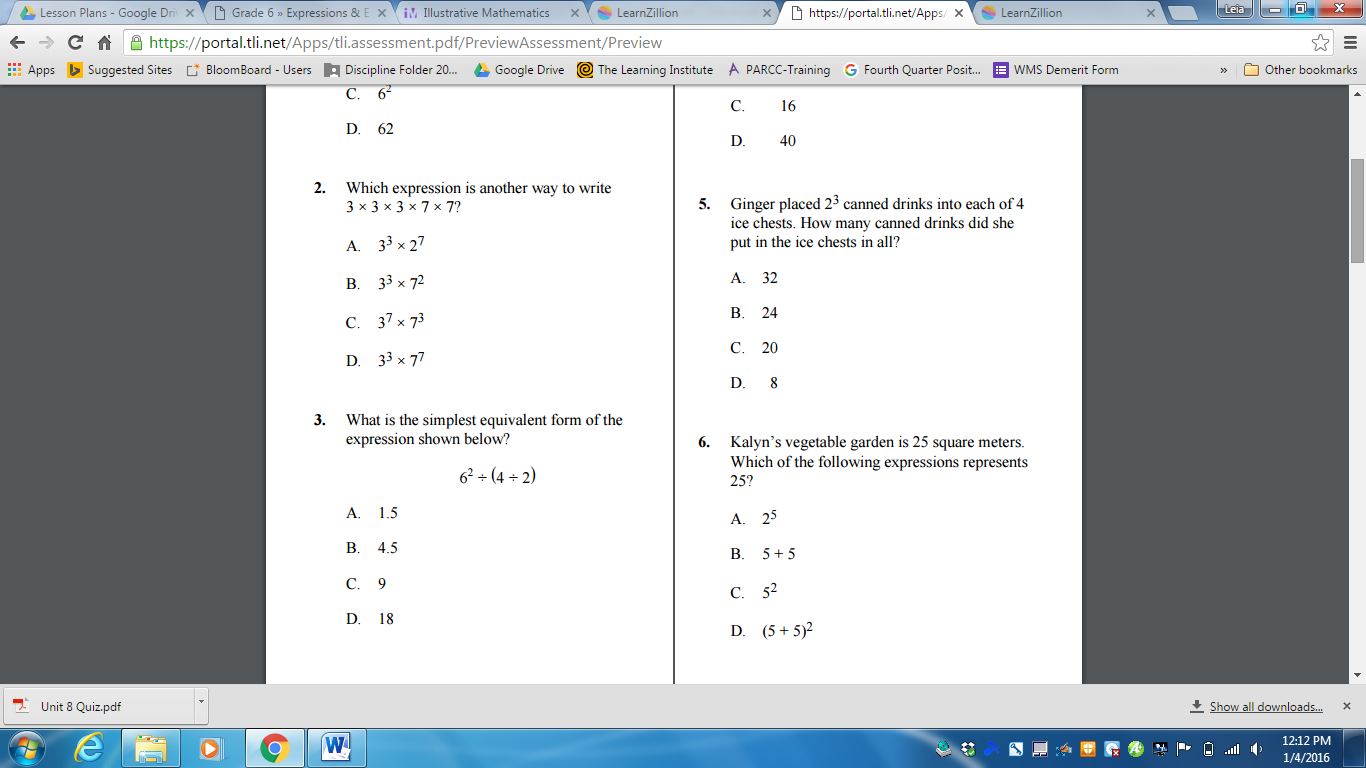
6th Grade Unit 6 Parent Packet

**Standard:** 6.EE.1

* I can write numerical expressions involving whole-number exponents.
* I can evaluate numerical expressions involving whole-number exponents.

**Examples:**



This is an example problem from their quiz. We will talk about exponents and how they mean that’s how many times you mulplity the number by itself. The answer to this dproblem would be B, because you’ve multiplied 3 by itself 3 times and 7 by itself 2 times.

**Misconceptions:**

This is their first real practice with this skill so students try to multiply the whole number by the exponent number, such as 3x3, which is not what it means. They need practice and to be remined that the exponent means how many times to multiply the number by itself.

**Supplementary Material:**

<https://learnzillion.com/lesson_plans/6212-evaluate-numerical-expressions-by-using-whole-number-exponents>

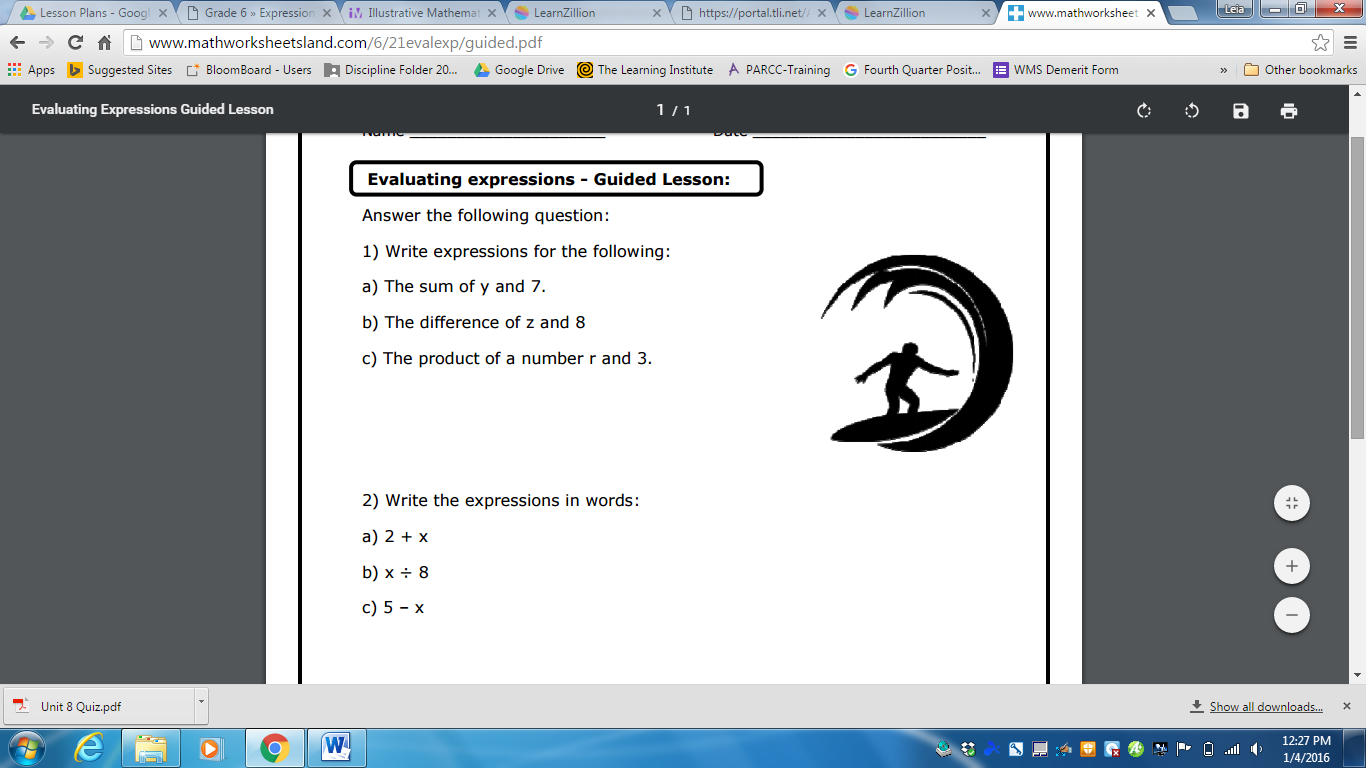
<https://learnzillion.com/resources/72480-write-and-evaluate-expressions-involving-whole-number-exponents-6-ee-1>

