Name: _____ Date: _____

Spin and Round
Recording Sheet

Directions: Round the six-digit numbers and record them on your sheet.

Date: _____

Name: _____

My Wins

1. Round to nearest _____
2. Round to nearest _____
3. Round to nearest _____
4. Round to nearest _____
5. Round to nearest _____
6. Round to nearest _____
7. Round to nearest _____
8. Round to nearest _____

"What's the Difference?"

Players: 2 players

Materials: "What's the Difference?" spinner
                Ace - 9 cards
                Optional - Student-made place value mat – Cut 11 x 17-inch
                paper in half lengthwise to create two mats. Fold mats in
                half widthwise and then into thirds to make 6 columns.
                Use 5 of the columns.

Objective: Find the sum or difference that best matches the target.

How to Play:
- Player spins to determine the target of the game.
- Players take turns. On your turn:
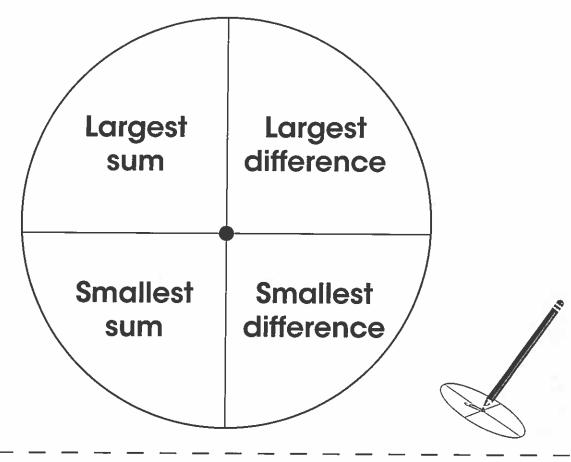   - Draw and place five cards, one card at a time, to make a 5-digit number.
    - Place each card in a different place value position.
    - Once you place a card on the place value mat, it cannot be moved.
- On your next turn, draw a sixth card. You may use it to replace one of the cards already placed, or you may discard it.
- On your next turn, repeat these steps to make the second 5-digit number.
- Finally, both players perform the operation indicated on the spinner target. When subtracting, remember to subtract the smaller number from the larger number.
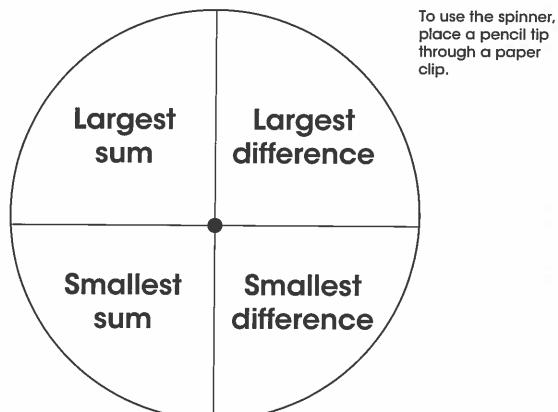- Check your work. The player with the answer closest to the target wins the round.

Variations:
- More Support - Start with a place value mat that only goes to hundreds or thousands.
- More challenge (above grade level)- Make six-digit numbers.
- Advanced Challenge (above grade level) - Make decimal numbers that include tenths and hundredths.

4.NBT.4

"What's the Difference" Spinner (Game 4-3)

Largest sum	Largest difference
Smallest sum	Smallest difference

To use the spinner, place a pencil tip through a paper clip.

Largest sum	Largest difference
Smallest sum	Smallest difference

Multiplication Master

Players: 2 players

Materials: Ace – 9 Cards; Coin to Flip

Objective:
- Use your cards to create a multiplication problem with the smallest or largest product.

How to Play:

- Flip a coin to determine the object of the game.
    - Heads: Make the largest product.
    - Tails: Make the smallest product.

- Players take turns drawing 4 cards.   On your turn:
    - Create a 1-digit x 3-digit multiplication problem to match the object of the game.
    - Find the product and clearly record your work.

- The player who makes the larger (or smaller) product wins the round.

- Find the difference between your product and the other player's product and win that many points.

Variations:
- Three-Card Version: Create a 1-digit x 2-digit multiplication problem to match the object of the game. Find the product.

- Five-Card Version: Create a 1-digit x 4-digit multiplication problem to match the object of the game. Find the product.

4.NBT.5

Playing the Dozens

Playing the Dozens is a game for two or more players. Each player needs a separate game board like the one below, and a die. Select a target number such as fifteen, and place it in the target box.

Now roll your die. Divide the target number by the number on the die. For example, if you rolled a 6, you would divide $15 \div 6$ for a quotient of 2, and a remainder of 3. Go to your game board, and cross out three boxes. This represents the remainder. Alternate turns until a player eliminates all 15 boxes. The first player to do so wins.

Game Board

Target Box $\longrightarrow$

15

Target
Box

Target
Box

Target
Box

Target
Box

Remainders Race

Topic: Division with remainders

Object: Reach the finish first.

Groups: 2 to 4 players

Materials per group

- *Remainders Race* Gameboard,
- Markers (different color for each player)
- Paper clip and pencil for spinner

Directions

1. Each player begins by placing a marker on START (43). Numbers on the path are dividends. The number spun becomes the divisor.

2. The first player spins to determine a divisor for 43. The player then completes the division, states the resulting division problem with the answer, and moves ahead the number of spaces equal to the remainder.

   Example: If 7 is spun, the player says, "43 divided by 7 equals 6 with a remainder of 1" and moves one space.

3. If a division problem yields a remainder of zero, the player is unable to move ahead for that turn.

4. Players alternate turns until one player reaches or goes beyond FINISH.
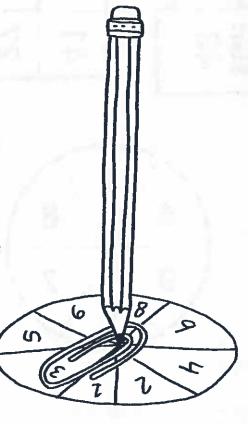
Making Connections

Promote reflection and make mathematical connections by asking:

- Which numbers did you prefer to spin? Please explain.
- Which numbers did you prefer to land on? Why?

Tip *To increase students' operation sense, allow students to select their divisor choice instead of spinning.*

Remainders Race

46	31	20
15		37
29		18
47		24
22		35
30		44
Start 43	27	41

49	24	45
28		57
19		21
42		50
31		34
23		48
51	16	29

Finish 36	47	19
		26
		41
		35
		39
		51
		33
		23
		17
40	40	43

44 32 25

Gameboard

Spinner: 5, 6, 7, 8, 9, 4

Ten

Objectives

reading decimals
adding decimals
comparing decimals
reasoning
probability concepts

Materials

two – three dice
paper and pencil

Procedure:

The object of this game is to get a score as close to ten as possible without going over. Give each player a pair of dice, a note pad, and a pencil. **All players should roll their dice at the same time.** The numbers on the dice will be used as digits to form a two digit decimal fraction. For example, if a player rolls a 6, and a 3, he could form 6.3, 3.6, .63, or .36. No number over ten may be created. The player selects the number he wishes, and records it on his note pad. He rolls a second time, and adds the new number onto the first.

The players may chose to stop after any roll, but once a player stops, he may not resume. **The players may not roll more than four times.** A player loses automatically, if his score goes over ten. Add all of the decimal fractions to determine the winner. The player closest to ten without exceeding it wins. At the end of the game, be sure to have the players read each decimal they form.
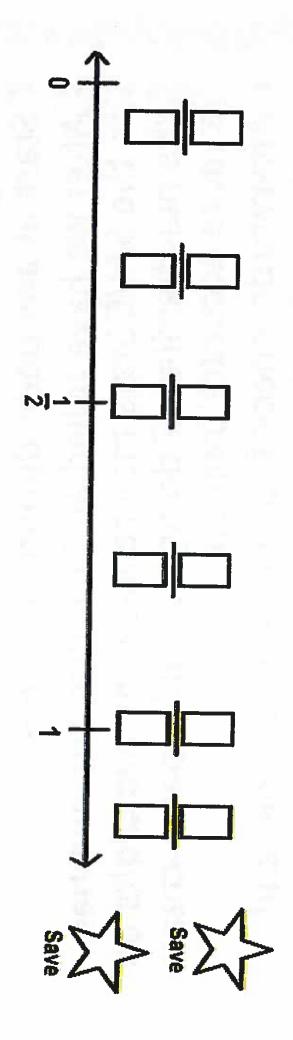
Variation:
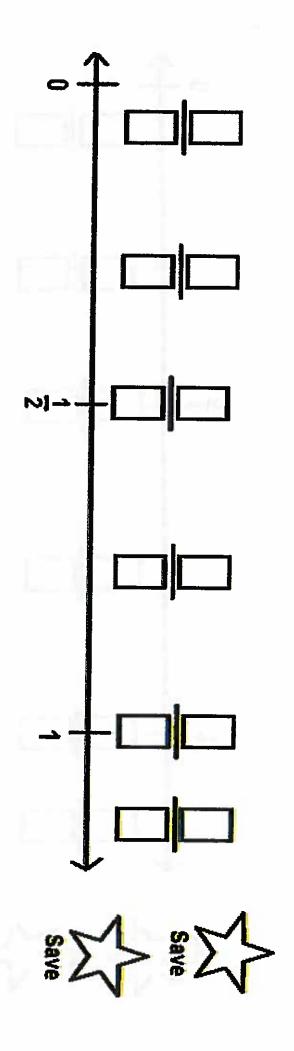
Have the students play against the teacher. Play the game right along with your students. Record your numbers on a board. Add your decimals on the display board, so that the students can compare their results with yours, and determine when they want/need to stop rolling. In this variation, a player wins when his decimal fraction is greater than the teacher's decimal, but not over ten. Play with three dice to achieve decimal fractions to the thousandths.

