

## $7^{\text {th }}$ Grade

# Tier 2 Intervention Lessons 

Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for 7.EE.4a: Solve equations with more than one step
Session 1: Planning Guide ..... p. 4
Session 1: Re-engagement Lesson Resources ..... p. 5-10
Sessions 2 through 8: Planning Guide ..... p. 11
Sessions 2 through 8: Lesson Resources ..... p. 12-53
Independent Practice Game: "Evaluating Expressions Match-Up" ..... p. 54-58
Classroom Poster: Questions for Solving Word Problems ..... p. 59
Tier 1 Support Classroom Poster: Steps for Solving Word Problems ..... p. 60
IES Recommendations for Tier $\mathbf{2}$ and $\mathbf{3}$ intervention lessons:

| 2. Instructional materials for students receiving interventions should <br> focus intensely on in-depth treatment of whole numbers in kindergar- <br> ten through grade 5 and on rational numbers in grades 4 through 8. <br> These materials should be selected by committee. | Low |
| :--- | :--- |
| 3. Instruction during the intervention should be explicit and systematic. <br> This includes providing models of proficient problem solving, verbal- <br> ization of thought processes, guided practice, corrective feedback, and <br> frequent cumulative review. | Strong |
| 4. Interventions should include instruction on solving word problems <br> that is based on common underlying structures. | Strong |
| 5. Intervention materials should include opportunities for students to <br> work with visual representations of mathematical ideas and interven- <br> tionists should be proficient in the use of visual representations of <br> mathematical ideas. | Moderate |
| 6. Interventions at all grade levels should devote about lo minutes in each <br> session to building fluent retrieval of basic arithmetic facts. | Moderate |
| 7. Monitor the progress of students receiving supplemental instruction |  |
| and other students who are at risk. | Low |
| 8. Include motivational strategies in tier 2 and tier 3 interventions. | Low |

## Gradual release of responsibility model

Teacher Responsibility

| Focus Lesson |  | "I do it" |
| :---: | :---: | :---: |
| Guided <br> Instruction |  | "We do it" |
|  | Collaborative "You do it |  |
| Indegether" |  |  |

Figure 1
(Dr. Douglas Fisher, Effective Use of the Gradual Release of Responsibility Model)

## Planning Guide: Session 1

## $7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step

| Recommended Actions |  |
| :---: | :---: |
| Beginning (15 min.) | Review the readiness standard with the intervention group using the Guided Review <br> - Introduce the learning target and why it is important for future learning <br> - Read each question on the Guided Review and ask students to share what they remember from the previous school year. |
| Middle <br> (5 min.) | Ask students to reflect on their progress towards the learning target <br> - What did I remember about the learning target? <br> - What did I learn today about the learning target? <br> - How confident do I feel about doing the learning target on my own? |
| $\begin{gathered} \text { End } \\ \text { (10 min.) } \end{gathered}$ | Assess each student's progress using Quick Check - Form A <br> Guide students to self-correct their Quick Check - Form A <br> Guide students to chart their progress by recording the date and Quick Check score in their Growth Chart <br> Collect each student's Quick Check and Growth Chart |
| After | Create sub-groups to differentiate the middle of sessions 2 through 8 <br> - Group 1 - Include students who did not meet the learning goal <br> - Group 2 - Include students who met or exceeded the learning goal |

## $7^{\text {th }}$ Grade Fall Guided Review

$\qquad$ Date $\qquad$

Learning Target: I will evaluate algebraic expressions.
1.

Evaluate the expression $4 x+3$ for $x=2$.
○ 8
○ 9
○ 10
○ 11
2.

Evaluate the expression $x^{2}+5$ for $x=3$.
○ 9
○ 14
○ 11
○ 10
3.

Evaluate the expression $20-3 x$ for $x=4$.
○ 17
○ 13

- 12
○ 8


## $7^{\text {th }}$ Grade Winter Guided Review

Readiness Standard 4-6.EE.2c

Name $\qquad$ Date $\qquad$

Learning Target: I will evaluate algebraic expressions.
1.

Evaluate the expression $5 x+2$ for $x=3$.
$\bigcirc 15$
○ 10
○ 17

- 25

2. 

Evaluate the expression $x^{2}+6$ for $x=4$
$\bigcirc \quad 22$
○ 16
○ 14

- 12

3. 

