0	
4	1		1		1		1	
8	2		2		2		2	
12	3		3		3		3	
16	8		4		4		0	

Challenge Problem 1: If there are 5 blue tiles, 4 red tiles, 3 green tiles and 3 yellow tiles, what fraction of the tiles are green?

Challenge Problem 2: Justin has 12 tiles. 6 of them are green. ½ of them are blue. How many blue tiles does Justin have?

Name: _____ **Date:** _____

Fraction Trains



1. Choose 12 of your cubes or tile and make a train with them. Make sure your train includes blue and green tiles (you can have other colors too if you want!). Color your train.

What fraction of your train is blue? _____

What fraction of your train is green? _____

2. Choose 9 of your cubes or tile and make a train with them. Make sure your train includes yellow and green tiles (you can have other colors too if you want!).

What fraction of your train is yellow? _____

What fraction of your train is green? _____

3. Choose 8 of your cubes or tiles and make a train with them. Make sure your train includes all four colors. Make sure half of your train is red.

What fraction of your train is red? _____

What fraction of your train is green? _____

Lots of Fractions! – Answer Key

Directions: Use your connecting cubes or tiles to make different fractions and then record on your chart.

Total number of cubes or tiles	Number of blue cubes or tiles	What fraction of the total cubes or tiles are the blue ones?	Number of red cubes or tiles	What fraction of the total cubes or tiles are the red ones?	Number of green cubes or tiles	What fraction of the total cubes or tiles are the green ones?	Number of yellow cubes or tiles	What fraction of the total cubes or tiles are the yellow ones?
2	1	$\frac{1}{2}$	1	$\frac{1}{2}$	0	0	0	0
4	2	$\frac{1}{2}$	2	$\frac{1}{2}$	0	0	0	0
6	3	$\frac{1}{2}$	3	$\frac{1}{2}$	0	0	0	0
6	2	$\frac{1}{3}$	2	$\frac{1}{3}$	2	$\frac{1}{3}$	0	0
9	3	$\frac{1}{3}$	3	$\frac{1}{3}$	3	$\frac{1}{3}$	0	0
12	4	$\frac{1}{3}$	4	$\frac{1}{3}$	4	$\frac{1}{3}$	0	0
4	1	$\frac{1}{4}$	1	$\frac{1}{4}$	1	$\frac{1}{4}$	1	$\frac{1}{4}$
8	2	$\frac{1}{4}$	2	$\frac{1}{4}$	2	$\frac{1}{4}$	2	$\frac{1}{4}$
12	3	$\frac{1}{4}$	3	$\frac{1}{4}$	3	$\frac{1}{4}$	3	$\frac{1}{4}$
16	8	$\frac{1}{2}$	4	$\frac{1}{4}$	4	$\frac{1}{4}$	0	0

Challenge Problem 1: If there are 5 blue tiles, 4 red tiles, 3 green tiles and 3 yellow tiles, what fraction of the tiles are green?

Challenge Problem 2: Justin has 12 tiles. 6 of them are green. ½ of them are blue. How many blue tiles does Justin have?

Mathematics Alignment Lesson
Grade 2 Quarter 3 Day 99

SCOS Objective(s)

1.02 Use area or region models and set models of fractions to explore part-whole relationships in context.
1.02a Represent fractions (halves, thirds, fourths) concretely and symbolically.
1.02b Compare fractions (halves, thirds, fourths) using models.
1.02c Make different representations of the same fraction.
1.02d Combine fractions to describe parts of a whole.

Materials Needed:

- Blackline Masters
  "Fraction Puzzles"
  "Fraction Tic Tac Toe"
  "Fraction Tic Tac Toe Journal Prompt"
- *"Tic Tac Toe Calling Strips"*
- Chips/markers for tic tac toe game
- Scissors and glue or tape for each student

Homework Reference Day 99

None Referenced

Assessment Reference Day 99

None Referenced

Alignment Lesson
Fraction Tic Tac Toe

Note: Cut out pieces on Blackline Master Tic Tac Toe Calling Strips before this lesson.

1. Display/Distribute Transparency/Blackline Master *"Fraction Puzzles"*.

2. Distribute Blackline Master "Fraction Tic Tac Toe" and a handful of chips to each student. Students write any of the following fractions on their tic tac toe board – $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ $\frac{1}{2}$ $\frac{1}{3}$ $\frac{2}{3}$
   Use the pieces from Blackline Master *"Tic Tac Toe calling strips"* to call fractions for students to cover.
   Students can cover equivalent fractions such as $\frac{1}{2}$ when you call $\frac{2}{4}$. Please several rounds as time allows.

3. Students complete Blackline Master *"Fraction Tic Tac Toe Journal Prompt"* as time allows or for homework.

Source: Teacher Created, Adapted from Classroom Strategies

Vocabulary

None Referenced

Name: _____ **Date:** _____

Fraction Puzzles

Each puzzle is missing a piece. Look for it at the side. Cut the puzzle piece out and glue or tape it to where it belongs.

Three-fourths

$\frac{3}{4}$

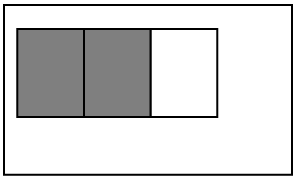
One-half

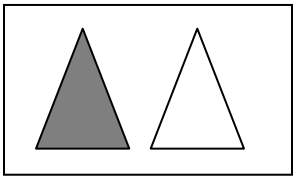
$\frac{1}{2}$

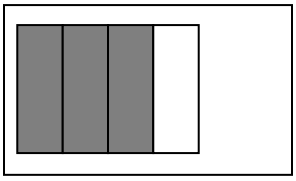
Two-thirds

$\frac{2}{3}$

Puzzle Pieces:







Name: _____ Date: _____

Fraction Tic Tac Toe

Directions: Fill in the empty squares on your board using the fractions below. Listen as your teacher calls out fractions. You can cover the fraction that you hear, or you can cover a fraction that is equivalent, or that means that same thing (we know that $\frac{1}{2}$ means the same amount as $\frac{2}{4}$ so if your teacher calls out $\frac{2}{4}$ you can cover EITHER $\frac{1}{2}$ or $\frac{2}{4}$). You can only cover one fraction on each turn.

Fill in your board with these fractions:

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

You can use a fraction more than one time! Don't leave any empty squares! Be the first to get four in a row and call out Tic Tac Toe! You can win up and down, side to side or diagonally!

		Free Space! 	

Teacher Copy – 1 per class Grade 2 Day 99 Objective(s) 1.02a, b, c, d

Tic Tac Toe Calling Strips – cut these out before the lesson

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

Name: _____ Date: _____

Fraction Tic Tac Toe Journal Prompt

Pretend that you had four tic tac toe spots covered in a row. You only need one more covered to be the winner! Your teacher calls out the fraction one-third but you don't have one-third on your board. What other fractions would you like to have in that spot so that you could still be the winner and why?

Mathematics Alignment Lesson
Grade 2 Quarter 3 Day 125

SCOS Objective(s)

1.03 Create, model, and solve problems that involve addition, subtraction, equal grouping, and division into halves, thirds and fourths (record in fraction form).

Materials Needed:

- From Day 128-
  - Transparency/Blackline Master- *"Division Dilemma"*
- Blackline Masters *"Calculate to 100" ,"The Dart Game"*
- 3 number cubes per pair
- Calculator per student

Homework Reference Day 125

None referenced.

Assessment Reference Day 125

Blackline Master *"The Dart Game"* (optional assessment)

Alignment Lesson
Number Sentence Addition

1. Begin class by discussing Transparency/Blackline Master *"Division Dilemma"* from Day 128. Start by focusing on the first chart, sharing equally between 2 groups. Students will complete the last column. Have them title the column *"Number Sentence"*. Model a few examples whole class to get students started. Have students write number sentences in the last columns of their group charts.

   Example: If a group had a total of 27 counters shared equally between 2 groups, then there are 13 counters in each group with 1 counter left over. A Number Sentence that might describe this scenario is: 13 + 13 + 1 = 27.

2. Have students play *"Calculate to 100"* with a partner. The first student (Student A) rolls 3 number cubes, records the 3 numbers, writes a number sentence to find the sum of the 3 numbers, and enters his/her final total in a calculator. The next student repeats procedure above. Student A rolls again, records the 3 numbers, writes a number sentence to find the sum of the 3 numbers, and adds that total to the previous total on his/her calculator. The calculator serves as the running total. The first student to make it to 100 wins.

3. Have each student complete Blackline Master *"The Dart Game"*. You may choose to use this problem as an assessment.

Source: Classroom Strategies

Vocabulary

Halves
Thirds
Fourths
Equal Grouping
Divide
Addition
Number Sentence

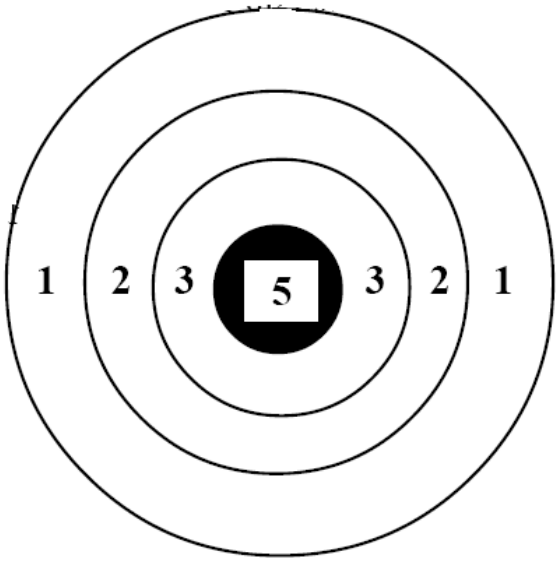
Blackline Master Grade 2 Day 125 Objective(s) 1.03

Calculate to 100

Roll	Numbers Rolled	Number Sentence Total
Example	6, 1, 3	6 + 1 + 3 = 10
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

13		
14		
15		
16		
17		
18		
19		
20		

The Dart Game



Mary and Lee played a game of darts using the board shown. Mary and Lee both threw three darts each. Mary scored a 7, and Lee scored a 6.

