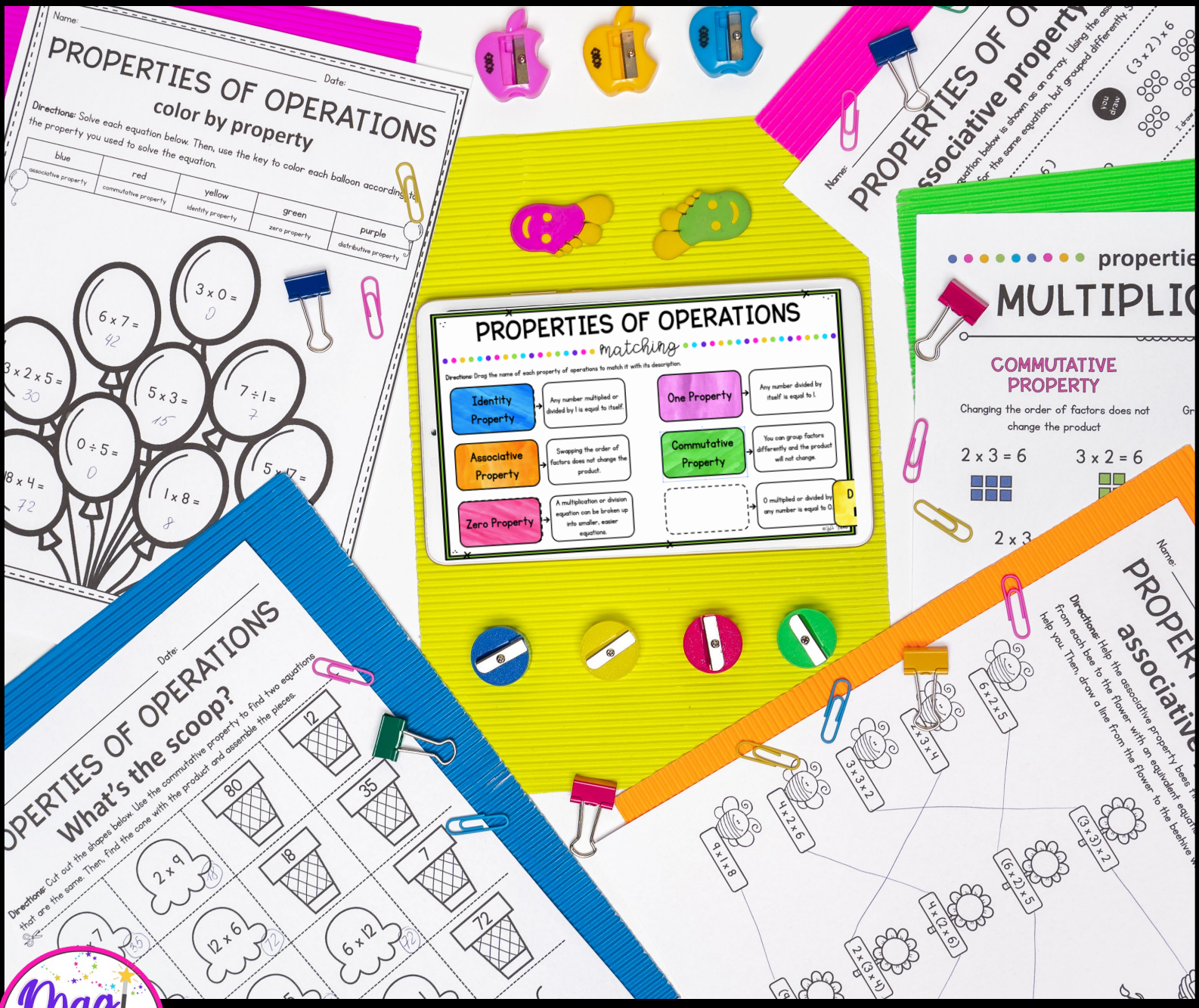
PROPERTIES OF OPERATIONS

3rd Grade



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PROPERTIES OF OPERATIONS

3rd grade

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Date:

OF OPERATIONS

Date:

RTIES OF OPERATIONS

ciative property arrays

tion below is shown as an array. Using the associative property,
for the same equation, but grouped differently. Solve.

