

7th 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

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IES Recommendations for Tier 2 and 3 intervention lessons:

 Instructional materials for students receiving interventions should focus intensely on in-depth treatment of whole numbers in kindergar- ten through grade 5 and on rational numbers in grades 4 through 8. These materials should be selected by committee. 	Low
 Instruction during the intervention should be explicit and systematic. This includes providing models of proficient problem solving, verbalization of thought processes, guided practice, corrective feedback, and frequent cumulative review. 	Strong
4. Interventions should include instruction on solving word problems that is based on common underlying structures.	Strong
 Intervention materials should include opportunities for students to work with visual representations of mathematical ideas and interven- tionists should be proficient in the use of visual representations of mathematical ideas. 	Moderate
6. Interventions at all grade levels should devote about 10 minutes in each 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

(Institute of Educational Sciences, Assisting Students Struggling with Mathematics: Response to Intervention (RtI) for Elementary and Middle Schools, 2009, p. 6)

Gradual release of responsibility model

Focus Lesson

"I do it"

Guided Instruction

Collaborative "You do it together"

Independent "You do it alone"

Figure 1

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



Planning Guide: Session 1

7th 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 Introduce the learning target and why it is important for future learning Read each question on the Guided Review and ask students to share what they remember from the previous school year. 			
Middle (5 min.)	 Ask students to <u>reflect</u> on their progress towards the learning target What did I remember about the learning target? What did I learn today about the learning target? How confident do I feel about doing the learning target on my own? 			
End (10 min.)	 Assess each student's progress using Quick Check – Form A Guide students to self-correct their Quick Check – Form A Guide students to chart their progress by recording the date and Quick Check score in their Growth Chart Collect each student's Quick Check and Growth Chart 			
After	 Create sub-groups to differentiate the middle of sessions 2 through 8 Group 1 – Include students who <u>did not</u> meet the learning goal Group 2 – Include students who met or exceeded the learning goal 			

7th Grade Fall Guided Review

Readiness Standard 4 - 6.EE.2c

Name___ Date

Learning Target: I will evaluate algebraic expressions.

1. Evaluate the expression 4x + 3 for x = 2.

- 0 8
- \circ 9
- 10
- 0 11
- 2. Evaluate the expression $x^2 + 5$ for x = 3.

- 0 9
- o 14 o 11
- 0 10

3.

Evaluate the expression 20 - 3x for x = 4.

- 0 17
- 0 13
- 0 12
- 0 8

7th Grade Winter Guided Review

Readiness Standard 4 - 6.EE.2c

Name____ Date

Learning Target: I will evaluate algebraic expressions.

1. Evaluate the expression 5x + 2 for x = 3.

- 15 10 17 25

- 2. Evaluate the expression $x^2 + 6$ for x = 4.

- 0 22
- 0 16
- 0 14
- 0 12

3.

Evaluate the expression 13 - 2x for x = 3.

- 33
- ° 7
- 8
- 0 6

7th Grade Spring Guided Review

Readiness Standard 4 - 6.EE.2c

Name____ Date

Learning Target: I will evaluate algebraic expressions.

1. Evaluate the expression 3x + 6 for x = 4.

- O 12
- 30
- 2. Evaluate the expression $x^2 + 4$ for x = 5.

- 0 11
- 0 14
- O 25
- 0 29

3.

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

- 0 7
- O 22
- 9
- 0 8



Session 1: Self-Reflection

7th Grade - Readiness Standard 4 – 6.EE.2c

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

7th Grade - Readiness Standard 4 – 6.EE.2c

Name_			Date	_
earning T.	'arget: I will evaluate algebraic expres	ssions.		
Directions	: Evaluate each expression for the giv	ven value of X. (v	Vork time: 4 minutes)	
1.		2.		
	2x + 4, when $x = 3$		10 - 2x, when $x = 2$	
3.		4.		
	$x^3 + 6$, when $x = 4$		4(x + 2), when $x = 5$	
5.		6.		
	14 - 2x, when $x = 3$		$x^2 - 4$, when $x = 3$	
	14 - ZA, WHEHA - 3		$\lambda = 4$, when $\lambda = 3$	