Where could Mary's three arrows have hit with her score of 7?

Where could Lee's three arrows have hit with his score of 6?

Show your work with pictures, words, or numbers.

Mathematics Alignment Lesson
Grade 2 Quarter 4 Day 149

SCOS Objective(s)

1.02 Use area or region models and set models of fractions to explore part-whole relationships in context.
1.02a Represent fractions (halves, thirds, fourths) concretely and symbolically.
1.02b Compare fractions (halves, thirds, fourths) using models.
1.02c Make different representations of the same fraction.
1.02d Combine fractions to describe parts of a whole.

Materials Needed:

- Transparency- *"How Much to Make One Whole?"*
- Blackline Masters - *"Pizza Party"* *"Make one Whole"*
- Pattern Blocks for each student – 1 yellow hexagon, 2 red trapezoids, and 3 blue rhombus
- 1 crayon for each student

Homework Reference Day 149

None Referenced

Assessment Reference Day 149

None Referenced

Alignment Lesson
Pattern Block Fractions II

1. Distribute pattern block sets to each student (1 yellow hexagon, 2 red trapezoids and 3 blue rhombuses) and Blackline Master *"Pizza Party"*. Students can use the pattern blocks to help them solve the three problems.

   Then students will draw their own pizza with $\frac{2}{4}$ leftover. Let students discover that their pizza has the same amount leftover as the pizza with $\frac{1}{2}$ leftover. Mrs. Young's class has $\frac{3}{4}$ of a pizza leftover. Mr. Edwards' pizza has $\frac{1}{2}$ of a pizza leftover. Miss Brickhouse's class has $\frac{1}{3}$ of a pizza leftover.

2. Display Transparency *"How Much to Make One Whole?"*. Show students how fractional parts can make a whole.

3. Distribute Blackline Master *"Make One Whole"*. Students will color in (with pencil or crayon) fractional parts to make one whole.

Source: Teacher Created, Adapted from Indicators

Vocabulary

None Referenced

Name: _____ **Date:** _____

Pizza Party

Each 2nd grade class had a pizza party. Tell how much pizza each class has leftover. Use your pattern blocks to help you solve. The yellow hexagon will be the whole pizza.

Mrs. Young's class:

Mr. Edwards' class:

How much pizza is leftover?

_____

How much pizza is leftover?

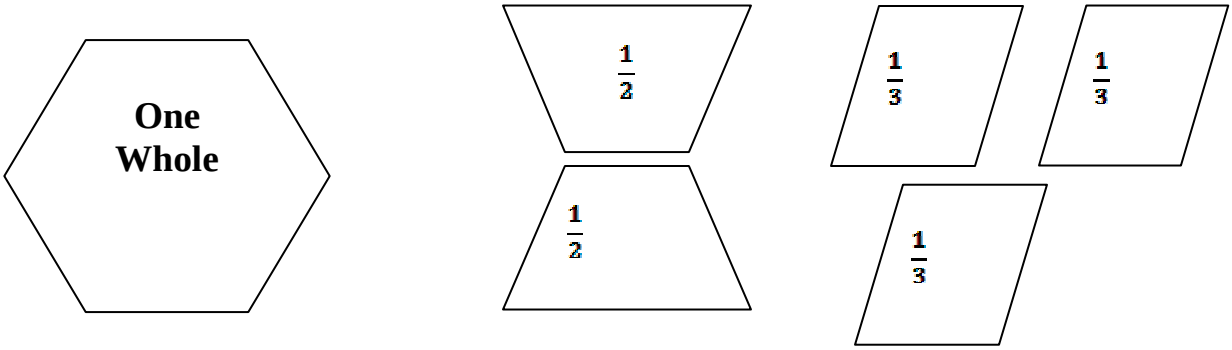
_____

Miss Brickhouse's class:

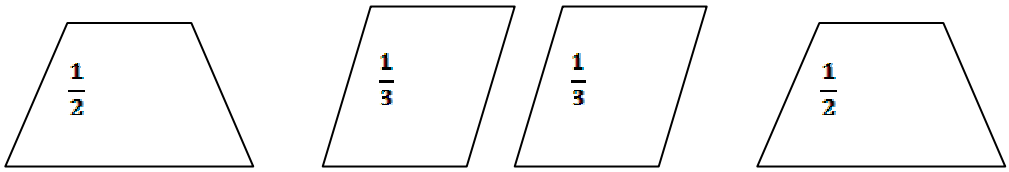
Draw a pizza below that has $\frac{2}{4}$ leftover:

How Much to Make One Whole?

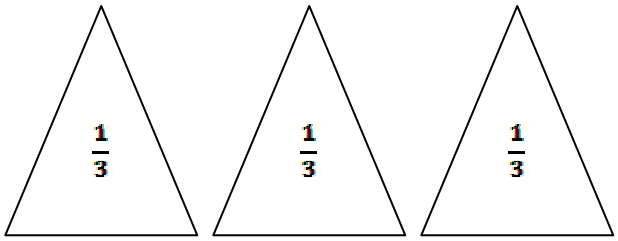
You can make one whole with several fractional parts. Use your pattern blocks to help you.



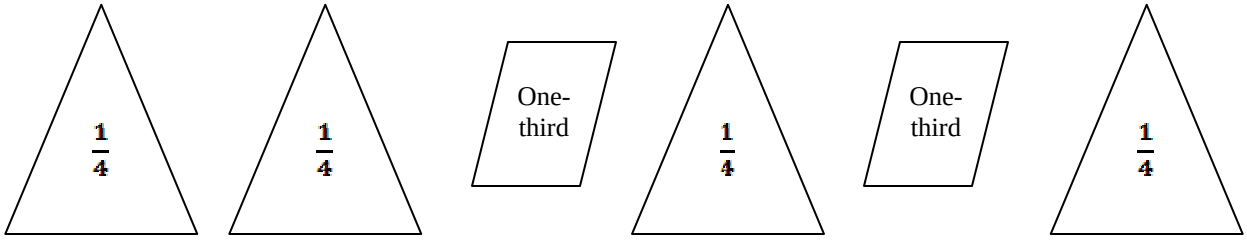
Color the pieces in this section that make one whole:



Now let's find a whole without the patter blocks. Let's find one whole by using thirds.

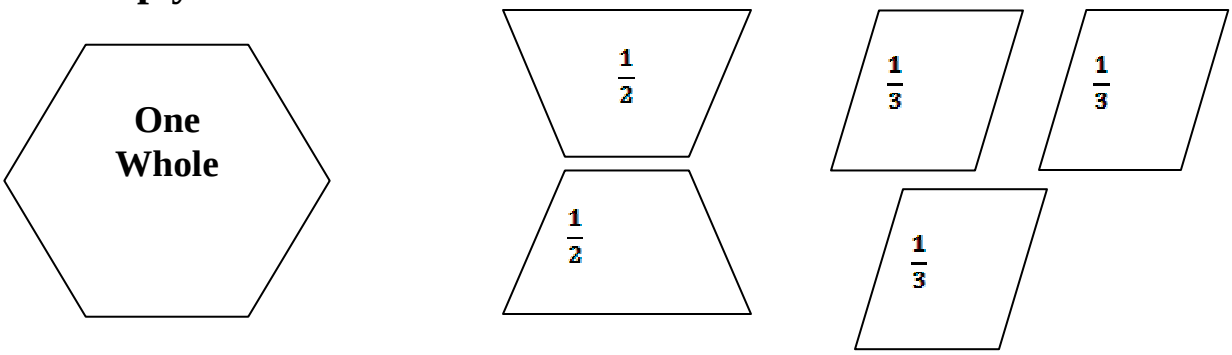


Color the pieces in this section that make one whole.

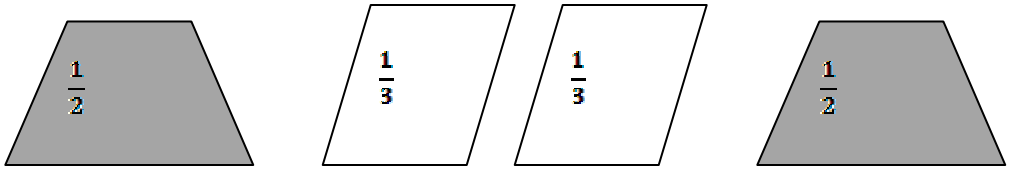


How Much to Make One Whole? – Answer Key

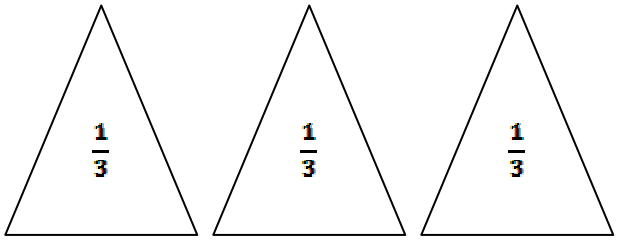
You can make one whole with several fractional parts. Use your pattern blocks to help you.



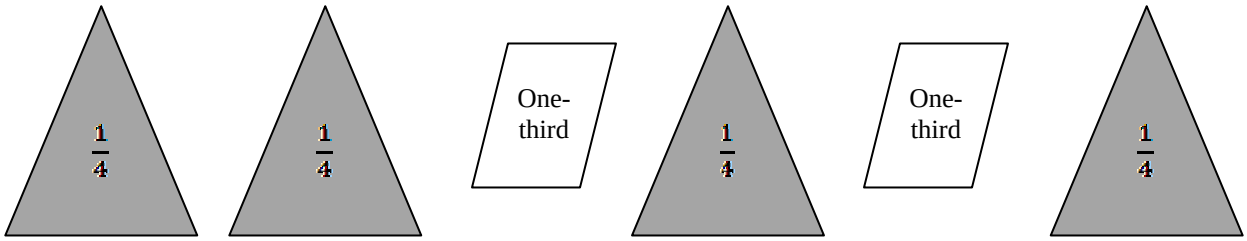
Color the pieces in this section that make one whole:



Now let's find a whole without the pattern blocks. Let's find one whole by using thirds.