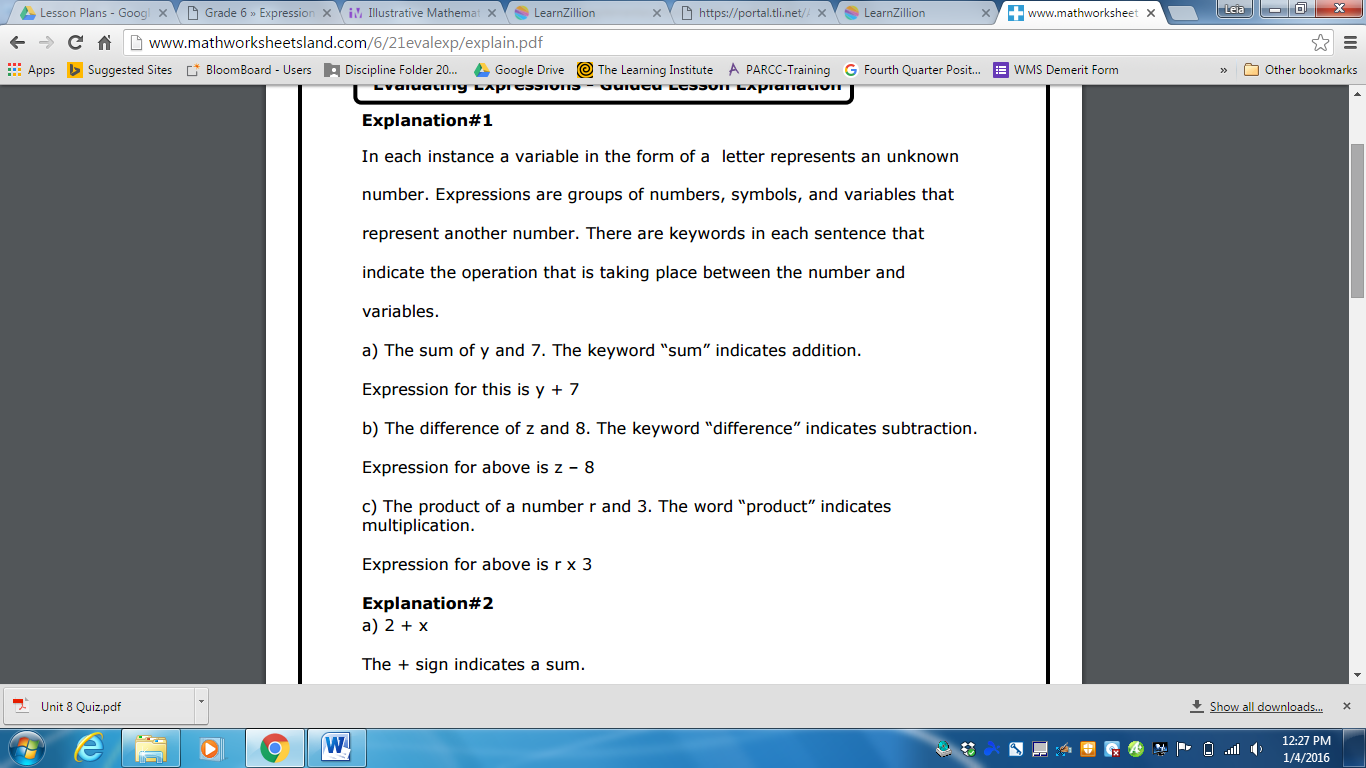
pgs. 110-117 in the text book

**Standard:** 6.EE.2a

* I can write expressions that record operations with variables.

**Examples:**





**Misconceptions:**

Students have a hard time with order. They generally know which operation to do, but especially with subtraction and division where it matters which number is first, they have a hard time understanding what the problem is asking,and putting that in the correct numerical form.

**Supplementary Material:**

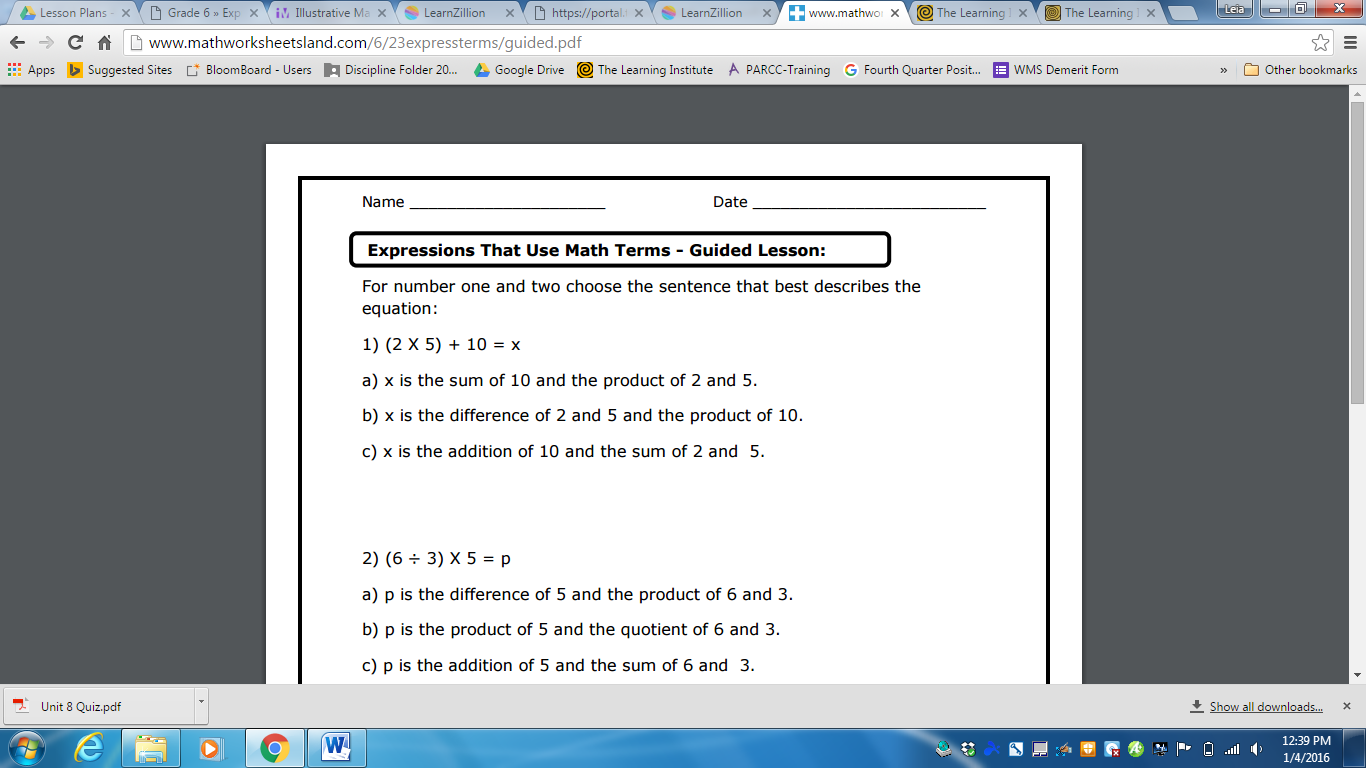
<https://learnzillion.com/resources/72284-write-read-and-evaluate-expressions-in-which-letters-stand-for-numbers-6-ee-2>