5.NBT.7

Rolling Something Close
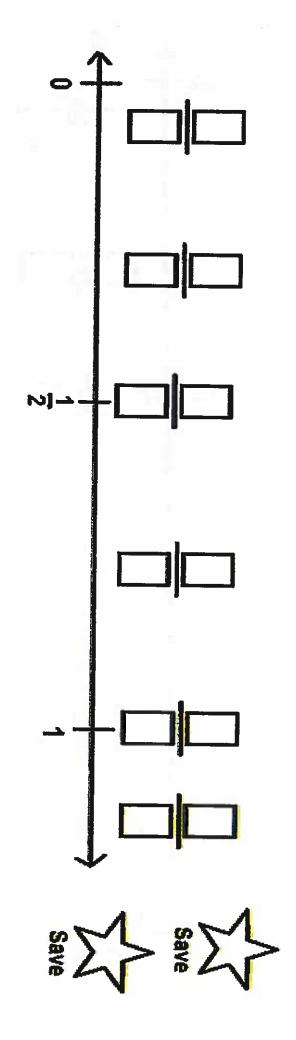
- Each time a digit is rolled, place it in one of the boxes.

- A digit that is rolled may be placed in the SAVE Stars at any point during the game.

- After we have rolled all 14 digits, the numbers in the SAVE Stars may replace any two digits on the number line IF doing so will help you create a more accurate fraction.

- Afterwards, check fractions with partner and circle any fraction you created on the number line that has the appropriate value.

NCTM presentation 2015, Alexander & Parnett

Rolling Something Close

Rolling Something Close

Rolling Something Close

$$0 \qquad \qquad \frac{1}{2} \qquad \qquad 1$$

Save

Save

Chippin'

Objectives

recognizing fractions as ratios
comparing fractions with like
and unlike denominators
expressing fractions in lowest
terms

Materials

50 two sided colored chips (red
and yellow)
two small cups

Procedure:

The game can only be played with two players. Give each team of two players 50 two sided colored chips, and a cup for each player. Each player places five chips in his cup, shakes them, and spills them onto the table. The players observe their chips, and give a fraction expressing the ratio of the red chips to the whole group. For example, if a player tosses two reds, and three yellows, his ratio is two out of five, or the fraction 2/5. The player with the greater fraction collects all ten chips as winnings. **Note**: Insist on having each player state orally the fraction displayed.

The players continue tossing chips in groups of five until all fifty chips have been used. The winner is the player with the most chips. Play several games.

Variations:

Change the base number of chips to 4, 6, or 8. Be sure the ratios are expressed orally, and in lowest terms.

Mix the cups up. Have one player toss four chips, and another eight. With this arrangement, the players will need to make comparisons of unlike fractions.

4.NF.2   3.NF.3

Close to 1

Players: 2 – 4 players

Materials: 3 dice

How to Play:

- The object of this game is to make a fraction as close to one as possible. Roll three dice, and use **just two** of them to create a fraction. One die is the numerator, and the second one is the denominator. Improper fractions are permitted.

- Compare the fractions. The player closest to one wins a point. Play several games.

3.NF.3

Finding Equivalent Fractions

Topic: Equivalent fractions

Object: Get four-in-a-row.

Groups: Pair players

Materials

- *Finding Equivalent Fractions* Gameboard,
- 2 number cubes (1–6)
- Markers

Directions

1. Taking turns, pairs roll the two number cubes and place them on the gameboard's fraction form. They place one number cube in the space for the numerator and the other number cube in the space for the denominator. The smaller of the two numbers rolled is placed in the numerator position. If a 5 is rolled, roll that die again.

2. If necessary, the pair simplifies the fraction.

3. After announcing the results, the pair covers that amount on their gameboard. Only one cell can be covered.

4. Pairs alternate turns, following this sequence. When the resulting new fraction is announced and no longer available to cover, the pair forfeits that turn.

5. Play continues until one pair has four-in-a-row, horizontally, vertically or diagonally.

Making Connections

Promote reflection and make mathematical connections by asking:

- How was it useful to work in pairs?
- What helped you simplify fractions to their lowest terms?
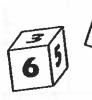
Tips *If preferred, or time is short, initially students can win with three-in-a-row.*

1	$\frac{2}{3}$	$\frac{1}{4}$	1	$\frac{1}{2}$
$\frac{2}{3}$	$\frac{1}{6}$	1	$\frac{1}{2}$	$\frac{3}{4}$
1	$\frac{1}{2}$	$\frac{2}{3}$	1	$\frac{1}{3}$
$\frac{1}{2}$	1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{6}$
$\frac{1}{3}$	$\frac{3}{4}$	1	$\frac{1}{2}$	$\frac{1}{4}$

Finding Equivalent Fractions

Numerator:

———————

Denominator:

1	$\frac{2}{3}$	$\frac{1}{4}$	1	$\frac{1}{2}$
$\frac{2}{3}$	$\frac{1}{6}$	1	$\frac{1}{2}$	$\frac{3}{4}$
1	$\frac{1}{2}$	$\frac{2}{3}$	1	$\frac{1}{3}$
$\frac{1}{2}$	1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{6}$
$\frac{1}{3}$	$\frac{3}{4}$	1	$\frac{1}{2}$	$\frac{1}{4}$

Domino Fractions PRACTICE and PLAY

Literacy Love Company

Domino Fraction War
Level 1

Domino Fraction War
Level 2

Name: _____

DOMINO Fractions!
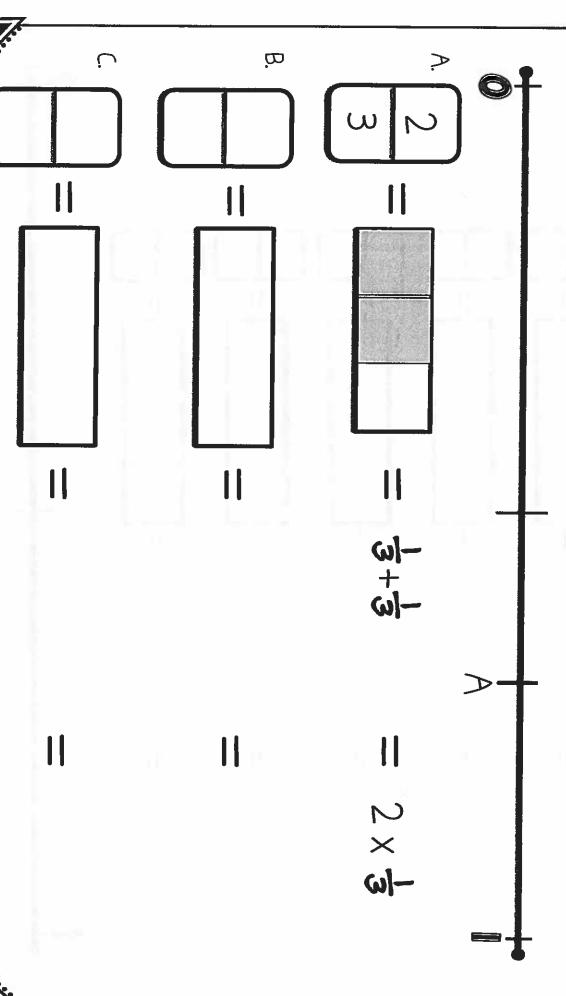
Drawing Fraction Models, Decomposing, and Plotting Fractions on a Number Line

Directions: Place all dominoes face down. Turn over a domino and write the fraction shown on the "domino" on this sheet. Draw a fraction model that matches the fraction. Then show the fraction two different ways: one addition and one multiplication. Use the letter of the fraction to plot the fraction on the number line. The first one is done for you.

A.

$\dfrac{2}{3}$ =   = $\dfrac{1}{3}+\dfrac{1}{3}$ = $2 \times \dfrac{1}{3}$

B. = = =

C. = = =

I

H

G

f.

E

D

Domino Fraction War

Level 1

Materials needed:

- Dominoes
- white boards, markers, and erasers

1. Place dominoes face down between the players.
2. Each player chooses a domino and turns it over. Once you choose a domino and turn it over, you cannot change dominoes.
3. Each domino represents a fraction. Make sure you are using proper fractions, not improper fractions.
4. Use your white boards to determine which fraction is larger. You may use fraction models, number lines, or equations.
5. The player with the larger fraction wins all the dominoes that were turned over.
6. Continue play until there are not enough dominoes for all players to turn one over.
7. The player with the most dominoes at the end of the rounds wins the game.

If you finish playing before the end of station time, play again. You may choose to play Domino Fraction War Level 2.

Domino Fraction War

Level 2

Materials needed:
- Dominoes
- white boards, markers, and erasers

1. Place dominoes face down between the players.
2. Each player chooses a domino and turns it over. Once you choose a domino and turn it over, you cannot change dominoes.
3. Each domino represents an <u>improper fraction.</u>
4. Use your white boards to <u>turn your fraction into a mixed number.</u>
5. All players compare their mixed numbers to determine who has the larger mixed number. Compare by changing fractions with uncommon denominators into fractions with common denominators. You may also use fraction models and/or number lines.
6. The player with the larger fraction wins all the dominoes that were turned over.
7. Continue play until there are not enough dominoes for all players to turn one over.
8. The player with the most dominoes at the end of the rounds wins the game.

If you finish playing before the end of station time, play again.

Fill It Up

Players: 2 players

Materials: 2 containers, dominoes.

How to Play:

- Give each player a small container.

- Turn a set of dominoes face down between two players, and ask the players to alternate turns selecting dominoes.

- If a domino selected can be shown as a fraction **greater** than one half, the player places it in his container.

- One side of the domino represents the numerator, and the other side is the denominator.

- Any domino selected which is **less** than one half is discarded. Continue taking turns until all dominoes have been drawn. The player whose cup contains the most dominoes wins.

- **No fractions greater than one may be used.**

Variations:

Use double nine dominoes to create fractions with larger denominators, and make the comparisons more difficult.