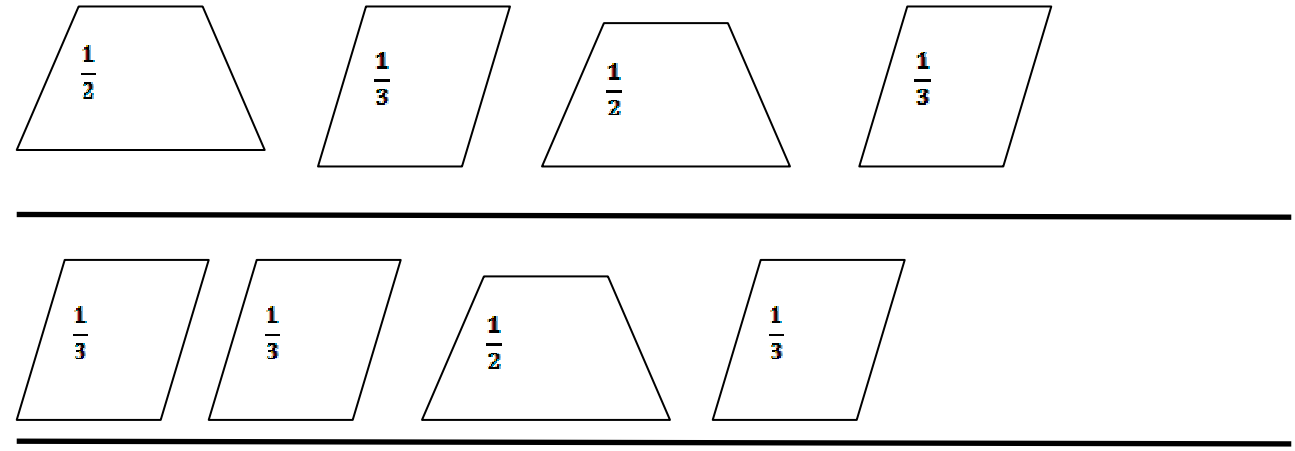
Color the pieces in this section that make one whole.



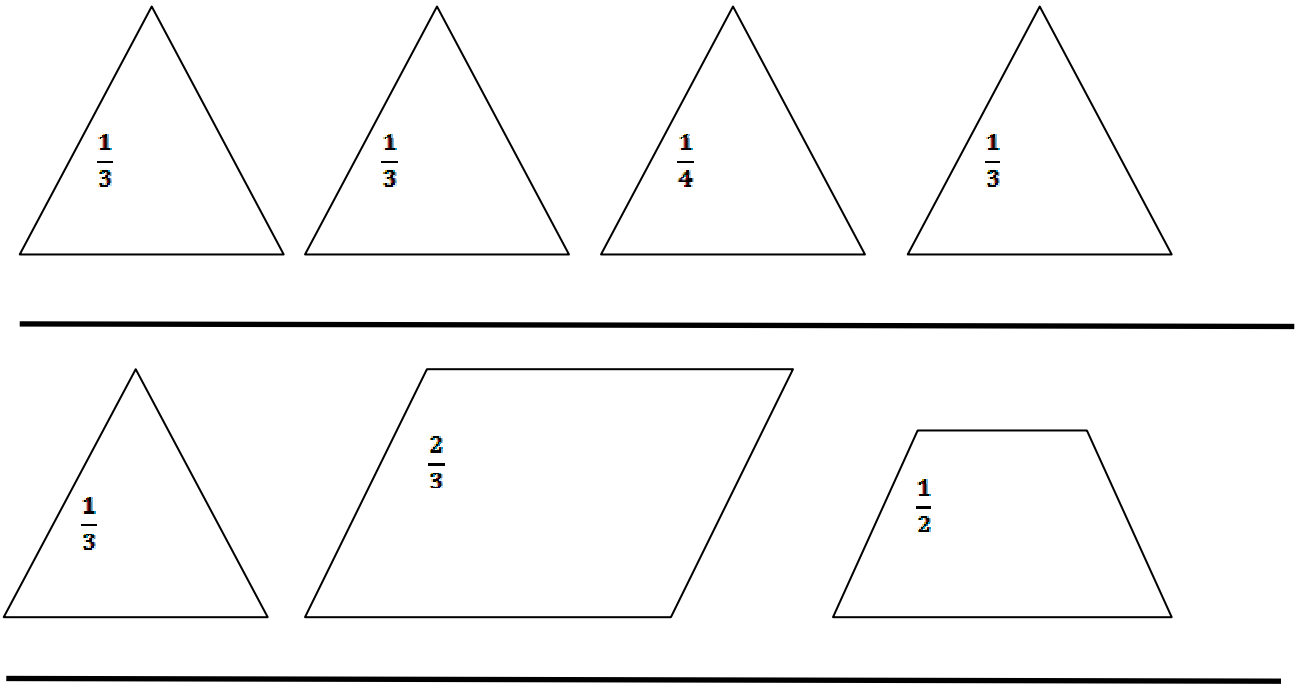
Name: _____ Date: _____

Make One Whole

Use your pattern blocks to find a whole. Color the fractions in each section that make a whole.



You will not need pattern blocks for this part. Color the fractions in each section that make a whole.



Mathematics Alignment Lesson
Grade 2 Quarter 4 Day 150

SCOS Objective(s)

1.02 Use area or region models and set models of fractions to explore part-whole relationships in context.
1.02a Represent fractions (halves, thirds, fourths) concretely and symbolically.
1.02b Compare fractions (halves, thirds, fourths) using models.
1.02c Make different representations of the same fraction.
1.02d Combine fractions to describe parts of a whole.

Materials Needed:

- Blackline Masters
  "Make One Third"
- Color Tiles- for each student – 10 of each color
- One Inch Tile Graphing Paper

Homework Reference Day 150

None Referenced

Assessment Reference Day 150

None Referenced

Alignment Lesson
Make One Third

1. On the overhead, model how to find one-half and one-fourth of 12 tiles with two different colored tiles. Show students how to use the denominator of the fraction to know how many columns to make (make 4 columns for one-fourths).

2. Distribute color tiles to each student and Blackline Master *"Make One Third"*. Students will use their color tiles to solve the problems.

3. Students can make up one problem of their own for making a fourth and trade with a partner.

Source: Teacher Created, Adapted from Indicators

Vocabulary

None Referenced

Name: _____ Date: _____

Make One Third

1) Use 12 tiles. Make $\frac{1}{3}$ of them red. Make $\frac{2}{3}$ of them blue. Color the tiles here.

2) Use 15 tiles. Make $\frac{1}{3}$ of the tiles green. Make $\frac{1}{3}$ of the tiles blue. You can choose the color for the other third. Trace and color your tiles on the attached One Inch Tile Graphing Paper.

3) Use 18 tiles. Make 2/3 of them yellow. You can choose the color for the rest of the tiles. Trace and color your tiles on the attached One Inch Tile Graphing Paper.

4) $\frac{1}{3}$ of your tiles are red. $\frac{1}{3}$ of your tiles are blue. $\frac{1}{3}$ of your tiles are yellow. You have 4 blue tiles. How many tiles do you have altogether?

Make One Third – Answer Key

1) Use 12 tiles. Make $\frac{1}{3}$ of them red. Make $\frac{2}{3}$ of them blue. Color the tiles here.

red	**blue**	**blue**
red	**blue**	**blue**
red	blue	blue
red	blue	blue

2) Use 15 tiles. Make $\frac{1}{3}$ of the tiles green. Make $\frac{1}{3}$ of the tiles blue. You can choose the color for the other third. Trace and color your tiles on the attached One Inch Tile Graphing Paper. ***5 tiles will be green, 5 will be blue and 5 will be another color***

3) Use 18 tiles. Make 2/3 of them yellow. You can choose the color for the rest of the tiles. Trace and color your tiles on the attached One Inch Tile Graphing Paper. ***12 will be yellow, 6 will be another color***

4) $\frac{1}{3}$ of your tiles are red. $\frac{1}{3}$ of your tiles are blue. $\frac{1}{3}$ of your tiles are yellow. You have 4 blue tiles. How many tiles do you have altogether?
12 tiles altogether

Mathematics Alignment Lesson
Grade 2 Quarter 4 Day 151

SCOS Objective(s)

1.02 Use area or region models and set models of fractions to explore part-whole relationships in context.
1.02a Represent fractions (halves, thirds, fourths) concretely and symbolically.
1.02b Compare fractions (halves, thirds, fourths) using models.
1.02c Make different representations of the same fraction.
1.02d Combine fractions to describe parts of a whole.

Materials Needed:

- Transparency *"Pattern Block Creature"*
- Blackline Master- *"Figure It Out"*
- Pattern blocks for each student

Homework Reference Day 151
None Referenced

Assessment Reference Day 151
None Referenced

Alignment Lesson
Pattern Block Creature

1. Display Transparency *"Pattern Block Creature"*. Students will use pattern blocks and follow the rules to create a creature with different fractional parts. Students can trace and draw their creature on grid paper and then write rules of their own to trade with a partner.

2. Distribute Blackline Master *"Figure it Out"*. Students will work in pairs or small groups to solve the problem and can use various manipulatives to help them solve. Read through the problems before students solve.

Source: Teacher Created, Adapted from Indicators,

Vocabulary
None Referenced

Pattern Block Creature

Use your pattern blocks. Make a creature that follows these rules:

$\frac{1}{2}$ of the blocks must be green.

$\frac{1}{3}$ of the blocks must be yellow.

After you make your creature, draw it on your grid paper. Then you can make up your own rules and have a partner make a creature.