Evaluate the expression $13-2 x$ for $x=3$.
$\bigcirc 33$
$\bigcirc \quad 7$
○ 8
○ 6

## $7^{\text {th }}$ Grade Spring Guided Review

$\qquad$ Date $\qquad$

Learning Target: I will evaluate algebraic expressions.
1.

Evaluate the expression $3 x+6$ for $x=4$

- 12
○ 18
○ 13
$\bigcirc 30$

2. 

Evaluate the expression $x^{2}+4$ for $x=5$.
$\bigcirc \quad 11$
○ 14
○ 25

- 29

3. 

Evaluate the expression $15-4 x$ for $x=2$.

○ 7
○ 22
○ 9
○ 8

Learning Target: I will evaluate algebraic expressions

Briefly discuss student responses
> What did I remember about evaluating algebraic expressions?
$>$ What did I learn today about evaluating algebraic expressions?
$>$ How confident do I feel about evaluating algebraic expressions on my own? (Thumbs up, down, or sideways)

## Quick Check - Form A

$7{ }^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Name $\qquad$ Date $\qquad$

Learning Target: I will evaluate algebraic expressions.

Directions: Evaluate each expression for the given value of $x$. (Work time: 4 minutes)


## Growth Chart

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c
Name
Date

Learning Target: I will evaluate algebraic expressions.
Goal: 5 out of 6 correct


| Intervention | Date | Score |
| :--- | :---: | :---: |
| Session 1: |  |  |
| Session 2: |  |  |
| Session 3: |  |  |
| Session 4: |  |  |
| Session 5: |  |  |
| Session 6: |  |  |
| Session 7: |  |  |
| Session 8: |  |  |

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step

| Recommended Actions |  |  |
| :---: | :---: | :---: |
| Beginning (5 min.) | > Review the learning target with the whole group and ask each student to set a goal. |  |
| Middle <br> (15 min.) | Group 1: Students who scored below the learning goal on the previous Quick Check. <br> Model solving a word problem - "I do" <br> Guided Practice - "We do" <br> Session 2: Evaluate algebraic expressions using algebra tiles. <br> Session 3: Evaluate algebraic expressions using drawings. <br> Session 4: Evaluate algebraic expressions using conceptual understanding of substituting values for variables. | Group 2: (Students who met the learning goal) <br> Independent practice - "You do alone" <br> Activity: Evaluating Expressions Match-Up! <br> (Look for additional activities in $6^{\text {th }}$ grade core instruction resources.) |
| $\begin{gathered} \text { End } \\ (10 \mathrm{~min} .) \end{gathered}$ | Bring the students back together. <br> Ask students to reflect on their progress towards the learning target <br> - What did I learn today about evaluating algebraic expressions? <br> - How confident do you feel about evaluating algebraic expressions on my own? <br> (Thumbs up, down, or sideways) <br> Assess each student's progress using the next Quick Check form <br> Guide students to self-correct their Quick Check <br> Guide students to chart their progress in their Growth Chart <br> - If not using Delta Math lessons, record the activity in the table <br> Collect each student's Quick Check and Growth Chart |  |
| After | Regroup students to differentiate the middle of se <br> - Promote students who met the learning g <br> - Exit students who met the learning goal fo <br> Problem solve with a team to plan additional supp | sions 3 through 8 <br> al to group 2 <br> a third time <br> rt for students who did not exit |

## Session 2: Modeling (I Do)

$7{ }^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step
James owns a pet watching business and charges $\$ 5$ plus $\$ 2$ per pet. The Smith family is going on vacation and would like James to watch their 1 dog and 2 cats. How much will James charge the Smith family?

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step
James owns a pet watching business and charges $\$ 5$ plus $\$ 2$ per pet. The Smith family is going on vacation and would like James to watch their 1 dog and 2 cats. How much will James charge the Smith family?

## 5 dollars plus 2 dollars for each pet

$$
5+2 x
$$

Build the expression


Replace each $x$ with 3
(The Smiths have 3 pets)


Find the total
$5+6=11$

Note: Color-coding is provided to help the interventionist make connections between the numbers, symbols and pictures. It may also help students who struggle to make similar connections.

$7^{\text {th }}$ Grade - Readiness Standard 4 - 6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step
James owns a pet watching business and charges $\$ 5$ plus $\$ 2$ per pet. The Smith family is going on vacation and would like James to watch their 1 dog and 2 cats. How much will James charge the Smith family?

I am going to think aloud to model solving this problem.
Your job is to watch, listen, think and ask questions.

