



Additional Guided Practice

8th Grade Readiness Standards

7.NS.1d, 7.EE.2c, 7.EE.1a, 7.EE.1b, 7.EE.1c, 7.EE.4a

- Intended Purpose
 - To help students **strengthen and maintain conceptual understanding** using visual representations of mathematical ideas
- Suggestions for use:
 - **Distributed/spaced practice** between readiness screenings
 - **Revisit an intervention** after taking a short break with students who demonstrate some conceptual understanding by coming close to the learning goal on their Growth Chart
- Instructional Design:
 - Approximately **5 to 15 minutes** per session
 - **Forms A, B and C** are available for each readiness standard
 - Begin with the teacher/interventionist leading a **“We Do Together”** problem
 - The middle provides time for students to **reflect** and ask questions about the learning target
 - End with students taking turns leading to solve the **“You Do Together”** problems
- Solutions for Form A Guided Practice are included at the end of this document:
 - Drawing guides were used to construct each math drawing
 - Students who struggle with kinesthetic movement and spatial organization many benefit from using drawing guides to construct math drawings
 - Drawing guides are available with Delta Math intervention kits at www.deltamath.org



Name _____ Date _____

Learning Target: I will add and subtract integers between -10 and 10 8th Grade - Readiness Standard 1 - 7.NS.1d
- Form A

1. We Do Together: Draw, say, write and think add to subtract.

Draw 6 negatives and cross out 2 negatives	Draw 6 negatives and 2 positives to find the total
Say the <u>subtraction</u> problem and write the answer $(-6) - (-2) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-6) + (+2) = \underline{\hspace{2cm}}$
Draw 3 negatives, then draw 5 zero pairs to cross out 5 positives	Draw 3 negatives and 5 negatives to find the total
Say the <u>subtraction</u> problem and write the answer $(-3) - (+5) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-3) + (-5) = \underline{\hspace{2cm}}$

2. Reflect: What questions do you have about adding and subtracting integers?

3. You Do Together: Draw, say, write and think add to subtract.

Draw 5 negatives, then draw 3 zero pairs to cross out 8 negatives	Draw 5 negatives and 8 positives to find the total
Say the <u>subtraction</u> problem and write the answer $(-5) - (-8) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-5) + (+8) = \underline{\hspace{2cm}}$
Draw 2 negatives, then draw 4 zero pairs to cross out 4 positives	Draw 2 negatives and 4 negatives to find the total
Say the <u>subtraction</u> problem and write the answer $(-2) - (+4) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-2) + (-4) = \underline{\hspace{2cm}}$



Name _____ Date _____

Learning Target: I will add and subtract integers between -10 and 10 8th Grade - Readiness Standard 1 - 7.NS.1d
- Form B

1. We Do Together: Draw, say, write and think add to subtract.

Draw 7 negatives and cross out 5 negatives	Draw 7 negatives and 5 positives to find the total
Say the <u>subtraction</u> problem and write the answer $(-7) - (-5) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-7) + (+5) = \underline{\hspace{2cm}}$
Draw 2 negatives, then draw 6 zero pairs to cross out 6 positives	Draw 2 negatives and 6 negatives to find the total
Say the <u>subtraction</u> problem and write the answer $(-2) - (+6) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-2) + (-6) = \underline{\hspace{2cm}}$

2. Reflect: What questions do you have about adding and subtracting integers?

3. You Do Together: Draw, say, write and think add to subtract.

Draw 4 negatives, then draw 3 zero pairs to cross out 7 negatives	Draw 4 negatives and 7 positives to find the total
Say the <u>subtraction</u> problem and write the answer $(-4) - (-7) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-4) + (+7) = \underline{\hspace{2cm}}$
Draw 3 positives, then draw 5 zero pairs to cross out 5 negatives	Draw 3 positives and 5 positives to find the total
Say the <u>subtraction</u> problem and write the answer $(3) - (-5) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(3) + (+5) = \underline{\hspace{2cm}}$



Name _____ Date _____

Learning Target: I will add and subtract integers between -10 and 10 8th Grade - Readiness Standard 1 - 7.NS.1d
- Form C

1. We Do Together: Draw, say, write and think add to subtract.

Draw 5 negatives and cross out 2 negatives	Draw 5 negatives and 2 positives to find the total
Say the <u>subtraction</u> problem and write the answer $(-5) - (-2) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-5) + (+2) = \underline{\hspace{2cm}}$
Draw 3 negatives, then draw 7 zero pairs to cross out 7 positives	Draw 3 negatives and 7 negatives to find the total
Say the <u>subtraction</u> problem and write the answer $(-3) - (+7) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-3) + (-7) = \underline{\hspace{2cm}}$

2. Reflect: What questions do you have about adding and subtracting integers?

3. You Do Together: Draw, say, write and think add to subtract.

Draw 4 negatives, then draw 2 zero pairs to cross out 6 negatives	Draw 4 negatives and 6 positives to find the total
Say the <u>subtraction</u> problem and write the answer $(-4) - (-6) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(-4) + (+6) = \underline{\hspace{2cm}}$
Draw 2 positives, then draw 5 zero pairs to cross out 5 negatives	Draw 2 positives and 5 positives to find the total
Say the <u>subtraction</u> problem and write the answer $(2) - (-5) = \underline{\hspace{2cm}}$	Say the " <u>add to subtract</u> " equation and write the total $(2) + (+5) = \underline{\hspace{2cm}}$

Learning Target: I will multiply and divide integers between -10 and 10 8th Grade - Readiness Standard 2 - 7.NS.2c
- Form A

1. We Do Together: Draw, say, write and think multiply to divide. *Represent both meanings of division*

Draw 3 groups of 4 negatives Group 1 Group 2 Group 3 Total = _____	Draw to <u>divide</u> 12 negatives into 3 equal groups Group 1 Group 2 Group 3 3 groups of _____
Say the <u>multiplication</u> problem and write the answer $3(-4) = \underline{\hspace{2cm}}$	Say the “ <u>multiply to divide</u> ” equation and write answers $-12 \div 3 = \underline{\hspace{2cm}}$ <i>Think: $3(\underline{\hspace{1cm}}) = -12$</i>
Draw the opposite of 4 groups of 5 positives... which is equal to 4 groups of 5 _____ Group 1 Group 2 Group 3 Group 4 Total = _____	Draw to <u>divide</u> 20 negatives into equal groups of -5 _____ groups of -5
Say the <u>multiplication</u> problem and write the answer $-4(+5) = +4(-5) = \underline{\hspace{2cm}}$	Say the “ <u>multiply to divide</u> ” equation and write answers $-20 \div -5 = \underline{\hspace{2cm}}$ <i>Think: $\underline{\hspace{1cm}}(-5) = -20$</i>

2. Reflect: What questions do you have about multiplying and dividing integers?

3. You Do Together: Draw, say, write and think multiply to divide. *Represent both meanings of division*

Draw 2 groups of 5 negatives Group 1 Group 2 Total = _____	Draw to <u>divide</u> 10 negatives into 2 equal groups Group 1 Group 2 2 groups of _____
Say the <u>multiplication</u> problem and write the answer $2(-5) = \underline{\hspace{2cm}}$	Say the “ <u>multiply to divide</u> ” equation and write answers $-10 \div 2 = \underline{\hspace{2cm}}$ <i>Think: $2(\underline{\hspace{1cm}}) = -10$</i>
Draw the opposite of 4 groups of 3 negatives... which is equal to 4 groups of 3 _____ Group 1 Group 2 Group 3 Group 4 Total = _____	Draw to <u>divide</u> 12 negatives into equal groups of -3 _____ groups of -3
Say the <u>multiplication</u> problem and write the answer $-4(-3) = +4(+3) = \underline{\hspace{2cm}}$	Say the “ <u>multiply to divide</u> ” equation and write answers $-12 \div -3 = \underline{\hspace{2cm}}$ <i>Think: $\underline{\hspace{1cm}}(-3) = -12$</i>

