Today's Materials

- device
- notecard
- calculator
- pencil

Reasoning about Contexts with Tape Diagrams

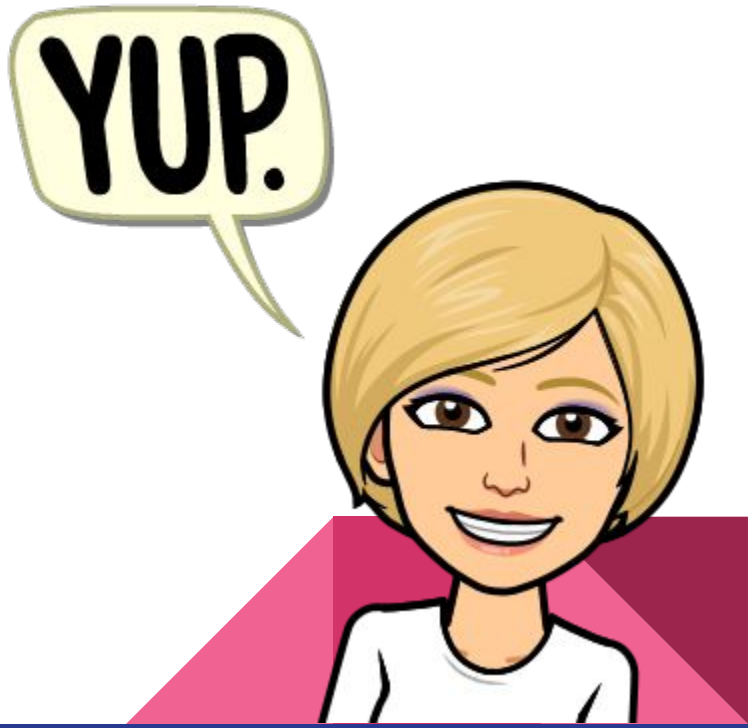
Lesson 3

CCSS Standards: Building on	• 6.EE.A.4
CCSS Standards: Addressing	• 7.EE.B.3
CCSS Standards: Building towards	• 7.EE.B.4

Let’s see how equations can describe tape diagrams!

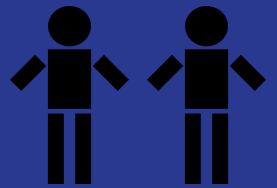
Today's Goals

- ❏ If I have an equation, I can draw a tape diagram that shows the same relationship.
- ❏ I can match equations and tape diagrams that represent the same situation.



Find Equivalent Expressions

Warm Up



What do you know about equivalent expressions?

Explain why **2x** and **2 + x** are not equivalent.

Explain why **3 + x** and **x + 3** are equivalent.

Think of another example of 2 equivalent expressions.

What does it mean to have equivalent expressions?

Describe ways to decide whether expressions are equivalent.

Begin with Quiet Work Time. (2 min.)

Talk about your answers with your partner.

Select all the expressions that are equivalent to **7(2—3n)**.

Explain how you know each expression you select is equivalent.

A. 9—10n

B. 14—3n

C. 14—21n

D. (2—3n) • 7

E. 7 • 2 • (-3n)

distributive property

$7(2 - 3n) = 14 - 21n$

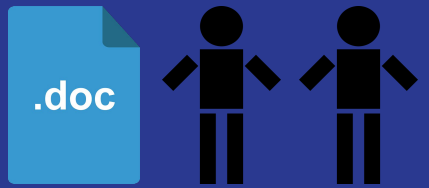
so...

$a(b+c) = ab + ac$

Matching Equations to Tape Diagrams

Activity 1

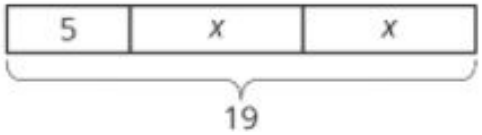
- Take Turns



With your partner/group...

Match each equation to one of the tape diagrams. Be prepared to explain how the equation matches the diagram.