First, it is important to know what the problem is about.
The problem is about James' pet watching business.
Second, I need to determine what I need to find. I need to find the how much James will charge the Smith family.

Third, I need to determine what I know.
I know that James charges $\mathbf{\$ 5}$ plus $\mathbf{\$ 2}$ per pet and I know the Smith family has $\mathbf{3}$ pets... $\mathbf{1}$ dog and $\mathbf{2}$ cats (Write " 5 dollars plus 2 dollars for each pet" on the Modeling page.)

I also know that I can translate these words into an algebraic expression using a plus sign and the variable $\boldsymbol{x}$ to represent the number of pets.
(Write " $5+2 x$ " below the phrase.)
Fourth, I need to figure out what I can try.
I am going to use algebra tiles to help me evaluate an algebraic expression.
I will represent the first 5 dollars using 5 " +1 " tiles.
(Place 5 " +1 " tiles below the digit " 5 ".)

| 5 dollars plus 2 dollars for each pet <br> $5+2 x$ |  |
| :---: | :---: |
| $\underline{+1} \mid + 1 \longdiv { + 1 }$ | +x |
|  | ${ }_{+x}$ |

Next, I will use 2 " $+x$ " tiles to represent the 2 dollars for each pet.
(Place 2 " $+x$ " tiles below the term " $2 x$ ".)
In mathematics, the word evaluate means to find the value of the expression.
(Point to the expression $5+2 x$ )
$+ + 1 \longdiv { + 1 } + 1 + 1 + 1$
$+1+1+1$
$+1+1+1$
Since the Smiths have 3 pets, I need to evaluate the expression when $x$ is 3 .
(Replace each $x$-tile with 3 " +1 " tiles.)
Now we see 6 is the value of the $\mathbf{2} \boldsymbol{x}$ 's and can write $5+6$ below the tiles.
(Point to the 2 groups of 3 that show 6 and write " $5+6$ " below the tiles.)
And $I$ know that $5+6$ is equal to 11.
(Write "= 11 " next to the addition expression.)
Last, I need to make sure that my answer makes sense.
I found that James will charge the Smiths 11 dollars. This makes sense because I modeled the situation using algebra tiles and replaced the variable $x$ to find the value of the expression for 3 pets.

Name $\qquad$ Date $\qquad$

## Session 2: Guided Practice (We Do)

## Materials:

$>$ Algebra Tiles (1 set on p. 13: $20+1$ s and $16+x$ 's per student)
> Expression mat (1 per student)

We Do Together: (Teacher Actions)
> Say, build and evaluate the algebraic expression.

| 1. $2 x+3$, when $x=4$ |  |  |
| :--- | :--- | :--- |
|  |  | 2. |
| 3. |  |  |

Name $\qquad$ Date $\qquad$

## Session 2: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
$>$ Students take turns leading and repeat the steps to evaluate the algebraic expression and write the answer.


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## Session 2: Guided Practice (We Do - Teacher Notes)

## Materials:

> Algebra Tiles ( 1 set on $p .13: 20+1$ s and $16+x$ 's per student)
> Expression mat (1 per student)

We Do Together: (Teacher Actions)
> Say, build and evaluate the algebraic expression.

| 1. <br> $2 x+3$, when $x=4$ $8+3=11$ | 2. $x^{2}+4, \text { when } x=3$ <br> $x$ squared, when $x=3$ is a 3 by 3 square $9+4=13$ |
| :---: | :---: |
| 3. $x-3, \text { when } x=5$ <br> Find the value of $x$. Then, find 3 less than that value. | 4. <br> Think: 4 groups of the quantity " $x-2$ " $4(x-2)$, when $x=3$ <br> Find the value of $x-2$. Then, find 4 groups of that value. |

Note: Color-coding is provided to help the interventionist make connections between the numbers, symbols and pictures. It may also help students who struggle to make similar connections.