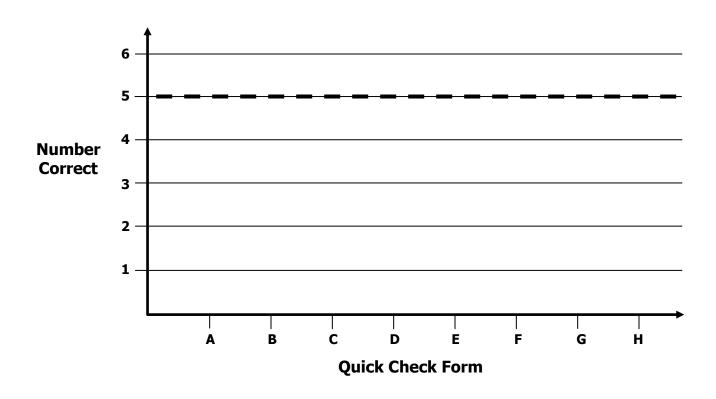
Growth Chart

7th 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:		



Planning Guide: Sessions 2 Through 8

7th 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 (5 min.)	> Review the learning target with the whole group ar	nd ask each student to set a goal.		
Middle (15 min.)	Group 1: Students who scored below the learning goal on the previous Quick Check.	Group 2: (Students who met the learning goal)		
	➤ Model solving a word problem — "I do"	➤ Independent practice — "You do alone"		
	➤ Guided Practice – "We do"			
	Session 2: Evaluate algebraic expressions using algebra tiles.	Activity: Evaluating Expressions Match-Up		
	Session 3: Evaluate algebraic expressions using drawings.	(Look for additional activities in 6 th grade core instruction resources.)		
	Session 4: Evaluate algebraic expressions using conceptual understanding of substituting values for variables.			
End (10 min.)	 Bring the students back together. Ask students to reflect on their progress towards the learning target What did I learn today about evaluating algebraic expressions? How confident do you feel about evaluating algebraic expressions on my own?			
After	 Regroup students to differentiate the middle of sessions 3 through 8 Promote students who met the learning goal to group 2 Exit students who met the learning goal for a third time Problem solve with a team to plan additional support for students who did not exit 			



Session 2: Modeling (I Do)

7th 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?

Session 2: Modeling (I Do – Visual Support)

7th Grade - Readiness Standard 4 – 6.EE.2c

Learning Target: I will evaluate algebraic expressions

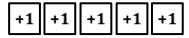
Readiness for solving equations with more than one step

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?

5 dollars plus 2 dollars for each pet

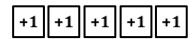
5 + 2x

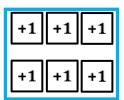
Build the expression





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





Find the total

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.



Session 2: Modeling (I Do - Teacher Notes)

7th 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 \$5 plus \$2 per pet and I know the Smith family has 3 pets...1 dog and 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 x to represent the number of pets.

(Write "5 + 2x" 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".)

Next, I will use 2 "+x" tiles to represent the 2 dollars for each pet.

(Place 2 "+x" tiles below the term "2x".)

In mathematics, the word evaluate means to find the value of the expression.

(Point to the expression 5 + 2x)

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 2 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.



5 dollars plus 2 dollars for each pet

5 + 2x

+1 +1 +1 +1 +1

+1 +1 +1 +1 +1



Name _____ Date ____

Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

Session 2: Guided Practice (We Do)

Materials:

 \triangleright Algebra Tiles (1 set on p. 13: 20 +1s and 16 +x's per student)

> Expression mat (1 per student)

We Do Together: (Teacher Actions)

> Say, build and evaluate the algebraic expression.

1.

2x + 3, when x = 4

2.

 x^2 + 4, when x = 3

3.

x - 3, when x = 5

4.

4(x - 2), when x = 3

15

Date

Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

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.

