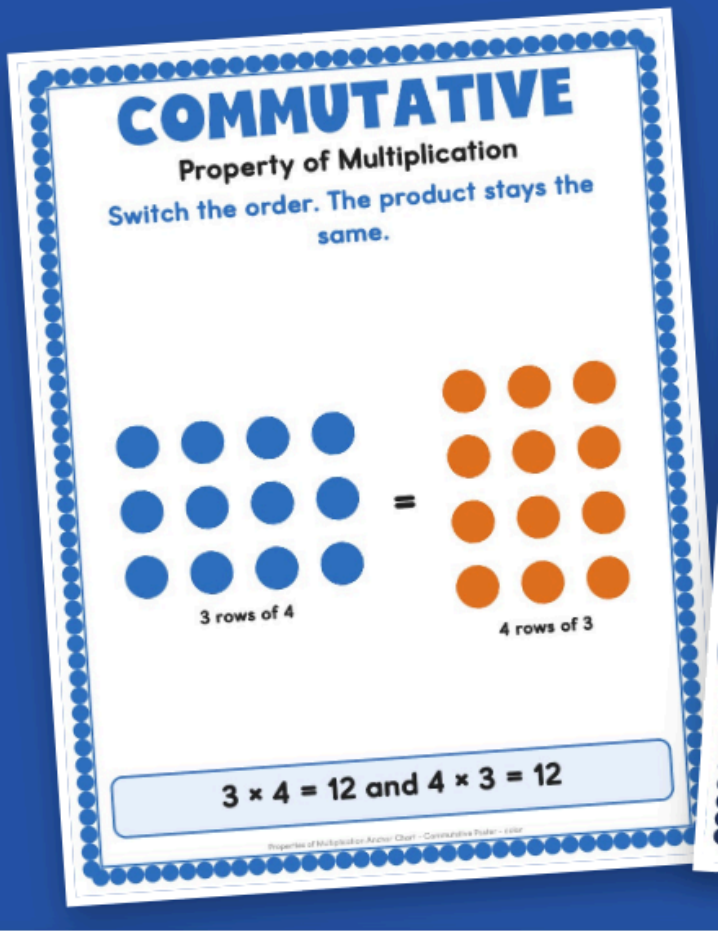
PROPERTIES OF MULTIPLICATION

ANCHOR CHART POSTERS





5 PROPERTY POSTERS

68 CUT PIECES

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PREVIEW

How to Teach It: Five Short Routines

One property a day, a few minutes each. Draw it as an array first, then write it as an equation.

Commutative

- Show the poster (page 5). Say: "Order does not change the product." Turn the 3 rows of 4 into 4 rows of 3 with your hands.
- Ask: "Is 2 × 5 the same as 5 × 2? How do you know?"

Associative

- Show the poster (page 6). Say: "Grouping does not change the product." Both ways make 24.
- Have children say which pair they would multiply first, and why.

Identity

- Show the poster (page 7). Say: "One times a number is that number."
- Ask for one more example of their own.

Zero

- Show the poster (page 8). Say: "Zero groups of anything, or any groups of zero, is 0."
- Ask: "What is in each empty box?"

Distributive

- Show the poster (page 9). Say: "Break apart, multiply each part, then add." Point to the blue part, then the orange part.
- Then use the break-apart page (page 27) so children color the parts.