Algebra Tiles (2 sets of positive tiles)
$7^{\text {th }}$ Grade - Readiness Standards $3,4,5$ and 6 - 6.EE.2a, 6.EE.2c, 6.EE.4, 6.EE. 7
Directions: Provide each student one set of positive tiles.
Note: $+x^{2}$ tiles are included, but will not be used 6.EE. 2 a and 6.EE. 7

| +1 | +1 | +1 | +1 | +1 | $+\boldsymbol{x}$ | $+\boldsymbol{x}$ | $+\boldsymbol{x}$ | $+\boldsymbol{x}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| +1 | +1 | +1 | +1 | +1 | $+\boldsymbol{x}$ | $+x$ | $+x$ | $+x$ |
| +1 | +1 | +1 | +1 | +1 | $+x$ | $+\boldsymbol{x}$ | $+x$ | $+\boldsymbol{x}$ |
| +1 | +1 | +1 | +1 | +1 | $+x$ | $+x$ | $+\boldsymbol{x}$ | $+\boldsymbol{x}$ |
| $+x^{2}$ |  |  | $+x^{2}$ |  | $+x^{2}$ | $+x^{2}$ | $+x^{2}$ | $+x^{2}$ |
| $+x^{2}$ |  |  | $+x^{2}$ |  | $+x^{2}$ | $+x^{2}$ | $+x^{2}$ | $+x^{2}$ |
| +1 | +1 | +1 | +1 | +1 | $+x$ | $+x$ | $+\boldsymbol{x}$ | $+x$ |
| +1 | +1 | +1 | +1 | +1 | $+x$ | $+x$ | $+x$ | $+x$ |
| +1 | +1 | +1 | +1 | +1 | $+x$ | $+x$ | $+x$ | $+x$ |
| +1 | +1 | +1 | +1 | +1 | + $\boldsymbol{x}$ | $+\boldsymbol{x}$ | $+\boldsymbol{x}$ | $+\boldsymbol{x}$ |
| $+x^{2}$ |  |  | $+x^{2}$ |  | $+x^{2}$ | $+x^{2}$ | $+x^{2}$ | $+x^{2}$ |
|  | $+x^{2}$ |  | $+x^{2}$ |  | $+x^{2}$ | $+x^{2}$ | $+x^{2}$ | $+x^{2}$ |


| Use for Problem 1 <br> $2 x+3$, when $x=4$ | Use for Problem 2 <br> $x^{2}+4$, when $\mathrm{x}=3$ |
| :---: | :---: |
| Use for Problem 3 <br> $x-3$, when $x=5$ | Use for Problem 4 <br> $4(x-2)$, when $x=3$ |
| Use for Problem 5 $3+2 x, \text { when } x=4$ | Use for Problem 6 <br> $3 x-4$, when $x=2$ |
| Use for Problem 7 <br> $x^{2}+2$, when $x=3$ | Use for Problem 8 $3(x-2), \text { when } x=4$ |
| Use for Problem 9 $3 x+10, \text { when } x=2$ | Use for Problem 10 <br> $x^{2}+2$, when $x=4$ |
| Use for Modelling $5+2 x, \text { when } x=3$ |  |

## Session 2: Self-Reflection

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions

Briefly discuss student responses
$>$ What did I learn today about evaluating algebraic expressions?
$>$ How confident do I feel about evaluating algebraic expressions on my own? (Thumbs up, down, or sideways)
$\qquad$

Learning Target: I will evaluate algebraic expressions.

Directions: Evaluate each expression for the given value of $\boldsymbol{X}$. (Work time: 4 minutes)

|  | $6+2 x, \text { when } x=4$ | 2. | $5 x-4$, when $x=6$ |
| :---: | :---: | :---: | :---: |
| 3 |  | 4. |  |
|  | $x^{2}+4$, when $x=3$ |  | $3(x-2)$, when $x=9$ |
| 5. | $20-3 x, \text { when } x=4$ | 6. | $x^{3}+2, \text { when } x=4$ |

## Session 3: Modeling (I Do)

$7^{\text {th }}$ Grade - Readiness Standard 4 - 6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step
Amy and her family went to a Detroit Tigers baseball game and she purchased a refillable souvenir cup. The cup cost $\$ 12$ to purchase and $\$ 2$ additional for each refill. If Amy refilled the cup 3 times, what was her total cost for the cup and refills?
$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step
Amy and her family went to a Detroit Tigers baseball game and she purchased a refillable souvenir cup. The cup cost $\$ 12$ to purchase and $\$ 2$ additional for each refill. If Amy refilled the cup 3 times, what was her total cost for the cup and refills?

Total Cost $=$ Cup + Refills


$$
\text { (Refilled } 3 \text { times) }
$$

Total Cost $=12+2(3)$

Total Cost $=12+6$

Total Cost = 18 dollars

Note: Color-coding is provided to help the interventionist make connections between the numbers, symbols and pictures. It may also help students who struggle to make similar connections.