Name: _____ Date: _____

Figure It Out

1. Justin and Chris have a candy bar to share. Justin wants to cut the candy bar in half so he and Chris can each have an equal sized piece. Chris wants to cut it into six pieces so he and Justin can each have 3 pieces. Who will get more of the candy bar each way? Use pictures and words to show your work and solve.

2. Allison and Meghan are at the donut shop. There are eight glazed donuts. The girls want to share them equally. Allison wants each girl to get four donuts. Meghan wants each girl to get $\frac{2}{4}$ of the donuts. Who will get more donuts each way? Use pictures and words to show your work and solve.

Mathematics Alignment Lesson
Grade 2 Quarter 4 Day 155

SCOS Objective(s)

3.02 Describe the change in attributes as two- and three- dimensional figures are cut and rearranged.

Materials Needed:

- Blackline Masters- *"Rearranging Shapes"*, *"Triangle & Trapaziod"*, *"Building Creation"*
- Examples of various two- and three-dimensional figures
- Licorice strips (at least one/student)
- Sponges (at least one/student)
- Scissors
- Glue

Homework Reference Day 155
None Referenced

Assessment Reference Day 155
None Referenced

Alignment Lesson
Spongy Shapes!

1. Begin a discussion to review the names and attributes of two- and three-dimensional figures. Invite students to share what they know as you hold up various figures.

2. Explain to the class that today that are going to explore what happens to geometric figures when they are cut and rearranged. Provide students with a copy Blackline masters *"Triangle & Trapziod"*, paper shapes, licorice strips (cylinders) and sponges (rectangular prisms). Have students cut out the triangle and the trapezoid. (To save time you may want to have a parent volunteer complete this a head of time)

3. Distribute Blackline Master, *"Rearranging Shapes"*. Students will identify each figure by writing the names above the picture on their paper copy. Afterward, they should explore the figures by cutting them in half and rearranging them. On the paper, students should draw a picture of the new figure in the box next to the original one. (Remind students to only cut the figures once since the pieces will be used again in the lesson. They may need to cut the figures more during the next part of the lesson.)

4.For the final activity, explain to the students that they will be using their new figures to create a building. They should pay attention to how the figures' attributes change as they create a new object. Students may create their building on Blackline Master- *"Building Creation"*.

5. After the buildings have dried, invite students to share their new designs.

Note: Students may work in pairs to create their building.

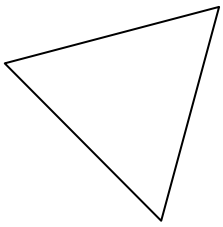
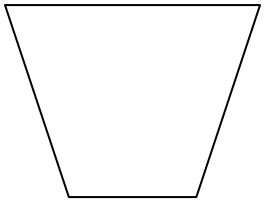
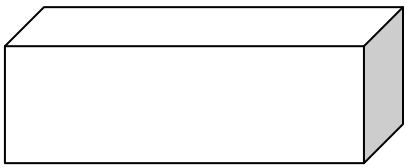
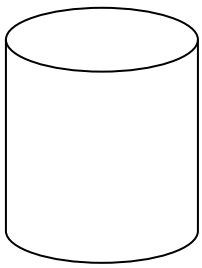
Source: Teacher Created Materials

Vocabulary

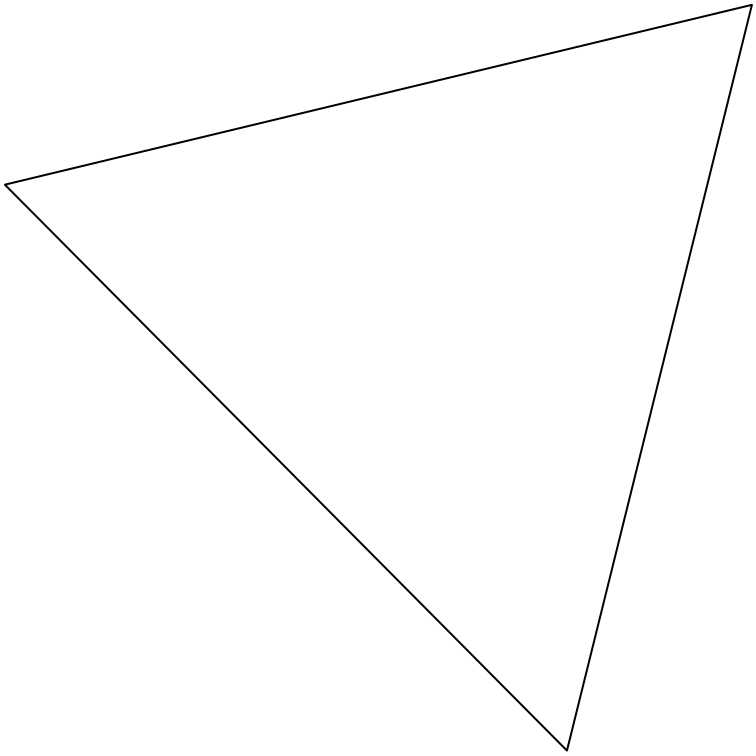
Square
Triangle
Circle
Oval
Semi-circle
Trapezoid
Parallelogram\
Rectangular Prism
Cone
Cylinder
Triangular Prism

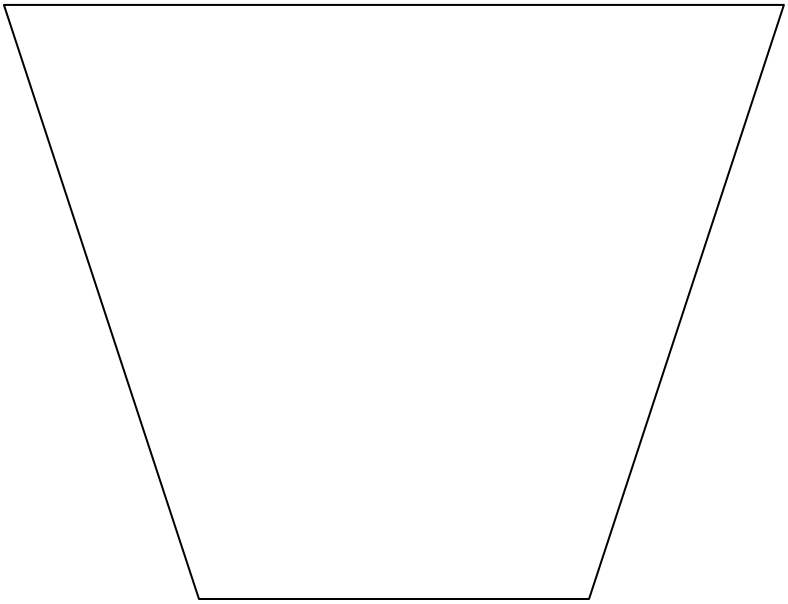
Name: _____ Date: _____

Rearranging Shapes

_____ 	
_____ 	
_____ 	
_____ 	

Triangle & Trapaziod





BUILDING CREATION

Mathematics Alignment Lesson
Grade 2 Quarter 4 Day 160

SCOS Objective(s)

3.03 Identify and make:
3.03a Symmetric figures.
3.03b Congruent figures.

Materials Needed:

- Transparency/ Blackline Master- *"Congruent Shapes"*
- Blackline Master- *"Shapes with Symmetry"*
- Cardstock (Teacher Only)- *"Symmetry Example I", "Symmetry" "Example II", "Symmetry Non-Example I", "Congruent Example I", "Congruent Example II"*
- Paper for students to glue shapes folded to show line symmetry

Homework Reference Day 160

Blackline Master- *"Symmetrical Figures and Congruent Figures Homework"*

Assessment Reference Day 160

None referenced.

Alignment Lesson
Symmetry & Congruency All Around Us

1. Discuss symmetry by showing students a figure that has symmetry using Blackline Master *"Symmetry Example I"*. Fold the shape in half on the line of symmetry and tell students the figure has symmetry. Ask if students can figure out what symmetry means. Show students another example of a shape with line symmetry (Blackline Master *"Symmetry Example II"*). Guide students to come up with the meaning of symmetry. Discuss with students the definition of symmetry. Show a non-example (parallelogram) so students can visualize what it looks like to not have a line of symmetry (Blackline Master *"Symmetry Non-Example I"*).
2. Have students cut figures and fold them to show line symmetry from Blackline Master *"Shapes with Symmetry"*. Have discussions about whether the figures have only one line of symmetry or possibly more. Encourage students to fold figures to show all lines of symmetry. Glue, label, and identify the number of lines of symmetry for each figure.
3. Ask students to find objects in the room that they think have a line of symmetry. Allow students to share and discuss how they know the objects have line symmetry. Note that some objects may have more than one line of symmetry.
4. Show students two congruent figures (Blackline Master *"Congruent Example I"*). Tell students that the two shapes are congruent and discuss ideas for the meaning of congruent. Show two different congruent figures to help students refine a meaning for congruent (*Blackline Master "Congruent Example II"*).
5. Guide students to decide if shapes on Blackline Master *"Congruent Shapes"* are congruent as you model using a Transparency. Circle pairs of students that are congruent.
6. Review terms symmetry and congruent and review homework expectations.