5.

$$3 + 2x$$
, when $x = 4$

6.

$$3x - 4$$
, when $x = 2$

7.

$$x^2$$
 + 2, when $x = 3$

8.

$$3(x - 2)$$
, when $x = 4$

9.

$$3x + 10$$
, when $x = 2$

10.

$$x^2$$
 + 2, when $x = 4$



Name _____ Date ____

Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

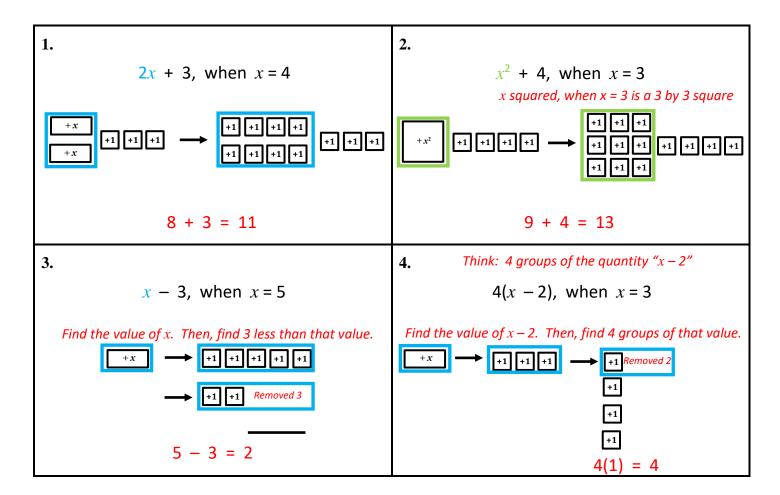
Session 2: Guided Practice (We Do – Teacher Notes)

Materials:

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

We Do Together: (Teacher Actions)

> Say, build and evaluate the algebraic expression.



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^{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.2a and 6.EE.7

+x +x +x
+x
+ x
2 + x ²
x^{2} + x^{2}
+ <i>x</i>
+x
+x
+ <i>x</i>
$+ x^2$



Algebraic Expression Cards

7th Grade - Readiness Standard 4 – 6.EE.2c

Use for Problem 1	Use for Problem 2
2x + 3, when $x = 4$	$x^2 + 4$, when x = 3
Use for Problem 3	Use for Problem 4
x - 3, when $x = 5$	4(x - 2), when $x = 3$
Use for Problem 5	Use for Problem 6
3 + 2x, when $x = 4$	3x - 4, when $x = 2$
Use for Problem 7	Use for Problem 8
	036 101 1 10316111 0
$x^2 + 2$, when $x = 3$	3(x - 2), when $x = 4$
$x^2 + 2$, when $x = 3$	
$x^2 + 2$, when $x = 3$	
, and the second	3(x - 2), when $x = 4$
Use for Problem 9	3(x - 2), when $x = 4$ Use for Problem 10
Use for Problem 9	3(x - 2), when $x = 4$ Use for Problem 10
Use for Problem 9 $3x + 10$, when $x = 2$	3(x - 2), when $x = 4$ Use for Problem 10
Use for Problem 9 $3x + 10$, when $x = 2$	3(x - 2), when $x = 4$ Use for Problem 10



Session 2: Self-Reflection

7th 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 B

7th Grade - Readiness Standard 4 – 6.EE.2c

Nam	e	Date			
	Learning Target: I will evaluate algebraic expressions. Directions: Evaluate each expression for the given value of <i>X</i> . (Work time: 4 minutes)				
1.	6 + 2 x , when $x = 4$	2. $5x - 4$, when $x = 6$			
3.	$x^2 + 4$, when $x = 3$	4. $3(x - 2)$, when $x = 9$			
5.	20 - 3x, when $x = 4$	6. $x^3 + 2$, when $x = 4$			



Session 3: Modeling (I Do)

7th 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?



Session 3: Modeling (I Do – Visual Support)

7th Grade - Readiness Standard 4 – 6.EE.2c

Learning Target: I will evaluate algebraic expressions

Total Cost =

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?

