Home Connections
Math Activities

Grade 4
Number Sense and Numeration

Addition and Subtraction Puzzles
Exploring Multiplication
The Remainders Game
Less Than, Equal To, or Greater Than ½
Cover the Tenths Game

Addition and Subtraction Puzzles

1. Have your child cut out the six circles containing the decimal numbers for the first puzzle. (See attached)
2. Ask your child to place the number circles on the empty circles in the triangle so that a true addition or subtraction sentence is formed on each side of the puzzle.
3. Have your child glue the number circles onto the puzzle or write the numbers in the empty circles.
4. Ask him or her to repeat for each of the remaining puzzles.

Solutions provided on attached sheet.

Using the proper mathematical language helps with understanding place value.
0.7 + 0.8
seven-tenths and eight-tenths combined gives fifteen-tenths or one and five-tenths

Let's Talk About It

- How are the addition and subtraction puzzles similar to other puzzles?
- What strategy did you use to solve the puzzles?

Addition and Subtraction Puzzles

(0.1) (0.4) (0.5)

(0.7) (0.8) (1.2)

(0.5) (0.6) (0.9)

(1.1) (1.4) (2.0)

(0.4) (0.5) (0.6)

(0.7) (1.1) (1.3)

(1.4) (2.0)

Addition and Subtraction Solutions

Box 1:

0.4

$+ \quad +$

$0.8 \qquad 0.1$

$= \qquad =$

$1.2 - 0.7 = 0.5$

Options: $0.1 \quad 0.4 \quad 0.5$
$0.7 \quad 0.8 \quad 1.2$

Box 2:

0.6

$+ \quad +$

$1.4 \qquad 0.5$

$= \qquad =$

$2.0 - 0.9 = 1.1$

Options: $0.5 \quad 0.6 \quad 0.9$
$1.1 \quad 1.4 \quad 2.0$

Box 3:

$0.7 + 1.3 - 2.0$

$+ \qquad\qquad -$

$0.4 \qquad\qquad 1.4$

$= \qquad\qquad =$

$1.1 - 0.5 - 0.6$

Options: $0.4 \quad 0.5 \quad 0.6$
$0.7 \quad 1.1 \quad 1.3$
$1.4 \quad 2.0$

Exploring Multiplication

Three different ways to represent 3 x 17 is on the attached sheet.

1. Ask your child to explain how each representation could be used to find the answer to 3 x 17.
2. Ask your child to represent 3 x 17 another way.

2 groups of 3 stars
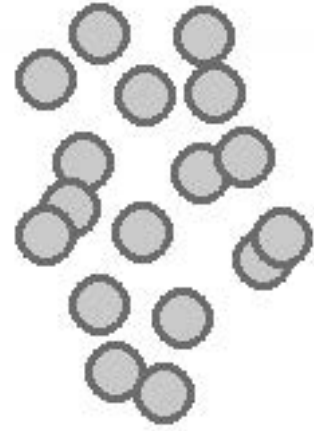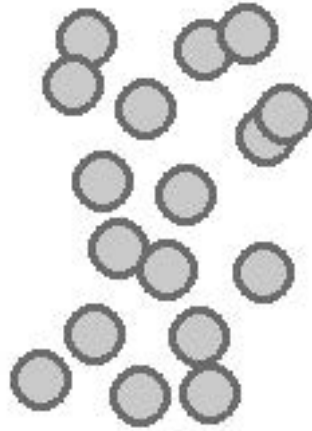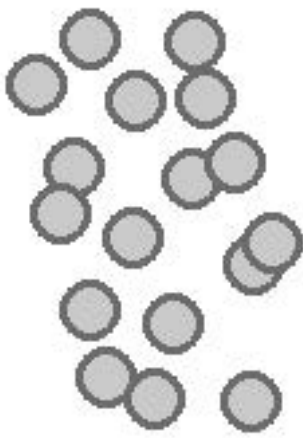
2 x 3

2 by 3

2 x 3
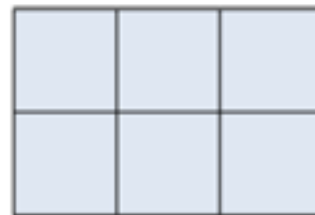
(Array)

An array (an arrangement of objects in rows and columns) provides a usefil model for multiplication. Arrays can be split into parts.

Let's Talk About It

• How are the three representations different?
• How are they similar?
• Which representation is the easiest to use to find the answer? Which is the hardest?

17 + 17 + 17

3 x 17

3 x 10 **+** 3 x 7

The Remainders Game

Number of Players: 2

Materials:
- Die
- 20 small objects
- Piece of paper and pencil

Rules:
1. Play this game with a partner.
2. To begin, a player rolls the die. The player needs to divide the 20 small objects equally amongst the number of groups shown on the die.

    For example:

    3 is rolled, the 20 small objects are divided into 3 groups.

3. If there is a remainder, the player records the number of remaining objects on a piece of paper. For the example, the remainder is 2.
4. Now the turn passes to the other player who rolls the die, makes equal groups, and records the remainder on his or her paper.
5. After each player has had 10 turns, the players add up the remainders on their piece of paper.

    The player with the least total wins the game

> The left over after dividing a quantity evenly is called the remainder.

Let's Talk About It

- How do you figure out what the remainder is?
- What does the remainder in division mean?

Less Than, Equal To, or Greater Than 1/2

1. With your child, find examples of fractions in your home.
For example:
   - the fraction of socks in a drawer that are black
   - the fraction of doors that have locks
   - the fraction that describes the amount of water in a bottle

2. Ask your child to compare these fractions with ½.
For example:
   - more than ½ of the socks in the drawer are black
   - exactly ½ of the doors have locks
   - the water bottle is less than ½ full

3. Ask your child to make drawings to show how some of the fractions you found compare with ½.

Relating fractions to benchmarks of 0, ½, and 1 can help build a sense of fractional quantities.

Let's Talk About It

- How do you know if there is more than or less than ½?
- Why were some items hard to make fractions for?
- How are these fractions important in every day life?

Cover the Tenths Game

Number of Players: 2

Materials:
- 10 small objects (buttons, coins…)
- Piece of paper
- Pencil

Rules:
1. Cut out the rectangles on the attached page. Each rectangle is considered one-whole with 10 parts. Each part is worth "0.1" or "1/10".
2. Players take turns covering spaces on the rectangle with small objects (one small object per space).
3. At each turn, players decide whether to cover one, two, or three spaces. Encourage your child to count out each space as they cover the spaces with the small object (e.g. one tenth, two tenths, three tenths).
4. Have your child record the fraction and decimal for each turn. For example, if 3 spaces are covered, the player would announce "3 tenths" and would record "3/10" and "0.3."
5. The player who places the last object on the rectangle is the winner.

0.1 or 1/10 →

Counting by tenths helps to build an understanding of decimal quantity and can reinforce an understanding of the relationship between tenths and the whole.

Let's Talk About It

- What strategies do you use to win the game?
- What did you learn from playing this game?

Cover the Tenths Game

Game 1

Game 2