3 x (2 x 6)

three groups of 2 x 6 arrays

you draw

(3 x 2) x 6

I draw six groups of 3 x 2 arrays

My array:

My equation:

6 = ___

My array:

x (5 x 6)

My equation:

Name: Date:

PROPERTIES OF OPERATIONS

Direction
that are

5 x

4 x

1 x

9 x

Name: Date:

PROPERTIES OF OPERATIONS

properties of

MULTIPLICATION

COMMUTATIVE PROPERTY

Changing the order of factors does not change the product

2 x 3 = 6

3 x 2 = 6

2 x 3 = 3 x 2

ASSOCIATIVE PROPERTY

Grouping factors in different ways does not change the product

(5 x 2) x 3 = 5 x (2 x 3)

10 x 3 = 5 x 6

30 = 30

DISTRIBUTIVE PROPERTY

A multiplication equation can be broken down into two simpler multiplication facts

16 x 4 = ?

(10 + 6) x 4 = ?

(10 x 4) + (6 x 4) = ?

40 + 24 = 64

IDENTITY PROPERTY

The product of 1 and any other number is that number

8 x 1 = 8

1 x 952 = 952

ZERO PROPERTY

The product of 0 and any number is 0

0 x 10 = 0

865 x 0 = 0

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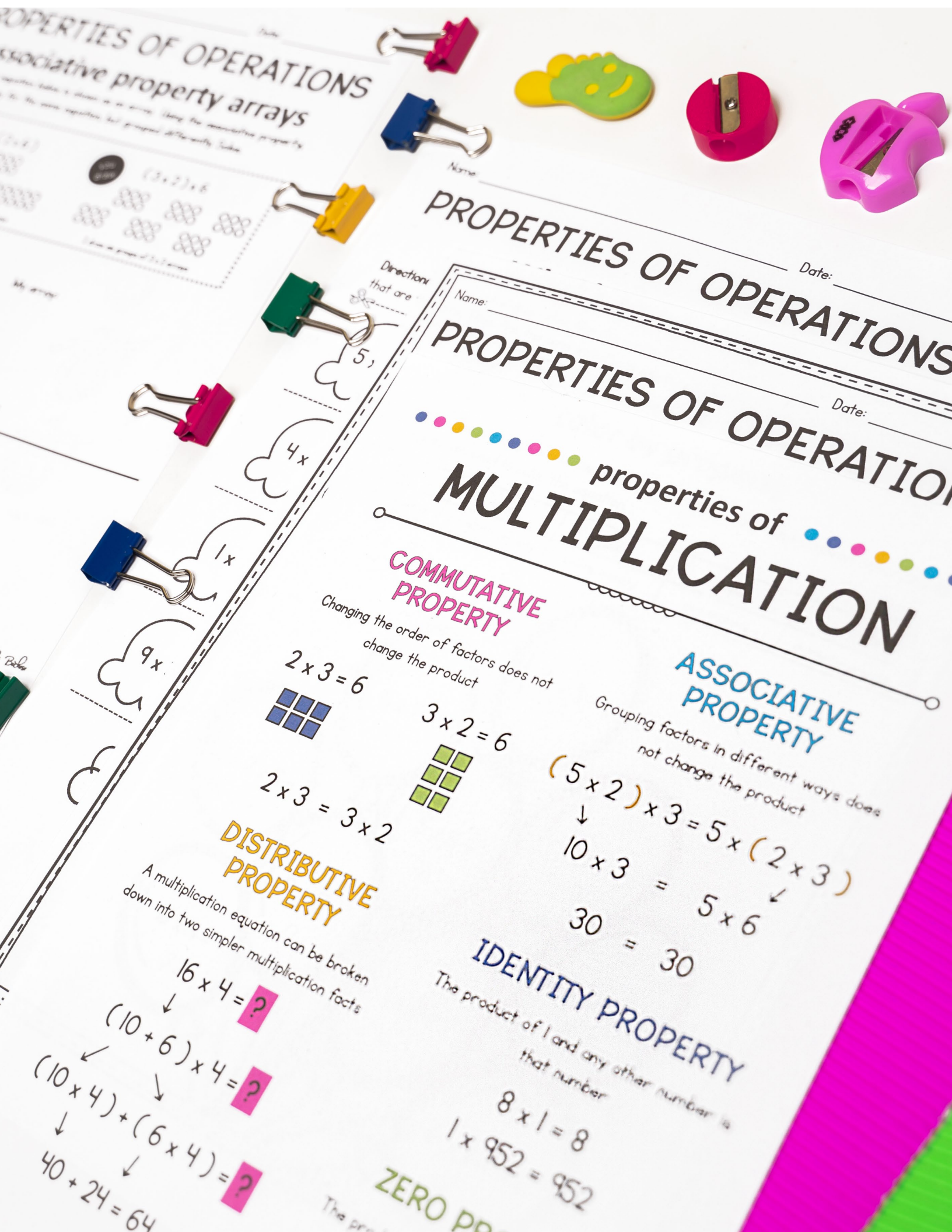
PROPERTIES OF OPERATIONS
associative property arrays
PROPERTIES OF OPERATIONS
Name:
Date:
PROPERTIES OF OPERATION
properties of
MULTIPLICATION
COMMUTATIVE PROPERTY
Changing the order of factors does not change the product
2 x 3 = 6
3 x 2 = 6
2 x 3 = 3 x 2
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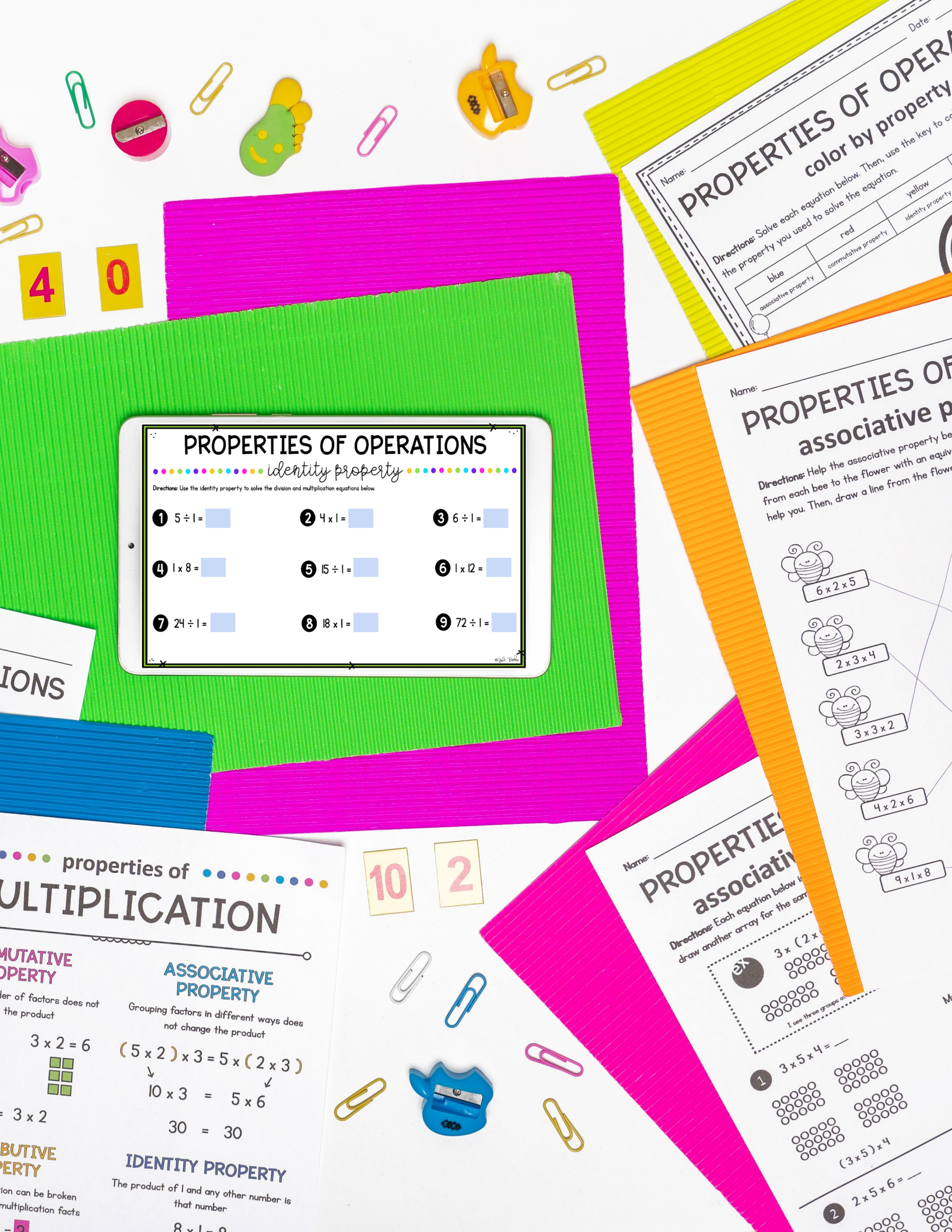
ZERO PR
Direction
that are
5,
4x
1x
9x