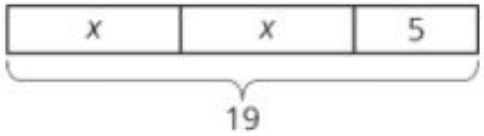
A



$2x + 5 = 19$

$19 = 5 + 2x$

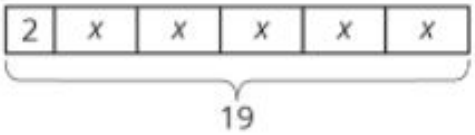
B



$2x + 5 = 19$

$19 = 5 + 2x$

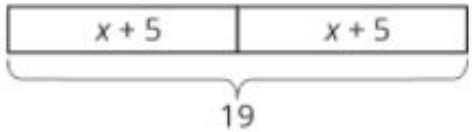
C



$2 + 5x = 19$

$19 - 2 = 5x$

D

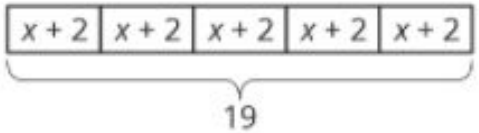


$2(x + 5) = 19$

$(x + 5) \cdot 2 = 19$

$19 \div 2 = x + 5$

E



$5(x + 2) = 19$

$19 = (x + 2) \cdot 5$

With your partner/group...

Put the tape diagrams away.

Sort the equations into categories of your choosing.

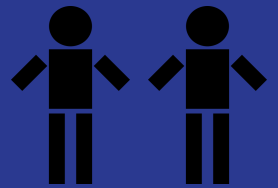
Be prepared to explain each category.

How did you sort the equations into categories?

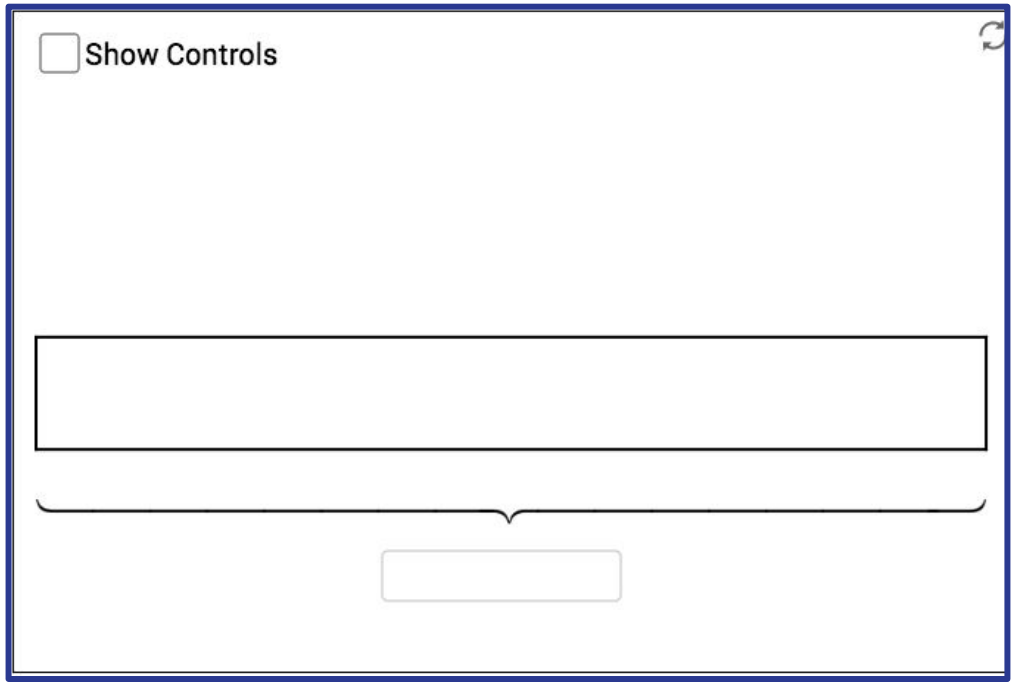
Drawing Tape Diagrams to Represent Equations

Activity 2

- 5 Practices



Draw a diagram to match each equation. Then solve for your variable. **Begin with Quiet Work Time. (5 min.)**