Notes on your day

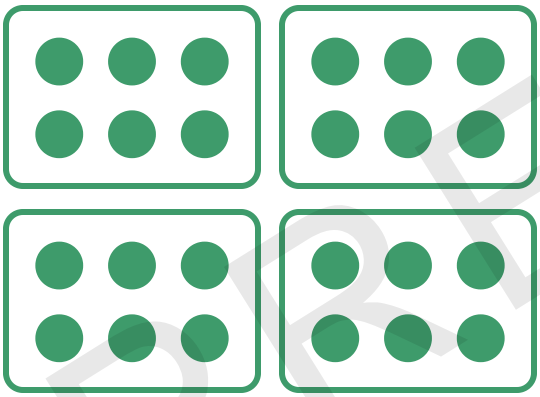
PREVIEW

Preview - Bright Path Sped

ASSOCIATIVE

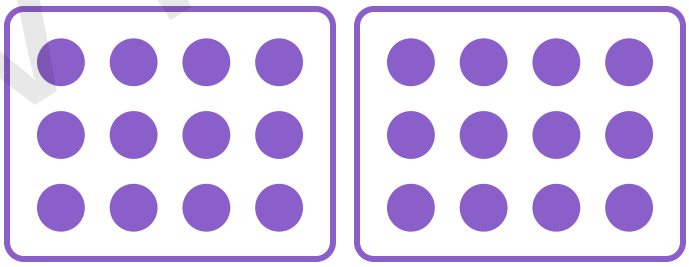
Property of Multiplication

Group the numbers a different way. The product stays the same.



4 groups of 2 × 3

=



2 groups of 3 × 4

PREVIEW

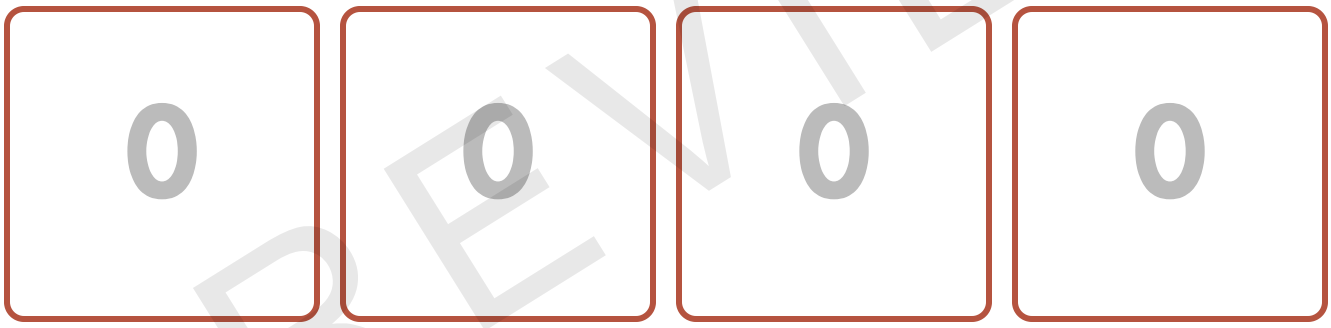
(2 × 3) × 4 = 6 × 4 = 24 and 2 × (3 × 4) = 2 × 12 = 24

Preview - Bright Path Sped

ZERO

Property of Multiplication

Multiply by 0. The product is always 0.



4 groups of 0 dots

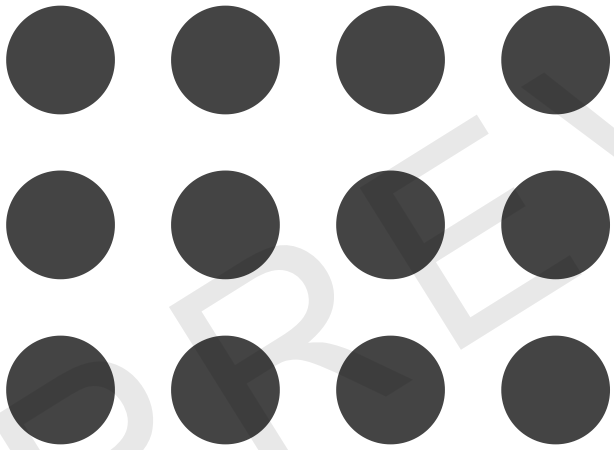
PREVIEW

4 × 0 = 0 and 0 × 4 = 0

COMMUTATIVE

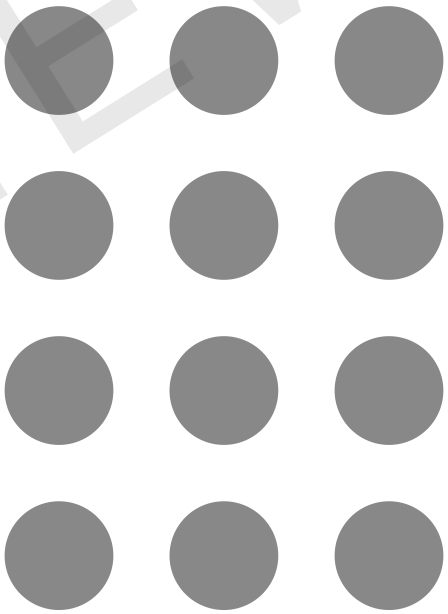
Property of Multiplication

Switch the order. The product stays the same.