Learning Target: I will multiply and divide integers between -10 and 10 8th Grade - Readiness Standard 2 - 7.NS.2c
- Form B

1. We Do Together: Draw, say, write and think multiply to divide. *Represent both meanings of division*

Draw 2 groups of 6 negatives Group 1 Group 2 Total = _____	Draw to <u>divide</u> 12 negatives into 2 equal groups Group 1 Group 2 3 groups of _____
Say the <u>multiplication</u> problem and write the answer $2(-6) = \underline{\hspace{2cm}}$	Say the “ <u>multiply to divide</u> ” equation and write answers $-12 \div 2 = \underline{\hspace{2cm}}$ <i>Think: $2(\underline{\hspace{1cm}}) = -12$</i>
Draw the opposite of 3 groups of 4 negatives ... which is equal to 3 groups of 4 _____ Group 1 Group 2 Group 3 Total = _____	Draw to <u>divide</u> 12 negatives into equal groups of -3 _____ groups of -3
Say the <u>multiplication</u> problem and write the answer $-3(-4) = +3(+4) = \underline{\hspace{2cm}}$	Say the “ <u>multiply to divide</u> ” equation and write answers $-12 \div -3 = \underline{\hspace{2cm}}$ <i>Think: $\underline{\hspace{1cm}}(-3) = -12$</i>

2. Reflect: What questions do you have about multiplying and dividing integers?

3. You Do Together: Draw, say, write and think multiply to divide. *Represent both meanings of division*

Draw 4 groups of 5 negatives Group 1 Group 2 Group 3 Group 4 Total = _____	Draw to <u>divide</u> 20 negatives into 4 equal groups Group 1 Group 2 Group 3 Group 4 4 groups of _____
Say the <u>multiplication</u> problem and write the answer $4(-5) = \underline{\hspace{2cm}}$	Say the “ <u>multiply to divide</u> ” equation and write answers $-20 \div 4 = \underline{\hspace{2cm}}$ <i>Think: $4(\underline{\hspace{1cm}}) = -20$</i>
Draw the opposite of 3 groups of 6 positives... which is equal to 4 groups of 3 _____ Group 1 Group 2 Group 3 Total = _____	Draw to <u>divide</u> 18 negatives into equal groups of -6 _____ groups of -6
Say the <u>multiplication</u> problem and write the answer $-3(+6) = +3(-6) = \underline{\hspace{2cm}}$	Say the “ <u>multiply to divide</u> ” equation and write answers $-18 \div -6 = \underline{\hspace{2cm}}$ <i>Think: $\underline{\hspace{1cm}}(-6) = -18$</i>

Learning Target: I will multiply and divide integers between -10 and 10 8th Grade - Readiness Standard 2 - 7.NS.2c
- Form C

1. We Do Together: Draw, say, write and think multiply to divide. *Represent both meanings of division*

Draw 4 groups of 2 negatives Group 1 Group 2 Group 3 Group 4 Total = _____	Draw to <u>divide</u> 8 negatives into 4 equal groups Group 1 Group 2 Group 3 Group 4 4 groups of _____
Say the <u>multiplication</u> problem and write the answer 4(-2) = _____	Say the “ <u>multiply to divide</u> ” equation and write answers -8 ÷ 4 = _____ Think: 4(____) = -8
Draw the opposite of 4 groups of 3 positives... which is equal to 4 groups of 3 _____ Group 1 Group 2 Group 3 Group 4 Total = _____	Draw to <u>divide</u> 12 negatives into equal groups of -4 _____ groups of -4
Say the <u>multiplication</u> problem and write the answer -4(+3) = +4(-3) = _____	Say the “ <u>multiply to divide</u> ” equation and write answers -12 ÷ -4 = _____ Think: ____(-4) = -12

2. Reflect: What questions do you have about multiplying and dividing integers?

3. You Do Together: Draw, say, write and think multiply to divide. *Represent both meanings of division*

Draw 5 groups of 3 negatives Group 1 Group 2 Group 3 Group 4 Group 5 Total = _____	Draw to <u>divide</u> 15 negatives into 5 equal groups Group 1 Group 2 Group 3 Group 4 Group 5 5 groups of _____
Say the <u>multiplication</u> problem and write the answer 5(-3) = _____	Say the “ <u>multiply to divide</u> ” equation and write answers -15 ÷ 5 = _____ Think: 5(____) = -15
Draw the opposite of 3 groups of 6 negatives... which is equal to 3 groups of 6 _____ Group 1 Group 2 Group 3 Total = _____	Draw to <u>divide</u> 18 negatives into equal groups of -3 _____ groups of -3
Say the <u>multiplication</u> problem and write the answer -3(-6) = +3(+6) = _____	Say the “ <u>multiply to divide</u> ” equation and write answers -18 ÷ -3 = _____ Think: ____(-3) = -18



Learning Target: I will add and subtract algebraic expressions

1. We Do Together: Say, combine, write and add the opposite to subtract. ($a - b = a + -b$)

<p>Say the expressions and combine the like terms</p> $(x + 3) + (4x + -1)$ <div style="display: flex; align-items: center; justify-content: center; gap: 10px;"> <div style="border: 1px solid black; padding: 2px 5px;">+x</div> <div>+</div> <div style="border: 1px solid black; padding: 2px 5px;">+x</div> <div>+</div> <div style="border: 1px solid black; padding: 2px 5px;">+x</div> <div>+</div> <div style="border: 1px solid black; padding: 2px 5px;">+x</div> <div>+</div> <div style="border: 1px solid black; padding: 2px 5px;">+x</div> <div>-</div> </div>	<p>Write as <u>add the opposite to subtract</u>, then draw</p> $(x + 3) - (4x + -1)$ $(x + 3) + \underline{\hspace{2cm}}$
<p>Write the equivalent simplified algebraic expression</p>	<p>Write the equivalent simplified algebraic expression</p>

2. Reflect: What questions do you have about adding and subtracting algebraic expressions?

3. You Do Together: Say, combine, write and add the opposite to subtract. ($a - b = a + -b$)

<p>Say the expressions and combine the like terms</p> $(3x + -5) + x + (2x + 3)$ <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> </div> <div style="margin-right: 10px;"> <div>-</div> <div>-</div> <div>-</div> <div>-</div> </div> <div style="margin-right: 10px;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> </div> <div style="margin-right: 10px;"> <div>-</div> </div> <div style="margin-right: 10px;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> </div> <div> <div>+</div> <div>+</div> <div>+</div> </div> </div>	<p>Write as <u>add the opposite</u> to subtract, then draw</p> $(3x + -5) - x - (2x + -3)$ $(3x + 5) + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
<p>Write the equivalent simplified algebraic expression</p>	<p>Write the equivalent simplified algebraic expression</p>
<p>Say the expressions and combine the like terms</p> $(x + 1) + (-4x + 2) + 2x$ <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> </div> <div style="margin-right: 10px;"> <div>+</div> </div> <div style="margin-right: 10px;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$-x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$-x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$-x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$-x$</div> </div> <div style="margin-right: 10px;"> <div>+</div> <div>+</div> </div> <div style="margin-right: 10px;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> </div> </div>	<p>Write as <u>add the opposite</u> to subtract, then draw</p> $(x + 1) - (-4x + 2) - 2x$ $(x + 1) + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
<p>Write the equivalent simplified algebraic expression</p>	<p>Write the equivalent simplified algebraic expression</p>

Learning Target: I will add and subtract algebraic expressions 8th Grade - Readiness Standard 3 - 7.EE.1a - Form B