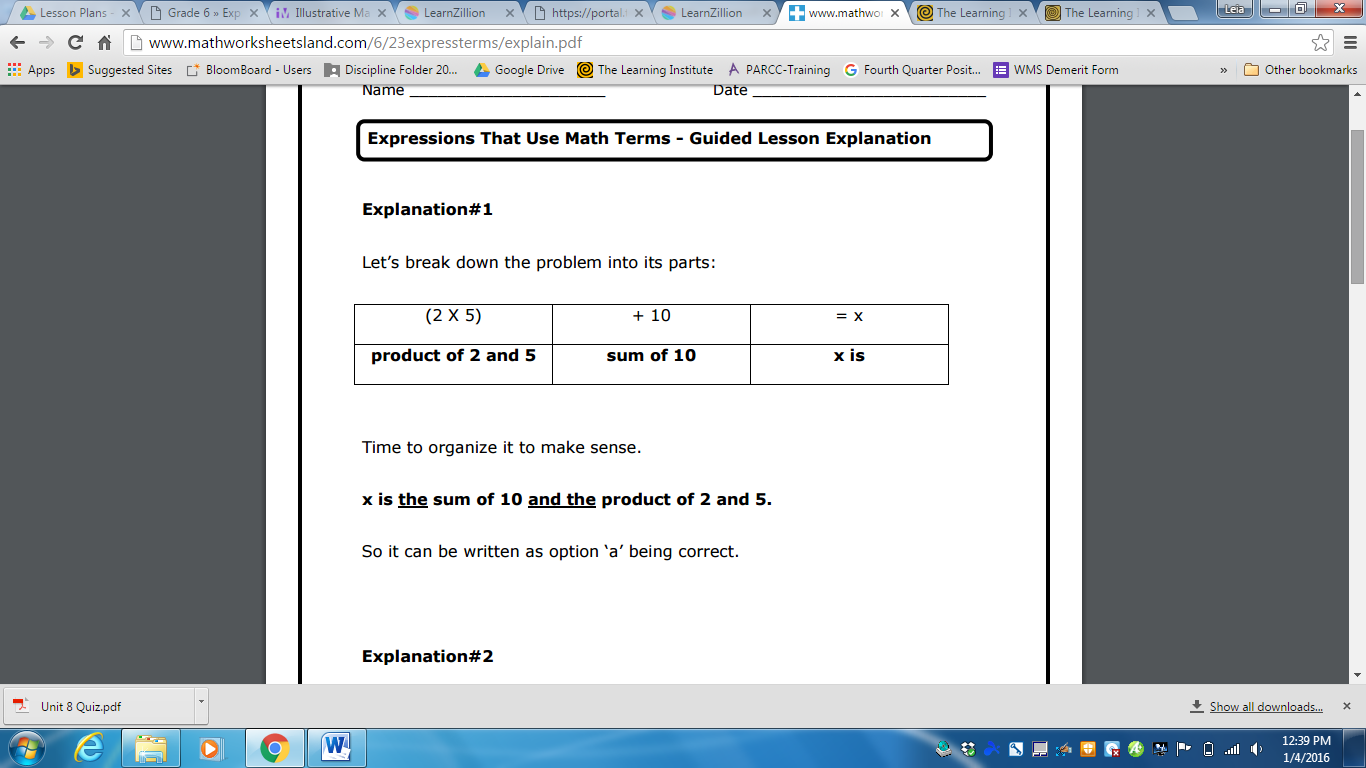
pgs. 118-123 in the text book

**Standard:** 6.EE.2b

* I can read expressions with variables.
* I can identify the parts of an expression using sum, term, product, factor, quotient, coefficient

**Examples:**





**Misconceptions:**

On top of having issues with making the words and numbers match, students now have to plug in a variable for an unknown. If they can get the original skill down, they will be alright. If not, this is going to throw them for a loop.

**Supplementary Material:**

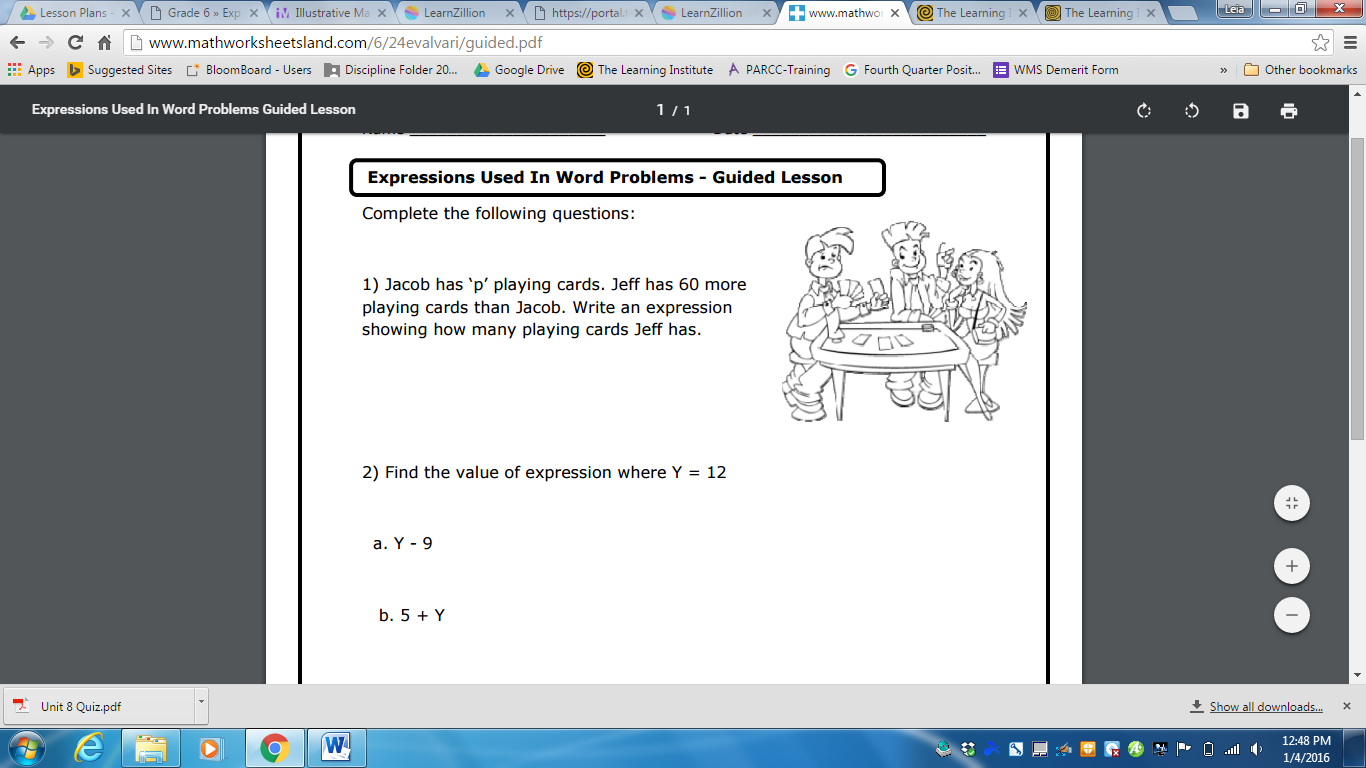
<https://learnzillion.com/resources/72284-write-read-and-evaluate-expressions-in-which-letters-stand-for-numbers-6-ee-2>

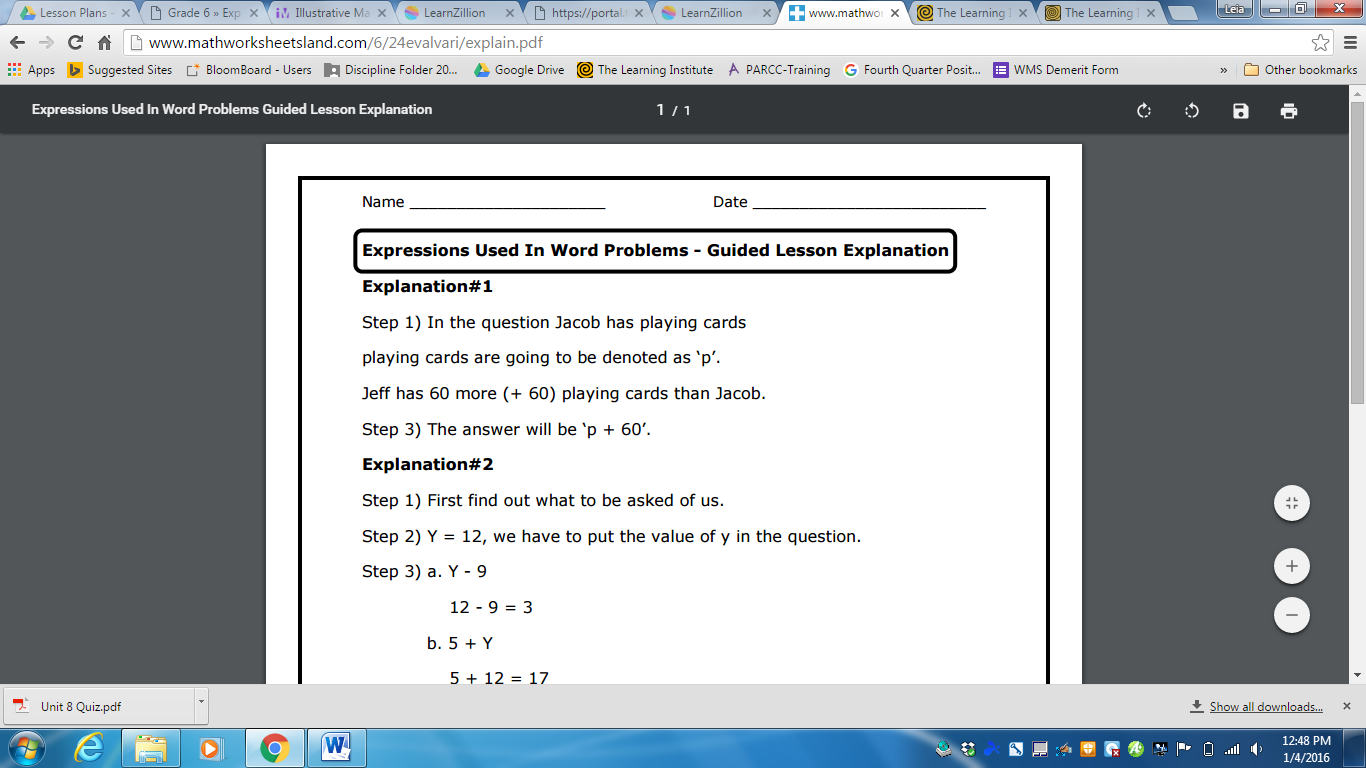
pgs. 118-123 in the text book

**Standard:** 6.EE.2c

* I can evaluate expressions with variables.
* I can evaluate expressions using specific values for variables.
* I can use formulas to solve real world problems.