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.



Session 3: Modeling (I Do - Teacher Notes)

7th 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 \$2 to refill the cup. (Write "+ 2x".) 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 12 dollars cost of the cup. (Draw the plus signs.)

Next, I will draw 2 x-tiles to represent the 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 12 plus 2 groups of 3.

(Write "Total Cost = 12 + 2(3)" below the drawing.)

And...2 groups of 3 is equal to 6...

(Write "Total Cost = 12 + 6".)

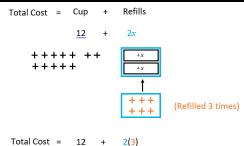
Which is equal to 18 dollars.

(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 3 times.

This makes sense because I modeled the situation using an equation and drawing algebra tiles. Then I substituted 3 into the variable x to find the total after 3 refills.





Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

Session 3: Guided Practice (We Do)

We Do Together: (Teacher Actions)

> Say, draw and evaluate the algebraic expression.

1.

2x + 1, when x = 5

2.

x - 4, when x = 9

3.

 $x^2 - 4$, when x = 3

4.

3(x - 2), when x = 6

Date

Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

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.

5. 3 + 2x, when x = 4

6.

3x - 4, when x = 2

7.

 x^2 + 2, when x = 3

8.

3(x - 2), when x = 5

9.

3x + 10, when x = 2

10.

 x^2 + 2, when x = 4



Name Date

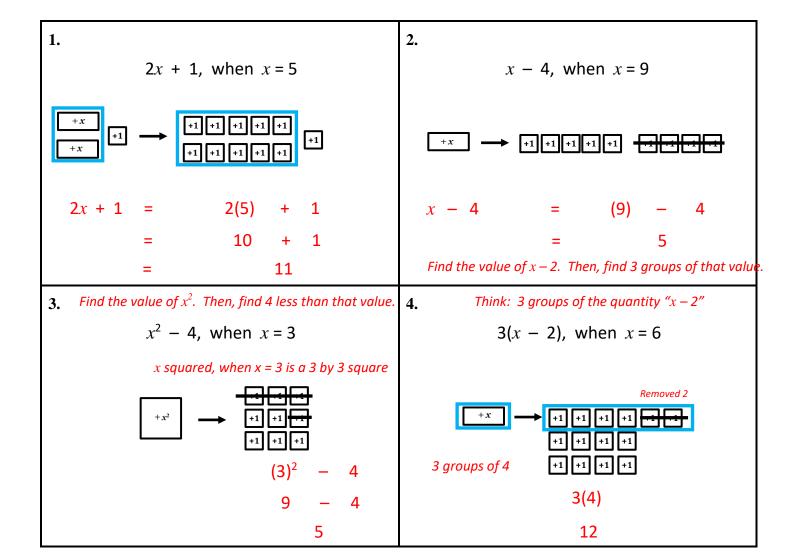
Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

Session 3: Guided Practice (We Do – Teacher Notes)

We Do Together: (Teacher Actions)

> Say, draw and evaluate the algebraic expression.





Session 3: Self-Reflection

7th 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 C

7th Grade - Readiness Standard 4 – 6.EE.2c

Name			Date	
Learning Target: I will evaluate algebraic expressions. Directions: Evaluate each expression for the given value of X. (Work time: 4 minutes)				
1.		2.		
g	9x + 3, when $x = 2$		12 - 3x, when $x = 3$	
3.		4.		
2	$x^3 + 2$, when $x = 3$		4(x + 7), when $x = 2$	
5.		6.		
1	6 - 3x, when $x = 2$		$x^2 - 1$, when $x = 4$	



Session 4: Modeling (I Do)

7th 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?



Session 4: Modeling (I Do – Visual Support)

7th 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
=
$$8 + 2x$$
 2 dollars for each activity
= $8 + 2(6)$ Participated in 6 activities
= $8 + 12$ 2 x 6 = 12
= 20 dollars



Session 4: Modeling (I Do - Teacher Notes)

7th 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?