4.NF.2

My Pie

Players: 2 players

Materials:

- 20 chips of one color for each player
- My Pie Game Board
- 2 dice

Objective: A game designed to build the concepts of basic fractions
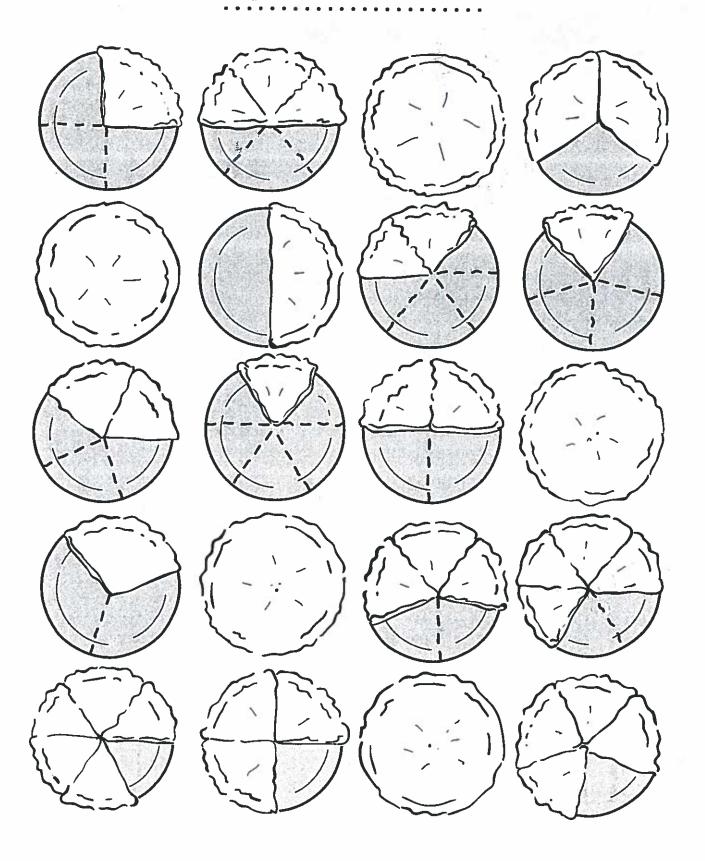
How to Play:

- Roll the dice and use the numbers to make a fraction (1 or less).
- Find the fraction on the My Pie game board. Claim the fraction by covering it with one of your chips.
- Players take turns rolling the dice, making fractions, and claiming fraction pies with chips.
- If a player rolls a fraction that is equal to 1, the player has a choice of which pie to claim.
- If a player rolls a fraction that is claimed by the other player, she may take the other player's chip and claim the pie with her own chip. Taken chips are eliminated from the game. If the player already claimed the pie, her turn is missed.
- The game is over when a player runs out of chips.
- The winner is the player with the most claimed pies on the game board.

Variation:

Use fraction circles to make each fraction that is rolled.

2.G.3   3.NF.3   3.NF.1   4.NF.1

My Pie Game Board

More than Half

Materials: One game sheet, one pair of dice, and two different colored crayons for each pair of players.

Object: This game is best played as a two-person game. The object of the game is to own more circles than one's opponent. A player owns a circle when **more than half** of it has been colored **with her color**.
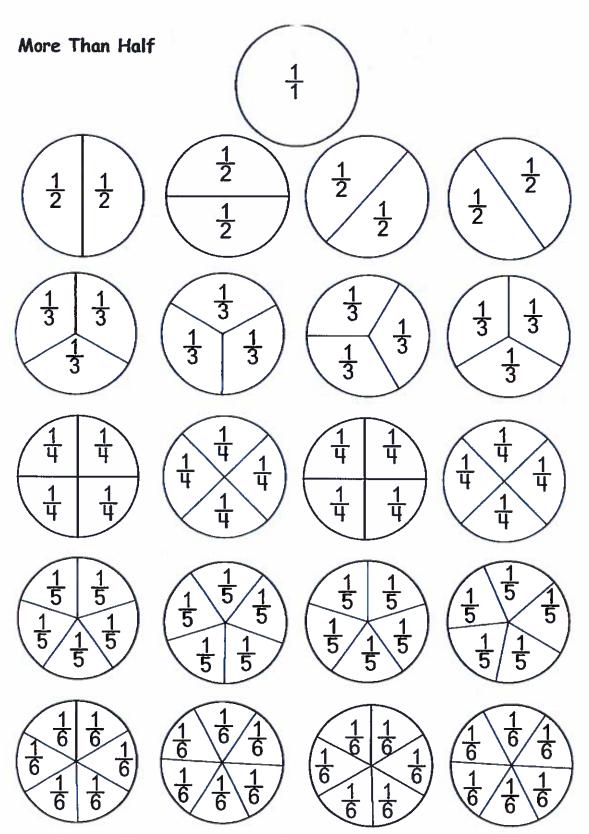
Directions for the Basic Game:

• Players roll one die to see who becomes "Player One".

• Player One rolls the pair of dice. The lower number represents the numerator, and the larger number represents the denominator. For example, if a 3 and a 5 are rolled, the number rolled is the fraction 3/5. Player One says "three fifths" and colors in three of the pieces that represent 1/5.

• Player Two then rolls the dice and colors in the pieces that represent her roll.

• The players take turns rolling the dice and naming and coloring each fraction that is rolled.

• Each player must use all of her roll. If she cannot use her whole roll, then she loses a turn.

• On each turn a player may color all of her roll on one circle, or split it among two or more circles.

• When a player has more than half of any circle in her color, then she puts her initials next to that circle. (This initialing makes counting circles at the end easier, but does not mean that blank parts of the circle can't be used when necessary to complete a person's roll. This, of course, does not affect ownership.)

• If a circle is colored equally by two players, each having half, then neither player may claim the circle. The circle is neutralized.

• Play continues until all circles have been claimed or neutralized, or when it becomes obvious that one must player must win.
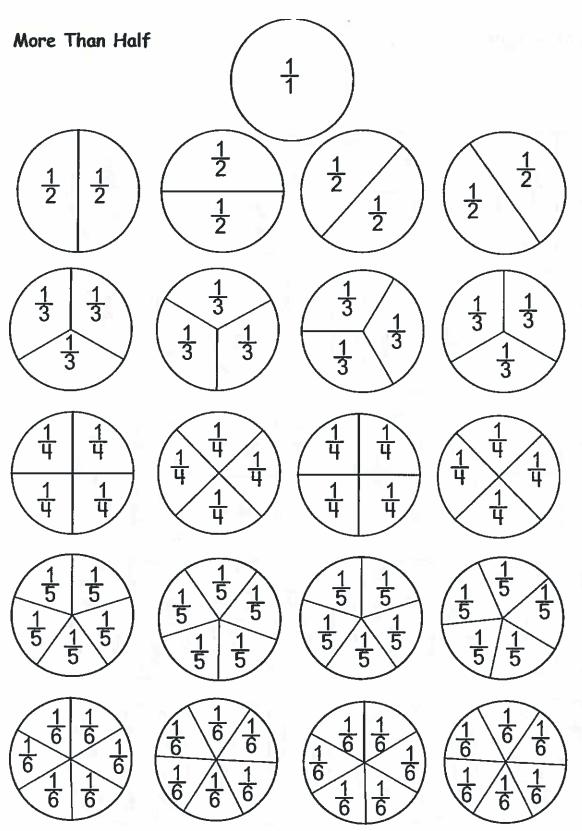
4.NF.2, 3   3.NF.1,3   5.NF.1
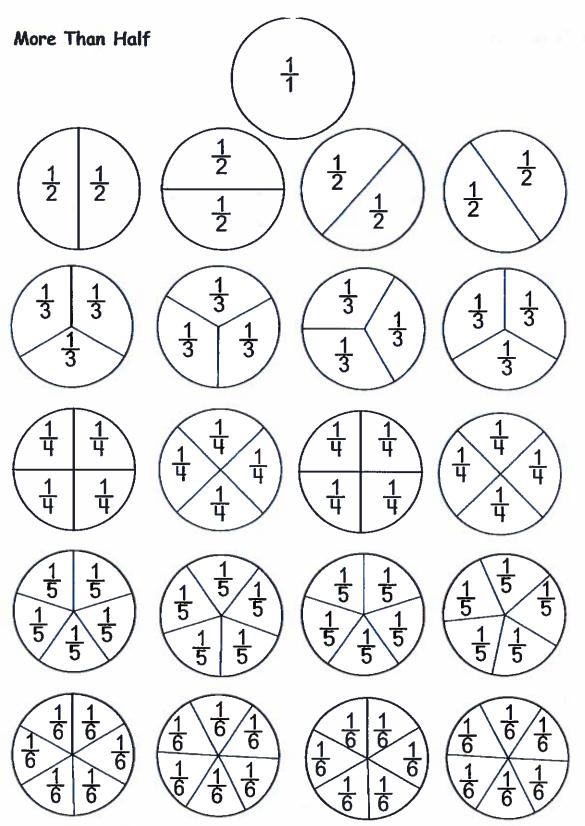
More Than Half