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step
Amy and her family went to a Detroit Tigers baseball game and she purchased a refillable souvenir cup. The cup cost $\$ 12$ to purchase and $\$ 2$ additional for each refill. If Amy refilled the cup 3 times, what was her total cost for the cup and refills?

I am going to think aloud to model solving this problem.
Your job is to watch, listen, think and ask questions.
First, it is important to know what the problem is about.
This problem is Amy purchasing and refilling a souvenir cup.
Second, I need to determine what I need to find.
I need to find the total cost for purchasing the cup and refilling the cup.
Third, I need to determine what I know.
I know that the total cost is equal to the initial cost of the cup plus the cost of each refill.
(Write "Total Cost = Cup + Refills".)
The initial cost of the cup is $\$ 12$. (Write " 12 " below the word "Cup".)
And it cost $\$ \mathbf{2}$ to refill the cup. (Write " $+2 x^{\prime \prime}$.) And Amy refilled the cup 3 times.

Fourth, I need to figure out what I can try.
I am going to use the equation and create a math drawing to help me model this situation.

I will draw 12 plus signs in a group of 10 and 2 more to represent the $\mathbf{1 2}$ dollars cost of the cup. (Draw the plus signs.)

Next, I will draw $\mathbf{2} \boldsymbol{x}$-tiles to represent the $\mathbf{2}$ dollars for each refill.
(Draw $2 x$-tiles)
Since Amy purchase 3 refills, I need to replace each $x$-tile with 3 plus signs
(Draw 2 sets of 3 " + " $s$ with an arrow pointing to the $2 x$-tiles.)
The total cost is equal to $\mathbf{1 2}$ plus $\mathbf{2}$ groups of 3.
(Write "Total Cost = $12+2(3)$ " below the drawing.)
And... 2 groups of $\mathbf{3}$ is equal to 6 ...
(Write "Total Cost $=12+6$ ".)
Which is equal to 18 dollars.
(Write "Total Cost $=18$ dollars")
Last, I need to make sure that my answer makes sense.
I found that Amy's family will pay $\$ 18$ to buy the souvenir cup and refill it $\mathbf{3}$ times.
This makes sense because I modeled the situation using an equation and drawing algebra tiles. Then I substituted $\mathbf{3}$ into the variable $\boldsymbol{x}$ to find the total after $\mathbf{3}$ refills.

Name $\qquad$ Date $\qquad$

## Session 3: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Say, draw and evaluate the algebraic expression.


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$\qquad$

## Session 3: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Students take turns leading and to say, draw and evaluate the algebraic expression.

$\qquad$
$\qquad$

## Session 3: Guided Practice (We Do - Teacher Notes)

We Do Together: (Teacher Actions)
> Say, draw and evaluate the algebraic expression.


## Session 3: Self-Reflection

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions

Briefly discuss student responses
$>$ What did I learn today about evaluating algebraic expressions?
$>$ How confident do I feel about evaluating algebraic expressions on my own? (Thumbs up, down, or sideways)
$\qquad$

Learning Target: I will evaluate algebraic expressions.

Directions: Evaluate each expression for the given value of $\boldsymbol{X}$. (Work time: 4 minutes)

| 1. | 2. |  |
| :--- | :--- | :--- |

## Session 4: Modeling (I Do)

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step

Kari went to a family fun center with go karts, mini golf, batting cages, arcades and more.
It was Kids' Night with special prices that included $\$ 8$ to enter and $\$ 2$ additional to participate in each activity. If Kari participated in 6 activities, what was the total cost for her entry and activities?

#  

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step

Kari went to a family fun center with go karts, mini golf, batting cages, arcades and more.
It was Kids' Night with special prices that included \$8 to enter and \$2 additional to participate in each activity. If Kari participated in 6 activities, what was the total cost for her entry and activities?

| Total Cost | $=$ Entry + Activities |
| ---: | :--- |
|  | $=8+2 x \quad 2$ dollars for each activity |
|  | $=8+2(6) \quad$ Participated in 6 activities |
|  | $=8+12 \quad 2 \times 6=12$ |
|  | $=20$ dollars |

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step

Kari went to a family fun center with go karts, mini golf, batting cages, arcades and more. It was Kids' Night with special prices that included $\$ 8$ to enter and $\$ 2$ additional to participate in each activity. If Kari participated in 6 activities, what was the total cost for her entry and activities?