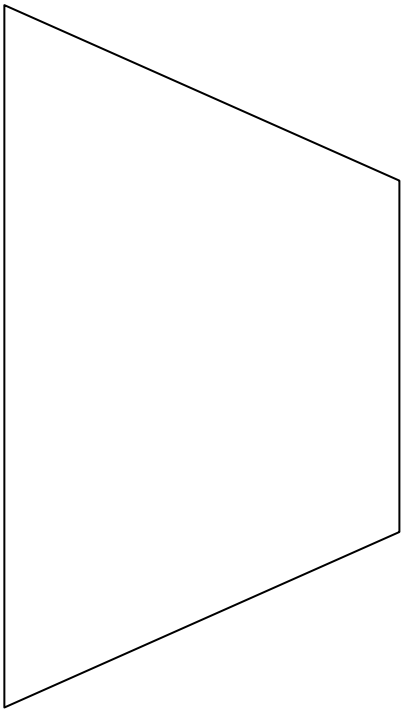
Source: Teacher Created

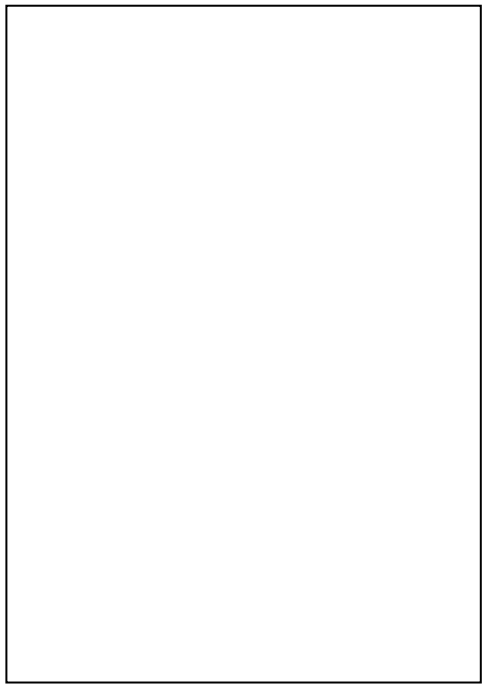
Vocabulary

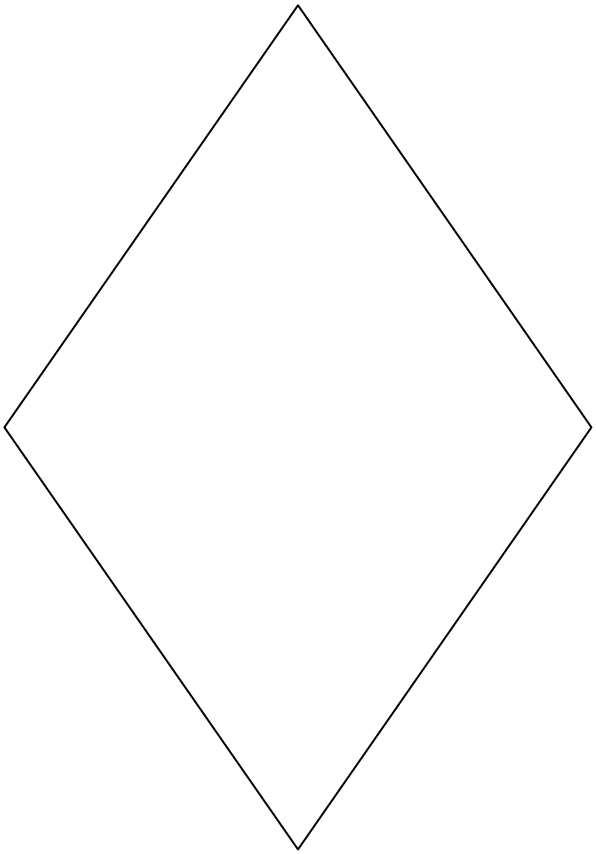
Symmetry- a figure has line symmetry if it can be folded so that the two halve match exactly.
Congruent- having the same size and the same shape

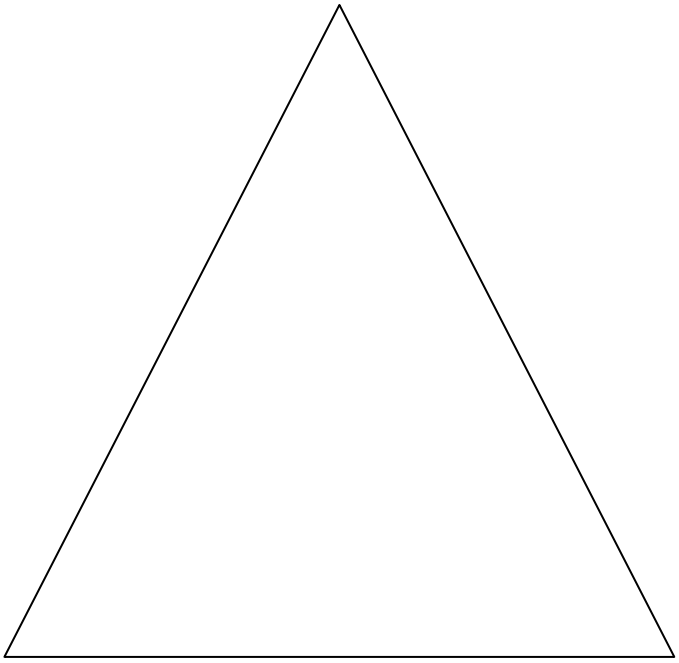
Name: _____ **Date:** _____

Shapes with Symmetry



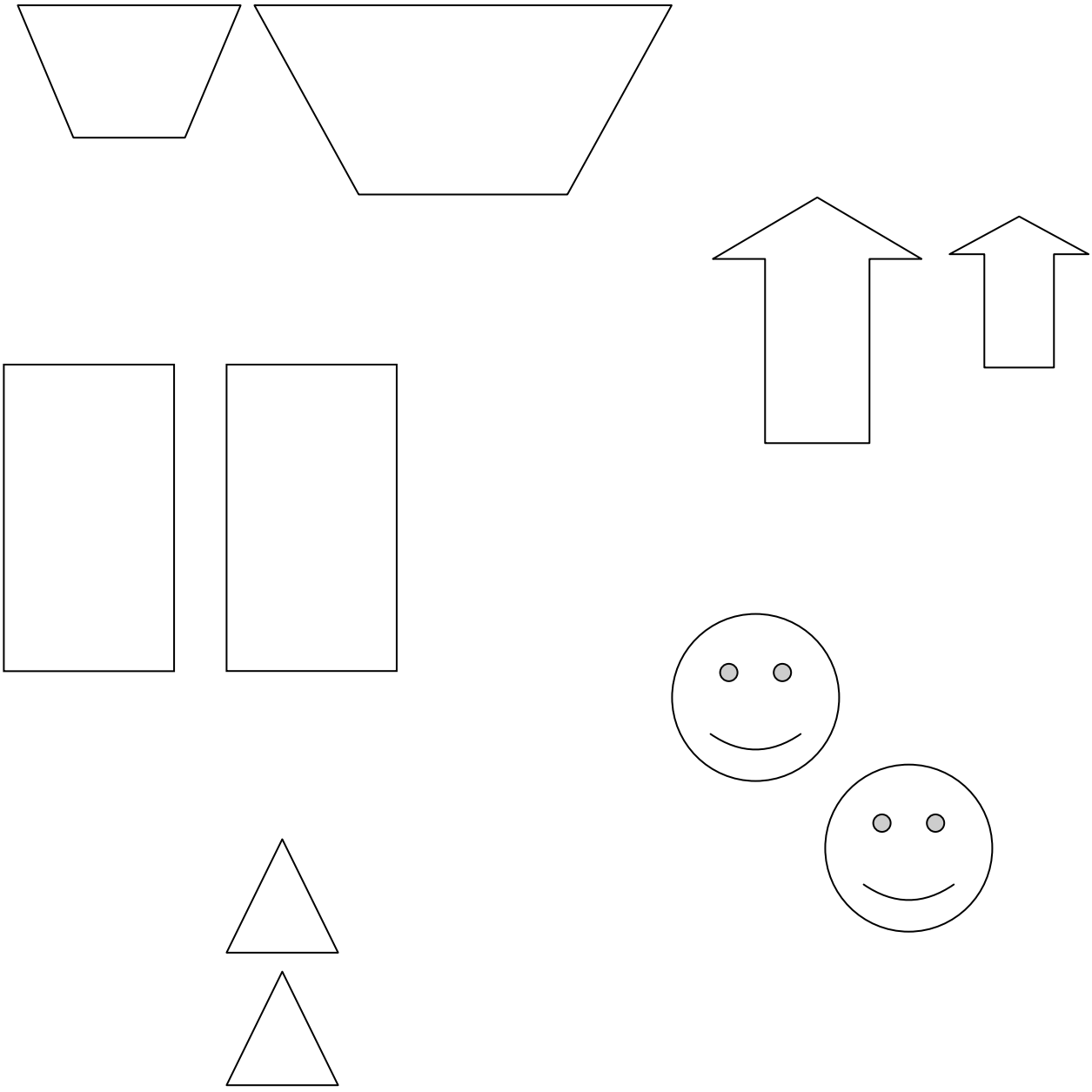






Congruent Figures

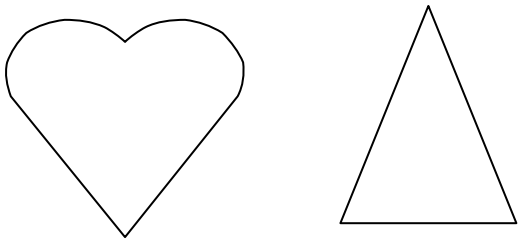
Circle the pairs of figures that are congruent.



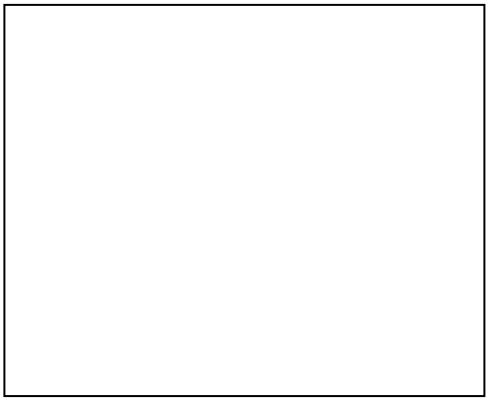
Two figures are congruent if they have the same _____ and _____.