1. We Do Together: Say, combine, write and add the opposite to subtract. $(a - b = a + -b)$

<p>Say the expressions and combine the like terms</p> $(3x + 1) + (x + -2)$ <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">+</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">-</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">-</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">-</div> </div>	<p>Write as <u>add the opposite to subtract</u>, then draw</p> $(3x + 1) - (x + -2)$ $(3x + 1) + \underline{\hspace{2cm}}$
<p>Write the equivalent simplified algebraic expression</p>	<p>Write the equivalent simplified algebraic expression</p>

2. Reflect: What questions do you have about adding and subtracting algebraic expressions?

3. You Do Together: Say, combine, write and add the opposite to subtract. $(a - b = a + -b)$

<p>Say the expressions and combine the like terms</p> $(2x + -3) + x + (4x + 2)$ <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">-</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">+</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">-</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">+</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">+</div> </div>	<p>Write as <u>add the opposite to subtract</u>, then draw</p> $(2x + -3) - x - (4x + 2)$ $(2x + 3) + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
<p>Write the equivalent simplified algebraic expression</p>	<p>Write the equivalent simplified algebraic expression</p>
<p>Say the expressions and combine the like terms</p> $(x + 3) + (-2x + 1) + 3x$ <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">+</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">-x</div> <div style="margin: 0 10px;">+</div> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">+</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px; margin: 2px;">+x</div> <div style="margin: 0 10px;">+</div> </div>	<p>Write as <u>add the opposite to subtract</u>, then draw</p> $(x + 3) - (-2x + 1) - 3x$ $(x + 3) + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
<p>Write the equivalent simplified algebraic expression</p>	<p>Write the equivalent simplified algebraic expression</p>

Learning Target: I will add and subtract algebraic expressions 8th Grade - Readiness Standard 3 - 7.EE.1a - Form C

1. We Do Together: Say, combine, write and add the opposite to subtract. $(a - b = a + -b)$

<p>Say the expressions and combine the like terms</p> $(x + 4) + (2x + -3)$ <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">+</div> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">-</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin: 0 5px;">+</div> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">-</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin: 0 5px;">+</div> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">-</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin: 0 5px;">+</div> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">-</div> </div>	<p>Write as <u>add the opposite to subtract</u>, then draw</p> $(x + 4) - (2x + -3)$ $(x + 4) + \underline{\hspace{2cm}}$
<p>Write the equivalent simplified algebraic expression</p>	<p>Write the equivalent simplified algebraic expression</p>

2. Reflect: What questions do you have about adding and subtracting algebraic expressions?

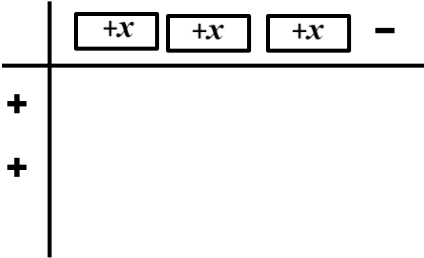
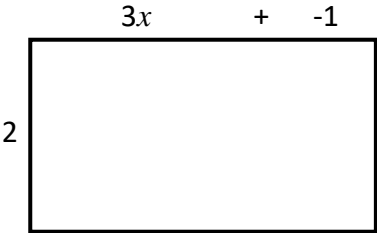
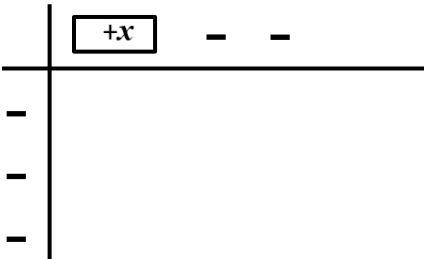
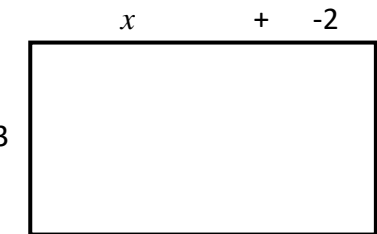
3. You Do Together: Say, combine, write and add the opposite to subtract. $(a - b = a + -b)$

<p>Say the expressions and combine the like terms</p> $(3x + -4) + x + (4x + 1)$ <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">-</div> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">+</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">-</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">-</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">+</div> </div>	<p>Write as <u>add the opposite</u> to subtract, then draw</p> $(3x + -4) - x - (4x + 1)$ $(3x + 4) + \underline{\hspace{1cm}} + \underline{\hspace{1cm}}$
<p>Write the equivalent simplified algebraic expression</p>	<p>Write the equivalent simplified algebraic expression</p>
<p>Say the expressions and combine the like terms</p> $(2x + 1) + (-x + 3) + 2x$ <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">+</div> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">-x</div> <div style="margin: 0 5px;">+</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">+</div> </div> <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">+x</div> <div style="margin: 0 5px;">+</div> </div>	<p>Write as <u>add the opposite</u> to subtract, then draw</p> $(2x + 1) - (-x + 3) - 2x$ $(2x + 1) + \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
<p>Write the equivalent simplified algebraic expression</p>	<p>Write the equivalent simplified algebraic expression</p>

Learning Target: I will expand algebraic expressions

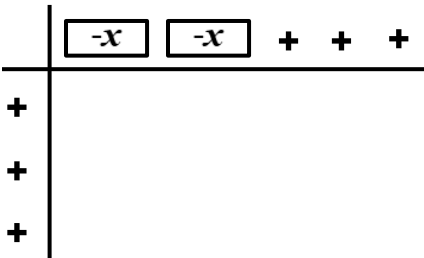
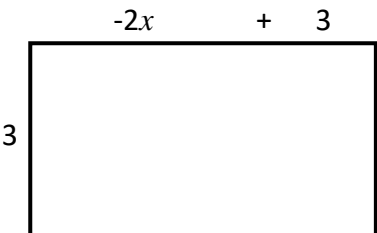
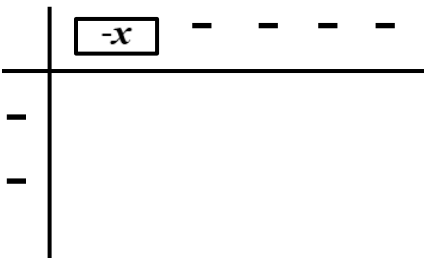
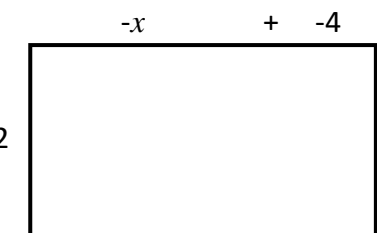
8th Grade - Readiness Standard 4 - 7.EE.1b - Form A

1. We Do Together: Draw two ways and show.

Draw an <u>array model</u> to multiply 	Draw an <u>area model</u> to multiply 	Show your thinking using numbers and symbols $2(3x - 1)$
Draw an <u>array model</u> to multiply 	Draw an <u>area model</u> to multiply 	Show your thinking using numbers and symbols $-3(x - 2)$

2. Reflect: What questions do you have about expanding algebraic expressions?

3. You Do Together: Draw two ways and show.

Draw an <u>array model</u> to multiply 	Draw an <u>area model</u> to multiply 	Show your thinking using numbers and symbols $3(-2x + 3)$
Draw an <u>array model</u> to multiply 	Draw an <u>area model</u> to multiply 	Show your thinking using numbers and symbols $-2(-x - 4)$