I am going to think aloud to model solving this problem.
Your job is to watch, listen, think and ask questions.
First, it is important to know what the problem is about.
This problem is about Kari going to a family fun center for Kid's Night.

Second, I need to determine what I need to find.
I need to find her total cost for entry and activities.

Third, I need to determine what I know.
I know that the total cost is equal to the cost to enter plus an additional cost to participate in each activity.
(Write "Total Cost = Entry + Activities".)
And, I know that the cost to enter is \$8, an additional \$2 for each activity and she participated in 6 activities. (Write " $=8+2 x$ " and "2 dollars for each activity" below the total cost equation.)

Fourth, I need to figure out what I can try $\quad$ Total Cost $=$ Entry + Activities
I am going to use the equation to help me model this situation
by evaluating it when the number of activities is equal to $6 . \quad=8+2(6) \quad$ Participated in 6 activities
(Point to " $8+2 x$ " and write " $8+2(6)$ " and "Participated in 6 activities".) $=8+12 \quad 2 \times 6=12$
Next, I remember replacing 2 x's with a number to end up with
$=20$ dollars
2 groups of that number...which can represent multiplication.
And, $\mathbf{2}$ groups of 6 is $\mathbf{1 2}$.
(Point to "2(6)" and write " $8+12$ " and " $2 \times 6=12$ ".)
Now, I know that the total cost is equal to 20 dollars by adding 8 plus 12.
(Write "20 dollars" and point to " $8+12$ ".)

Last, I need to make sure that my answer makes sense.
I found that Kari paid $\mathbf{\$ 2 0}$ for a night of fun at the family fun center.
This makes sense because I modeled the situation using an equation and visualized using algebra tiles to help me substitute 6 into the variable $x$ to find the total after participating in 6 activities.

Name $\qquad$ Date $\qquad$

## Session 4: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Use substitution to evaluate each algebraic expression.

| 1. $2 x+1$, when $x=8$ |  |  |
| :--- | :--- | :--- |
|  |  |  |

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$\qquad$

## Session 4: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Students take turns leading to evaluate each algebraic expression using substitution.

| 5. | $3+2 x$, when $x=5$ | 6. | $3 x-4, \text { when } x=7$ |
| :---: | :---: | :---: | :---: |
| 7. |  | 8. |  |
|  | $x^{2}+2$, when $x=6$ |  | $3(x-2)$, when $x=8$ |
| 9. | $3 x+10$, when $x=5$ | 10. | $x^{2}+2$, when $x=9$ |

Name $\qquad$
$\qquad$

## Session 4: Guided Practice (We Do - Teacher Notes)

We Do Together: (Teacher Actions)
> Use substitution to evaluate each algebraic expression.

| 1. <br> Think: 1 more than 2 times 8 $2 x+1, \text { when } x=8$ $\begin{aligned} 2 x+1 & =2(8)+1 \\ & =16+1 \\ & =17 \end{aligned}$ | 2. <br> Think: 4 less than 13 $x-4, \text { when } x=13$ $\begin{aligned} x-4 & =(13)-4 \\ & =9 \end{aligned}$ |
| :---: | :---: |
| 3. <br> Think: 4 less than a 7 by 7 square $x^{2}-4, \text { when } x=7$ <br> Find the value of $x^{2}$. Then, find 4 less than that value. $\begin{aligned} x^{2}-4 & =(7)^{2}-7 \\ & =49-7 \\ & =42 \end{aligned}$ | 4. Think: 3 groups of the quantity " $9-2$ " $3(x-2), \text { when } x=9$ <br> Find the value of $x-2$. Then, find 3 groups of that value. $\begin{aligned} 3(x-2) & =3(9-2) \\ & =3(7) \\ & =21 \end{aligned}$ |

## Session 4: Self-Reflection

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions

Briefly discuss student responses
$>$ What did I learn today about evaluating algebraic expressions?
$>$ How confident do I feel about evaluating algebraic expressions on my own? (Thumbs up, down, or sideways)
$\qquad$

Learning Target: I will evaluate algebraic expressions.