Symmetrical Figures and Congruent Figures Homework

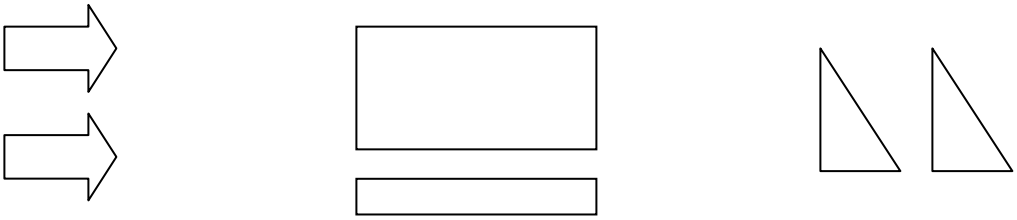
Draw one line of symmetry for each shape.



Draw a shape that has line symmetry.
Draw one line of symmetry for that shape and label it.

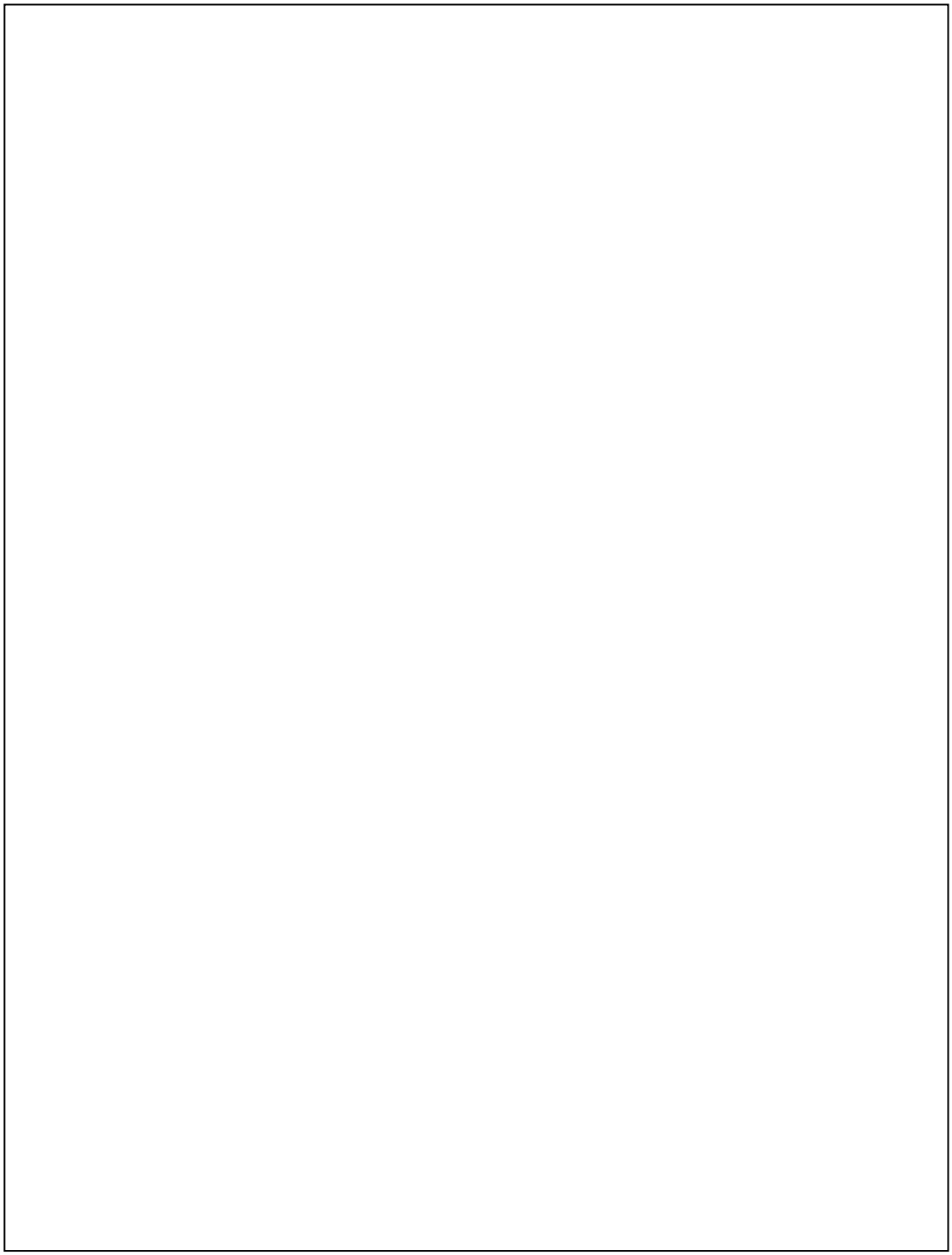


Circle the pairs of figures that are congruent.

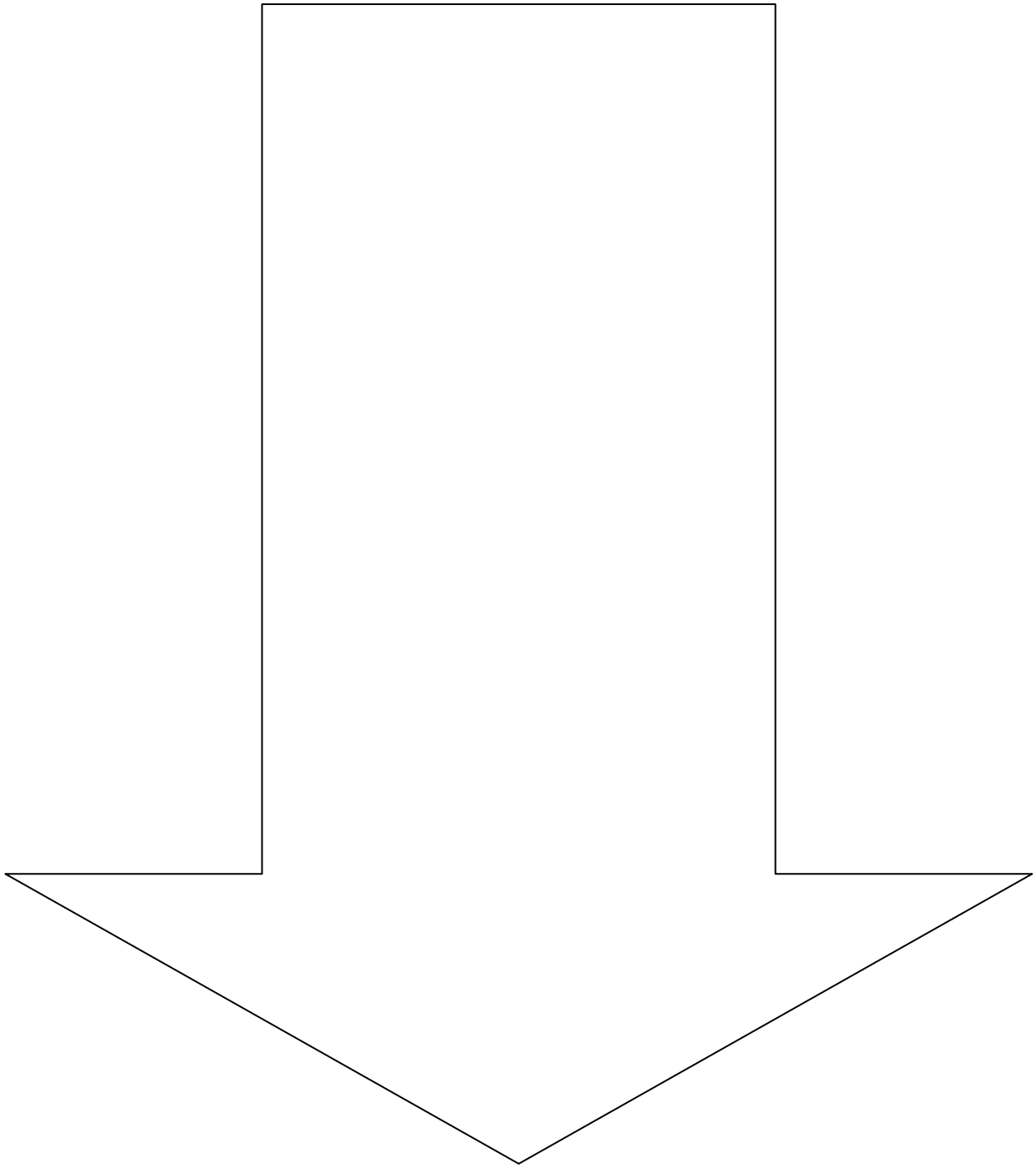


Two figures are congruent if they have the same _____ and _____.