**Examples:**





**Misconceptions:**

This skills just takes the last two a step further and students will have to find an answer by plugging a number in for the variable.

**Supplementary Material:**

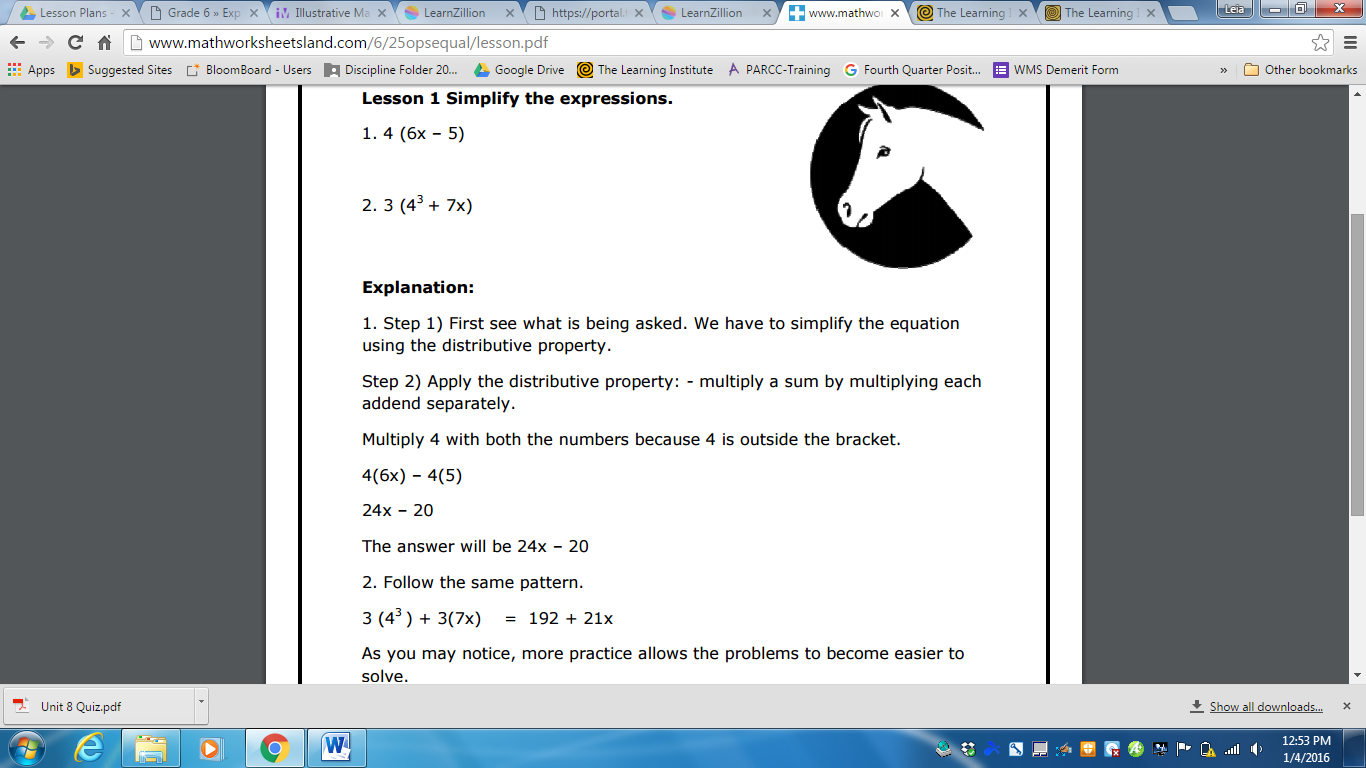
<https://learnzillion.com/resources/72284-write-read-and-evaluate-expressions-in-which-letters-stand-for-numbers-6-ee-2>

pgs 118-123 in text book

**Standard:** 6.EE.3

* I can evaluate expressions using the Order of Operations.
* I can apply the properties of operations to generate equivalent expressions.
* I can combine like terms to find equivalent expressions.

**Examples:**



**Misconceptions:**

Students have to remind themselves what the distributive property is and how to do it. Often times, figuring out how to pull something out that can be distributed can blow their minds. Also, they are throwing in exponents and variables that will confuse students.

**Supplementary Material:**

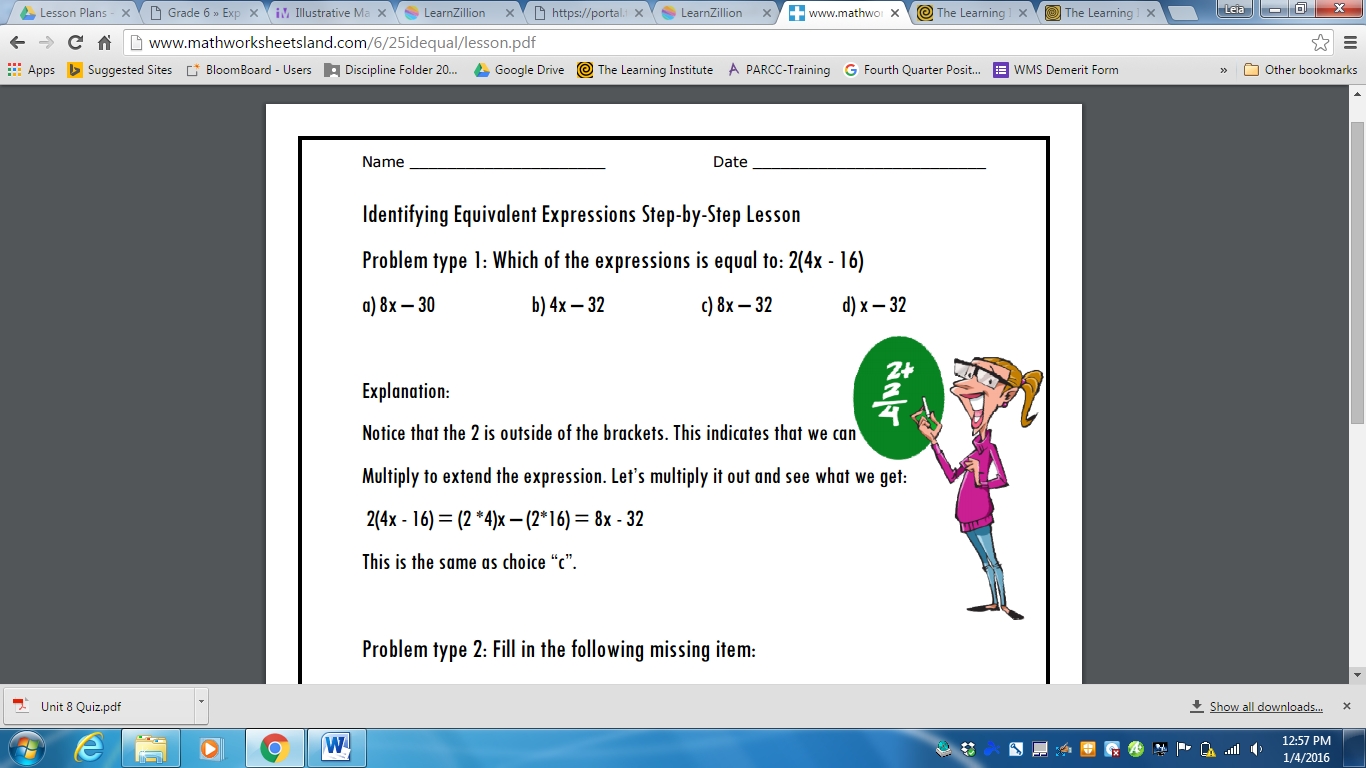
<https://learnzillion.com/resources/72704-apply-properties-of-operations-to-generate-equivalent-expressions>

pgs. 132-137 in text book

**Standard:** 6. EE.4

* I can identify if and when two expressions are equivalent.

**Examples:**



**Misconceptions:**

This final skill takes everything we’ve covered and they now have to tell if two expressions are equivalent by simplifying them.