3 rows of 4

=



4 rows of 3

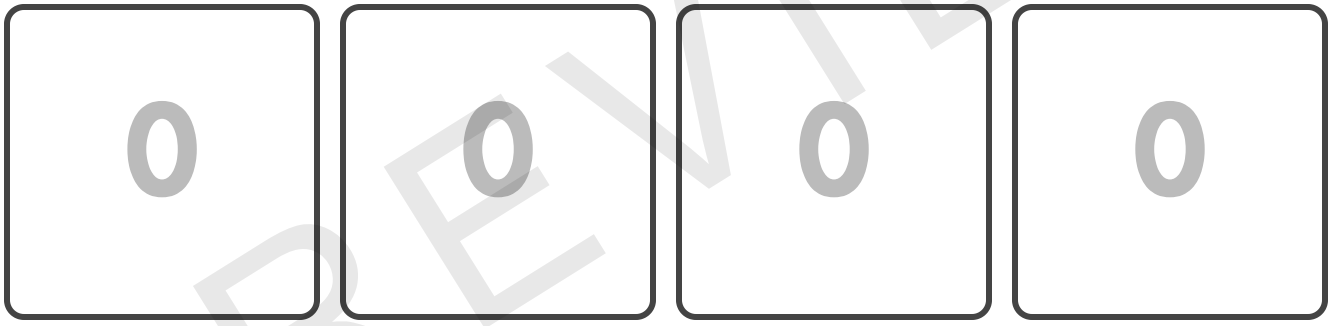
PREVIEW

3 × 4 = 12 and 4 × 3 = 12

ZERO

Property of Multiplication

Multiply by 0. The product is always 0.



4 groups of 0 dots

PREVIEW

4 × 0 = 0 and 0 × 4 = 0

Preview - Bright Path Sped

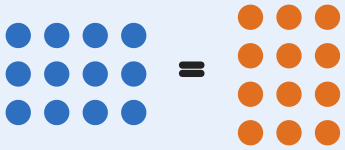
PROPERTIES OF MULTIPLICATION

Five ways multiplication works every time.

COMMUTATIVE

Switch the order. The product stays the same.

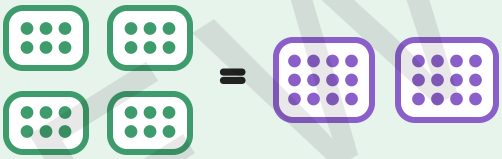
$3 \times 4 = 4 \times 3$



ASSOCIATIVE

Group the numbers a different way. The product stays the same.

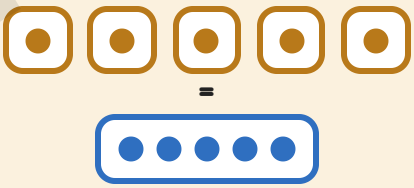
$(2 \times 3) \times 4 = 2 \times (3 \times 4)$



IDENTITY

Multiply by 1. The number stays the same.

$5 \times 1 = 5$



ZERO

Multiply by 0. The product is always 0.

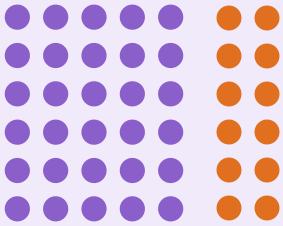
$4 \times 0 = 0$



DISTRIBUTIVE

Break a factor apart. Multiply each part. Add.

$6 \times 7 = (6 \times 5) + (6 \times 2)$



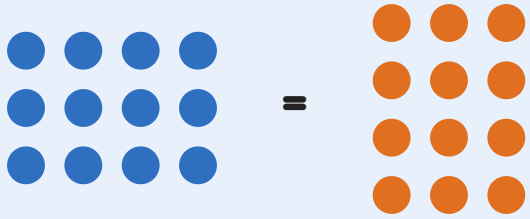
PREVIEW

Preview - Bright Path Sped

Cut out the charts. Glue them in your notebook.