PROPERTIES OF OPERATIONS
identity property
Directions: Use the identity property to solve the division and multiplication equations below.
1 5 ÷ 1 =
2 4 x 1 =
3 6 ÷ 1 =
4 1 x 8 =
5 15 ÷ 1 =
6 1 x 12 =
7 24 ÷ 1 =
8 18 x 1 =
9 72 ÷ 1 =
PROPERTIES OF OPERA
color by property
Name:
Date:
Directions: Solve each equation below. Then, use the key to co
the property you used to solve the equation.
blue
associative property
red
commutative property
yellow
identity property
PROPERTIES OF
associative p
Name:
Directions: Help the associative property be
from each bee to the flower with an equiv
help you. Then, draw a line from the flowe
6 x 2 x 5
2 x 3 x 4
3 x 3 x 2
4 x 2 x 6
9 x 1 x 8
properties of
ULTIPLICATION
MUTATIVE
OPERTY
der of factors does not
the product
3 x 2 = 6
= 3 x 2
BUTIVE
PERTY
ion can be broken
multiplication facts
ASSOCIATIVE
PROPERTY
Grouping factors in different ways does
not change the product
(5 x 2) x 3 = 5 x (2 x 3)
10 x 3 = 5 x 6
30 = 30
IDENTITY PROPERTY
The product of 1 and any other number is
that number
8 x 1 = 8
Name:
PROPERTIE
associati
Directions: Each equation below i
draw another array for the sam
3 x (2 x
I see three groups o
1 3 x 5 x 4 = —
(3x5)x4
2 2 x 5 x 6 = —


PROPERTIES OF OPERATIONS
What's the scoop?
Directions: Use the commutative property to find two equations that are equal. Drag both ice cream scoops to the cone with the product.
10 x 8
12 x 6
5 x 7
8 x 10
6 x 12
80
12
35
72
4 x 3
MULTIPLI
COMMUTATIVE PROPERTY
Changing the order of factors does not change the product
3 x 2 = 6
2 x 3 = 6
2 x 3 = 3 x 2
ASSO PROPER
Grouping factors in different wa not change the product
(5 x 2) x 3 = 5 x (2 x 3)
10 x 3 = 5 x 6
30 = 30
IDENTITY PROPERTY
The product of 1 and any other number is that number
8 x 1 = 8
1 x 952 = 952
DISTRIBUTIVE PROPERTY
A multiplication equation can be broken down into two simpler multiplication facts
16 x 4 = ?
(10 + 6) x 4 = ?
(10 x 4) + (6 x 4) = ?
40 + 24 = 64
ZERO PROPERTY
The product of 0 and any numbe
0 x 10 = 0
865 x 0 =
PROPERTIES OF OPERATIONS
Name:
Date:
color by property
Directions: Solve each equation below. Then, use the key to color each balloon accordin the property you used to solve the equation.
blue
associative property
red
commutative property
yellow
identity property
green
zero property
3 x 0 = 0
6 x 7 = 42
3 x 2 x 5 = 30
Name:
Directions:
draw anothe
Directions: Cut
that are the sa
I see
1 3 x 5 x 4 =
(3 x 5) x 4
2 2 x 5 x 6 =
5 x 7
4 x 3
1 x 7
9 x 2