They need a strong foundation in everything we’ve covered until this point.

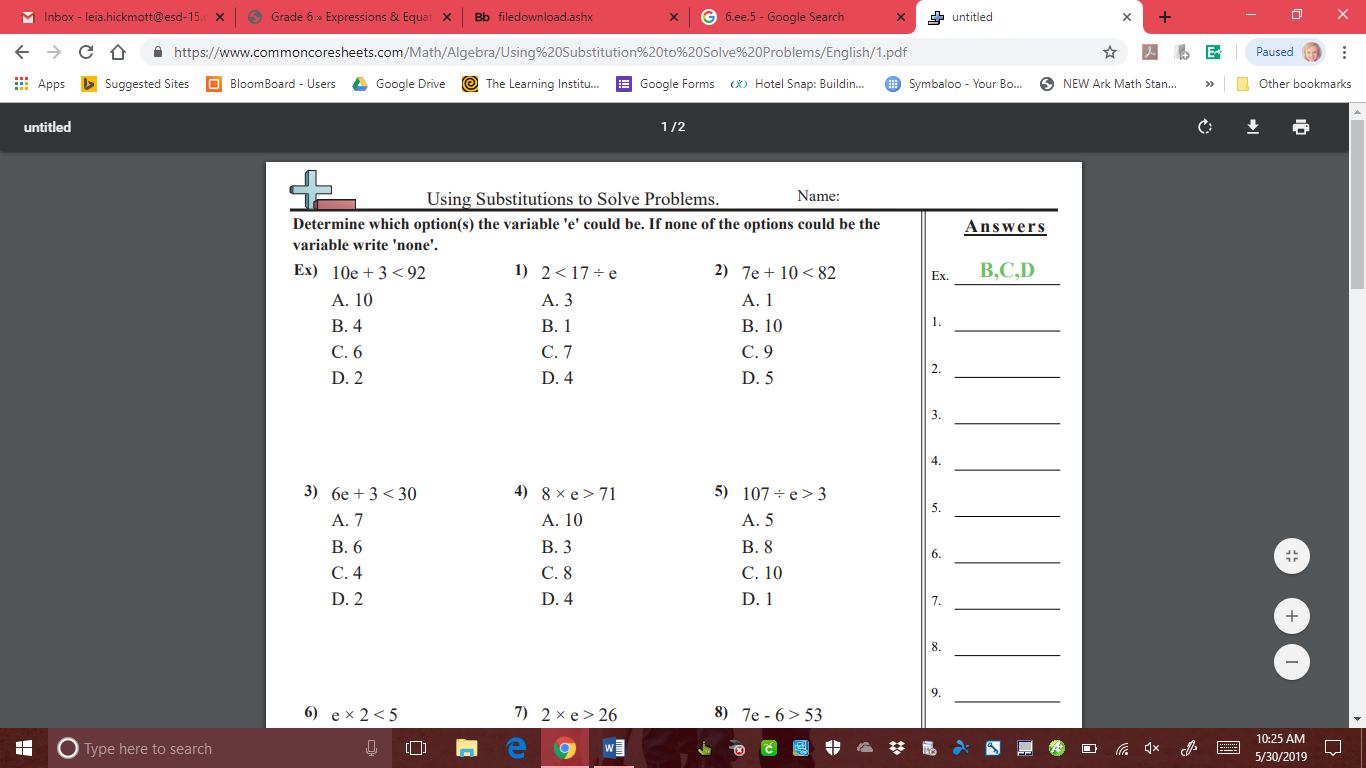
**Supplementary Material:**

<https://learnzillion.com/resources/72925-identify-when-two-expressions-are-equivalent-6-ee-4>

**Standard:** 6.EE.5

* I can recognize solving an equation or inequality as a process of answering “Which values from a specified set, if any, make the equation or inequality true?”
* I can use the solution to an equation or inequality to prove that the answer is correct.
* I can use substitution to determine whether a given number in a specified set makes an equation or inequality true.

**Examples:**



**Misconceptions:**

The new skill here is knowing what ≥ and ≤ mean. These have the greater than and less than symbol they already know, as well as half an equal sign. Therefore, these symbols are “greater than or equal to” and “less than or equal to.” Confusion comes when negative numbers are part of the equation or inequality as well, because these are brand new to students this year. I always go back to a number line and where that final answer is located on a number line to help understand why symbol is the correct answer.

**Supplementary Material:**

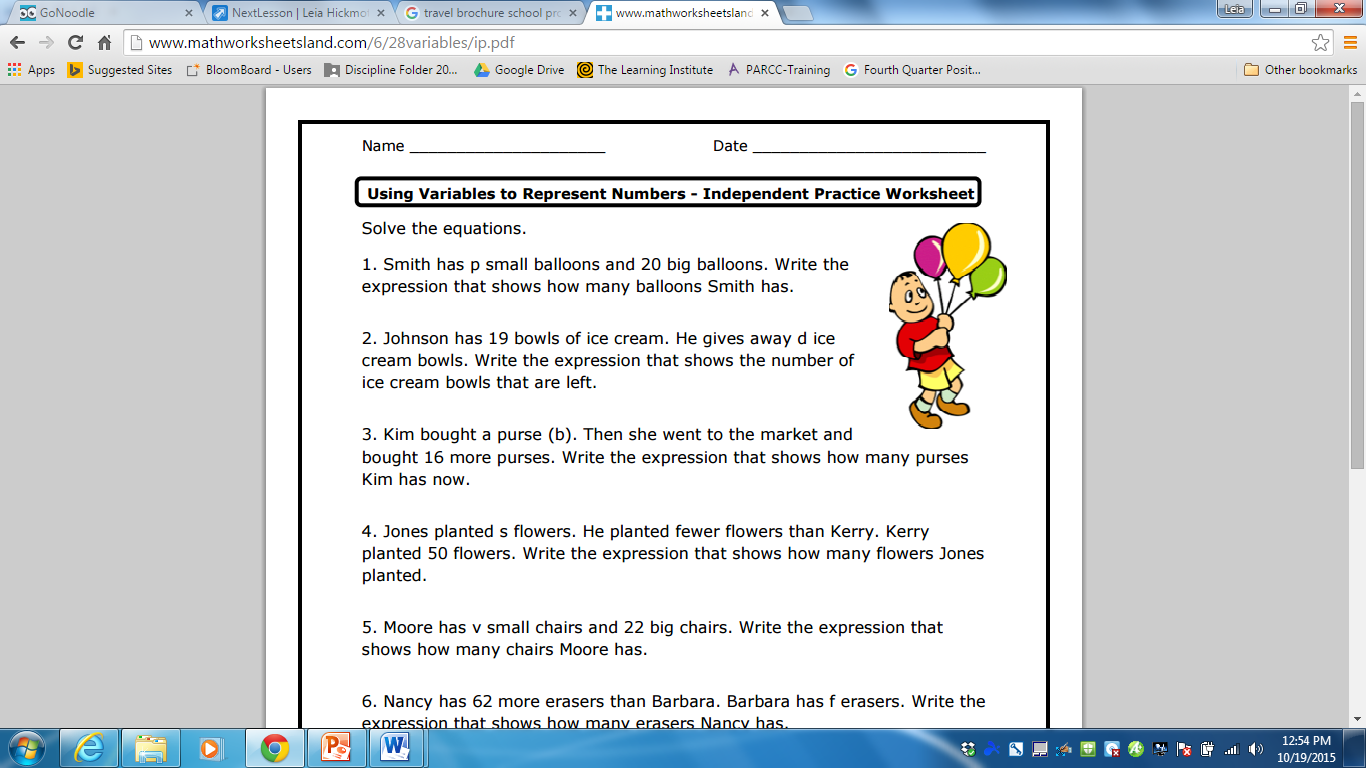
<https://www.commoncoresheets.com/SortedByGrade.php?Sorted=6ee5> -great for practice

<https://learnzillion.com/resources/72628-understand-solving-an-equation-or-inequality-as-the-process-of-finding-the-values-that-make-it-true-6-ee-5/> -videos and lessons

**Standard:** 6.EE.6

* I can write an algebraic expression that represents a real-world situation by using a variable when a specific number is unknown.
* I can explain and give examples of how a variable can represent a single unknown number or any number in a specified set.
* I can use variables to write expressions that represent a consistent relationship in a particular pattern.