Learning Target: I will expand algebraic expressions

8th Grade - Readiness Standard 4 - 7.EE.1b - Form B

1. We Do Together: Draw two ways and show.

<p>Draw an <u>array model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $+x$ $+x$ $-$ </div> <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> $+$ $+$ $+$ </div> <div style="border: 1px solid black; width: 200px; height: 100px;"></div> </div>	<p>Draw an <u>area model</u> to multiply</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> $2x$ $+$ -1 </div> <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> 3 </div> <div style="border: 1px solid black; width: 200px; height: 100px;"></div> </div>	<p>Show your thinking using numbers and symbols</p> $3(2x - 1)$
<p>Draw an <u>array model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $+x$ $-$ $-$ $-$ </div> <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> $-$ $-$ </div> <div style="border: 1px solid black; width: 200px; height: 100px;"></div> </div>	<p>Draw an <u>area model</u> to multiply</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> x $+$ -3 </div> <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> -2 </div> <div style="border: 1px solid black; width: 200px; height: 100px;"></div> </div>	<p>Show your thinking using numbers and symbols</p> $-2(x - 3)$

2. Reflect: What questions do you have about expanding algebraic expressions?

3. You Do Together: Draw two ways and show.

<p>Draw an <u>array model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $-x$ $-x$ $+$ </div> <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> $+$ $+$ $+$ $+$ </div> <div style="border: 1px solid black; width: 200px; height: 100px;"></div> </div>	<p>Draw an <u>area model</u> to multiply</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> $-2x$ $+$ 1 </div> <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> 4 </div> <div style="border: 1px solid black; width: 200px; height: 100px;"></div> </div>	<p>Show your thinking using numbers and symbols</p> $4(-2x + 1)$
<p>Draw an <u>array model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $-x$ $-$ $-$ </div> <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> $-$ $-$ $-$ </div> <div style="border: 1px solid black; width: 200px; height: 100px;"></div> </div>	<p>Draw an <u>area model</u> to multiply</p> <div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> $-x$ $+$ -2 </div> <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> -3 </div> <div style="border: 1px solid black; width: 200px; height: 100px;"></div> </div>	<p>Show your thinking using numbers and symbols</p> $-3(-x - 2)$

Learning Target: I will expand algebraic expressions

8th Grade - Readiness Standard 4 - 7.EE.1b - Form C

1. We Do Together: Draw two ways and show.

<p>Draw an <u>array model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $+x$ $+x$ $-$ </div> <div style="border: 1px solid black; padding: 5px;"> $+$ $+$ $+$ $+$ </div>	<p>Draw an <u>area model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $2x$ $+$ -1 </div> <div style="border: 1px solid black; padding: 5px;"> 4 </div>	<p>Show your thinking using numbers and symbols</p> $4(2x - 1)$
<p>Draw an <u>array model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $+x$ $-$ $-$ $-$ $-$ </div> <div style="border: 1px solid black; padding: 5px;"> $-$ $-$ $-$ </div>	<p>Draw an <u>area model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> x $+$ -4 </div> <div style="border: 1px solid black; padding: 5px;"> -3 </div>	<p>Show your thinking using numbers and symbols</p> $-3(x - 4)$

2. Reflect: What questions do you have about expanding algebraic expressions?

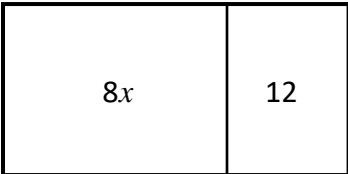
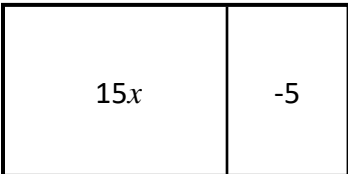
3. You Do Together: Draw two ways and show.

<p>Draw an <u>array model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $-x$ $-x$ $-x$ $+$ </div> <div style="border: 1px solid black; padding: 5px;"> $+$ $+$ </div>	<p>Draw an <u>area model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $-3x$ $+$ 1 </div> <div style="border: 1px solid black; padding: 5px;"> 2 </div>	<p>Show your thinking using numbers and symbols</p> $2(-3x + 1)$
<p>Draw an <u>array model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $-x$ $-$ $-$ $-$ $-$ </div> <div style="border: 1px solid black; padding: 5px;"> $-$ $-$ </div>	<p>Draw an <u>area model</u> to multiply</p> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> $-x$ $+$ -5 </div> <div style="border: 1px solid black; padding: 5px;"> -2 </div>	<p>Show your thinking using numbers and symbols</p> $-2(-x - 5)$

Learning Target: I will factor linear expressions

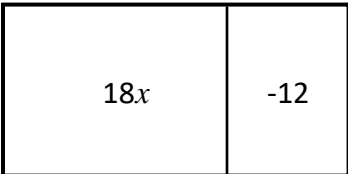
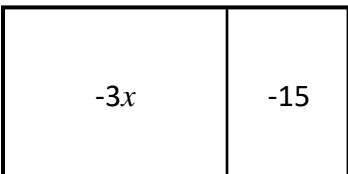
8th Grade - Readiness Standard 5 - 7.EE.1c - Form A

1. We Do Together: List, circle, label, find and write.

List the factors and circle the greatest common factor $\begin{array}{r l} 8x & 12 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $8x + 12$
List the factors and circle the greatest common factor $\begin{array}{r l} 15x & -5 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $15x - 5$

2. Reflect: What questions do you have about factoring algebraic expressions?

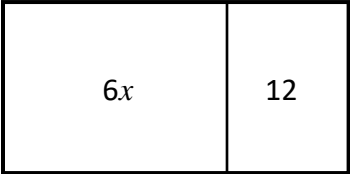
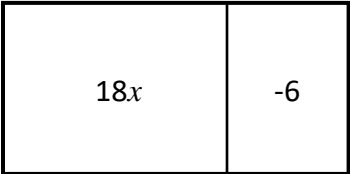
3. You Do Together: List, circle, label, find and write.

List the factors and circle the greatest common factor $\begin{array}{r l} 18x & -12 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $18x - 12$
List the factors and circle the greatest common factor $\begin{array}{r l} -3x & -15 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $-3x - 15$

Learning Target: I will factor linear expressions

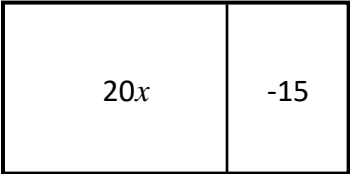
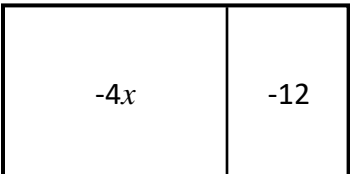
8th Grade - Readiness Standard 5 - 7.EE.1c - Form B

1. We Do Together: List, circle, label, find and write.

List the factors and circle the greatest common factor $\begin{array}{r l} 6x & 12 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $6x + 12$
List the factors and circle the greatest common factor $\begin{array}{r l} 18x & -6 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $18x - 6$

2. Reflect: What questions do you have about factoring algebraic expressions?

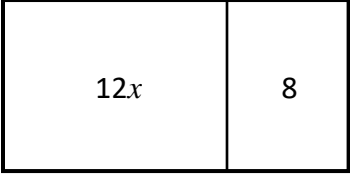
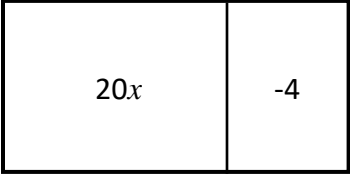
3. You Do Together: List, circle, label, find and write.