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

$$\frac{1}{2} \quad \frac{1}{2}$$

$$\frac{1}{2} \quad \frac{1}{2}$$

$$\frac{1}{2} \quad \frac{1}{2}$$

$$\frac{1}{2} \quad \frac{1}{2}$$

$$\frac{1}{3} \quad \frac{1}{3} \quad \frac{1}{3}$$

$$\frac{1}{3} \quad \frac{1}{3} \quad \frac{1}{3}$$

$$\frac{1}{3} \quad \frac{1}{3} \quad \frac{1}{3}$$

$$\frac{1}{3} \quad \frac{1}{3} \quad \frac{1}{3}$$

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

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

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

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

$$\frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5}$$

$$\frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5}$$

$$\frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5}$$

$$\frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5} \quad \frac{1}{5}$$

$$\frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6}$$

$$\frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6}$$

$$\frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6}$$

$$\frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6} \quad \frac{1}{6}$$

More Than Half

More Than Half

Along the Way
Fraction Version

Players: 2

Materials: deck of cards (1-9)
                    Gameboard for each player

Object: To complete the path by arranging numbers along the
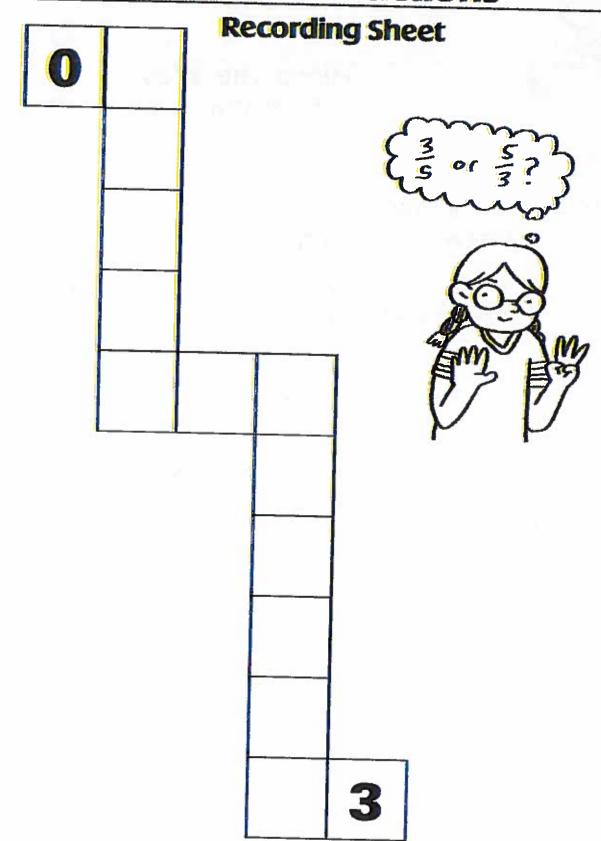   way from smaller to greater

How to Play:
- Each player draws 2 cards and forms a fraction between 0 and 3. The player writes the number in one of the squares on the path, somewhere between 0 and 3.
- Players take turns filling in their paths. A player loses a turn if the two digits do not make a number that can be placed on the path.
- First player to complete their path is the winner.

4.NF.2

Ordered Fractions
Recording Sheet

0

$\frac{3}{5}$ or $\frac{5}{3}$?

3

Ordered Fractions

Recording Sheet

0	

3/5 or 5/3 ?

3

0	

$$\frac{3}{5} \text{ or } \frac{5}{3}?$$

		3

Adding Fractions

BUMP GAMES

FREEBIE
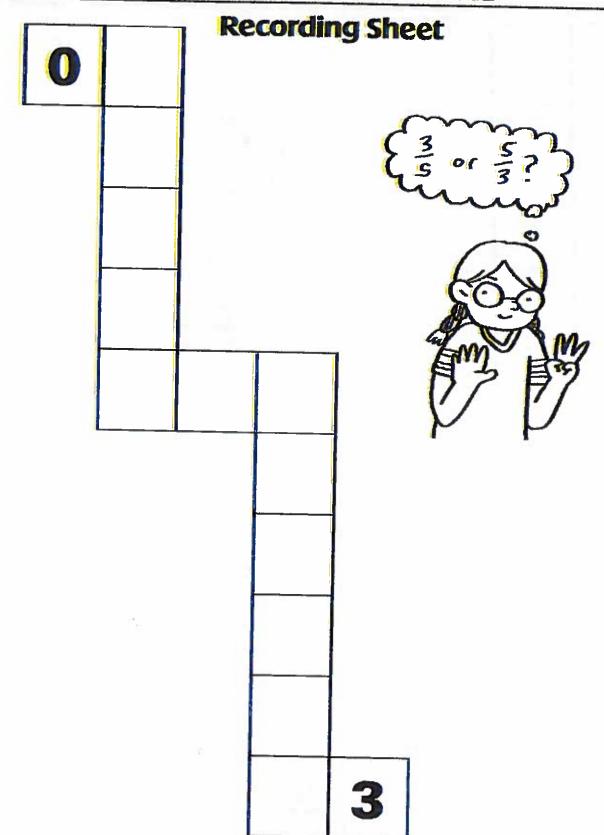
Adding Fractions: Bump Game #1

Adding Fractions: Bump Game #2

Bump Game Setup
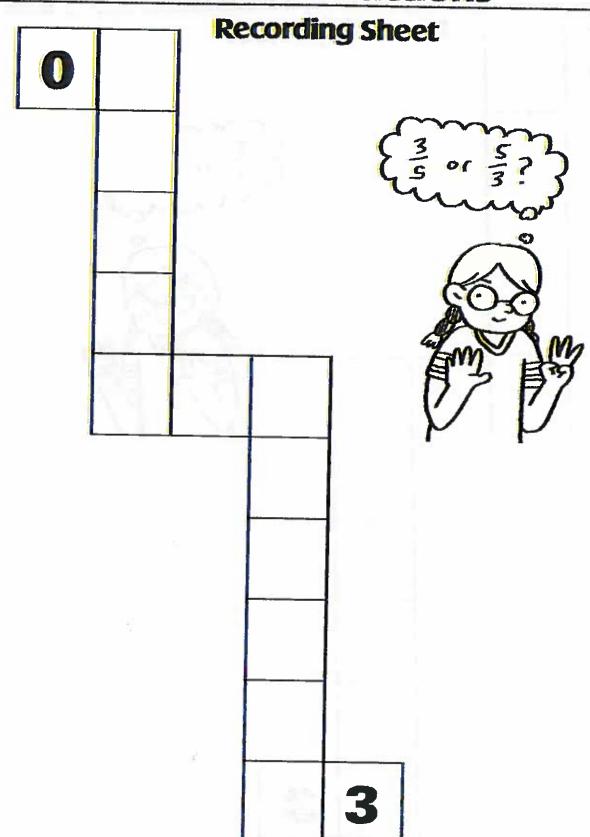
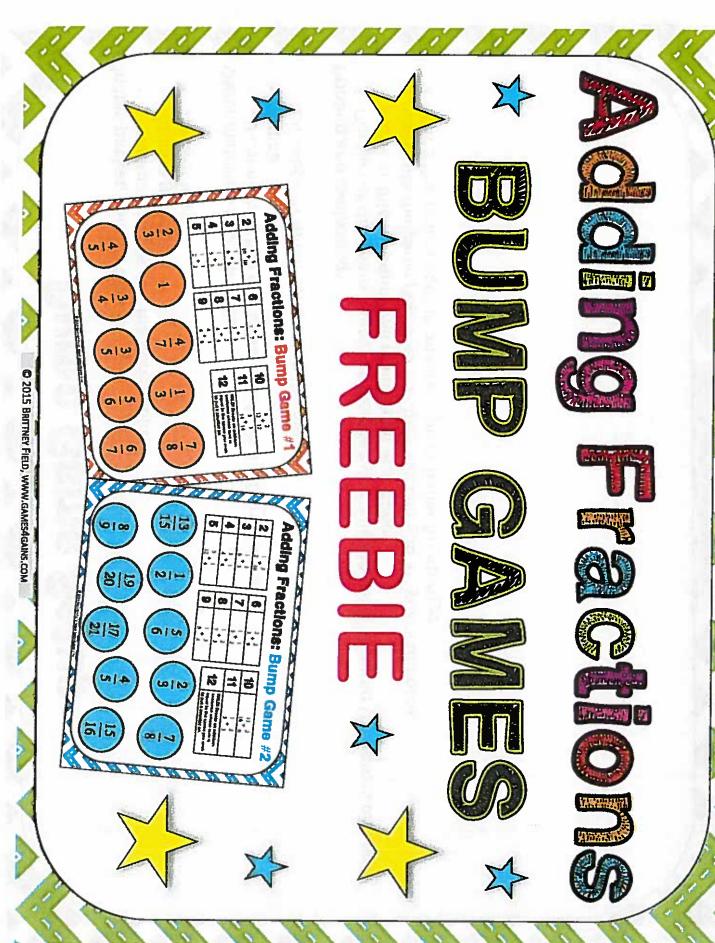**In this packet, you will find:**

- Directions for playing the bump games
- 2 bump games
- Answer keys

Other materials you will need:

- 20 counters (10 in one color and 10 in a different color)
- 2 dice
- Envelope or folder for storing the games

Printing and laminating:

1. Print all of the game pages (or the ones you'd like to use). Printing the games on card stock or thicker paper will make them last longer.
2. Laminate the game pages so that they will last you for years to come.
3. Place the game pages in an envelope or folder for storage.

Bump Games Instructions

Materials Needed: Bump game board of choosing, 10 counters of one color and 10 counters of a different color, 2 dice

Directions:

1. Each player takes 10 counters of the same color (i.e. one player has 10 red counters and one player has 10 blue counters).

2. Each player rolls a dice. Whoever has the highest roll goes first.

3. The first player rolls both dice. The player adds numbers of both dice together (i.e. if the player rolled a 6 and a 4, the sum of both dice is 10), and finds that number in the chart below. The player solves the sum of the fractions beside that number, and covers that sum on the game board with one of his or her counters.

   - If the player rolls a sum that has already been covered by the other player, the player can bump the other player's counter off and replace it with his or her own counter.

   - If the player rolls a sum that has already been covered by his or her own counter, the player can place a second counter on top of it. When two of a player's counters are on top of the same number, that player's counters can no longer get bumped off by the other player. They are locked in.

   - If the player rolls a sum that has already been locked in by either player, the player cannot do anything. He or she must wait for the next turn.

   - If the player rolls a 12, he or she must create an addition sentence whose sum is equal to the fraction on the space he or she wants to put his or her counter on. The player's addition sentence must be correct in order to place a counter on that space.

4. Play continues with each player taking turns until one player has placed all 10 of his or her counters on the game board. The first player to place all 10 of his or her counters on the game board is the winner.

Answer Key

Bump Game #1:

2	$\frac{4}{5}$
3	$\frac{1}{3}$
4	$\frac{3}{5}$
5	1

6	$\frac{6}{7}$
7	$\frac{2}{3}$
8	$\frac{3}{4}$
9	$\frac{7}{8}$

10	$\frac{5}{6}$
11	$\frac{4}{7}$
12	WILD! Create an addition sentence whose sum is equal to the space you wish to put a counter on.

