Today's Materials

- ❑ calculator
- ❑ pencil
- ❑ notebook
- ❑ glue
- ❑ a smile

Expanding and Factoring

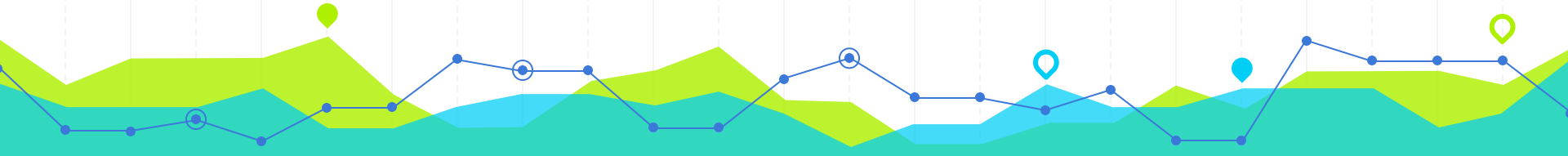
Lesson 19

CCSS Standards: Building on	• 7.NS.A
CCSS Standards: Addressing	• 7.EE.A.1
CCSS Standards: Building towards	• 7.EE.A.1

Let's use the distributive property to write expressions in different ways.

Today's Goals

- ❑ I can organize my work when I use the distributive property.
- ❑ I can use the distributive property to rewrite expressions with positive and negative numbers.
- ❑ I understand the factoring and expanding are words used to describe using the distributive property to write equivalent expressions.



Number Talk: **Parentheses**

Warm up

Find the value of each expression mentally.

$2 + 3 \cdot 4$

$(2 + 3)(4)$

$2 - 3 \cdot 4$

$2 - (3 + 4)$

$2 - 3 - 4$

Factoring and Expanding with Negative Numbers

Activity 1

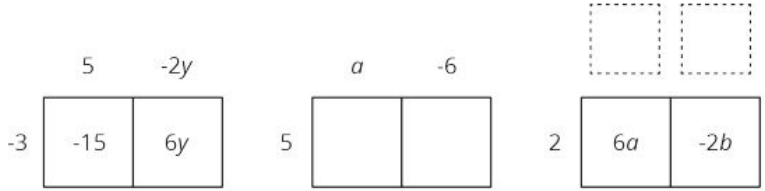
Directions, part 1:

In each row, write the equivalent expression.

- ★ Notice the organizers that appear above the table. These match the first 3 rows in the table.
- ★ If you get stuck, draw more organizers like these for other rows!

19.2: Factoring and Expanding with Negative Numbers

In each row, write the equivalent expression. If you get stuck, use a diagram to organize your work. The first row is provided as an example. Diagrams are provided for the first three rows.



factored	expanded
$-3(5-2y)$	$-15+6y$
$5(a-6)$	
	$6a-2b$
$-4(2w-5z)$	
$-(2x-3y)$	
	$20x-10y+15z$
$k(4-17)$	
	$10a-13a$
$-2x(3y-z)$	
	$ab-bc-3bd$
$-x(3y-z+4w)$	

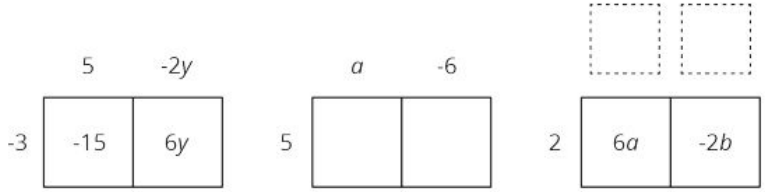
Directions, part 2:

Work in table groups to complete the activity.

- ★ Partner 1 should write the equivalent expression and explain their reasoning.
- ★ If you disagree, work together to resolve the problem.
- ★ For the next row, the next partner should do the explaining.