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 + 2x" and "2 dollars for each activity" below the total cost equation.)

Total Cost =

Entry

20 dollars

Fourth, I need to figure out what I can try.

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. (Point to "8 + 2x" and write "8 + 2(6)" and "Participated in 6 activities".)

Next I remember replacing 2 x's with a number to end up with

= 8 + 2x 2 dollars for each activity
= 8 + 2(6) Participated in 6 activities
= 8 + 12 2 x 6 = 12

Activities

Next, I remember replacing 2 x's with a number to end up with 2 groups of that number...which can represent multiplication.

And, 2 groups of 6 is 12.

(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 \$20 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 _____ Date ____

Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

Session 4: Guided Practice (We Do)

We Do Together: (Teacher Actions)

> Use substitution to evaluate each algebraic expression.

1.

2x + 1, when x = 8

2.

x - 4, when x = 13

3.

 $x^2 - 4$, when x = 7

4.

3(x - 2), when x = 9

33

Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

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.
$$3 + 2x$$
, when $x = 5$

6.

$$3x - 4$$
, when $x = 7$

7.

$$x^2$$
 + 2, when $x = 6$

8.

$$3(x - 2)$$
, when $x = 8$

9.

$$3x + 10$$
, when $x = 5$

10.

$$x^2$$
 + 2, when $x = 9$

Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

Session 4: Guided Practice (We Do – Teacher Notes)

We Do Together: (Teacher Actions)

> Use substitution to evaluate each algebraic expression.

1. Think: 1 more than 2 times 8

$$2x + 1$$
, when $x = 8$

$$2x + 1 = 2(8) + 1$$

$$= 16 + 1$$

$$= 17$$

2. Think: 4 less than 13

$$x - 4$$
, when $x = 13$

$$x - 4 = (13) - 4$$
 $= 9$

3. Think: 4 less than a 7 by 7 square

$$x^{2} - 4$$
, when $x = 7$

Find the value of x^2 . Then, find 4 less than that value.

$$x^2$$
 - 4 = $(7)^2$ - 7
= 49 - 7
= 42

4. Think: 3 groups of the quantity "9-2"

$$3(x - 2)$$
, when $x = 9$

Find the value of x - 2. Then, find 3 groups of that value.

$$3(x-2) = 3(9-2)$$

= 3(7)
= 21



Session 4: Self-Reflection

7th 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 D

Name	Date			
Learning Target: I will evaluate algebraic expressions. Directions: Evaluate each expression for the given value of X. (Work time: 4 minutes)				
1. $5x + 4$, when $x = 3$	2. $6x - 10$, when $x = 5$			
3. $x^3 + 4$, when $x = 2$	4. $2(x - 1)$, when $x = 6$			
5. $16 - x$, when $x = 5$	6. $x^2 + 5$, when $x = 6$			



Name	Date

7th Grade - RS 4 - 6.EE.2c

Session 5: Guided Practice (We Do)

We Do Together: (Teacher Actions)

> Say, draw and evaluate the algebraic expression.

1.

$$3x + 1$$
, when $x = 2$

2.

$$x - 2$$
, when $x = 10$

3.

$$x^2 - 3$$
, when $x = 5$

4.

$$3(x - 2)$$
, when $x = 4$

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Date

Learning Target: I will evaluate algebraic expressions

7th Grade - RS 4 - 6.EE.2c

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 + 2x, when x = 3

6.

4x - 3, when x = 2

7.

 x^2 + 3, when x = 2

8.

3(x - 2), when x = 4

9.

2x + 10, when x = 4

10.

 x^2 + 3, when x = 5



Session 5: Self-Reflection

7th 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 E

Name			Date		
Learning 1	Target: I will evaluate algebraic expre	essions.			
Directions	s: Evaluate each expression for the gi	ven value of <i>X</i> . (v	Vork time: 4 minutes)		
1.		2.			
	2x + 4, when $x = 3$		10 - 2x, when $x = 2$		
3.		4.			
	$x^3 + 6$, when $x = 4$		4(x + 2), when $x = 5$		
5.		6.			
	14 - 2 x , when $x = 3$		$x^2 - 4$, when $x = 3$		



7th Grade - RS 4 - 6.EE.2c

Session 6: Guided Practice (We Do)

We Do Together: (Teacher Actions)

> Say, draw and evaluate the algebraic expression.