Bump Game #2:

2	$\frac{4}{5}$
3	$\frac{1}{2}$
4	$\frac{7}{8}$
5	$\frac{2}{3}$

6	$\frac{8}{9}$
7	$\frac{5}{6}$
8	$\frac{17}{21}$
9	$\frac{19}{20}$

10	$\frac{15}{16}$
11	$\frac{13}{15}$
12	WILD! Create an addition sentence whose sum is equal to the space you wish to put a counter on.

Adding Fractions: Bump Game #1

2	$\frac{3}{10} + \frac{5}{10}$
3	$\frac{1}{6} + \frac{1}{6}$
4	$\frac{1}{5} + \frac{2}{5}$
5	$\frac{1}{2} + \frac{1}{2}$

6	$\frac{4}{7} + \frac{2}{7}$
7	$\frac{1}{3} + \frac{1}{3}$
8	$\frac{1}{4} + \frac{2}{4}$
9	$\frac{4}{8} + \frac{3}{8}$

10	$\frac{8}{12} + \frac{2}{12}$
11	$\frac{5}{14} + \frac{3}{14}$
12	WILD! Create an addition sentence whose sum is equal to the space you wish to put a counter on.

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

Adding Fractions: Bump Game #2

2	$\frac{1}{2} + \frac{3}{10}$
3	$\frac{1}{6} + \frac{1}{3}$
4	$\frac{3}{4} + \frac{1}{8}$
5	$\frac{5}{12} + \frac{1}{4}$

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

10	$\frac{11}{16} + \frac{2}{8}$
11	$\frac{1}{5} + \frac{2}{3}$
12	WILD! Create an addition sentence whose sum is equal to the space you wish to put a counter on.

$\frac{8}{9}$ $\frac{13}{15}$

$\frac{19}{20}$ $\frac{1}{2}$

$\frac{17}{21}$ $\frac{5}{6}$

$\frac{4}{5}$ $\frac{2}{3}$

$\frac{15}{16}$ $\frac{7}{8}$

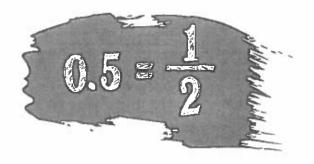# Fraction Decimal Match

Players: 2 players

Materials: Fraction Decimal Match Cards

How to Play:

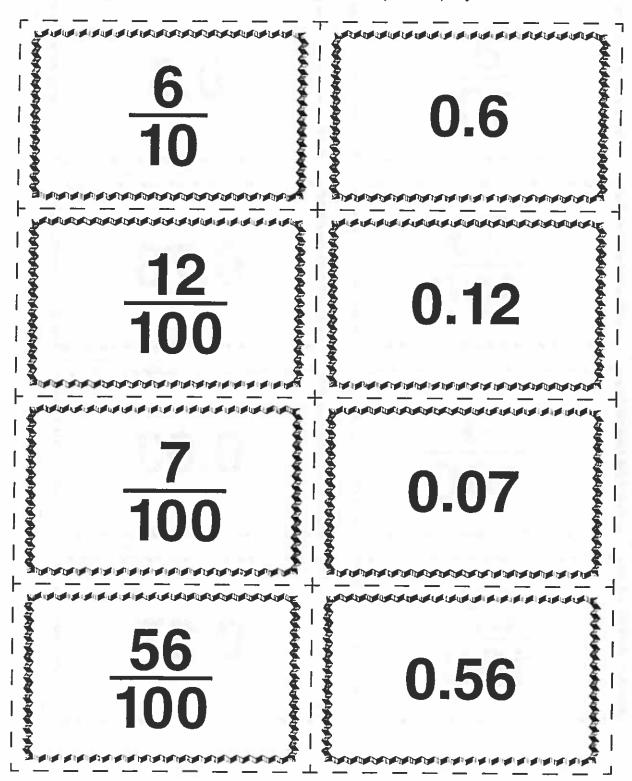- Players arrange *Fraction Decimal Match Cards* facedown in a 4 x 8 array.

- Player 1 turns over two cards in order to find a matching pair. A matching pair is a fraction and a decimal that represent the same value.

- If the cards match, Player 1 keeps the pair and goes again.

- If the cards do not match, Player 1 returns them to the same place in the array.

- Player 2 repeats these steps.

- Play continues until no cards remain. The player with more pairs at the end of the game is the winner.

4.NF.6

$$0.5 = \frac{1}{2}$$
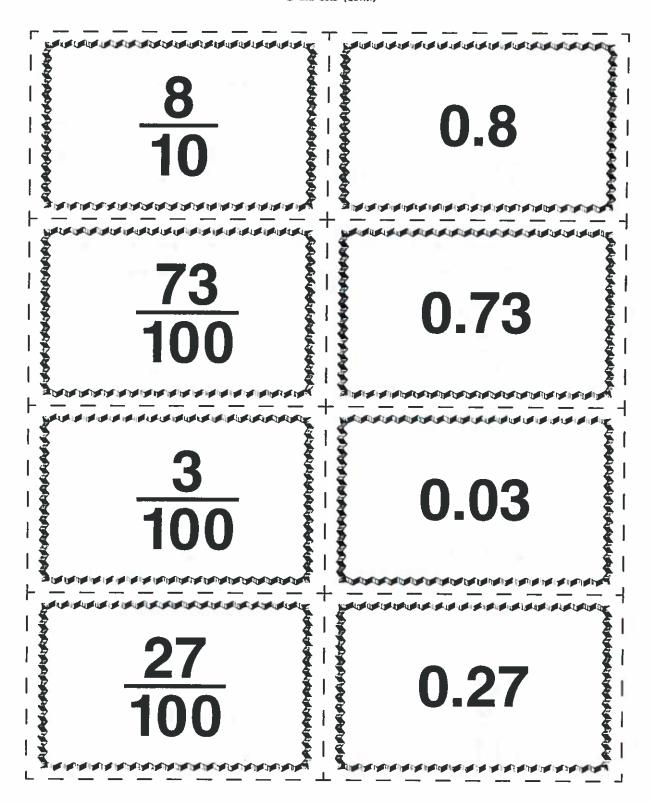
FRACTION DECIMAL MATCH
Cards
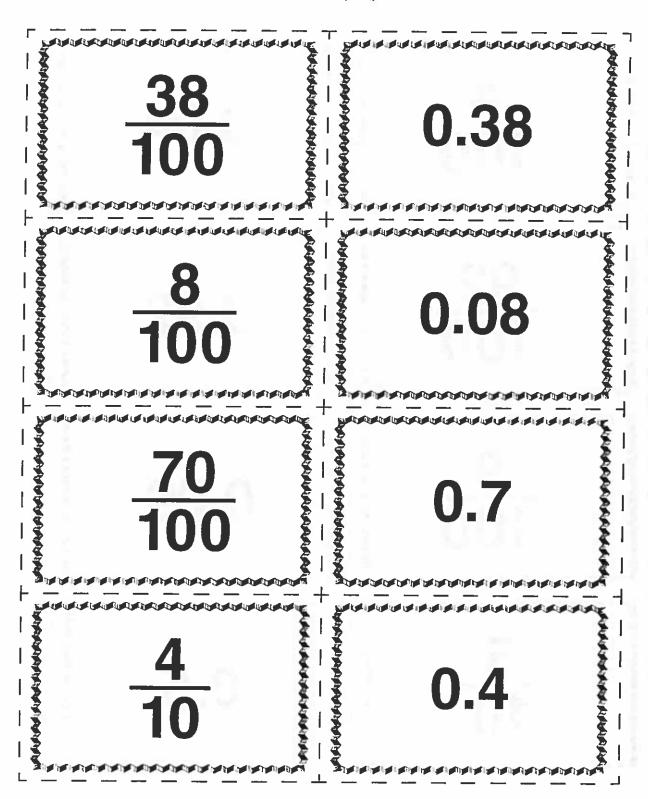
Directions: Copy and cut out cards for each pair of players.
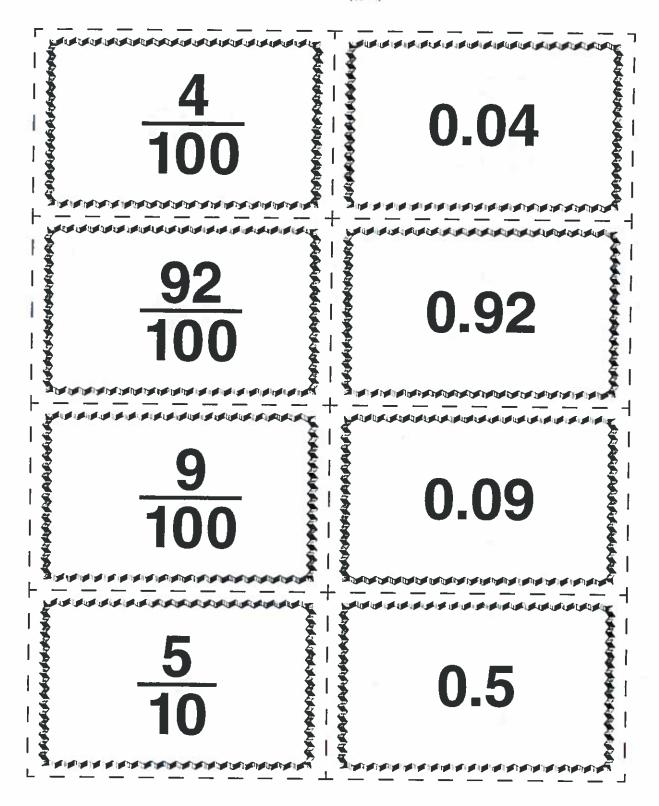
$\dfrac{6}{10}$	**0.6**
$\dfrac{12}{100}$	**0.12**
$\dfrac{7}{100}$	**0.07**
$\dfrac{56}{100}$	**0.56**

FRACTION DECIMAL MATCH
Cards (cont.)