properties of
PLICATION
ASSOCIATIVE PROPERTY
3 = 5 x (2 x 3)
5 x 6
PROPERTIES OF OPERATIONS
associative property bees
Name:
Date:
Directions: Help the associative property bees find their way back to the hive. Draw a line from each bee to the flower with an equivalent equation. Use the associative property to help you. Then, draw a line from the flower to the beehive with the product.
18
6 x 2 x 5
2 x
PROPERTIES OF OPERAT
associative property arra
Directions: Each equation below is shown as an array. Using the associative
draw another array for the same equation, but grouped differently. Solve.
(2 x 6)
you draw
(3 x 2) x 6
Name:
Date:
PROPERTIES OF OPERA
Directi
that
hat's the scoop?
Name:
the commutative property to f
nduct and assemble th
PROPERTIES OF OPERA
color by property
Directions: Solve each equation below. Then, use the key to color each balloon
the property you used to solve the equation.
blue
associative property
red
commutative property
yellow
identity property
green
zero property
purp
distributive prop
3 x 2 x 5 = 30
6 x 7 = 42
3 x 0 = 0
18 x 4 = 72
0 ÷ 5 = 0
5 x 3 = 15
7 ÷ 1 = 7
1 x 8 = 8
5 x 17 = 85
6 x 2 x 4 = 48
PROPERTIES OF OPERATIONS
board game
Directions: Move one of the circles on the right side of the screen to uncover how many spaces to move your game piece. Solve the equation and explain which property of operations you used to solve it.
START
0 x 5
2 x 3 x 2
5 x 1
16 x 4
0 ÷ 7
4 x 3 x 3
14 x 6
5 x 16
3 ÷ 1
5 x 2 x 5
0 ÷ 12
1 x 9
7 ÷ 7
11 x 0
4 ÷ 1
8 ÷ 8
7 x 2 x 6
6 x 18
8 x 0
5 x 2 x 4
10 ÷ 0
13 x 7
FINISH
4
1
+
2
7
6
=
5


Name: Date:
PROPERTIES OF OPERATIONS
What's the scoop?
Directions: Cut out the shapes below. Use the
PROPERTIES OF OPERATIONS
color by property
Directions: Solve each equation below. Then, use the key to color each balloon according to the property you used to solve the equation.
blue
associative property
red
commutative property
yellow
identity property
green
zero property
purple
distributive property
3 x 0 = 0
6 x 7 = 42
3 x 2 x 5 = 30
5 x 3 = 15
7 ÷ 1 = 7
0 ÷ 5 = 0
18 x 4 = 72
1 x 8 = 8
6 x 2 x 4 = 48
PROPERTIES OF OPERATIONS
review
Directions: Solve the equations below.
1 9 ÷ 1 =
2 8 x 0 =
3 7 ÷ 0 =
4 6 x 0 =
5 0 ÷ 12 =
6 9 x 1 =
7 6 ÷ 1 =
8 1 x 5 =
9 0 ÷ 4 =
MULT
COMMUTATIV
PROPERTY
Changing the order of factor
change the product
3 = 6
3 x
2 x 3 = 3 x 2
DISTRIBUTIV
PROPERTY
ultiplication equation can b
into two simpler multiplica
16 x 4 = ?
(10 + 6) x 4 =
(10 x 4) + (6 x 4
40 + 24 = 64

Name: _____ Date: _____

PROPERTIES OF OPERATIONS

identity property

Directions: Use the identity property to solve the division and multiplication equations below.

1. $5 \div 1 =$ ___
2. $4 \times 1 =$ ___
3. $6 \div 1 =$ ___
4. $1 \times 8 =$ ___
5. $15 \div 1 =$ ___
6. $1 \times 12 =$ ___
7. $24 \div 1 =$ ___
8. $18 \times 1 =$ ___
9. $72 \div 1 =$ ___
10. $32 \times 1 =$ ___
11. $56 \div 1 =$ ___
12. $1 \times 128 =$ ___
13. $212 \div 1 =$ ___
14. $385 \times 1 =$ ___
15. $590 \div 1 =$ ___
16. $1 \times 923 =$ ___
17. $1{,}000 \div 1 =$ ___
18. $2{,}152 \times 1 =$ ___