COMMUTATIVE

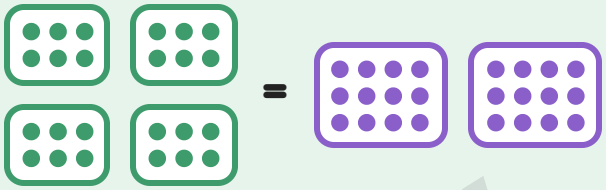
Switch the order. The product stays the same.



$3 \times 4 = 4 \times 3$

ASSOCIATIVE

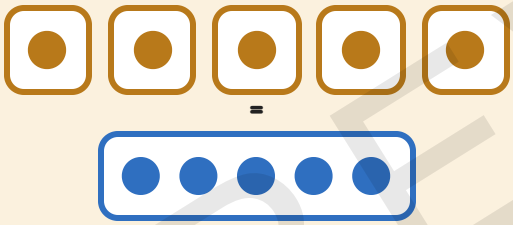
Group the numbers a different way. The product stays the same.



$(2 \times 3) \times 4 = 2 \times (3 \times 4)$

IDENTITY

Multiply by 1. The number stays the same.



$5 \times 1 = 5$

ZERO

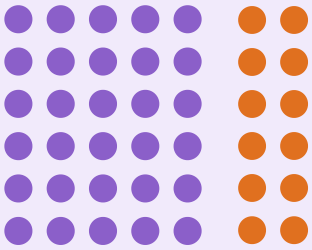
Multiply by 0. The product is always 0.



$4 \times 0 = 0$

DISTRIBUTIVE

Break a factor apart. Multiply each part. Add.



$6 \times 7 = (6 \times 5) + (6 \times 2)$

MY OWN

Write a property. Show an example.

PREVIEW

Preview - Bright Path Sped

Cut the strips. Keep one at your desk.

MY MULTIPLICATION PROPERTIES

Commutative: 3 × 4 = 4 × 3

Associative: (2 × 3) × 4 = 2 × (3 × 4)

Identity: 5 × 1 = 5

Zero: 4 × 0 = 0

Distributive: 6 × 7 = (6 × 5) + (6 × 2)

MY MULTIPLICATION PROPERTIES

Commutative: 3 × 4 = 4 × 3

Associative: (2 × 3) × 4 = 2 × (3 × 4)

Identity: 5 × 1 = 5

Zero: 4 × 0 = 0

Distributive: 6 × 7 = (6 × 5) + (6 × 2)

MY MULTIPLICATION PROPERTIES

Commutative: 3 × 4 = 4 × 3

Associative: (2 × 3) × 4 = 2 × (3 × 4)

Identity: 5 × 1 = 5

Zero: 4 × 0 = 0

Distributive: 6 × 7 = (6 × 5) + (6 × 2)

MY MULTIPLICATION PROPERTIES

Commutative: 3 × 4 = 4 × 3

Associative: (2 × 3) × 4 = 2 × (3 × 4)

Identity: 5 × 1 = 5

Zero: 4 × 0 = 0

Distributive: 6 × 7 = (6 × 5) + (6 × 2)

MY MULTIPLICATION PROPERTIES

Commutative: 3 × 4 = 4 × 3

Associative: (2 × 3) × 4 = 2 × (3 × 4)

Identity: 5 × 1 = 5

Zero: 4 × 0 = 0

Distributive: 6 × 7 = (6 × 5) + (6 × 2)

MY MULTIPLICATION PROPERTIES

Commutative: 3 × 4 = 4 × 3

Associative: (2 × 3) × 4 = 2 × (3 × 4)

Identity: 5 × 1 = 5

Zero: 4 × 0 = 0

Distributive: 6 × 7 = (6 × 5) + (6 × 2)

MY MULTIPLICATION PROPERTIES

Commutative: 3 × 4 = 4 × 3

Associative: (2 × 3) × 4 = 2 × (3 × 4)