$\dfrac{8}{10}$	**0.8**
$\dfrac{73}{100}$	**0.73**
$\dfrac{3}{100}$	**0.03**
$\dfrac{27}{100}$	**0.27**

FRACTION DECIMAL MATCH
Cards *(cont.)*

$\dfrac{38}{100}$	**0.38**
$\dfrac{8}{100}$	**0.08**
$\dfrac{70}{100}$	**0.7**
$\dfrac{4}{10}$	**0.4**

FRACTION DECIMAL MATCH
Cards *(cont.)*

$\dfrac{4}{100}$	**0.04**
$\dfrac{92}{100}$	**0.92**
$\dfrac{9}{100}$	**0.09**
$\dfrac{5}{10}$	**0.5**
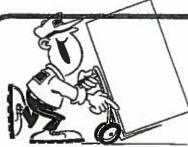
Deci-Moves

Number of Players: 2 players
Materials: You need 4 colored markers (cm cubes are good) for each player and a coin.

0.7	0.8	0.5	0.2
0.62	0.88	0.60	0.15
0.09	0.67	0.72	0.02
0.4	0.81	0.3	0 .27
0.04	0.75	0.1	0.91
0.49	0.05	0.57	0.25
0.31	0.95	0.13	0.65
0.3	0.4	0.5	0.6

Directions:
1. Each player chooses one side of the board and places her or his cubes on the 4 triangles on that side.
2. Take turns tossing the coin.
3. If the coin comes up **heads**, move one of your markers to a space having a number **larger** than the number your cube is on.
4. If the coin comes up **tails**, move one of your cubes to a space having a number **smaller** than the number your cube is on.
5. You can move up or down, left or right, or diagonally, one space only:

6. If your cube can move to a space occupied by your opponent's cube, his or her cube moves back to a beginning triangle. Only one cube may be on a space at one time.
7. If you are able to move one of your cubes, you must do so, no matter what the direction. If the only move you can make is away from a triangle on your opponent's side, you must make that move.
8. If you have no move within the rules, you lose your turn.
9. The winner is the first player to get all of her or his cubes to the triangles on the other side of the board.

(1.01c)

NCTM Presentation 2015, Tilley and Canipelli

Find the Fraction

Players: 2 players

Materials: 6 or 10 sided die

How to Play:

- Each partner gets one side of the board.

- Using a 6 or 10 sided die, players roll a number and place it anywhere on their side of the board, with the goal of getting as close to the target number (in the center column) as possible.

- Score is the difference between what the player has rolled and the target number.

Version 1:   Player gets 1 point for each fraction that is closer to the target. Winner is the player with the most points.

Version 2:   Each player finds the difference between their fraction and the target and adds them together. Winner is the player with the lowest sum.

5.NF.1

Close to

□		□
□	Difference	0	Difference	□
□		0		□
□	Difference		Difference	□
□		$\frac{1}{2}$		□
□	Difference		Difference	□
□		$\frac{1}{2}$		□
□	Difference		Difference	□
□		1		□
□	Difference		Difference	□
□		2		□
□	Difference		Difference	□

*Adapted from NCTM Presentation, 2014, r. Mikelman

Close to

	0	
Difference		Difference
	0	
Difference		Difference
	$\frac{1}{2}$	
Difference		Difference
	$\frac{1}{2}$	
Difference		Difference
	1	
Difference		Difference
	2	
Difference		Difference

Close to

□		□
□	Difference	□
□	Difference	□
□		□
□	Difference	□
□		□
□	Difference	□
□		□
□	Difference	□
□		□
□	Difference	□

0

0

$\frac{1}{2}$

$\frac{1}{2}$

1

2

Fraction Multiplication

Set the Stage: Discuss patterns for multiplication of a fraction by a whole number:

$2 \times \frac{1}{2}$ is 2 groups of $\frac{1}{2}$, or 1

$3 \times \frac{1}{2}$ is 3 groups of $\frac{1}{2}$, or $1\frac{1}{2}$

Players: 4 players

Materials: Counters (20 per student), spinner, pencil, and paperclip (one per group)
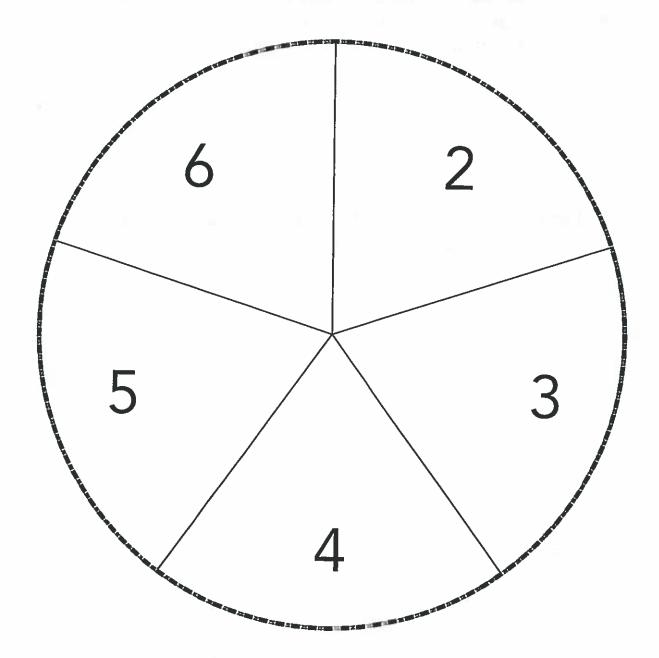
How to Play:

- Distribute the *Fraction Multiplication Game Board* and 20 counters to each student. Distribute the *Fraction Multiplication Spinner Sheet* to each group.

- To begin, one student spins the spinner to determine a number. The student may select any multiplication problem on the *Fraction Multiplication Game Board* for the fraction spun. For example, if a student spin 2, he or she may solve

$$2 \times \frac{1}{8}, 2 \times \frac{1}{6}, 2 \times \frac{1}{5}, \ 2 \times \frac{1}{4}, 2 \times \frac{1}{3}, or \ 2 \times \frac{1}{2}$$

- The student must work the problem and explain his or her thinking and reasoning. If successful, the student covers the corresponding square with a counter.

- The winner is the first student to completely cover one row (horizontal or vertical) on the *Fraction Multiplication Game Board.*

5.NF.4

Fraction Multiplication Spinner Sheet

Fraction Multiplication Game Board

X	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{1}{5}$	$\frac{1}{4}$	$\frac{1}{3}$	$\frac{1}{2}$
2						
3						
4						
5						
6						

Island Conquer

Math Buddies

Perimeter Directions

Objective: Create and conquer as many islands as possible. Score points according to the perimeter of each island captured.

Materials:
- Island Conquer Game Board
- two crayons
- Coordinate Cards

Directions:
1. Each player chooses one color to use on the game board. Color the key at the top of the board accordingly. Cut apart the Coordinate Cards and stack them face down near the game board.
2. Player 1 draws out a card and plots the 4 points according to the coordinates on the card. Player 1 uses his or her crayon to connect the points and form a rectangle or square. Player 1 finds its perimeter and writes that number inside the figure, thereby conquering the island. (Player 2 checks Player 1's work.)
3. Player 2 draws out another card and repeats Step 2 using his or her crayon. (Player 1 checks Player 2's work.)
4. Players continue taking turns creating and conquering islands, finding the perimeter of each figure.
5. At the end of the game, players add up their points by tallying the total perimeters of their islands. The player with the most points becomes Island King or Queen!

Island Conquer

Area Directions

Objective: Create and conquer as many islands as possible. Score points according to the area of each island captured.

Materials:
- Island Conquer Game Board
- two crayons
- Coordinate Cards

Directions:
1. Each player chooses one color to use on the game board. Color the key at the top of the board accordingly. Cut apart the Coordinate Cards and stack them face down near the game board.
2. Player 1 draws out a card and plots the 4 points according to the coordinates on the card. Player 1 uses his or her crayon to connect the points and form a rectangle or square. He or she then calculates the area of the figure, writes that number inside, and colors the island to capture it. (Player 2 checks Player 1's work.)
3. Player 2 draws out another card and repeats Step 2 using his or her crayon. (Player 1 checks Player 2's work.)
4. Players continue taking turns creating and conquering islands, finding the area of each rectangle or square.
5. At the end of the game, players add up their points by tallying the total area of their captured islands. The player with the most points becomes Island King or Queen!
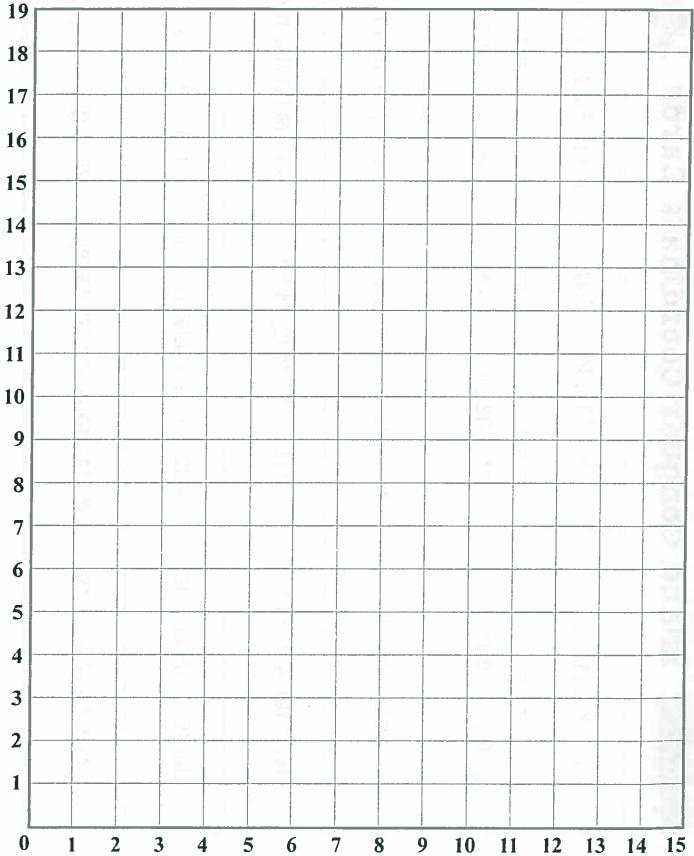
3.MD.5,6,7