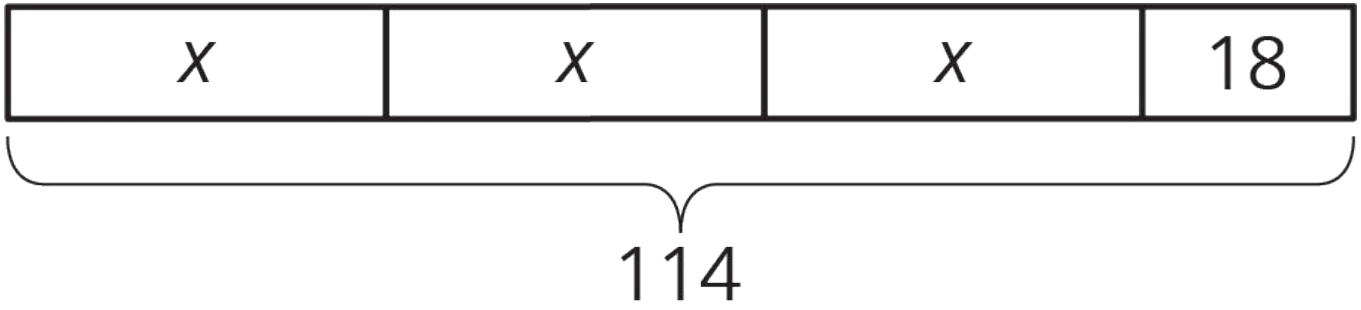


$$114 = 3x + 18$$

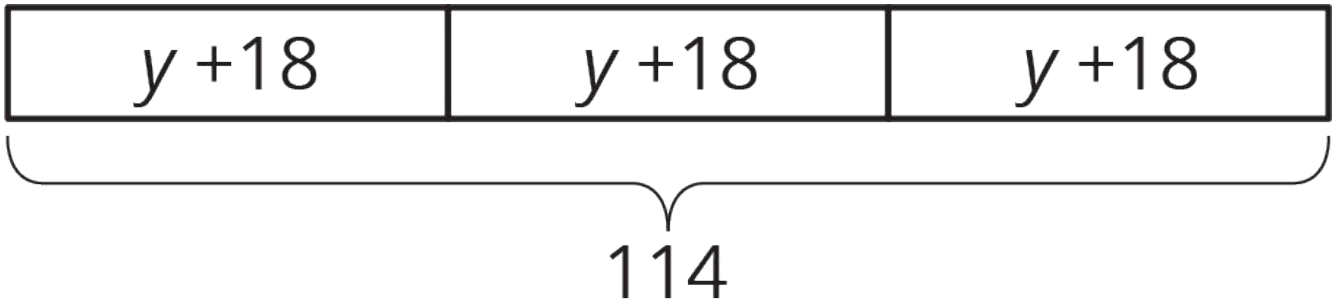
$$114 = 3(y + 18)$$

Unit 6
Lesson 3
Activity 3.3

$$114 = 3x + 18$$

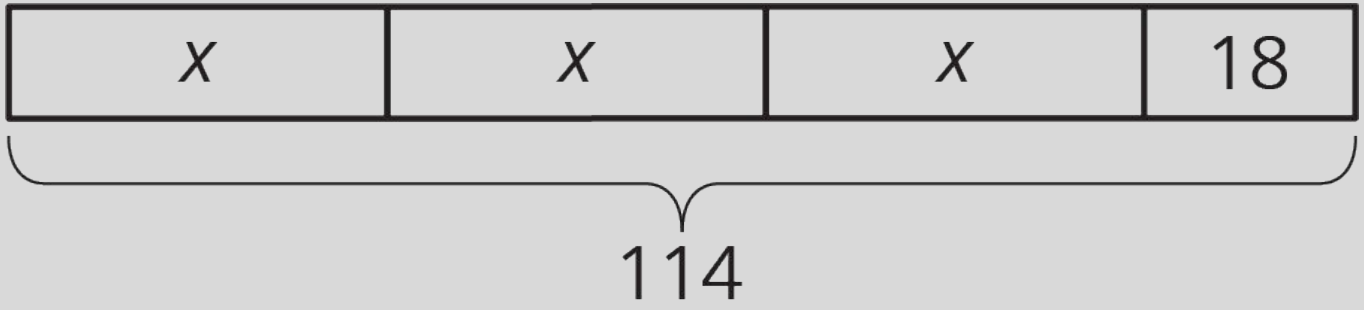


$$114 = 3(y + 18)$$



What are some ways that tape diagrams represent equations?

$$114 = 3x + 18$$



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Three of These Equations Belong Together

Cool Down