1.

2x + 1, when x = 3

2.

x - 4, when x = 7

3.

 $x^2 - 4$, when x = 4

4.

3(x - 2), when x = 5

7th Grade - RS 4 - 6.EE.2c

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. 3 + 2x, when x = 5

6.

5x - 4, when x = 2

7.

 x^2 + 2, when x = 4

8.

2(x - 3), when x = 6

9.

3x + 10, when x = 5

10.

 x^2 + 1, when x = 3



Session 6: Self-Reflection

7th 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 F

Name _.			Date		
	Learning Target: I will evaluate algebraic expressions. Directions: Evaluate each expression for the given value of X. (Work time: 4 minutes)				
1.	6 + 2 <i>x</i> , when <i>x</i> = 4	2. 5x	x – 4, when x = 6		
3.	$x^2 + 4$, when $x = 3$	4. 3(<i>x</i>	x – 2), when x = 9		
5.	20 - 3x, when $x = 4$	6.	$^{3} + 2$, when $x = 4$		

Session 7: Guided Practice (We Do)

We Do Together: (Teacher Actions)

> Use substitution to evaluate each algebraic expression.

1.
$$6x + 1$$
, when $x = 8$

2.

$$x - 5$$
, when $x = 13$

$$x^2 - 3$$
, when $x = 9$

4.

$$4(x - 2)$$
, when $x = 7$

7th Grade - RS 4 - 6.EE.2c

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.

J.				
	3 +	7 <i>x</i>	when	x = 8

6.

$$9x - 4$$
, when $x = 7$

5

 x^2 + 3, when x = 7

8.

$$6(x - 2)$$
, when $x = 8$

8x + 10, when x = 9

10.

$$x^2 - 5$$
, when $x = 8$



Session 7: Self-Reflection

7th 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

Nam	e	Date	_		
	Learning Target: I will evaluate algebraic expressions. Directions: Evaluate each expression for the given value of X. (Work time: 4 minutes)				
1.	9x + 3, when $x = 2$	2. $12 - 3x$, when $x = 3$			
3.	$x^3 + 2$, when $x = 3$	4. $4(x + 7)$, when $x = 2$			
5.	16 - $3x$, when $x = 2$	6. $x^2 - 1$, when $x = 4$			



7th Grade - RS 4 - 6.EE.2c

Session 8: Guided Practice (We Do - Continued)

We Do Together: (Teacher Actions)

> Use substitution to evaluate each algebraic expression.

7x + 1, when x = 9

2.

$$x - 6$$
, when $x = 15$

3.

$$x^2 - 4$$
, when $x = 8$

4.

$$8(x - 2)$$
, when $x = 7$

7th Grade - RS 4 - 6.EE.2c

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.
$$3 + 4x$$
, when $x = 7$

6.

$$3x - 4$$
, when $x = 8$

7.

$$x^2 - 2$$
, when $x = 6$

8.

$$3(x - 2)$$
, when $x = 9$

9.

$$6x + 10$$
, when $x = 7$

10.

$$x^2$$
 + 1, when $x = 9$



Session 8: Self-Reflection

7th 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 H

Name	Date			
Learning Target: I will evaluate algebraic expressions. Directions: Evaluate each expression for the given value of X. (Work time: 4 minutes)				
1. $5x + 4$, when $x = 3$	2. $6x - 10$, when $x = 5$			
3. $x^3 + 4$, when $x = 2$	4. $2(x - 1)$, when $x = 6$			
5. $16 - x$, when $x = 5$	6. $x^2 + 5$, when $x = 6$			



Independent Practice (You Do)

7th 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!"
Title of Game. Flay Evaluating Algebraic Expressions Watch-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 is"
➤ If Player 1 does not have the answer to the Problem card, turn the Problem card back over.