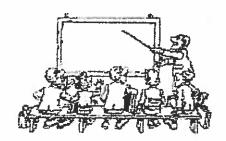# Island Conquer

Player 1 [ ]

Player 2 [ ]

Island Conquer Coordinate Cards

(14,18) (15,18) (14,19) (15,19)	(4,1) (11,1) (4,2) (11,2)
(9,4) (9,6) (11,4) (11,6)	(12,1) (12,6) (14,1) (14,6)
(8,9) (9,9) (8,10) (9,10)	(11,7) (11,10) (14,7) (14,10)
(8,11) (8,12) (13,11) (13,12)	(0,13) (0,15) (4,13) (4,15)
(1,7) (4,7) (1,12) (4,12)	(14,12) (15,12) (14,17) (15,17)
(5,9) (5,15) (7,9) (7,15)	(10,13) (10,18) (13,13) (13,18)

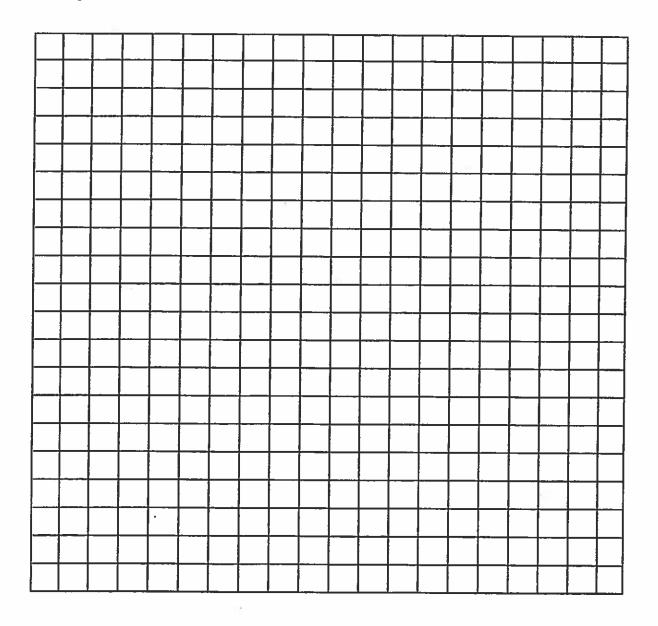|	
(1,1) (3,1) (3,4) (1,4)	
(4,3) (4,6) (8,3) (8,6)	
(5,7) (5,8) (10,7) (10,8)	
(1,16) (1,18) (4,16) (4,18)	
(5,16) (5,18) (7,16) (7,18)	
(8,13) (9,13) (8,18) (9,18)	

RAGING RECTANGLES

Number of Players: Two
Materials: Two number cubes, gameboard, crayon per player
Directions: In turn each player rolls the cubes. A player outlines and colors a rectangle on the gameboard to match the cubes. (Ex. a roll of 6 and 3 = a 6 x 3 rectangle or a 3 x 6 rectangle). Player writes the total number of squares (area) in the center of the rectangle. A player loses a turn when he rolls and cannot fit his rectangle on the gameboard. Game is over when neither player can draw a rectangle. Winner is the player with the most squares colored on the gameboard.

A NCTM Presentation 2015, Tilley & Canipelli
3 MD 7

What's My Angle?

Materials: 1 protractor
                 1 straightedge
                 Paper

Players: 2

Concept: Estimating and measuring angles

Object: Estimate angle sizes to get the lowest total score

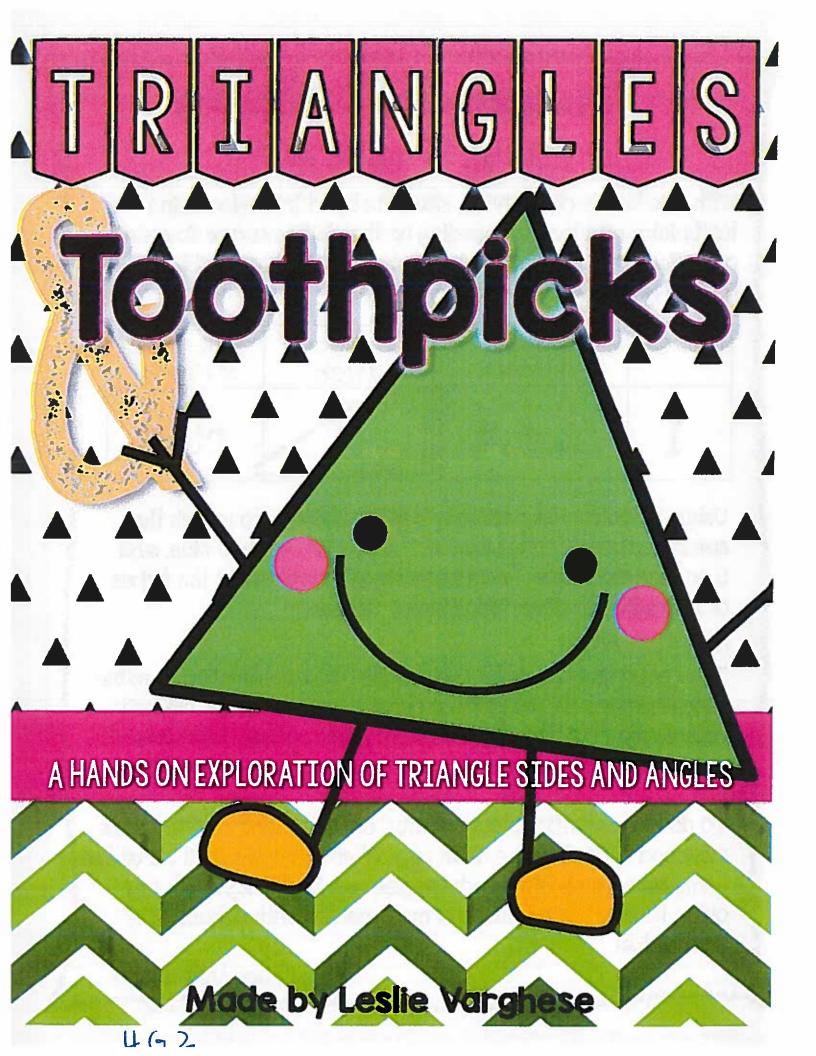**How to play:**
1. Player 1 draws an angle with the straightedge.
2. Player 2 guesses the number of degrees in that angle.
3. Player 1 measures the angle with the protractor. Players agree on the size of the angle.
4. Player 2 scores the round by subtracting his estimate and the actual size of the angle.
5. Players switch off until they have completed all rounds. Add the scores at the end of the rounds to determine the winner (one with the lowest score).

	Player 1			Player 2		
	Estimate	Actual	Score	Estimate	Actual	Score
Round 1						
Round 2						
Round 3						
Round 4						
Round 5						
Total						

4.MD.5   MP4, 5, 6

TRIANGLES

& Toothpicks

Made by Leslie Varghese

Triangles and Toothpicks
how it works

With this hands on activity, students build triangles using toothpicks and then, depending on the skill you are focusing on (sides, or angles) classify each triangle they build.

For example:

Triangle	Toothpicks per side	Sketch of triangle	Acute, right, or obtuse?
1	3, 4, 5		right

Using 12 toothpicks, students build a triangle to match the specifications-3 toothpicks on 1 side, 4 on another side, and 5 on the third side. From here they then classify the types of triangle by either the sides or angles.
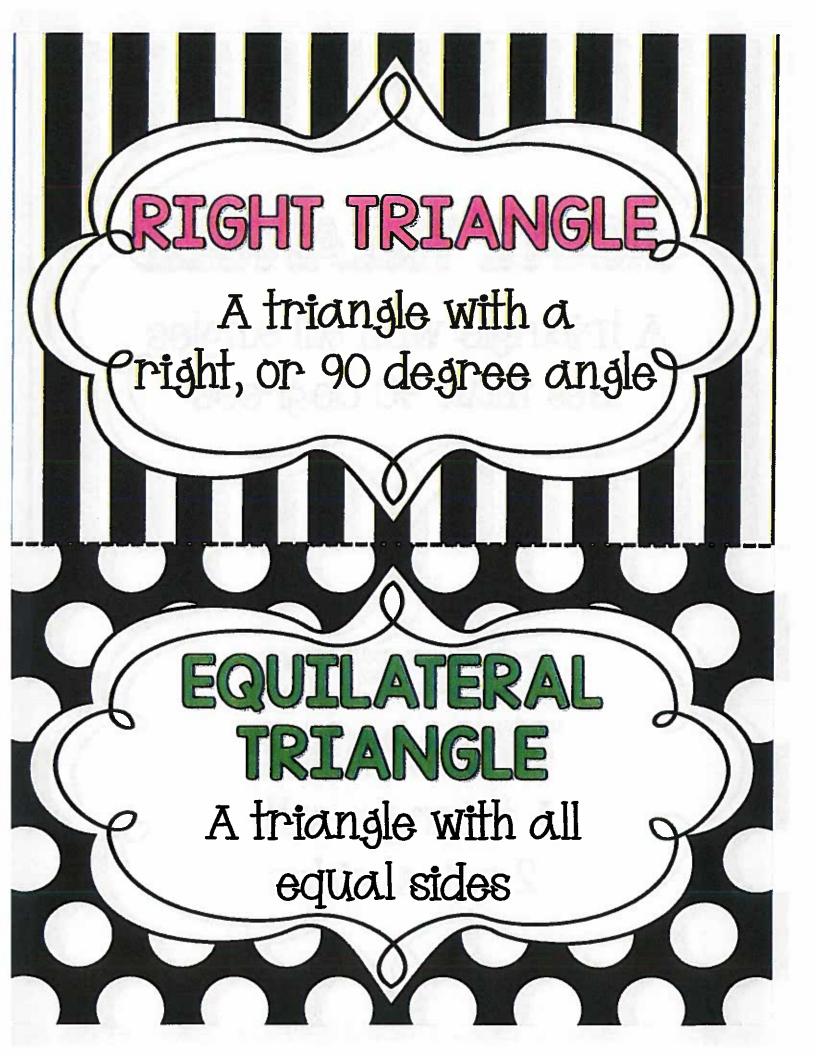
Helpful Hints:

The recording sheets for both sides and angles are the same specifications. If you plan on having your students classify both ways, run the copy front to back so they only have to build the triangle once and can then do all the classifying.
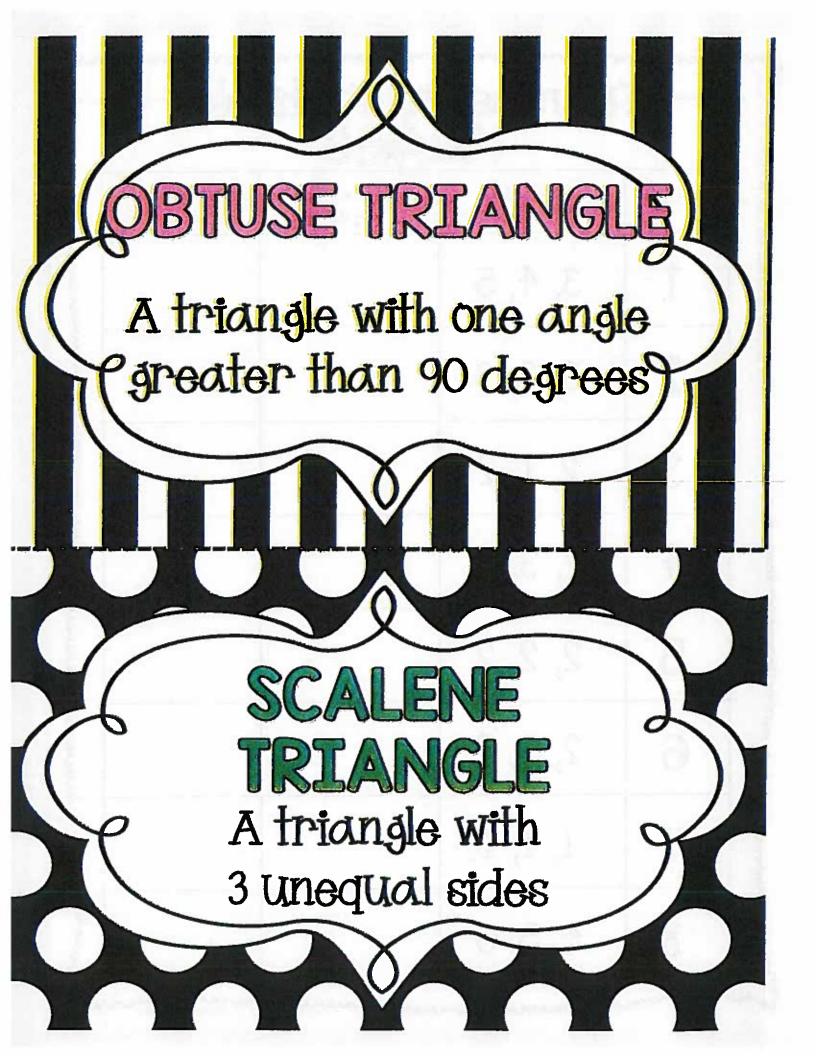
To do this activity independently, each student in your class will need 15 toothpicks. With my 3rd graders we do it all at the same time, some of those triangles can be tricky. With my older kiddos I used this in a math center with a bucket of toothpicks!

I hope you Enjoy!

RIGHT TRIANGLE

A triangle with a right, or 90 degree angle

EQUILATERAL TRIANGLE

A triangle with all equal sides

ACUTE TRIANGLE

A triangle with all angles less than 90 degrees

ISOCELES TRIANGLE

A triangle with 2 equal sides

OBTUSE TRIANGLE

A triangle with one angle greater than 90 degrees

SCALENE TRIANGLE

A triangle with 3 unequal sides

Triangles and Toothpicks
angles

Triangle	Toothpicks per side	Sketch of triangle	Acute, right, or obtuse?
1	3, 4, 5		
2	3, 3, 3		
3	2, 1, 2		
4	2, 3, 4		
5	2, 2, 2		
6	2, 3, 2		
7	1, 1, 1		
8	4, 5, 6		

Angles Answer Key

Triangle	Toothpicks per side	Sketch of triangle	Acute, right, or obtuse?
1	3, 4, 5		right
2	3, 3, 3		acute
3	2, 1, 2		acute
4	2, 3, 4		acute
5	2, 2, 2		acute
6	2, 3, 2		obtuse
7	1, 1, 1		acute
8	4, 5, 6		obtuse
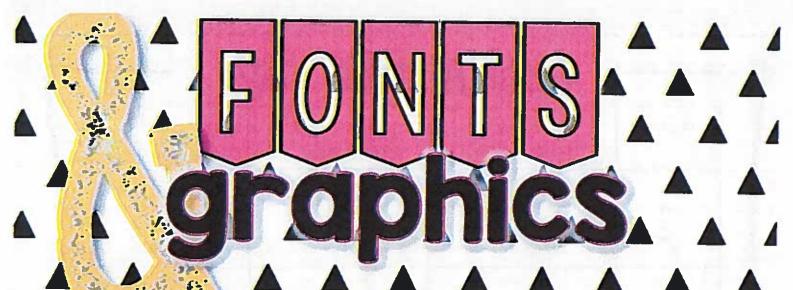
Triangles and Toothpicks
sides

Triangle	Toothpicks per side	Sketch of triangle	Isosceles, Scalene, or Equilateral?
1	3, 4, 5		
2	3, 3, 3		
3	2, 1, 2		
4	2, 3, 4		
5	2, 2, 2		
6	2, 3, 2		
7	1, 1, 1		
8	4, 5, 6		

Sides Answer Key

Triangle	Toothpicks per side	Sketch of triangle	Isosceles, Scalene, or Equilateral?
1	3, 4, 5		scalene
2	3, 3, 3		equilateral
3	2, 1, 2		isosceles
4	2, 3, 4		scalene
5	2, 2, 2		equilateral
6	2, 3, 2		isosceles
7	1, 1, 1		equilateral
8	4, 5, 6		scalene

FONTS & graphics

Creative Clips

KG Fonts (Volume 2)

2 Super Teachers

KG Fonts

GRAPHICS from the POND

Poppydreamz digital art
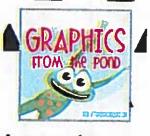
I hope you & your students enjoy! -Leslie

Subtraction is so sweet

Place Value SCOOT TASK CARDS

Multiplication Wordle Games
spin & search   multiple mix-up

MULTIPLICATION SLIDE-A-SPACE
a multiplication game for factors 2-10
2 3 4 5 6 7 8 9

ADDITION
Tic-Tac-Toe Three in a Row

3rd GRADE math writing galore
Common Core Math Journal, Anchor Charts, and "I Can" objectives

PUZZLES for practicing fact fluency

HEY ARRAY!
8 ACTIVITIES AND GAMES ANCHOR CHART
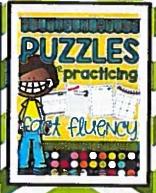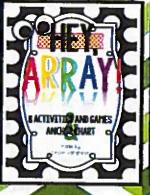
EVERYTHING BUT THE answer...
BY LESLIE VARGHESE

Rush Rules

Objective: You are given a problem to work on your own. When done you take the answer to the front of the room if your card is part of the answer and show it off.

- Organize into two teams – scramble the teams throughout the classroom.

- Each student gets at least one number or sign.

- There is no talking or sharing of answers

- The teacher will read or write a problem for the class. You will work the problem quietly at your desk. If you have part of the answer RUSH to the front of the room to display the answer with your teammates.

- The team who correctly displays the answer first gets a point.

- If anyone says any answer out loud or motions to a team member, the team is disqualified for that problem.

For the teacher:

Materials: two or three different colors of construction paper
               review questions

Preparation:

1. Write up a list of review questions in which answers have all different digits.
    Use answer keys from books to look for problems. 224.36 would not be a good
    answer to get because there are two two's.
2. Using whole pieces of colored paper, make two or three identical sets of signs
    containing the digits 0 through 9 and any additional symbols you may need –
    decimal point, negative sign… Put only one digit or symbol on each paper.
3. Organize the class into two or three teams but scramble them throughout the
    room – I randomly hand out the papers to students. Some students may get
    more than one paper.

Play of the game:

        The teacher stands at the back of the room (safer this way!) Clear the aisles.
Read a problem or write it out on the board. Each student should work quietly and then
rush to the front of the room if their paper contains part of the answer. The team who
correctly displays their answers first gets a point.

SKUNK

Materials: 2 dice (the big foam ones are really fun)
Scoresheet for each person

Players: Whole class

Concept: Strategy development, Addition

Object: Highest score after 5 rounds

How to Play:
1. All players stand up – a circle works well.
2. The teacher rolls the 2 dice. Score is equal to the sum of the dice.
3. Before rolling again, any player can record the score on his sheet for that round and be seated.
4. If any players stay standing, the teacher rolls again.
    * If a 1 is rolled, the players still standing get a score of 0 for that round. The round is over.
    * If two 1's are rolled the players still standing lose all their score from the previous rounds also and get a zero for this round.
    * If doubles are rolled (other than 1) then the points are doubled – so rolling two 4's would result in a score of 16. This gets added to their score for that round.
    * After each roll players can add the points to the previous rolls and record the score (they then sit down) or stay standing for the next roll.
5. Step 4 is repeated until no one is still standing. The round is over.
6. Everyone stands up for the beginning of the next round.
7. The player with the greatest total after 5 rounds is the winner for that game.

S

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S K U N K

Guess The Lowest Number

This is a great activity to use at the end of class to keep them focused. Pass out small slips of paper. On the slip of paper students write their name. Then they write down the lowest **natural number** (1, 2, 3,...) that they think no one else will select.

Collect the papers. As you unfold the paper write the student's name next to the number they chose. If the number is duplicated by someone else, cross out the number and the name. The lowest number left with a student's name is the winner. Choose a prize that works with your class.