**Examples:**



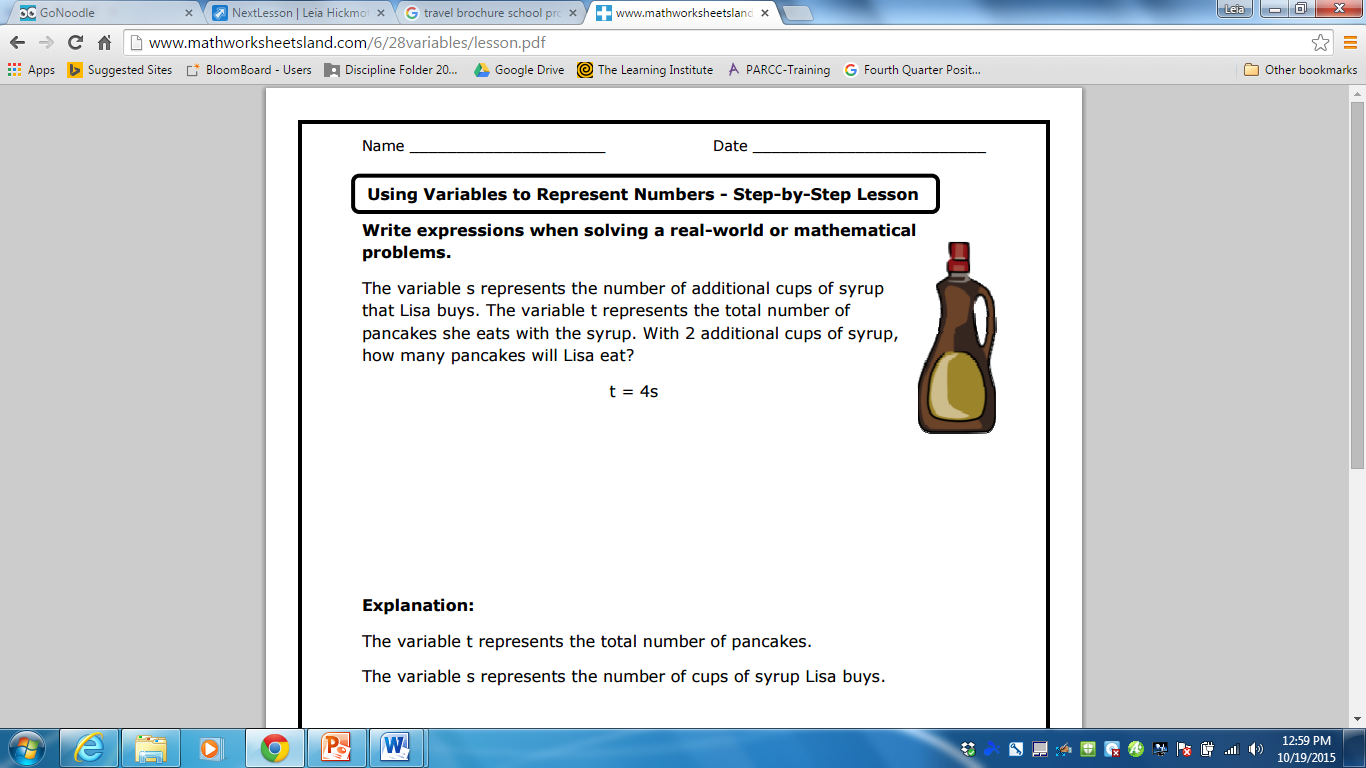
All students are doing here is using their knowledge of writing the expression that matches the words and incorporating letters for an unkown value. In #1, we only know that there are p small balloons, so that is what we use for a value instead of a number. We know this is adding because it wants the expression for all balloons. So your answer would be: p+20

#2: 19 – d

#3: b + 16

#4: 50 – s

#5: v + 22



**Misconceptions:**

Students know the difference between and expression and an equation. However, unless they took the algebra elective in 5th grade, they haven’t had any exposure to algebra. So this is brand new. It is also hard for them to wrap their heads around something being unknown and thbey have to find the value.

**Supplementary Material:**

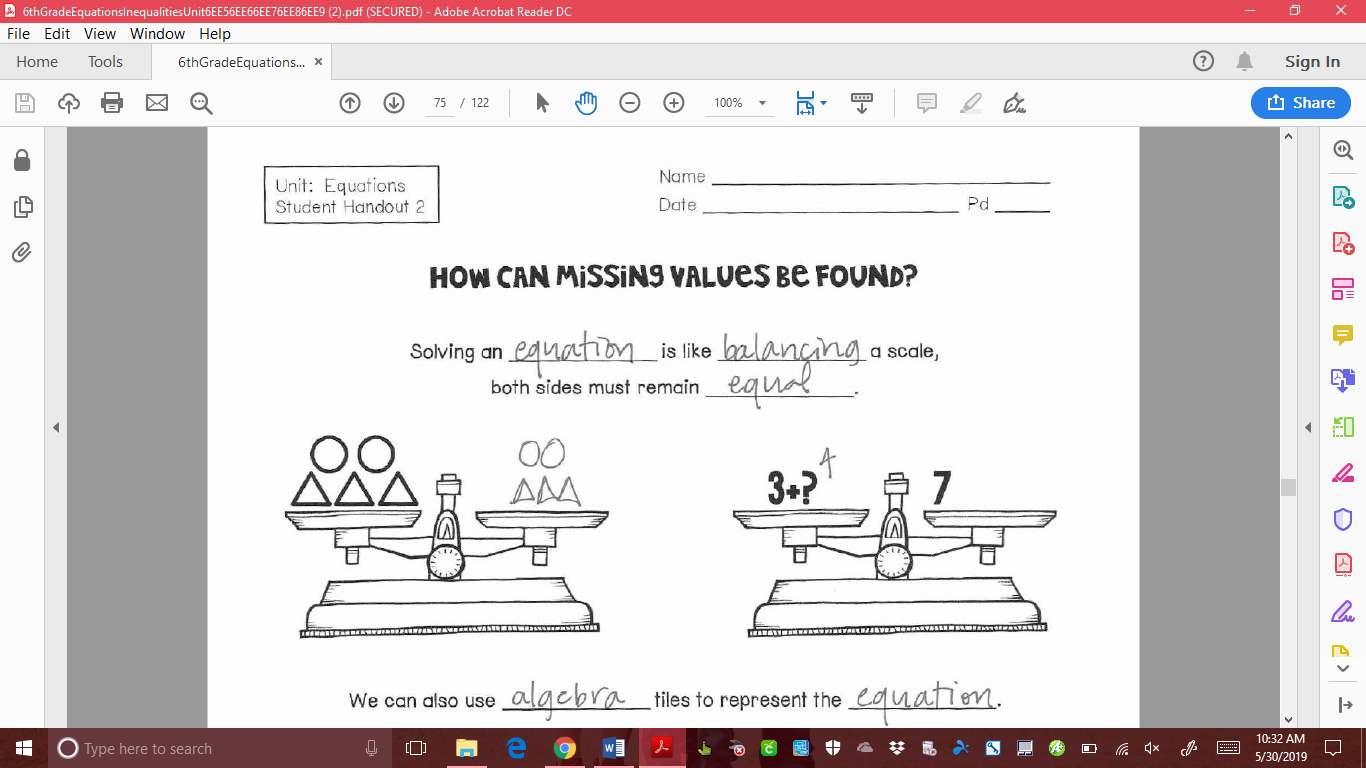
<http://www.mathworksheetsland.com/6/28var.html>

