

Lesson 18: Writing and Evaluating Expressions—Addition and Subtraction

Classwork

Opening Exercise

How can we show a number increased by 2?

Can you prove this using a model?

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 represent. The units of measure must be included if something is measured.

Exercises 1–2

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 represent Joshua's speed.	
Rufus's height (R)	Let R represent Rufus's height.	
Milk sold (M)	Let M represent the amount of milk sold.	
Colleen's time in the 40-meter hurdles (C)	Let C represent Colleen's time.	
Sean's age (S)	Let S represent Sean's age.	

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 represent Karolyn’s CDs.	Let K represent the number of CDs Karolyn has.
Joshua’s merit badges (J)	Let J represent Joshua’s merit badges.	
Rufus’s trading cards (R)	Let R represent Rufus’s trading cards.	
Milk money (M)	Let M represent the amount of milk money.	

Example 2: Writing and Evaluating Addition and Subtraction Expressions

Read each story problem. Identify the unknown quantity, and write the addition or subtraction expression 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 represent 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 represent 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.			Kristen read 9 books in the first marking period.	

<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>Abby read 20 books in the second marking 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>Julie has been teaching for 28 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>	
<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>	

Problem Set

1. Read each story problem. Identify the unknown quantity, and write the addition or subtraction expression 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
Sammy has two more baseballs than his brother Ethan.	Let e represent 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.	
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?