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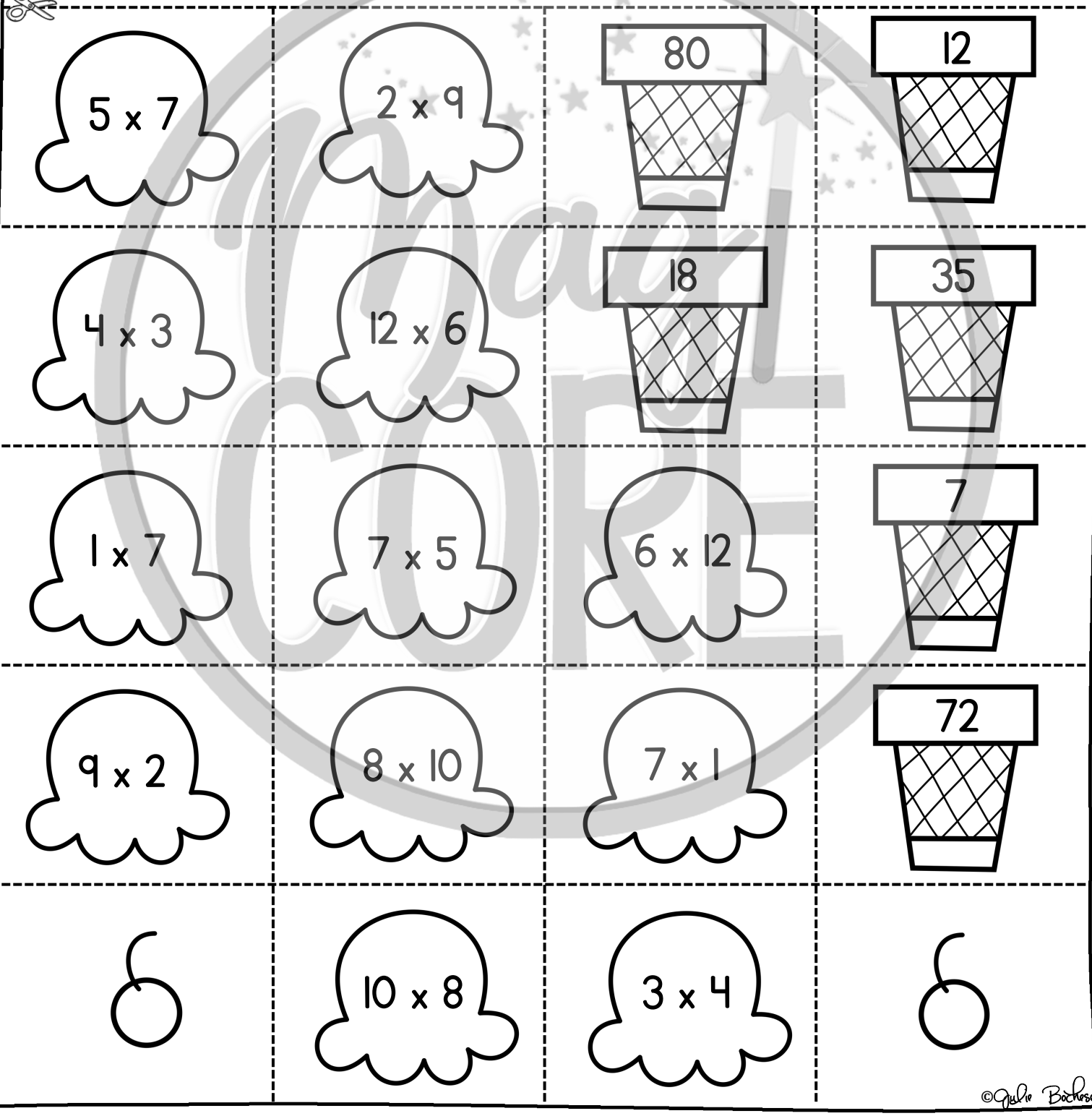
Name: _____ Date: _____

PROPERTIES OF OPERATIONS

What's the scoop?

Directions: Cut out the shapes below. Use the commutative property to find two equations that are the same. Then, find the cone with the product and assemble the pieces.



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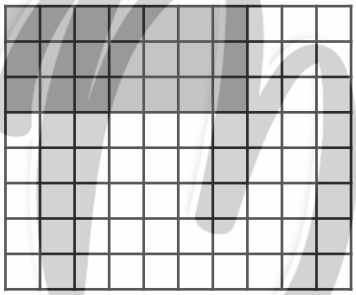
PROPERTIES OF OPERATIONS

distributive property grids

Directions: Shade in the grid to represent the multiplication equation. Then, use the distributive property of multiplication to break the equation into two simpler equations. Use two different colors to shade the second grid to represent your two new equations.

ex.