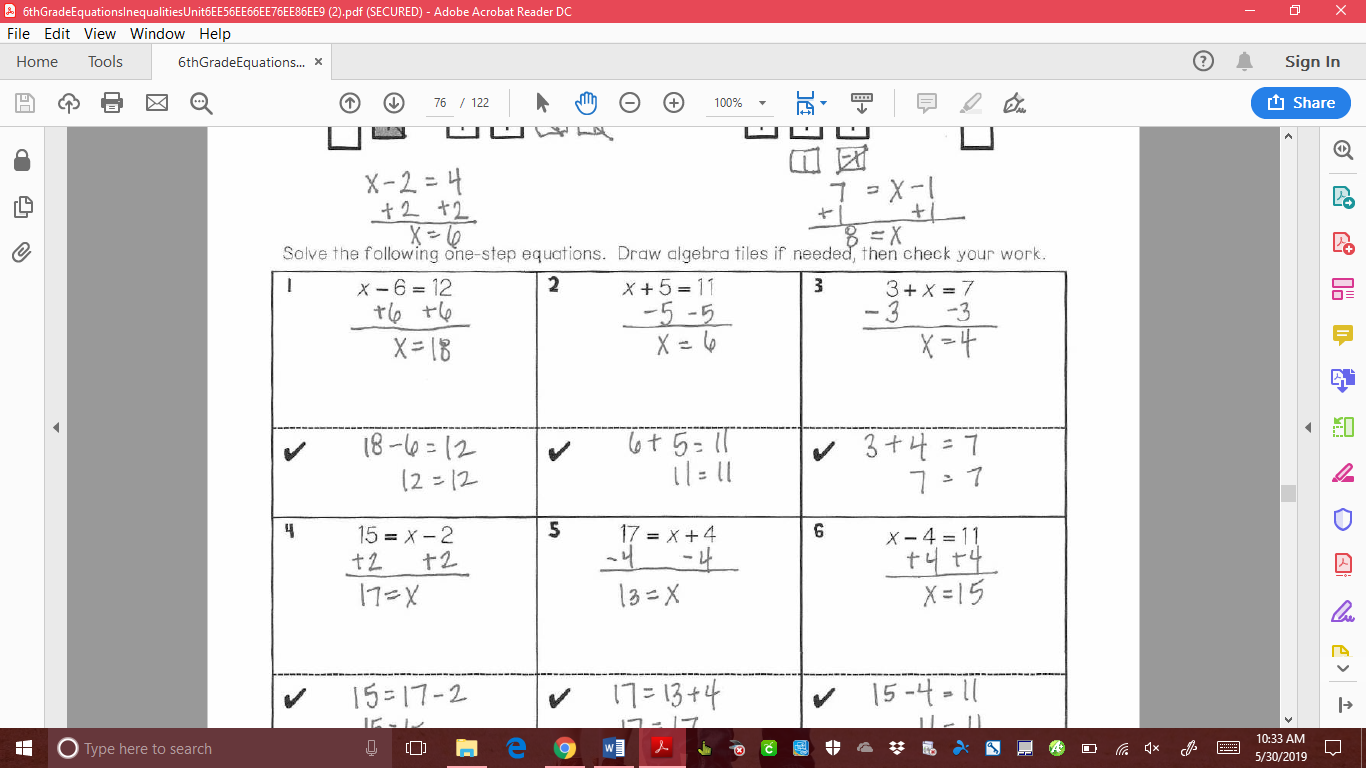
<https://learnzillion.com/resources/72511-understand-that-variables-represent-unknown-numbers-and-use-variables-to-solve-problems-6-ee-6>

**Standard:** 6.EE.7

* I can define an inverse operation.
* I can use inverse operations to solve one step variable equations.
* I can develop a rule for solving one step equations with a coefficient.
* I can solve and write real-world equations with one unknown.

**Examples:**





**Misconceptions:**

This is general something students can do in their heads, the hard part is making them understand why we write out the steps showing the inverse operation. This leads into problems for 7th grade that don’t have just one operation and can’t always be solved in their head because the variable may equal a fraction/decimal. The biggest challenge is just making sure they record the inverse operation steps and remember that the word inverse means opposite.

**Supplementary Material:**

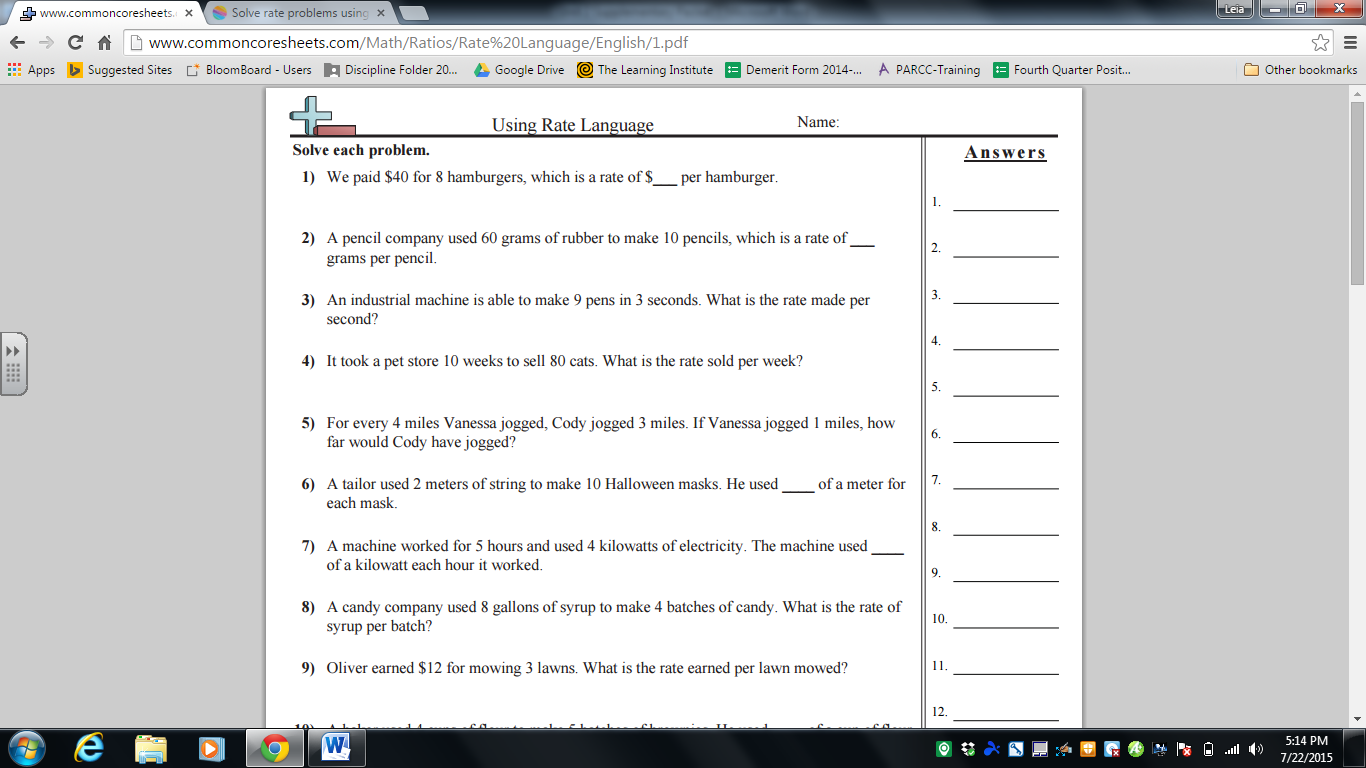
<https://learnzillion.com/lesson_plans/7943-solve-addition-and-subtraction-problems-using-1-step-equations/> -videos and lessons

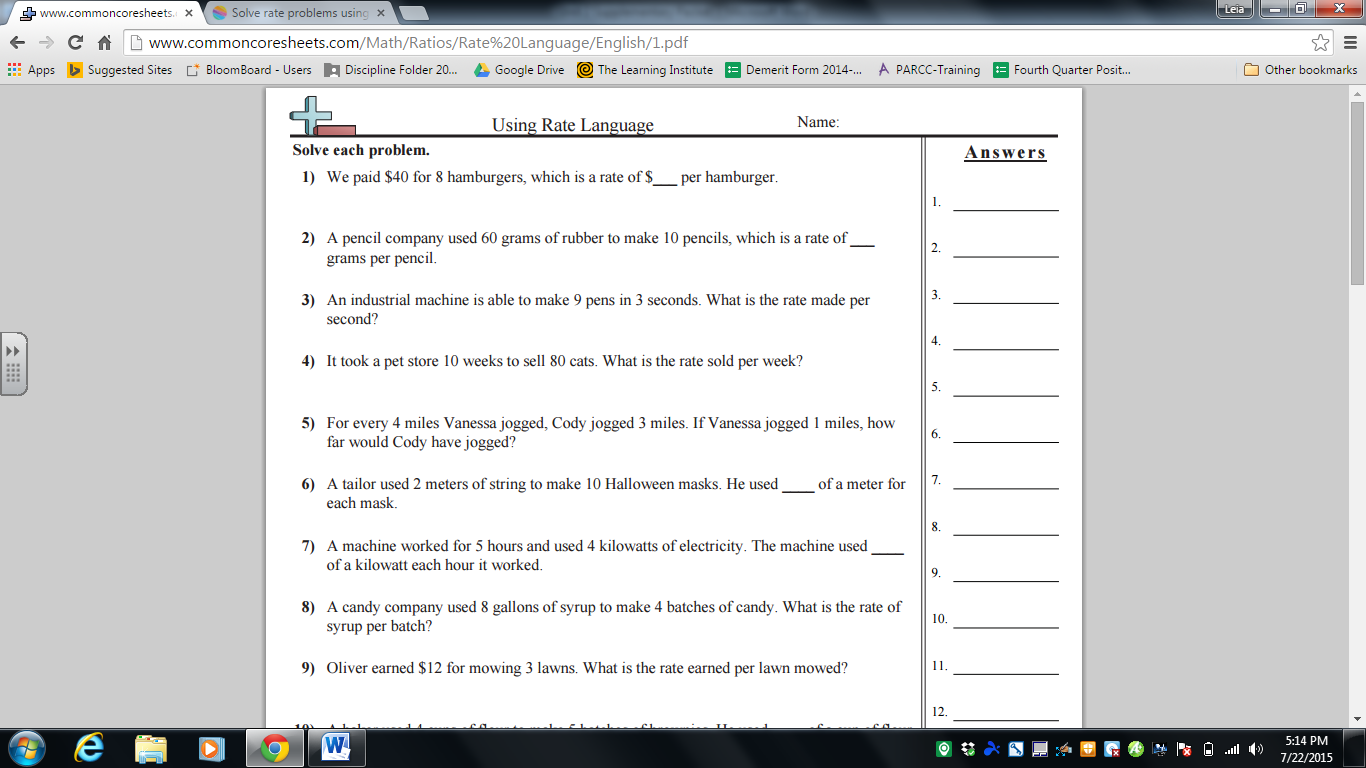
<https://betterlesson.com/lesson/464448/review-day-for-equations-and-inequalities?from=cc_lesson>