List the factors and circle the greatest common factor $\begin{array}{r l} 20x & -15 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $20x - 15$
List the factors and circle the greatest common factor $\begin{array}{r l} -4x & -12 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $-4x - 12$

Learning Target: I will factor linear expressions

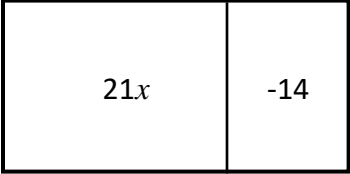
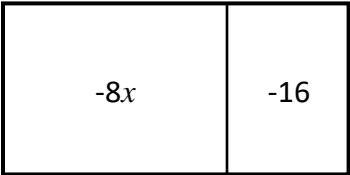
8th Grade - Readiness Standard 5 - 7.EE.1c - Form C

1. We Do Together: List, circle, label, find and write.

List the factors and circle the greatest common factor $\begin{array}{r l} 12x & 8 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $12x + 18$
List the factors and circle the greatest common factor $\begin{array}{r l} 20x & -4 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $20x - 4$

2. Reflect: What questions do you have about factoring algebraic expressions?

3. You Do Together: List, circle, label, find and write.

List the factors and circle the greatest common factor $\begin{array}{r l} 21x & -14 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $21x - 14$
List the factors and circle the greatest common factor $\begin{array}{r l} -8x & -16 \\ \hline \end{array}$	Label the height as the greatest common factor and find the partial lengths 	Write an equivalent expression using the greatest common factor $-8x - 16$

Learning Target: I will solve equations with more than one step 8th Grade - Readiness Standard 6 - 7.EE.4a - Form A

1. We Do Together: Say, draw, and show.

<p>Say what you see</p> <div style="display: flex; align-items: center; justify-content: center; margin: 20px 0;"> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="border: 1px solid black; padding: 2px 5px;">$+x$</div> </div> <div style="margin: 0 10px; font-size: 24px;">+</div> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border-left: 3px double black; border-right: 3px double black; height: 100px; margin: 0 10px;"></div> <div style="margin-top: 10px;">is equal to</div> </div> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">+++++</div> <div style="margin-bottom: 10px;">+++++</div> <div>+++</div> </div> </div> <div style="margin: 20px 0;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 5px 10px;">$3x$</td> <td style="padding: 5px 10px; width: 30px; text-align: center;">1</td> </tr> </table> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 5px 20px; text-align: center;">13</td> </tr> </table> </div>	$3x$	1	13
$3x$	1		
13			

2. Reflect: What questions do you have about solving equations with more than one step?

3. You Do Together: Say, draw, and show.

<p>Say what you see</p> <div style="display: flex; align-items: center; justify-content: center; margin: 20px 0;"> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="border: 1px solid black; padding: 2px 5px;">$+x$</div> </div> <div style="margin: 0 10px; font-size: 24px;">+</div> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border-left: 3px double black; border-right: 3px double black; height: 100px; margin: 0 10px;"></div> <div style="margin-top: 10px;">is equal to</div> </div> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="margin-bottom: 10px;">+++++</div> <div style="margin-bottom: 10px;">+++++</div> <div style="margin-bottom: 10px;">+++++</div> <div>+</div> </div> </div> <div style="margin: 20px 0;"> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 5px 10px;">$2x$</td> <td style="padding: 5px 10px; width: 30px; text-align: center;">6</td> </tr> </table> <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 5px 20px; text-align: center;">16</td> </tr> </table> </div>	$2x$	6	16
$2x$	6		
16			

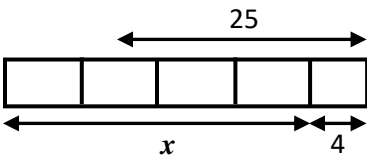
Learning Target: I will solve equations with more than one step 8th Grade - Readiness Standard 6 - 7.EE.4a - Form B

1. We Do Together: Say, draw, and show.

<p>Say what you see</p> <div style="display: flex; align-items: center; justify-content: center; margin: 20px 0;"> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="margin-bottom: 5px;">+</div> <div style="border: 1px solid black; padding: 2px 5px;">$+x$</div> </div> <div style="margin: 0 10px;"> </div> <div style="display: flex; flex-direction: column; align-items: center;"> <div>+++++</div> <div>+++++</div> <div>+++++</div> </div> </div> <div style="display: flex; align-items: center; justify-content: center; margin: 20px 0;"> <div style="border: 1px solid black; padding: 2px 10px; margin-bottom: 5px;">$2x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">1</div> </div> <div style="border: 1px solid black; padding: 2px 15px; margin: 5px 0;">13</div>	<p>Show your thinking using numbers and symbols</p> <div style="text-align: center; margin-top: 20px;"> $2x + 3 = 15$ </div>
<p>Draw <u>two</u> ways to find the value of x. (Algebra Tiles and Tape Diagrams)</p>	

2. Reflect: What questions do you have about solving equations with more than one step?

3. You Do Together: Say, draw, and show.

<p>Say what you see</p> <div style="display: flex; align-items: center; justify-content: center; margin: 20px 0;"> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="margin-bottom: 5px;">++</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">$+x$</div> <div style="margin-bottom: 5px;">++</div> <div style="border: 1px solid black; padding: 2px 5px;">$+x$</div> <div style="margin-bottom: 5px;">++</div> </div> <div style="margin: 0 10px;"> </div> <div style="display: flex; flex-direction: column; align-items: center;"> <div>+++++</div> <div>+++++</div> <div>+++</div> </div> </div> <div style="display: flex; align-items: center; justify-content: center; margin: 20px 0;"> <div style="border: 1px solid black; padding: 2px 10px; margin-bottom: 5px;">$3x$</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 5px;">6</div> </div> <div style="border: 1px solid black; padding: 2px 15px; margin: 5px 0;">14</div>	<p>Show your thinking using numbers and symbols</p> <div style="text-align: center; margin-top: 20px;"> $3(x + 2) = 14$ </div>
<p>Draw <u>two</u> ways to find the value of x. (Algebra Tiles and Tape Diagrams)</p>	
<p>Say what you see</p> <div style="text-align: center; margin-top: 20px;">  </div>	<p>Show your thinking using numbers and symbols</p> <div style="text-align: center; margin-top: 20px;"> $25 = \frac{3}{4}x + 4$ </div>
<p>Draw to find the value of x. (Tape Diagrams)</p>	

Learning Target: I will solve equations with more than one step 8th Grade - Readiness Standard 6 - 7.EE.4a - Form C

1. We Do Together: Say, draw, and show.

<p>Say what you see</p> <div style="display: flex; align-items: center; justify-content: center; gap: 20px;"> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 2px;">+x</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 2px;">+x</div> <div style="border: 1px solid black; padding: 2px 5px;">+x</div> </div> <div style="font-size: 24px;">+</div> <div style="font-size: 24px;">+</div> <div style="font-size: 24px;">+</div> <div style="font-size: 24px;">+</div> </div> <div style="display: flex; align-items: center; justify-content: center; gap: 10px;"> <div style="border-left: 3px double black; border-right: 3px double black; height: 100px; margin: 0 10px;"></div> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div> <div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div> </div> </div> <div style="display: flex; flex-direction: column; align-items: center; margin-top: 20px;"> <div style="border-left: 3px double black; border-right: 3px double black; height: 100px; margin: 0 10px;"></div> <div style="font-size: 18px;">is equal to</div> </div> <div style="display: flex; flex-direction: column; align-items: center; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: flex; gap: 10px;"> 3x 4 </div> <div style="border: 1px solid black; padding: 5px; display: flex; align-items: center; justify-content: center; width: 100px;"> 10 </div> </div>