Directions: Evaluate each expression for the given value of $x$. (Work time: 4 minutes)

| 1. | $5 x+4, \text { when } x=3$ | 2. | $6 x-10$, when $x=5$ |
| :---: | :---: | :---: | :---: |
| 3. |  | 4. |  |
|  | $x^{3}+4$, when $x=2$ |  | $2(x-1)$, when $x=6$ |
| 5. | $16-x \text {, when } x=5$ | 6. | $x^{2}+5, \text { when } x=6$ |

Name $\qquad$ Date $\qquad$

## Session 5: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Say, draw and evaluate the algebraic expression.


M $\triangle$ TH $\qquad$
$\qquad$

## Session 5: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Students take turns leading and to say, draw and evaluate the algebraic expression.

| 5. | $4+2 x$, when $x=3$ | $4 x-3$, when $x=2$ |
| :--- | :--- | :--- |
|  |  |  |
| $x^{2}+3$, when $x=2$ | 8. |  |
| 7. |  |  |

## Session 5: Self-Reflection

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions

Briefly discuss student responses
$>$ What did I learn today about evaluating algebraic expressions?
> How confident do I feel about evaluating algebraic expressions on my own? (Thumbs up, down, or sideways)
$\qquad$

Learning Target: I will evaluate algebraic expressions.

Directions: Evaluate each expression for the given value of $x$. (Work time: 4 minutes)

| 1. | $2 x+4, \text { when } x=3$ | 2. | $10-2 x, \text { when } x=2$ |
| :---: | :---: | :---: | :---: |
| 3 |  | 4. |  |
|  | $x^{3}+6$, when $x=4$ |  | $4(x+2)$, when $x=5$ |
| 5. | $14-2 x, \text { when } x=3$ | 6. | $x^{2}-4, \text { when } x=3$ |

Name $\qquad$ Date $\qquad$

## Session 6: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Say, draw and evaluate the algebraic expression.


M $\triangle$ TH $\qquad$
$\qquad$

## Session 6: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Students take turns leading and to say, draw and evaluate the algebraic expression.

| 5. |  |  |
| :--- | :--- | :--- | :--- |

## Session 6: Self-Reflection

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions

Briefly discuss student responses
$>$ What did I learn today about evaluating algebraic expressions?
$>$ How confident do I feel about evaluating algebraic expressions on my own? (Thumbs up, down, or sideways)
$\qquad$

Learning Target: I will evaluate algebraic expressions.

Directions: Evaluate each expression for the given value of $\boldsymbol{X}$. (Work time: 4 minutes)

| 1. | 2. |  |
| :--- | :--- | :--- |
|  |  |  |

$\qquad$

## Session 7: Guided Practice (We Do)

We Do Together: (Teacher Actions)
> Use substitution to evaluate each algebraic expression.


M $\triangle$ TH $\qquad$
$\qquad$

## Session 7: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Students take turns leading to evaluate each algebraic expression using substitution.


## Session 7: Self-Reflection

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions

Briefly discuss student responses
$>$ What did I learn today about evaluating algebraic expressions?
$>$ How confident do I feel about evaluating algebraic expressions on my own? (Thumbs up, down, or sideways)

## Quick Check - Form G

$7{ }^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Name $\qquad$ Date $\qquad$

Learning Target: I will evaluate algebraic expressions.

Directions: Evaluate each expression for the given value of $\boldsymbol{X}$. (Work time: 4 minutes)

| 1. | 2. |  |
| :--- | :--- | :--- |

MATH
Name $\qquad$ Date $\qquad$

## Session 8: Guided Practice (We Do - Continued)

We Do Together: (Teacher Actions)
> Use substitution to evaluate each algebraic expression.


MATH $\qquad$
$\qquad$

## Session 8: Guided Practice (We Do - Continued)

You Do Together: (As a class, or in small groups)
> Students take turns leading to evaluate each algebraic expression using substitution.

| 5. | $3+4 x$, when $x=7$ | 6. | $3 x-4, \text { when } x=8$ |
| :---: | :---: | :---: | :---: |
| 7. |  | 8. |  |
|  | $x^{2}-2$, when $x=6$ |  | $3(x-2)$, when $x=9$ |
| 9. | $6 x+10$, when $x=7$ | 10. | $x^{2}+1, \text { when } x=9$ |

## Session 8: Self-Reflection

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions

Briefly discuss student responses
$>$ What did I learn today about evaluating algebraic expressions?
$>$ How confident do I feel about evaluating algebraic expressions on my own? (Thumbs up, down, or sideways)
$\qquad$

Learning Target: I will evaluate algebraic expressions.