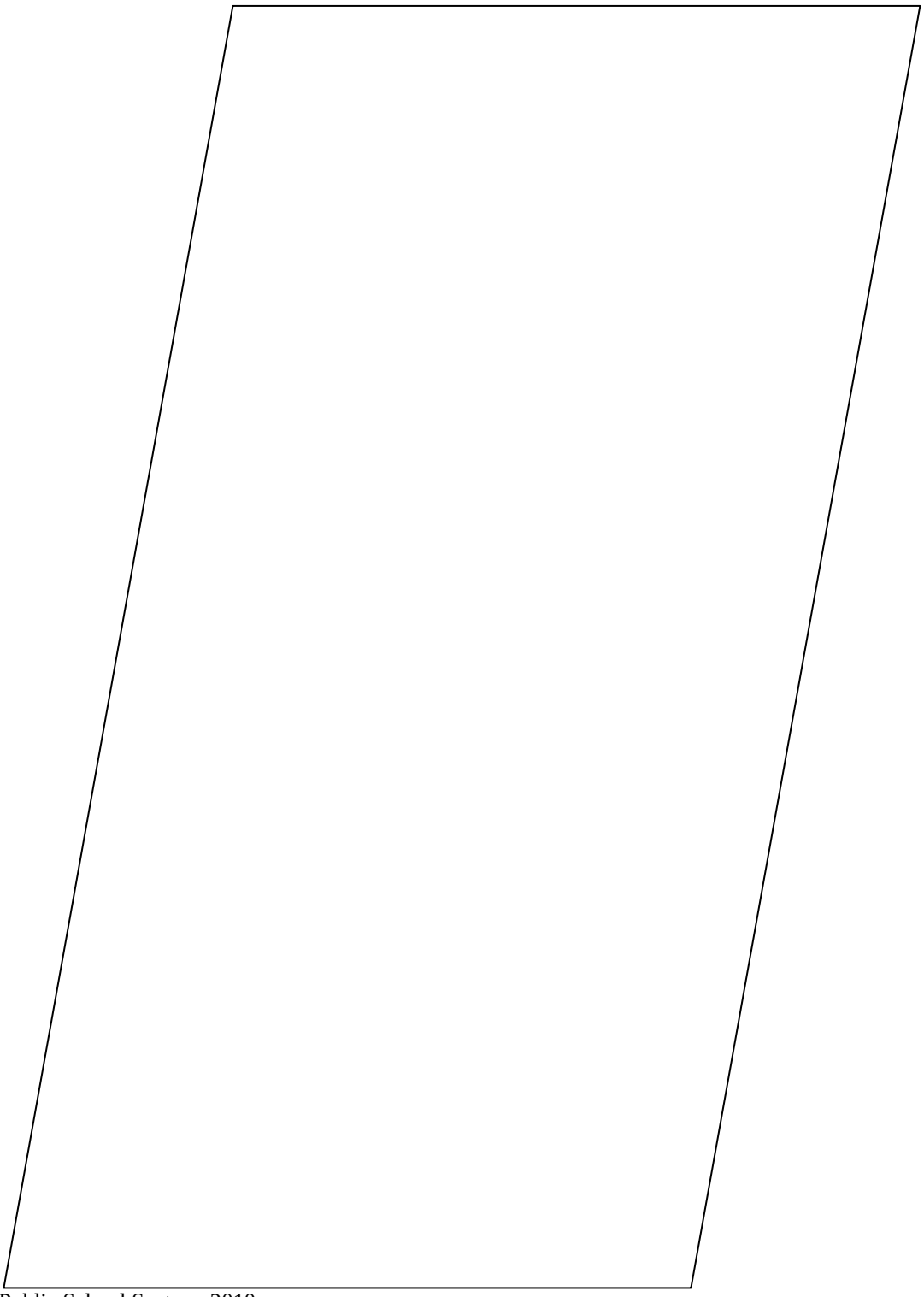
Symmetry Example I (Cardstock)



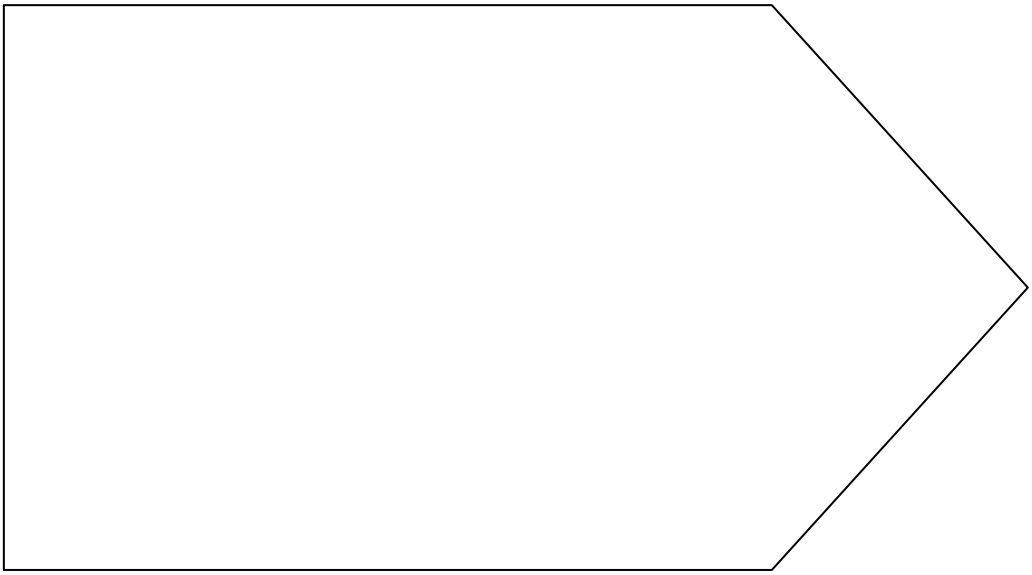
Symmetry Example II (Cardstock)

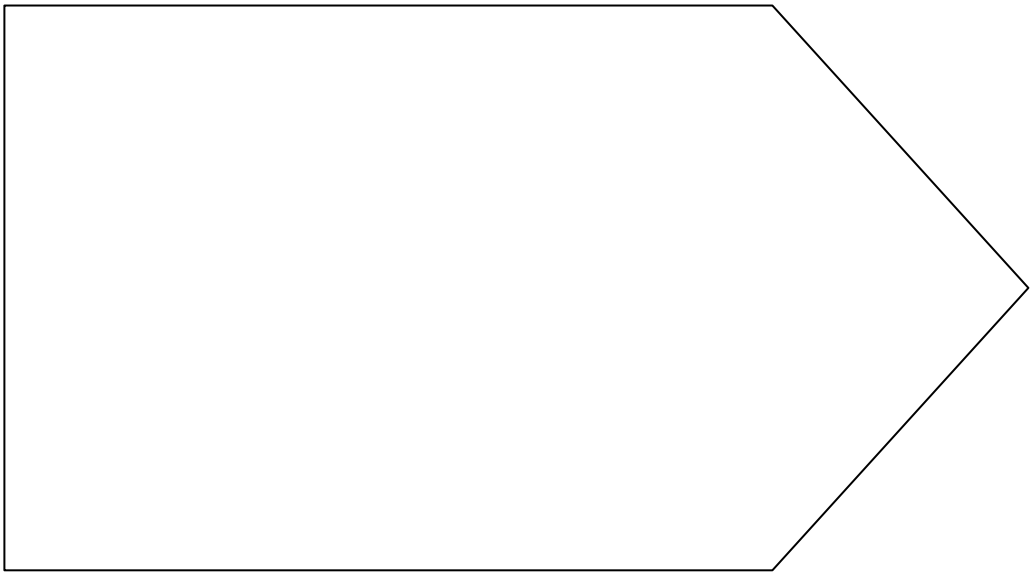


Symmetry Non-Example I (Cardstock)

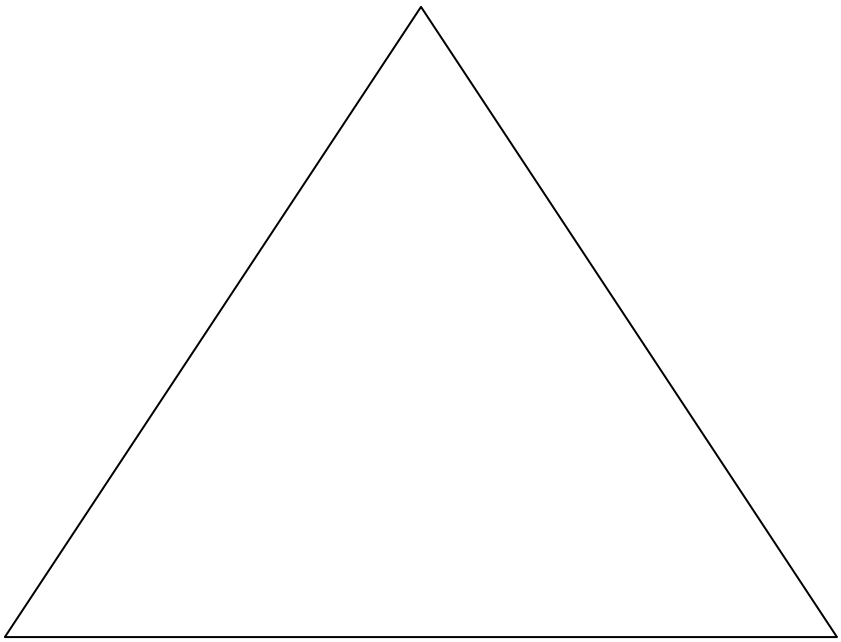


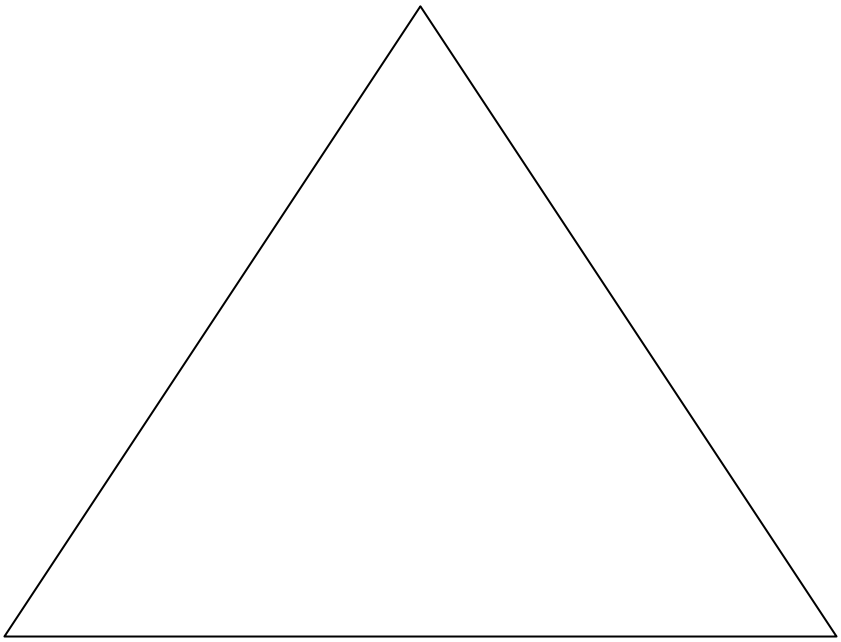
Congruent Example I (Cardstock)





Congruent Example II (Cardstock)





Mathematics Alignment Lesson
Grade 2 Quarter 4 Day 161

SCOS Objective(s)