> Players 1 and 2 alternate turns. The winner is the first player to match all 5 of their cards.



Problem Cards (Set A)

7th 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.

	2 <i>x</i> + 3	3x + 4	2x - 3	3 <i>x</i> – 4
	when $x = 4$	when $x = 2$	when $x = 4$	when $x = 2$
	Set A	Set A	Set A	Set A
A_1	$x^2 + 4$	$x^2 + 3$	$x^2 - 4$	$x^2 - 3$
Set A ₁	when $x = 3$	when $x = 2$	when $x = 5$	when $x = 2$
	Set A	Set A	Set A	Set A
	3(<i>x</i> + 2)	2(x + 3)		
	when $x = 4$	when $x = 4$		
	Set A	Set A		
	2 <i>x</i> + 3	3 <i>x</i> + 4	2 <i>x</i> – 3	3 <i>x</i> – 4
	when $x = 4$	when $x = 2$	when $x = 4$	when $x = 2$
	Set A	Set A	Set A	Set A
Set A ₂	$x^2 + 4$	$x^2 + 3$	$x^2 - 4$	$x^2 - 3$
Set	when $x = 3$	when $x = 2$	when $x = 5$	when $x = 2$
	Set A	Set A	Set A	Set A
	3(x + 2)	2(x + 3)		
	when $x = 4$	when $x = 4$		
	Set A	Set A		



Answer Cards (Set A)

7th 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.

	11	10	5	2
	Set A	Set A	Set A	Set A
${\sf A}_1$				
Set A ₁	13	7	21	1
	Set A	Set A	Set A	Set A
	12	1.4		
	12	14		
	Set A	Set A		
	11	10	5	2
	11	10	3	2
	Set A	Set A	Set A	Set A
Set A ₂	13	7	21	1
S				
	Set A	Set A	Set A	Set A
	12	14		
	Set A	Set A		



Problem Cards (Set B)

7th 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.

	7 <i>x</i> + 3	8 <i>x</i> + 4	7 <i>x</i> – 3	8 <i>x</i> – 4
	when $x = 9$	when $x = 6$	when $x = 9$	when $x = 6$
	Set B	Set B	Set B	Set B
Set B ₁	$x^2 + 4$	$x^2 + 3$	$x^{2} - 4$	$x^2 - 6$
Set	when $x = 7$	when $x = 8$	when $x = 7$	when $x = 9$
	C. A. D.	Cu D	C. A. D.	S. I. D.
	Set B	Set B	Set B	Set B
	9(x + 2)	8(<i>x</i> + 5)		
	when $x = 7$	when $x = 4$		
	Set B	Set B		
	3613	361.0		
	7x + 3	8x + 4	7x - 3	8 <i>x</i> – 4
	when $x = 9$	when $x = 6$	when $x = 9$	when $x = 6$
	Set B	Set B	Set B	Set B
Set B ₂	$x^2 + 4$	$x^2 + 3$	$x^2 - 4$	$x^2 - 6$
S	when $x = 7$	when $x = 8$	when $x = 7$	when $x = 9$
	Set B	Set B	Set B	Set B
	9(x + 2)	8(x + 5)		
	when $x = 7$	when $x = 4$		
	Set B	Set B		



Answer Cards (Set B)

7th 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.

	66	52	60	44
Set B ₁	Set B	32 Set B	Set B	TT Set B
	53	67	45	75
	Set B	Set B	Set B	Set
	01	72		
	81	72		
	Set B	Set B		
Set B ₂				
	66	52	60	44
	Set B	Set B	Set B	Set B
	53	67	45	75
	Set B	Set B	Set B	Set B
	81	72		
	Set B	Set B		



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?
Q_5	
	Does my answer make sense?



Steps 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?	
Q4. What can I try?	
Q ₅ . Does my answer make sense?	