Identity: 5 × 1 = 5

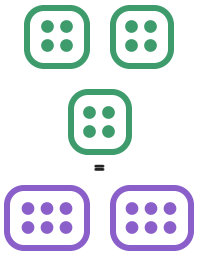
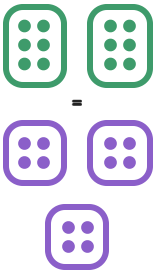
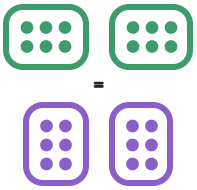
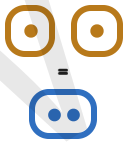
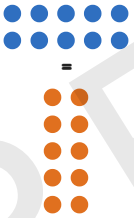
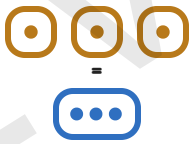
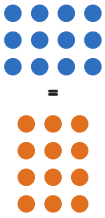
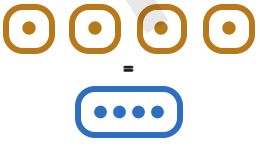
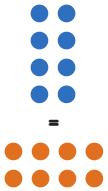
Zero: 4 × 0 = 0

Distributive: 6 × 7 = (6 × 5) + (6 × 2)

PREVIEW

Preview - Bright Path Sped

Cut the cards. Sort them on the mat.

 $(2 \times 2) \times 3 = 2 \times (2 \times 3)$	 $2 \times 0 = 0$	**IDENTITY Property**	 $(3 \times 2) \times 2 = 3 \times (2 \times 2)$	 $3 \times 0 = 0$
ZERO Property	 $(2 \times 3) \times 2 = 2 \times (3 \times 2)$	 $3 \times 5 = (3 \times 2) + (3 \times 3)$	**DISTRIBUTIVE Property**	 $2 \times 1 = 2$
 $2 \times 6 = (2 \times 4) + (2 \times 2)$	 $2 \times 5 = 5 \times 2$	 $3 \times 1 = 3$	 $4 \times 5 = (4 \times 3) + (4 \times 2)$	 $3 \times 4 = 4 \times 3$
 $4 \times 1 = 4$	**COMMUTATIVE Property**	 $4 \times 2 = 2 \times 4$	 $1 \times 0 = 0$	**ASSOCIATIVE Property**

PREVIEW

Preview : Bright Path Sped

My name _____

Glue each name on top. Glue its examples below.

name	name	name	name	name
example 1	example 1	example 1	example 1	example 1
example 2	example 2	example 2	example 2	example 2
example 3	example 3	example 3	example 3	example 3

PREVIEW

Preview : Bright Path Sped

My name _____

Circle the property.

$2 \times 9 = (2 \times 5) + (2 \times 4)$

Commutative Associative Identity
Zero Distributive

$5 \times 8 = 8 \times 5$

Commutative Associative Identity
Zero Distributive

$8 \times 0 = 0$

Commutative Associative Identity
Zero Distributive

$(3 \times 2) \times 2 = 3 \times (2 \times 2)$

Commutative Associative Identity
Zero Distributive

$6 \times 1 = 6$

Commutative Associative Identity
Zero Distributive

$7 \times 2 = 2 \times 7$

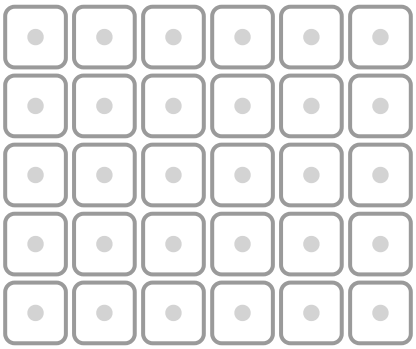
Commutative Associative Identity
Zero Distributive

PREVIEW

Preview : Bright Path Sped

My name _____

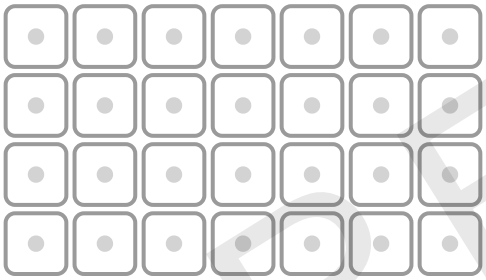
Break it apart. Color. Fill in.



Color 4 columns blue.
Color 2 columns orange.