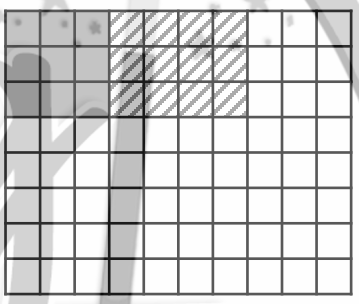
7 x 3



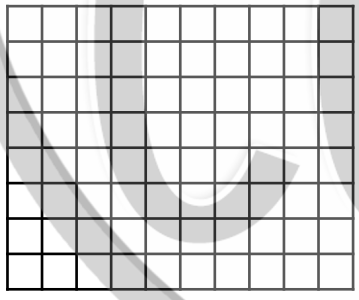
you do

(3 + 4) x 3 =

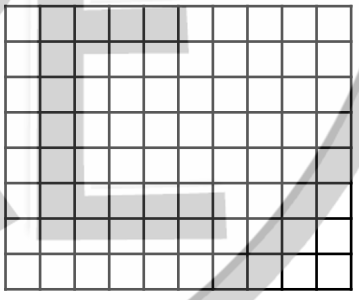
(3 x 3) + (3 x 4)



1 9 x 6

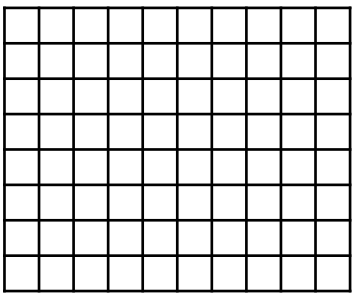


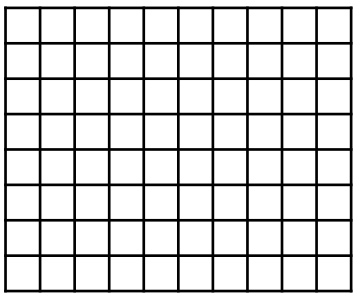
Break it down:



2 5 x 8

Break it down:





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PROPERTIES OF OPERATIONS

Review

Directions: Solve the equations below.

1. 9 ÷ 1 = ___
2. 8 x 0 = ___
3. 7 ÷ 0 = ___
4. 6 x 0 = ___
5. 0 ÷ 12 = ___
6. 9 x 1 = ___
7. 6 ÷ 1 = ___
8. 1 x 5 = ___
9. 0 ÷ 4 = ___

Directions: Use the commutative property to write a different but equivalent multiplication equation for each equation below. Then, solve both equations.

10. 3 x 2 = ___
11. 7 x 6 = ___
12. 12 x 2 = ___
13. 11 x 4 = ___
14. 9 x 5 = ___
15. 8 x 3 = ___
16. 1 x 7 = ___
17. 5 x 10 = ___
18. 6 x 4 = ___

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Name: _____ Date: _____

PROPERTIES OF OPERATIONS

Test

Directions: Solve the equations below.

1. $7 \div 1 =$ ___
2. $5 \times 0 =$ ___
3. $6 \div 6 =$ ___
4. $1 \times 8 =$ ___
5. $15 \div 0 =$ ___
6. $12 \times 1 =$ ___
7. $24 \div 1 =$ ___
8. $0 \times 10 =$ ___
9. $0 \div 1 =$ ___

Directions: Use the commutative property to write a different but equivalent multiplication equation for each equation below. Then, solve both equations.

10. $5 \times 6 =$ ___
11. $8 \times 11 =$ ___
12. $10 \times 3 =$ ___
13. $2 \times 9 =$ ___
14. $7 \times 4 =$ ___
15. $12 \times 0 =$ ___
16. $9 \times 6 =$ ___
17. $4 \times 10 =$ ___
18. $8 \times 7 =$ ___

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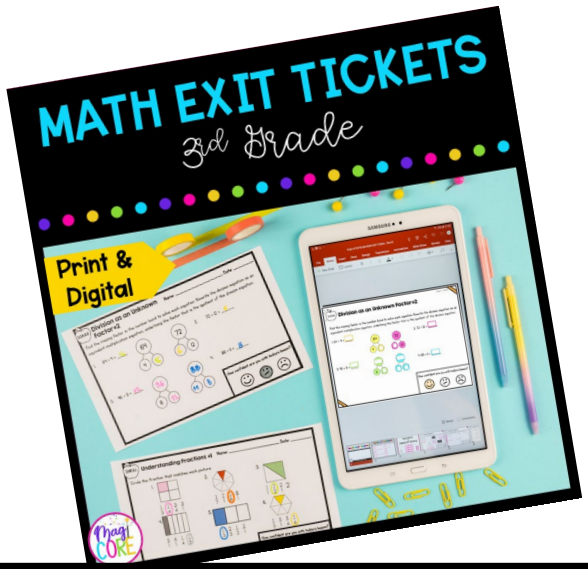

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