19.2: Factoring and Expanding with Negative Numbers

In each row, write the equivalent expression. If you get stuck, use a diagram to organize your work. The first row is provided as an example. Diagrams are provided for the first three rows.



factored	expanded
$-3(5-2y)$	$-15+6y$
$5(a-6)$	
	$6a-2b$
$-4(2w-5z)$	
$-(2x-3y)$	
	$20x-10y+15z$
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	$10a-13a$
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	$20x-10y+15z$

factored	expanded
$k(4-17)$	
	$10a-13a$
$-2x(3y-z)$	
	$ab-bc-3bd$
$-x(3y-z+4w)$	

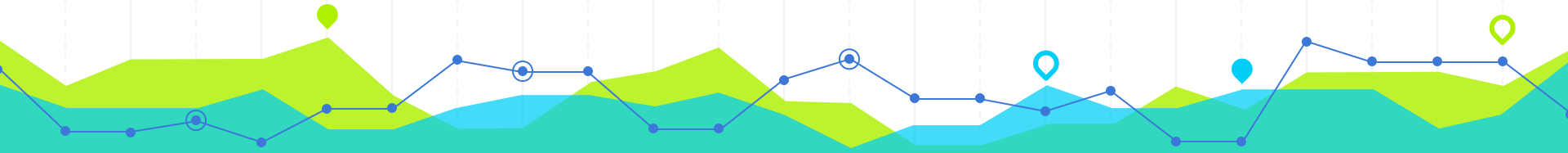
factored	expanded
$-3(5-2y)$	$-15+6y$
$5(a-6)$	$5a-30$
$2(3a-b)$	$6a-2b$
$-4(2w-5z)$	$-8w+20z$
$-(2x-3y)$	$-2x+3y$
$5(4x-2y+3z)$	$20x-10y+15z$
$k(4-17)$	$4k-17k$
$a(10-13)$	$10a-13a$
$-2x(3y-z)$	$-6xy+2xz$
$b(a-c-3d)$	$ab-bc-3bd$
$-x(3y-z+4w)$	$-3xy+xz-4xw$

Which rows did you and your partner disagree about? How did you resolve the disagreement?

Which rows are you the most unsure about?

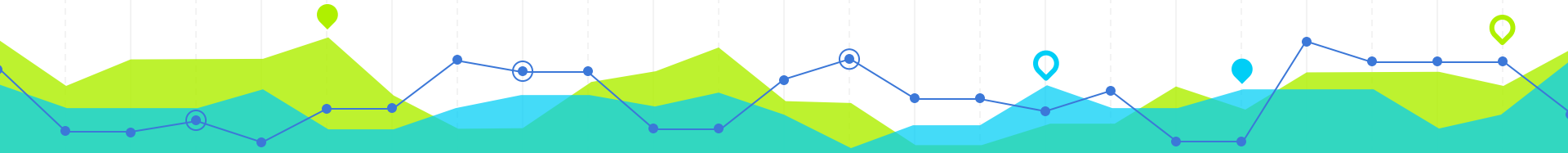
Describe a process or procedure for taking a factored expression and writing its corresponding expanded expression.

Describe a process or procedure for taking an expanded expression and writing its corresponding factored expression.



To write an equivalent expression by factoring means...

to use the distributive property to write a sum as a product.



To write an equivalent expression by expanding means...

to use the distributive property to write a product as a sum.

Today's Goals

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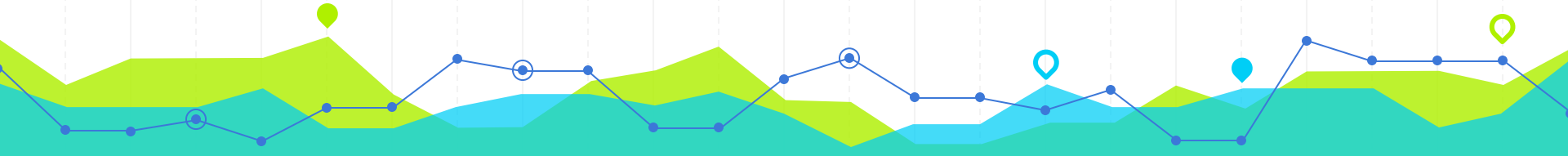

Equivalent Expressions

Cool Down