5 × 6 = (5 × 4) + (5 × 2)

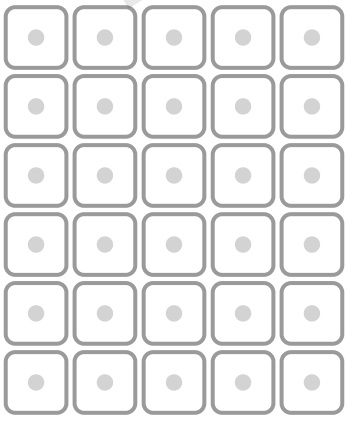
= _____ + _____ = _____



Color 5 columns blue.
Color 2 columns orange.

4 × 7 = (4 × 5) + (4 × 2)

= _____ + _____ = _____



Color 3 columns blue.
Color 2 columns orange.

6 × 5 = (6 × 3) + (6 × 2)

= _____ + _____ = _____

PREVIEW

Filled Example: One Child's Page

The page is "Fill in the missing number" (page 24). Theo (invented child). The child, the teacher and every answer on this page are invented.

Box	Theo wrote	Right?
1	$6 \times 2 = 2 \times 6$	yes
2	$9 \times 1 = 9$	yes
3	$5 \times 0 = 0$	yes
4	$7 \times 4 = 4 \times 7$	yes
5	$(2 \times 3) \times 2 = 2 \times (3 \times 2)$	yes
6	$3 \times 7 = (3 \times 5) + (3 \times 3)$	no: 2

Reading the page

5 of 6 boxes were right. In box 6 the child wrote 3. With 3 the two sides come out 21 and 24, so they do not match. The missing number is 2.

What the teacher did next

The teacher had the child draw a 3 by 7 array, circle 5 columns and 2 columns, and count each part. The child counted 15 and 6, added them, got 21, and fixed box 6.

What this example is not

One invented child's page. It sets no typical score, says nothing about any real child and predicts nothing.

PREVIEW

Key: Sort Cards

Cards read left to right, top to bottom on each cut sheet. Each column of the mat gets one name card and its three examples. Pages 21 and 22 use the same numbers, so one key serves both.

Sort cards (pages 21 and 22), mat on page 23

Cut sheet	Card 1	Card 2	Card 3	Card 4	Card 5
Row 1	Associative	Zero	Identity (name)	Associative	Zero
Row 2	Zero (name)	Associative	Distributive	Distributive (name)	Identity
Row 3	Distributive	Commutative	Identity	Distributive	Commutative
Row 4	Identity	Commutative (name)	Commutative	Zero	Associative (name)

Examples on the cards

- Commutative: $2 \times 5 = 5 \times 2$; $3 \times 4 = 4 \times 3$; $4 \times 2 = 2 \times 4$
- Associative: $(2 \times 2) \times 3 = 2 \times (2 \times 3)$; $(3 \times 2) \times 2 = 3 \times (2 \times 2)$; $(2 \times 3) \times 2 = 2 \times (3 \times 2)$
- Identity: $2 \times 1 = 2$; $3 \times 1 = 3$; $4 \times 1 = 4$
- Zero: $1 \times 0 = 0$; $2 \times 0 = 0$; $3 \times 0 = 0$
- Distributive: $3 \times 5 = (3 \times 2) + (3 \times 3)$; $2 \times 6 = (2 \times 4) + (2 \times 2)$; $4 \times 5 = (4 \times 3) + (4 \times 2)$

Notes on which cards to use first

PREVIEW

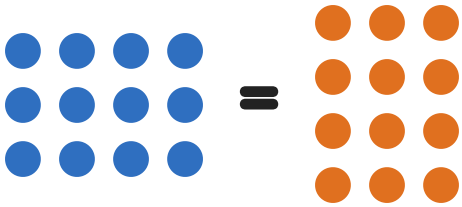
A Note Home: Properties of Multiplication

One page to send home when you start the posters.

Date _____ Class _____ Teacher _____

Dear families,

This week we are learning how multiplication works: the commutative, associative, identity, zero and distributive properties. We draw them as arrays of dots first, then write them as equations. For example, 3 × 4 and 4 × 3 both make 12.



This week we are practicing

_____

_____

You can try this at home

Look for arrays together: an egg carton, a muffin tin, a sheet of stamps. Count the rows and the columns, then turn it on its side and count again.

_____

_____

A note from me (your words)

_____

_____

_____

Thank you, (teacher) _____ Family signature, if your school asks for one _____

PREVIEW