3.03 Identify and make:
3.03a Symmetric figures.
3.03b Congruent figures.

Materials Needed:

- Scrap magazines
- Scissors
- Glue
- Poster Board or Butcher Paper

Homework Reference Day 161

- Blackline Master- *"Teach Your Friend About Symmetry"*

Assessment Reference Day 161

- Blackline Master- *"Symmetry and Congruent Figures In OurWorld- Journal Prompt"*

Alignment Lesson
Symmetrical and Congruent Figures In Our World

1. Review terms *symmetry* and *congruent.* Have students explain how they know a figure has symmetry. Remind students that a figure has line symmetry when it can be folded and the halves match exactly. Review figures mentioned in the previous lesson as examples. Identify and remind students of non-examples and what makes them non-examples.
2. Ask students to define congruent guiding them to state that shapes are congruent if they have the same size and same shape. Have students generate a list of items that are congruent to each other around the classroom (identical computer screens, identical textbooks, etc.)
3. Have students draw or cut figures from a magazine that contain one or more lines of symmetry. Students need to identify the total number of lines of symmetry found on each figure. Students cut out their shape and apply to poster labeled *Symmetrical Figures* along with the definition.
4. Facilitate students as they fold a paper in half and draw a figure on one half. Students will then cut it out, which will give students 2 congruent shapes. Have students note why the shapes are congruent.
5. Help students glue all congruent figures on poster board or butcher paper. The teacher should write the title Congruent Figures and the definition at the top of the poster board beforehand.
6. Complete, *"Symmetry and Congruent Figures In Our World- Journal Prompt"* as an assessment: How do you know if 2 figures are congruent? Explain and draw an example.

Note: Place both Symmetrical Figures and Congruent Figures posters in the room for future reference.

Source: Teacher Created

Vocabulary

Symmetry- A figure has line symmetry if it can be folded so that the two halves match exactly.
Congruent- Having the same size and the same shape.

Name: _____ Date: _____

Symmetrical and Congruent Figures - Journal Prompt

How do you know if two figures are congruent? Explain and draw an example.

Two figures are congruent if _____

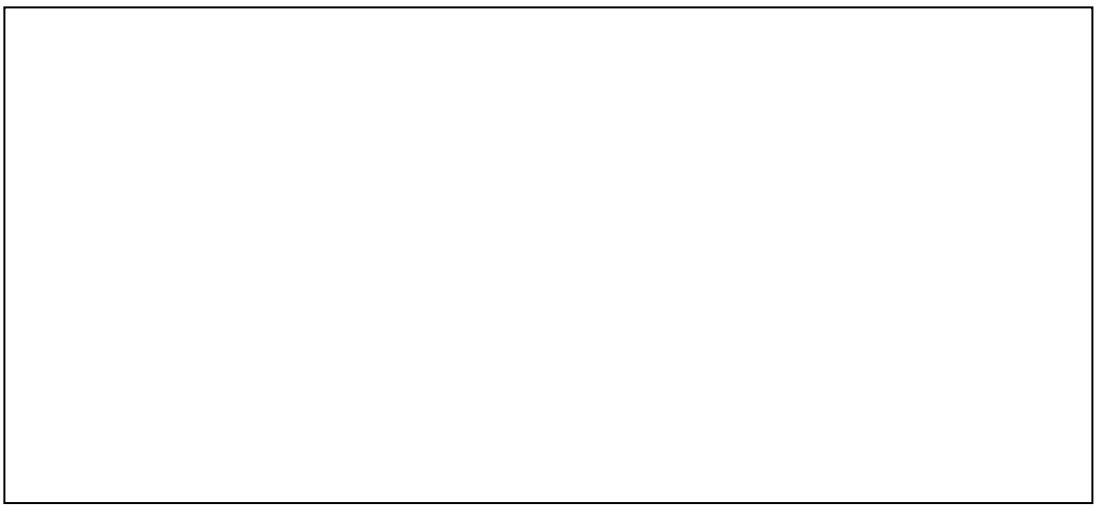
_____

_____

_____

_____.

These two shapes are congruent.



Teach Your Friend About Symmetry!

Write a letter to a friend explaining how to find out if a shape has symmetry. Draw a shape and the line of symmetry as an example for your friend.

Dear _____,

A shape has symmetry if _____

_____

_____

_____.

This shape has symmetry.

Your friend,

_____

Mathematics Alignment Lesson
Grade 2 Quarter 4 Day 164

SCOS Objective(s)

4.02 Conduct simple probability experiments; describe the results and make predictions.

Materials Needed:

- Transparency/Blackline Master- *"Marbles Frequency Chart"*
- 4-5 clear jars (one jar per group of students)
- Marbles (The following will be needed for each group)
  - 6 red marbles
  - 5 green marbles
  - 8 blue marbles
  - 3 yellow marbles

  (The number of colors can vary as long as there are the same number of marbles and colors for each group.)

Homework Reference Day 164

None Referenced

Assessment Reference Day 164

None Referenced

Alignment Lesson

Marbles Mania: A Lesson on Probability

1. Divide the class into groups of 4-5 students. Provide each group with a jar of marbles that contains 6 red, 5 green, 8 blue and 3 yellow. DO NOT tell the students how many of each color are in the jars.

2. Ask each group to predict which marble had the chance of being picked most often and least often. Invite students to share their reasoning.

3. Provide each student with a copy of Transparency/Blackline Master, *"Marbles Frequency Chart"*. This will be used to collect data as their group picks marbles. Closing their eyes, students should take turns selecting a marble from the jar. Every student should place an X in the box on their chart after each marble is picked. Model as needed using Transparency, *"Marbles Frequency Chart"*. The marble should be placed back into the jar before the next group member selects a marble. Each group member should have at least 5 turns at picking a marble for a total of 20-25 group pickings.

4. After each group has finished collecting their data, begin a discussion about the results. Invite groups of students to explain which color was picked more often and which was picked least often. Why do the students think this happened?

5. Next, invite the students to count the number of each color of marbles and ask them if they found a correlation between their data results and the number of each color.

Was there a greater probability the students to choose a red marble or a green marble? What about a blue marble or a yellow marble?

6. Explain to the class that probability is determined by the following:

Probably of an event= $\frac{\text{The number of ways Event A can occur}}{\text{The total number of possible outcomes}}$

Example: Probability of choosing Red= 6/22
Probability of choosing Green = 5/22
Probability of choosing Blue = 8/22
Probability of choosing Yellow = 3/22

Knowing this information, invite students to think about which color was most likely to be chosen and which was least likely. How does this match with their predictions from the beginning of the lesson?

Source: modified from mathgoodies.com, teacher-created

Vocabulary

Probability
Most likely
Least likely
Most often
Data
Event
Least often

Name: _____ Date: _____

Marbles Frequency Chart

25				
24				
23				
22				
21				
20				
19				
18				
17				
16				
15				
14				
13				
12				
11				
10				
9				
8				
7				
6				
5				
4				
3				
2				
1				
	Red	**Green**	**Blue**	**Yellow**

Mathematics Alignment Lesson
Grade 2 Quarter 4 Day 167

SCOS Objective(s)

1.03 Create, model, and solve problems that involve addition, subtraction, equal grouping, and division into halves, thirds and fourths (record in fraction form).

Materials Needed:

- Transparency *"What do you Think?"*
- Transparency/Blackline *"Division Dilemma"*
- Chart Paper & Markers
- Counters
- Bags or Containers

Homework Reference Day 167

None referenced

Assessment Reference Day 167

None referenced

Alignment Lesson
Division Dilemma

1. Students will need to be in small groups (3-4 per group). Display Transparency *"What Do You Think?"*. Read the problem aloud. Ask student groups to prepare a solution to the problem on chart paper to share with the rest of the class. Encourage students to find as many possible teams and to record number sentences to model a possible answer.

   For example: 5 boys + 3 girls = 8 players

2. Have student groups share their solutions. Look for similarities and differences among the responses. Ask questions to promote thinking about the problem in a different way. Encourage students to ask questions and challenge other groups.

3. Each student will need a copy of Transparency/Blackline Master *"Division Dilemma"*. Each student group will need a bag of counters. Use a small manipulative such as two color counters or beans. If you would like for students to have a larger number to divide equally, you may ask that each member of the group pulls from the bag and count that total to use.

4. In small groups, have students take turns pulling out counters from the bag to complete the first column, "Total Number of Counters". Students should work together to complete the rest of the chart. Repeat with sharing equally among 3 groups and 4 groups. The blank column should remain blank. Students will complete this portion of each chart on Day 129.

Source: Week by Week Essentials & Classroom Strategies

Vocabulary

Halves
Thirds
Fourths
Equal Grouping
Divide
Addition

What Do You Think?

The students wanted to play ball. Each team needs eight players. There are 11 boys and 13 girls in the class. How many teams can be made from the students in the class?

Working in small groups, Write about your solution on chart paper.

Division Dilemma

Directions: *Reach into a container and pull out a handful of counters. Count and record the total number of counters you pulled. Complete Row A by dividing into 2 groups. Draw a new handful for row B and repeat. Complete the chart.*

Leave the last column blank….You will complete this later.

	Total Number of Counters	How many counters will each group have when sharing equally between *2 groups*?	How many counters are left over?	
A				
B				
C				
D				
E				
F				
G				
H				
I				

Division Dilemma….continued

Copy your "Total Number of Counters" column from the first chart. Complete each row by dividing into 3 groups.

Leave the last column blank….You will complete this later.

	Total Number of Counters	How many counters will each group have when sharing equally among *3 groups*?	How many counters are left over?	
A				
B				
C				
D				
E				
F				
G				
H				
I				

Division Dilemma….continued

Copy your "Total Number of Counters" column from the first chart. Complete each row by dividing into 4 groups.

Leave the last column blank….You will complete this later.

	Total Number of Counters	How many counters will each group have when sharing equally among *4 groups*?	How many counters are left over?	
A				
B				
C				
D				
E				
F				
G				
H				
I				