

Math Properties and Recording Sheet

Name _____ Date _____

Round 1

1. Pick two numbers from the envelope, and add them. Write down the exact sequence in which you added them and the sum. $4+3=7$
2. Change the order of the two numbers, and write down their sum. $3+4=7$
3. Choose two numbers of your own, and repeat steps 1 and 2. $12+6=18$, $6+12=18$
4. When you add numbers together, does the order in which you add them matter?
Order does not matter because of the commutative property of addition.

Round 2

1. Write down the three numbers in the envelope. Put parentheses around two, and add them first. Then, add the third number. Write down the exact sequence, placement of the parentheses, and the sum. $(3+6)+8=17$
2. Keep the three numbers in the exact same sequence, but change the placement of the parentheses. Find the sum. Write this down. $3+(6+8)=17$
3. Choose three numbers of your own, and repeat steps 1 and 2. $(2+6)+3=11$, $2+(6+3)=11$
4. Does it matter how you group numbers with parentheses when adding?
NO, it doesn't matter how they are grouped because of the associative property of addition.

Round 3

1. Pick a number from the envelope, and add zero to it. $3+0=3$
2. Repeat this process with another number in the envelope. $5+0=5$
3. Choose a number of your own, and add zero to it. $45+0=45$
4. What happens when you add zero to a number?
The Number keeps its identity because of the identity property of addition.

Round 4

1. Pick two numbers and multiply them. Write down the exact sequence in which they were multiplied and their product.

$5 \times 2 = 10$

2. Change the order of the two numbers, and write down their product.

$2 \times 5 = 10$

3. Choose two numbers of your own, and repeat steps 1 and 2.

$2 \times 12 = 24$; $12 \times 2 = 24$

4. When you multiply numbers together, does the order in which you multiply them matter?

NO, because of the commutative property of multiplication

Round 5

1. Write down the three numbers in the envelope. Put parentheses around two, and multiply them first. Then, multiply the third number. Write down the exact sequence, placement of the parentheses, and the product.

$4 \times (6 \times 4) = 96$

2. Keep the three numbers in the exact same sequence, but change the placement of the parentheses. Record the product.

$(4 \times 6) \times 4 = 96$

3. Choose three numbers of your own, and repeat steps 1 and 2.

$(5 \times 6) \times 3 = 90$; $5 \times (6 \times 3) = 90$

4. Does it matter how you group numbers with parentheses when multiplying?

NO, because of the associative property of multiplication

Round 6

1. Pick a number from the envelope, and multiply it by one. Record the product.

$5 \times 1 = 5$

2. Repeat this process with another number in the envelope.

$4 \times 1 = 4$

3. Choose a number of your own, and multiply it by one.

$8 \times 1 = 8$

4. What happens when you multiply a number by one?

It maintains identity because of the identity property of multiplication

Round 7

1. Place the three numbers in the envelope in this expression: $\underline{4} (\underline{5} + \underline{4})$. Add the two numbers in the parentheses. Then, multiply that sum by the outside number. Record your answer. $\underline{36}$

$4(5+4)$

(20+4)
80+16
96

$$4(5+4) \quad | \quad 4(5+4)$$

$$4(9) \quad | \quad 20+16$$

$$\textcircled{36} \quad | \quad \textcircled{36}$$

2. Take these same three numbers in the exact same order, and multiply the first number by the second number and record it. 20 Then, multiply the first by the third and record it. 16 Add the two numbers you recorded. 36 What do you notice? The answer did not change.
3. Use three different numbers, and repeat steps 1 and 2.
 $2(3+4)=14$ $2(3)+2(4)$
 $6+8=14$
4. What do you think is happening?

Round 8

- Choose a number from the envelope, and add it to its opposite. Record the result.

- Choose another number from the envelope, and repeat step 1. Record the result.

- What sum do you get when you add a number and its opposite?

Round 9

- Choose a fraction from the envelope, and multiply it by its reciprocal. Record the result.

- Choose another fraction from the envelope, and repeat step 1. Record the result.

- What product do you get when you multiply a fraction and its reciprocal?

Round 10

- Choose a number from the envelope, and multiply it by zero. Record the result.

- Choose another number from the envelope, and repeat step 1. Record the result.

- What happens when you multiply a number by zero?

Choose the Property below that you believe is being described in each of the rounds; write that property in the box.	
Round 1	Round 6
Round 2	Round 7
Round 3	Round 8
Round 4	Round 9
Round 5	Round 10

MATH PROPERTIES OF ADDITION AND MULTIPLICATION	
ASSOCIATIVE PROPERTY OF ADDITION	IDENTITY PROPERTY OF ADDITION
ASSOCIATIVE PROPERTY OF MULTIPLICATION	IDENTITY PROPERTY OF MULTIPLICATION
COMMUTATIVE PROPERTY OF ADDITION	ADDITIVE INVERSE PROPERTY
COMMUTATIVE PROPERTY OF MULTIPLICATION	ZERO PROPERTY