2. Reflect: What questions do you have about solving equations with more than one step?

3. You Do Together: Say, draw, and show.

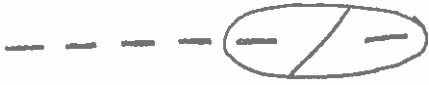



<p>Say what you see</p> <div style="display: flex; align-items: center; justify-content: center; gap: 20px;"> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 2px;">+x</div> <div style="border: 1px solid black; padding: 2px 5px; margin-bottom: 2px;">+x</div> </div> <div style="font-size: 24px;">+</div> <div style="font-size: 24px;">+</div> </div> <div style="display: flex; align-items: center; justify-content: center; gap: 10px;"> <div style="border-left: 3px double black; border-right: 3px double black; height: 100px; margin: 0 10px;"></div> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div> <div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div><div style="font-size: 24px;">+</div> </div> </div> <div style="display: flex; flex-direction: column; align-items: center; margin-top: 20px;"> <div style="border-left: 3px double black; border-right: 3px double black; height: 100px; margin: 0 10px;"></div> <div style="font-size: 18px;">is equal to</div> </div> <div style="display: flex; flex-direction: column; align-items: center; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px; margin-bottom: 5px; display: flex; gap: 10px;"> 2x 2 </div> <div style="border: 1px solid black; padding: 5px; display: flex; align-items: center; justify-content: center; width: 100px;"> 14 </div> </div>

Learning Target: I will add and subtract integers between -10 and 10

8th Grade - Readiness Standard 1 - 7.NS.1d





- Form A

1. We Do Together: Draw, say, write and think add to subtract.

<p>Draw 6 negatives and cross out 2 negatives</p> 	<p>Draw 6 negatives and 2 positives to find the total</p> 
<p>Say the <u>subtraction</u> problem and write the answer</p> $(-6) - (-2) = \underline{-4}$	<p>Say the "<u>add to subtract</u>" equation and write the total</p> $(-6) + (+2) = \underline{-4}$
<p>Draw 3 negatives, then draw 5 zero pairs to cross out 5 positives</p> 	<p>Draw 3 negatives and 5 negatives to find the total</p> 
<p>Say the <u>subtraction</u> problem and write the answer</p> $(-3) - (+5) = \underline{-8}$	<p>Say the "<u>add to subtract</u>" equation and write the total</p> $(-3) + (-5) = \underline{-8}$

2. Reflect: What questions do you have about adding and subtracting integers?

3. You Do Together: Draw, say, write and think add to subtract.

<p>Draw 5 negatives, then draw 3 zero pairs to cross out 8 negatives</p> 	<p>Draw 5 negatives and 8 positives to find the total</p> 
<p>Say the <u>subtraction</u> problem and write the answer</p> $(-5) - (-8) = \underline{+3}$	<p>Say the "<u>add to subtract</u>" equation and write the total</p> $(-5) + (+8) = \underline{+3}$
<p>Draw 2 negatives, then draw 4 zero pairs to cross out 4 positives</p> 	<p>Draw 2 negatives and 4 negatives to find the total</p> 
<p>Say the <u>subtraction</u> problem and write the answer</p> $(-2) - (+4) = \underline{-6}$	<p>Say the "<u>add to subtract</u>" equation and write the total</p> $(-2) + (-4) = \underline{-6}$

Learning Target: I will multiply and divide integers between -10 and 10 8th Grade - Readiness Standard 2 - 7.NS.2c
- Form A

1. We Do Together: Draw, say, write and think multiply to divide.

Represent both meanings of division

Draw 3 groups of 4 negatives Group 1 — — — — Group 2 — — — — Group 3 — — — — <div style="text-align: right;">Total = <u>-12</u></div>	Draw to <u>divide</u> 12 negatives into 3 equal groups Group 1 — — — — Group 2 — — — — Group 3 — — — — <div style="text-align: right;">3 groups of <u>-12</u></div>
Say the <u>multiplication</u> problem and write the answer $3(-4) = \underline{-12}$	Say the "<u>multiply to divide</u>" equation and write answers $-12 \div 3 = \underline{-4}$ Think: $3(\underline{-4}) = -12$
Draw the opposite of 4 groups of 5 positives... which is equal to 4 groups of 5 <u>negatives</u> Group 1 — — — — Group 2 — — — — Group 3 — — — — Group 4 — — — — <div style="text-align: right;">Total = <u>-20</u></div>	Draw to <u>divide</u> 20 negatives into equal groups of -5 <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> 4 groups of -5 </div> <div style="display: flex; flex-direction: column; align-items: center;"> <div>— — — —</div> <div>— — — —</div> <div>— — — —</div> <div>— — — —</div> </div> <div style="margin-left: 10px;"> <u>4</u> groups of -5 </div> </div>
Say the <u>multiplication</u> problem and write the answer $-4(+5) = +4(-5) = \underline{-20}$	Say the "<u>multiply to divide</u>" equation and write answers $-20 \div -5 = \underline{4}$ Think: $\underline{4}(-5) = -20$

2. Reflect: What questions do you have about multiplying and dividing integers?

3. You Do Together: Draw, say, write and think multiply to divide.

Represent both meanings of division

Draw 2 groups of 5 negatives Group 1 — — — — Group 2 — — — — <div style="text-align: right;">Total = <u>-10</u></div>	Draw to <u>divide</u> 10 negatives into 2 equal groups Group 1 — — — — Group 2 — — — — <div style="text-align: right;">2 groups of _____</div>
Say the <u>multiplication</u> problem and write the answer $2(-5) = \underline{-10}$	Say the "<u>multiply to divide</u>" equation and write answers $-10 \div 2 = \underline{-5}$ Think: $2(\underline{-5}) = -10$
Draw the opposite of 4 groups of 3 negatives... which is equal to 4 groups of 3 <u>positives</u> Group 1 + + + Group 2 + + + Group 3 + + + Group 4 + + + <div style="text-align: right;">Total = <u>12</u></div>	Draw to <u>divide</u> 12 negatives into equal groups of -3 <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> 4 groups of -3 </div> <div style="display: flex; flex-direction: column; align-items: center;"> <div>— — —</div> <div>— — —</div> <div>— — —</div> <div>— — —</div> </div> <div style="margin-left: 10px;"> _____ groups of -3 </div> </div>
Say the <u>multiplication</u> problem and write the answer $-4(-3) = +4(+3) = \underline{12}$	Say the "<u>multiply to divide</u>" equation and write answers $-12 \div -3 = \underline{4}$ Think: $\underline{4}(-3) = -12$

Learning Target: I will add and subtract algebraic expressions 8th Grade - Readiness Standard 3 - 7.EE.1a - Form A

1. We Do Together: Say, combine, write and add the opposite to subtract. ($a - b = a + -b$)

<p>Say the expressions and combine the like terms</p> $(x + 3) + (4x + -1)$ <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $\boxed{+x}$ + + + </div> <div style="text-align: center;"> $\boxed{+x}$ $\boxed{+x}$ $\boxed{+x}$ $\boxed{+x}$ </div> </div>	<p>Write as <u>add the opposite to subtract</u>, then draw</p> $(x + 3) - (4x + -1)$ $(x + 3) + \boxed{-4x + 1}$ <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $\boxed{-x}$ + + + </div> <div style="text-align: center;"> $\boxed{-x}$ $\boxed{-x}$ $\boxed{-x}$ $\boxed{-x}$ </div> </div>
<p>Write the equivalent simplified algebraic expression</p> $5x + 2$	<p>Write the equivalent simplified algebraic expression</p> $-3x + 4$