**Standard:** 6.RP.3b

* I can solve unit rate problems with unit pricing.
* I can solve unit rate problems using constant speed.

**Examples:**





This is an example of both a unit pricing problem and a constant speed problem. There are many methods students can use to solve these problems including a table, multiplication/division, number lines, or graphs.

For the first problem, students should easily recognize that 40÷8 is 5 or 8x5=40, which would make your answer $5 per hamburger.

The second problem is a little more difficult. We know that we are comparing Vanessa and Cody, so our ratio would be. We know that as a rate, our ratio is going to change at a constant speed, so we are finding an equivalent ratio to. The numerator represents Vanessa’s value, so we want our 1 in the numerator in our equivalent ratio. So we know = . To change our numerator we must divide 4 by 4 to get 1. So we must perform the same operation to the denominator. Students may leave 3÷4 as so the answer is.

**Misconceptions:**

Students may forget that a fraction is also a division problem, like in our example. is the same thing as 3÷4 so it can be written both ways. In solving problems, students tend to doubt themselves or their abilities. Oftentimes they know how to do the work; it’s just a matter of them realizing they do know how to tackle these problems.

**Supplementary Materials:**

<https://learnzillion.com/lessons/614-solve-rate-problems-using-multiplicative-reasoning>

<https://learnzillion.com/lessons/613-solve-rate-problems-using-double-number-lines>

<https://learnzillion.com/lessons/612-solve-for-missing-values-in-rate-problems-using-a-table>

<https://learnzillion.com/lessons/615-graphing-rate-problems-using-a-table>

These are all different ways to solve rate problems using different models.

<http://www.commoncoresheets.com/Math/Ratios/Rate%20Language/English/1.pdf> -Practice problems

**Standard:** 6.RP.3c

* I understand that percent means “per hundred”
* I can find a percent of a quantity as a rate.

**Examples:**

Percents are “per hundred” or out of 100. This means 50% could also be written as or 0.50 (zero and fifty hundreths). Students can use their knowledge of equivalent ratios and equivalent fractions to help them find the percent in ratio problems.

So let’s say 50% of the cars in the parking lot are red. This can be written as a ratio in the three different forms: 50 to 100, 50:100, or . Using the fraction, we can reduce that to , and then again to .

Adding to the above problem: 50% of the cars in the parking lot are red. There are 300 cars in the parking lot. How many are red?

We know the ratio is . We know there are 300 cars in the parking lot, so 300 will be our denominator because that is the total number of cars. Just like our rate problems, we can set = .

To change our denominator, we would multiply 100 by 3. We need to also multiply 50 by 3 so we create and equivalent ratio. 50x3=150, so our answer is 150.

There are many different methods to solve this problem, this is just the one I chose as it is probably the one they will see in future classes.

**Misconceptions:**

Students haven’t had much practice with percents, especially figuring out what they are from fractions or decimals. Therefore, it may be difficult for students to realize that 50% doesn’t mean 50. It depends on the whole.

There are also many different methods students will learn. It is important they are familiar with these methods, but need to find one they like best and master it to help eliminate confusion.

**Supplementary Materials:**

<https://learnzillion.com/lessons/593-define-percents-as-ratios> -Understanding percents as ratios

<https://learnzillion.com/lessons/596-find-the-part-when-the-percent-and-total-are-known> Solving when the part is unknown

<https://learnzillion.com/lessons/597-find-the-total-when-the-percent-and-part-are-known> Solving when the whole is unknown

<https://learnzillion.com/lessons/598-solve-percent-problems-using-a-ratio-table> Solving using a table

**Standard:** 6.NS.3

* I can fluently add and subtract multi-digit decimals using the standard algorithm.
* I can fluently multiply multi-digit decimals using the standard algorithm.
* I can fluently divide multi-digit decimals using the standard algorithm.

**Examples:**

\*This is the same standard that was addressed in Unit 2. The students should now be fluent with these skills.

2.34

+ 1.3

3.94

Adding and subtracting decimals should be fairly easy for students to remember. In 5th grade, they learned a song to help them remember what to do- “Line up the dot and give it all you got.” You simply line up your place values, or the decimal, and add like normal, bringing the decimal point down at the bottom.

1 1

3.45 2 decimal spaces here (Spaces behind the decimal)

X 1.3 1 decimal space here (Spaces behind the decimal

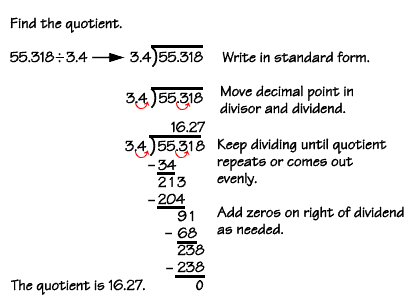
1035

+ 3450

4.485 3 total decimal spaces were in the problem, so there are three decimal spaces in the

answer.

Multiplication is a little different. Students push all numbers to the right instead of lining up place value. They then multiply like normal. Once finished multiplying, students count the number of decimal places in the problem and that’s how many decimal places will be in their answer.



Lastly we have division, which is a whole different animal for students. They also learned a song last year to help them remember what to do here- “Swoop there it is.” Students set the problem up for normal division. Before they get started they swoop the decimal in the outside number, or the divisor, to make it a whole number. The number of times they have to swoop there, they swoop the inside (monkey see monkey do) number, or the dividend, that many times. They then bring that decimal point to the top of the “house” and are ready to divide like normal.

**Misconceptions:**

Once reminded of the procedure, adding and subtracting should be easy for students. The only time they seem to have trouble, other than careless errors, is when they have a whole number. The decimal always goes at the end of any whole number.

Multiplication should be fairly easy was well, as it is just like standard whole number multiplication. Sometimes students just forget to add the decimal spaces, or all the decimal spaces, in the answer.

Division is hard. In 5th grade, students learn how to divide decimals, without learning the standard method. (Although some of them already know how to do that with your help ☺) This is just a skill they have to really practice and work at. Students tend to worry so much about trying to divide correctly, they forget the procedure for decimals in swooping before they get started.

**Supplementary Materials:**

<http://www.commoncoresheets.com/Math/Decimals/Add,%20Subtract,%20Multiply%20&%20Divide%20Decimals/English/1.pdf> -Practice worksheet

<http://www.math.com/school/subject1/lessons/S1U1L4GL.html> -Add/Subtract Decimals information

<https://www.youtube.com/watch?v=WP_f4EXp-Mg> –Add/Subtract Decimals Song

<https://www.mathsisfun.com/multiplying-decimals.html> -Multiplying decimals information

<https://www.youtube.com/watch?v=jaDWOlQw9FQ> –Multiplying decimals song

<https://www.mathsisfun.com/dividing-decimals.html> -Dividing decimals information

<https://www.youtube.com/watch?v=0onPTEpShPU> –Dividing decimals song