

Lesson 18: Writing and Evaluating Expressions—Addition and Subtraction

Classwork

Opening Exercise

How can we show a number increased by 2?

$n + 2$ $7 + 2$

Can you prove this using a model?

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Example 1: The Importance of Being Specific in Naming Variables

When naming variables in expressions, it is important to be very clear about what they stand for. The units of measure must be included if something is measured.

Exercises

1. Read the variable in the table and improve the description given, making it more specific.

Variable	Incomplete Description	Complete Description with Units
Joshua's speed (J)	Let J = Joshua's speed	J = Joshua's speed in mph or m/s.
Rufus's height (R)	Let R = Rufus's height	R = Rufus's height in ft. or inches
Milk sold (M)	Let M = the amount of milk sold	M = milk sold oz. or per day or
Colleen's time in the 40 meter hurdles (C)	Let C = Colleen's time	C = Colleen's time in sec.
Sean's age (S)	Let S = Sean's age	

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2. Read each variable in the table and improve the description given, making it more specific.

Variable	Incomplete Description	Complete Description with Units
Karolyn's CDs (K)	Let K = Karolyn's CDs	Let K = the number of CDs Karolyn has
Joshua's merit badges (J)	Let J = Joshua's merit badges	J = Josh's merit badges earned
Rufus's trading cards (R)	Let R = Rufus's trading cards	R = Rufus's trading cards bought
Milk money (M)	Let M = the amount of milk money	

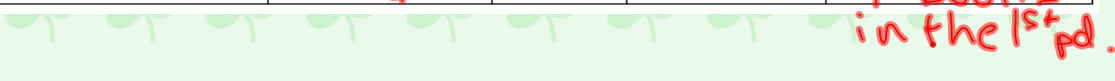


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Example 2 (20 minutes): Writing and Evaluating Addition and Subtraction Expressions

Read each story problem. Identify the unknown quantity, and write an addition or subtraction expressions that is described. Finally, evaluate your expression using the information given in column four.

Story Problem	Description with Units	Expression	Evaluate the Expression if:	Show your Work and Evaluate
Gregg has two more dollars than his brother Jeff. Write an expression for the amount of money Gregg has.	Let j = Jeff's money in dollars	$j + 2$	Jeff has \$12.	$j + 2$ $12 + 2$ 14 Gregg has \$14.
Gregg has two more dollars than his brother Jeff. Write an expression for the amount of money Jeff has.	Let g = Gregg's money in dollars	$g - 2$	Gregg has \$14.	$g - 2$ $14 - 2$ 12 Jeff has \$12.
Abby read 8 more books than Kristen in the first marking period. Write an expression for the number of books Abby read.	K = # of books Kristen read	$K + 8$	Kristen read 9 books in the first making period.	$K + 8$ $9 + 8$ 17 Abby read 17 books in the 1 st pd.



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<p>Abby read 6 more books than Kristen in the second marking period. Write an expression for the number of books Kristen read.</p>	<p>$A = \#$ of books Abby read in 2nd Qtr.</p>	<p>$a - 6$</p>	<p>Abby read 20 books in the second marking period.</p>	<p>$a - 6$ $20 - 6$ 14 Kristen read 14 books in 2 period</p>
<p>Daryl has been teaching for one year longer than Julie. Write an expression for the number of years that Daryl has been teaching.</p>	<p>$J = \#$ of years Julie has been teaching</p>	<p>$j + 1$</p>	<p>Julie has been teaching for 28 years.</p>	<p>$j + 1$ $28 + 1$ 29 Daryl has taught for 29 years</p>
<p>Ian scored 4 fewer goals than Julia in the first half of the season. Write an expression for the number of goals Ian scored.</p>			<p>Julia scored 13 goals.</p>	

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<p>Ian scored 3 fewer goals than Julia in the second half of the season. Write an expression for the number of goals Julia scored.</p>			<p>Ian scored 8 goals.</p>	
<p>Johann visited Niagara Falls 3 times fewer than Arthur. Write an expression for the number of times Johann visited Niagara Falls.</p>			<p>Arthur visited Niagara Falls 5 times.</p>	

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Problem Set

1. Read the story problem. Identify the unknown quantity and write an addition or subtraction expression that is described. Then evaluate your expression given the further information.

Story Problem	Description with Units	Expression	Evaluate the Expression if:	Show your Work and Answer
Sammy has two more baseballs than his brother Ethan.	Let e = the number of balls Ethan has	$e + 2$	Ethan has 7 baseballs.	$e + 2$ $7 + 2$ 9 Sammy has 9 baseballs.
Ella wrote 8 more stories than Anna in the fifth grade.			Anna wrote 10 stories in the fifth grade.	
Lisa has been dancing for 3 more years than Danika.			Danika has been dancing for 6 years.	

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The New York Rangers scored 2 fewer goals than the Buffalo Sabres last night.			The Rangers scored 3 goals last night.	
George has gone camping 3 times fewer than Dave.			George has gone camping 8 times.	

2. If George went camping 15 times, how could you figure out how many times Dave went camping?



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Exit Ticket

1. Kathleen lost a tooth today. Now she has lost 4 more than her sister Cara lost.

Write an expression to represent the number of teeth Cara has lost. Let K = the number of teeth Kathleen lost.

Expression:

2. Write an expression to represent the number of teeth Kathleen has lost. Let C = the number of teeth Cara lost.

Expression:

3. If Cara lost 3 teeth, how many teeth has Kathleen lost?

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