2. Reflect: What questions do you have about adding and subtracting algebraic expressions?

3. You Do Together: Say, combine, write and add the opposite to subtract. ($a - b = a + -b$)

<p>Say the expressions and combine the like terms</p> $(3x + -5) + x + (2x + 3)$ <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $\boxed{+x}$ $\boxed{+x}$ $\boxed{+x}$ - </div> <div style="text-align: center;"> $\boxed{+x}$ </div> <div style="text-align: center;"> $\boxed{+x}$ $\boxed{+x}$ + </div> </div>	<p>Write as <u>add the opposite to subtract</u>, then draw</p> $(3x + -5) - x - (2x + -3)$ $(3x + 5) + \boxed{-x} + \boxed{-2x + 3}$ <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $\boxed{-x}$ $\boxed{-x}$ $\boxed{-x}$ - </div> <div style="text-align: center;"> $\boxed{-x}$ $\boxed{-x}$ $\boxed{-x}$ + </div> </div>
<p>Write the equivalent simplified algebraic expression</p> $6x + -2$	<p>Write the equivalent simplified algebraic expression</p> $0x + -2 = -2$
<p>Say the expressions and combine the like terms</p> $(x + 1) + (-4x + 2) + 2x$ <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $\boxed{+x}$ + </div> <div style="text-align: center;"> $\boxed{-x}$ $\boxed{-x}$ $\boxed{-x}$ $\boxed{-x}$ + </div> <div style="text-align: center;"> $\boxed{+x}$ $\boxed{+x}$ </div> </div>	<p>Write as <u>add the opposite to subtract</u>, then draw</p> $(x + 1) - (-4x + 2) - 2x$ $(x + 1) + \boxed{4x + -2} + \boxed{-2x}$ <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $\boxed{-x}$ + </div> <div style="text-align: center;"> $\boxed{-x}$ $\boxed{-x}$ $\boxed{-x}$ $\boxed{-x}$ - </div> <div style="text-align: center;"> $\boxed{-x}$ $\boxed{-x}$ </div> </div>
<p>Write the equivalent simplified algebraic expression</p> $-x + 3$	<p>Write the equivalent simplified algebraic expression</p> $3x + -1$

Learning Target: I will expand algebraic expressions

8th Grade - Readiness Standard 4 - 7.EE.1b - Form A

1. We Do Together: Draw two ways and show.

<p>Draw an <u>array model</u> to multiply</p>	<p>Draw an <u>area model</u> to multiply</p>	<p>Show your thinking using numbers and symbols</p> $2(3x - 1)$ $2(3x + -1)$ $2(3x) + 2(-1)$ $6x + -2$
<p>Draw an <u>array model</u> to multiply</p>	<p>Draw an <u>area model</u> to multiply</p>	<p>Show your thinking using numbers and symbols</p> $-3(x - 2)$ $-3(x + -2)$ $-3(x) + -3(-2)$ $-3x + 6$

2. Reflect: What questions do you have about expanding algebraic expressions?

3. You Do Together: Draw two ways and show.

<p>Draw an <u>array model</u> to multiply</p>	<p>Draw an <u>area model</u> to multiply</p>	<p>Show your thinking using numbers and symbols</p> $3(-2x + 3)$ $3(-2x) + 3(3)$ $-6x + 9$
<p>Draw an <u>array model</u> to multiply</p>	<p>Draw an <u>area model</u> to multiply</p>	<p>Show your thinking using numbers and symbols</p> $-2(-x - 4)$ $-2(-x + -4)$ $-2(-x) + -2(-4)$ $2x + 8$

Learning Target: I will factor linear expressions

8th Grade - Readiness Standard 5 - 7.EE.1c - Form A

1. We Do Together: List, circle, label, find and write.

<p>List the factors and circle the greatest common factor</p> <table><tr><th>$8x$</th><th>12</th></tr><tr><td>$1 \cdot 8 \cdot x$</td><td>$1 \cdot 12$</td></tr><tr><td>$2 \cdot \textcircled{4} \cdot x$</td><td>$2 \cdot 6$</td></tr><tr><td></td><td>$3 \cdot \textcircled{4}$</td></tr></table>	$8x$	12	$1 \cdot 8 \cdot x$	$1 \cdot 12$	$2 \cdot \textcircled{4} \cdot x$	$2 \cdot 6$		$3 \cdot \textcircled{4}$	<p>Label the height as the greatest common factor and find the partial lengths</p> <table><tr><td colspan="2">$2x + 3$</td></tr><tr><td>$4(2x)$</td><td>$4(3)$</td></tr><tr><td>$8x$</td><td>12</td></tr></table> <p>4</p>	$2x + 3$		$4(2x)$	$4(3)$	$8x$	12	<p>Write an equivalent expression using the greatest common factor</p> $8x + 12$ $4(2x + 3)$
$8x$	12															
$1 \cdot 8 \cdot x$	$1 \cdot 12$															
$2 \cdot \textcircled{4} \cdot x$	$2 \cdot 6$															
	$3 \cdot \textcircled{4}$															
$2x + 3$																
$4(2x)$	$4(3)$															
$8x$	12															
<p>List the factors and circle the greatest common factor</p> <table><tr><th>$15x$</th><th>-5</th></tr><tr><td>$1 \cdot 15 \cdot x$</td><td>$-1 \cdot \textcircled{5}$</td></tr><tr><td>$3 \cdot \textcircled{5} \cdot x$</td><td>$1 \cdot -5$</td></tr></table>	$15x$	-5	$1 \cdot 15 \cdot x$	$-1 \cdot \textcircled{5}$	$3 \cdot \textcircled{5} \cdot x$	$1 \cdot -5$	<p>Label the height as the greatest common factor and find the partial lengths</p> <table><tr><td colspan="2">$x + -1$</td></tr><tr><td>$5(x)$</td><td>$5(-1)$</td></tr><tr><td>$15x$</td><td>-5</td></tr></table> <p>5</p>	$x + -1$		$5(x)$	$5(-1)$	$15x$	-5	<p>Write an equivalent expression using the greatest common factor</p> $15x - 5$ $15x + -5$ $5(3x + -1)$		
$15x$	-5															
$1 \cdot 15 \cdot x$	$-1 \cdot \textcircled{5}$															
$3 \cdot \textcircled{5} \cdot x$	$1 \cdot -5$															
$x + -1$																
$5(x)$	$5(-1)$															
$15x$	-5															