Directions: Evaluate each expression for the given value of $x$. (Work time: 4 minutes)

| 1. | $5 x+4, \text { when } x=3$ | 2. | $6 x-10$, when $x=5$ |
| :---: | :---: | :---: | :---: |
| 3. |  | 4. |  |
|  | $x^{3}+4$, when $x=2$ |  | $2(x-1)$, when $x=6$ |
| 5. | $16-x \text {, when } x=5$ | 6. | $x^{2}+5, \text { when } x=6$ |

## Independent Practice (You Do)

$7{ }^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Learning Target: I will evaluate algebraic expressions
Readiness for solving equations with more than one step

Title of Game: Play "Evaluating Algebraic Expressions Match-up!"
Number of Players: 2
Objective: To match all of your "Problem" cards to the "Answer" cards.

## Materials:

> 1 set of Problem and Answer cards per group

- For easy of sorting, copy each type of card on different colored paper.
> 1 recording sheet per player


## Set-up:

> Deal all 10 Problem cards face down in a row.
> Deal 5 Answer cards face up to each player.

## Directions:

> Player 1 goes first

- Take a card from the row of face down Problem cards and turn it face up
- Write the problem on the recording sheet
- And, find the answer in simplest form
> If Player 1 has the Answer card, place it face up on top of the Problem card, take both cards and say:
"The expression evaluated at $\qquad$ is $\qquad$ ."
> If Player 1 does not have the answer to the Problem card, turn the Problem card back over.
> Players $\mathbf{1}$ and $\mathbf{2}$ alternate turns. The winner is the first player to match all 5 of their cards.


## Problem Cards (Set A)

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Storage Suggestions: Copy the Problem (Set A) cards and Answer (Set A) cards in two different colors.
Store 1 set of each in a sealable bag for each pair of students.


M $\triangle$ TH

## Answer Cards (Set A)

$7^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Storage Suggestions: Copy the Problem (Set A) cards and Answer (Set A) cards in two different colors.
Store 1 set of each in a sealable bag for each pair of students.


## Problem Cards (Set B)

$7^{\text {th }}$ Grade - Readiness Standard 4 - 6.EE.2c

Storage Suggestions: Copy the Problem (Set B) cards and Answer (Set B) cards in two different colors.
Store 1 set of each in a sealable bag for each pair of students.

| $\begin{aligned} & ゅ^{-1} \\ & \stackrel{\rightharpoonup}{0} \end{aligned}$ | $7 x+3$ <br> when $x=9$ | $\begin{gathered} 8 x+4 \\ \text { when } x=6 \end{gathered}$ | $7 x-3$ <br> when $x=9$ | $8 x-4$ <br> when $x=6$ |
| :---: | :---: | :---: | :---: | :---: |
|  | $x^{2}+4$ <br> when $x=7$ | $x^{2}+3$ <br> when $x=8$ | $x^{2}-4$ <br> when $x=7$ | $x^{2}-6$ <br> when $x=9$ |
|  | $9(x+2)$ <br> when $x=7$ | $8(x+5)$ <br> when $x=4$ |  |  |
| $\begin{aligned} & \stackrel{\sim}{\omega} \\ & \stackrel{\sim}{\omega} \end{aligned}$ | $7 x+3$ <br> when $x=9$ | $8 x+4$ <br> when $x=6$ | $7 x-3$ <br> when $x=9$ | $8 x-4$ <br> when $x=6$ |
|  | $x^{2}+4$ <br> when $x=7$ | $x^{2}+3$ <br> when $x=8$ | $x^{2}-4$ <br> when $x=7$ <br> Set B | $x^{2}-6$ <br> when $x=9$ |
|  | $9(x+2)$ <br> when $x=7$ | $8(x+5)$ <br> when $x=4$ |  |  |

M $\triangle$ TH

## Answer Cards (Set B)

$7{ }^{\text {th }}$ Grade - Readiness Standard 4-6.EE.2c

Storage Suggestions: Copy the Problem (Set B) cards and Answer (Set B) cards in two different colors.
Store 1 set of each in a sealable bag for each pair of students.

(HiLTH Questions for Solving Word Problems

| $Q_{1}$ | What is the problem about? |
| :--- | :---: |
| $Q_{2}$ | What do I need to find? |
| $Q_{3}$ | What do I know? |
| $Q_{4}$ | What can I try? |
| Does my answer make sense? |  |

$Q_{1}$. What is the problem about?

Q2. What do I need to find?

Q3. What do I know?

Q4. What can I try?
$Q_{5}$. Does my answer make sense?