2. Reflect: What questions do you have about factoring algebraic expressions?

3. You Do Together: List, circle, label, find and write.

<p>List the factors and circle the greatest common factor</p> <table><tr><th>$18x$</th><th>-12</th></tr><tr><td>$1 \cdot 18 \cdot x$</td><td>$-1 \cdot 12$</td></tr><tr><td>$2 \cdot 9 \cdot x$</td><td>$1 \cdot -12$</td></tr><tr><td>$3 \cdot \textcircled{6} \cdot x$</td><td>$-2 \cdot \textcircled{6}$</td></tr><tr><td></td><td>$2 \cdot -6$</td></tr><tr><td></td><td>$-3 \cdot 4$</td></tr><tr><td></td><td>$3 \cdot -4$</td></tr></table>	$18x$	-12	$1 \cdot 18 \cdot x$	$-1 \cdot 12$	$2 \cdot 9 \cdot x$	$1 \cdot -12$	$3 \cdot \textcircled{6} \cdot x$	$-2 \cdot \textcircled{6}$		$2 \cdot -6$		$-3 \cdot 4$		$3 \cdot -4$	<p>Label the height as the greatest common factor and find the partial lengths</p> <table><tr><td colspan="2">$3x - 2$</td></tr><tr><td>$6(3x)$</td><td>$6(-2)$</td></tr><tr><td>$18x$</td><td>-12</td></tr></table> <p>6</p>	$3x - 2$		$6(3x)$	$6(-2)$	$18x$	-12	<p>Write an equivalent expression using the greatest common factor</p> $18x - 12$ $18x + -12$ $6(3x + -2)$
$18x$	-12																					
$1 \cdot 18 \cdot x$	$-1 \cdot 12$																					
$2 \cdot 9 \cdot x$	$1 \cdot -12$																					
$3 \cdot \textcircled{6} \cdot x$	$-2 \cdot \textcircled{6}$																					
	$2 \cdot -6$																					
	$-3 \cdot 4$																					
	$3 \cdot -4$																					
$3x - 2$																						
$6(3x)$	$6(-2)$																					
$18x$	-12																					
<p>List the factors and circle the greatest common factor</p> <table><tr><th>$-3x$</th><th>-15</th></tr><tr><td>$-1 \cdot 3 \cdot x$</td><td>$-1 \cdot 15$</td></tr><tr><td>$1 \cdot \textcircled{-3} \cdot x$</td><td>$1 \cdot -15$</td></tr><tr><td>$\uparrow$ exception to GCF rule</td><td>$\textcircled{-3} \cdot 5$</td></tr><tr><td></td><td>$3 \cdot -5$</td></tr></table>	$-3x$	-15	$-1 \cdot 3 \cdot x$	$-1 \cdot 15$	$1 \cdot \textcircled{-3} \cdot x$	$1 \cdot -15$	\uparrow exception to GCF rule	$\textcircled{-3} \cdot 5$		$3 \cdot -5$	<p>Label the height as the greatest common factor and find the partial lengths</p> <table><tr><td colspan="2">$x + 5$</td></tr><tr><td>$-3(x)$</td><td>$-3(5)$</td></tr><tr><td>$-3x$</td><td>-15</td></tr></table> <p>-3</p>	$x + 5$		$-3(x)$	$-3(5)$	$-3x$	-15	<p>Write an equivalent expression using the greatest common factor</p> $-3x - 15$ $-3x + -15$ $-3(x + 5)$				
$-3x$	-15																					
$-1 \cdot 3 \cdot x$	$-1 \cdot 15$																					
$1 \cdot \textcircled{-3} \cdot x$	$1 \cdot -15$																					
\uparrow exception to GCF rule	$\textcircled{-3} \cdot 5$																					
	$3 \cdot -5$																					
$x + 5$																						
$-3(x)$	$-3(5)$																					
$-3x$	-15																					

Learning Target: I will solve equations with more than one step 8th Grade - Readiness Standard 6 - 7.EE.4a - Form A

1. We Do Together: Say, draw, and show.

Say what you see	Show your thinking using numbers and symbols
<p style="text-align: center;">is equal to</p>	$ \begin{array}{r} 3x + 1 = 13 \\ -1 \quad -1 \quad \leftarrow \text{Subtract Positive} \\ \hline 3x = 12 \\ \frac{3x}{3} = \frac{12}{3} \\ x = 4 \end{array} $
<p>Draw <u>two</u> ways to find the value of x. (Algebra Tiles and Tape Diagrams)</p>	

2. Reflect: What questions do you have about solving equations with more than one step?

3. You Do Together: Say, draw, and show.

Say what you see	Show your thinking using numbers and symbols
<p style="text-align: center;">is equal to</p>	$ \begin{array}{r} 2(x + 3) = 16 \\ 2x + 6 = 16 \\ -6 \quad -6 \quad \leftarrow \text{Subtract Positive 6} \\ \hline 2x = 10 \\ \frac{2x}{2} = \frac{10}{2} \\ x = 5 \end{array} $
<p>Draw <u>two</u> ways to find the value of x. (Algebra Tiles and Tape Diagrams)</p>	
	<p>Show your thinking using numbers and symbols</p> $ \begin{array}{r} 13 = \frac{2}{3}x + 5 \\ -5 \quad -5 \quad \leftarrow \text{Subtract Positive 5} \\ \hline 8 = \frac{2}{3}x \\ \frac{8}{\frac{2}{3}} = \frac{\frac{2}{3}x}{\frac{2}{3}} \\ 8 \cdot \frac{3}{2} = 4 = x \end{array} $
<p>Draw to find the value of x. (Tape Diagrams)</p>	

Learning Target: I will solve equations with more than one step — 8th Grade - Readiness Standard 6 - 7.EE.4a - Form A

1. We Do Together: Say, draw, and show.

<p>Say what you see</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <table border="1" style="margin-bottom: 10px;"> <tr><td>$+x$</td></tr> <tr><td>$+x$</td></tr> <tr><td>$+x$</td></tr> </table> <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> $+$ </div> </div> <div style="text-align: center;"> <table border="1" style="margin-bottom: 10px;"> <tr><td>x</td></tr> <tr><td>x</td></tr> <tr><td>x</td></tr> </table> <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> $-$ </div> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <table border="1" style="text-align: center;"> <tr><td>$3x$</td><td>1</td></tr> </table> <table border="1" style="text-align: center;"> <tr><td>13</td></tr> </table> </div> <p style="text-align: center; margin-top: 10px;">is equal to</p>	$+x$	$+x$	$+x$	x	x	x	$3x$	1	13	<p>Show your thinking using numbers and symbols</p> $ \begin{array}{r} 3x + 1 = 13 \\ -1 \quad -1 \\ \hline 3x = 12 \\ \frac{3x}{3} = \frac{12}{3} \\ x = 4 \end{array} $ <p style="text-align: right; margin-top: 10px;">Add Negative 1</p>
$+x$										
$+x$										
$+x$										
x										
x										
x										
$3x$	1									
13										
<p>Draw two ways to find the value of x. (Algebra Tiles and Tape Diagrams)</p>										

2. Reflect: What questions do you have about solving equations with more than one step?

3. You Do Together: Say, draw, and show.

<p>Say what you see</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <table border="1" style="margin-bottom: 10px;"> <tr><td>$+x$</td></tr> <tr><td>$+x$</td></tr> </table> <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> $+$ </div> </div> <div style="text-align: center;"> <table border="1" style="margin-bottom: 10px;"> <tr><td>x</td></tr> <tr><td>x</td></tr> </table> <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> $-$ </div> </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <table border="1" style="text-align: center;"> <tr><td>$2x$</td><td>6</td></tr> </table> <table border="1" style="text-align: center;"> <tr><td>16</td></tr> </table> </div> <p style="text-align: center; margin-top: 10px;">is equal to</p>	$+x$	$+x$	x	x	$2x$	6	16	<p>Show your thinking using numbers and symbols</p> $ \begin{array}{r} 2(x + 3) = 16 \\ 2x + 6 = 16 \\ -6 \quad -6 \\ \hline 2x = 10 \\ \frac{2x}{2} = \frac{10}{2} \\ x = 5 \end{array} $ <p style="text-align: right; margin-top: 10px;">Add Negative 6</p>
$+x$								
$+x$								
x								
x								
$2x$	6							
16								
<p>Draw two ways to find the value of x. (Algebra Tiles and Tape Diagrams)</p>								

<p>Say what you see</p> <div style="text-align: center; margin-top: 20px;"> <table border="1" style="margin-bottom: 10px;"> <tr><td>x</td></tr> <tr><td>x</td></tr> <tr><td>x</td></tr> </table> <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> $-$ </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <table border="1" style="text-align: center;"> <tr><td>8</td></tr> </table> <table border="1" style="text-align: center;"> <tr><td>5</td></tr> </table> </div> <p style="text-align: center; margin-top: 10px;">is equal to</p>	x	x	x	8	5	<p>Show your thinking using numbers and symbols</p> $ \begin{array}{r} 13 = \frac{2}{3}x + 5 \\ -5 \quad -5 \\ \hline 8 = \frac{2}{3}x \\ \frac{8 \cdot \frac{3}{2}}{\frac{2}{3} \cdot \frac{3}{2}} = \frac{\frac{2}{3}x \cdot \frac{3}{2}}{\frac{2}{3} \cdot \frac{3}{2}} \\ 12 = x \end{array} $ <p style="text-align: right; margin-top: 10px;">Add Negative 5</p>
x						
x						
x						
8						
5						
<p>Draw to find the value of x. (Tape Diagrams)</p>						