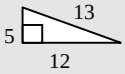
[53 minute lesson] **United States Public Release Lesson 2 Lesson Graph [8th grade]**

10 minutes

Private Class Work: Students Work on "Warm-Up" Problems Written on the Whiteboard

1. Is this a right triangle?



2. (13.0013 – 3.313) + (3.01 x .3)

3. $5\frac{1}{5} - 3\frac{2}{3}$

4. $1.2\sqrt{4.806}$

5. $2\frac{4}{5} \div 2\frac{1}{10}$

6. 4, 8, 2, 6 (i.e., use the numbers in 3 equations, with the last=24)

7. 3, 7, 9, 4 (i.e., use the numbers in 3 equations, with the last=24)

While the students work individually, the teacher checks to make sure everyone has completed their homework.

10 minutes

Public Class Work: Going over the Warm-Up Problems and Homework

1. Yes. 25 + 144 = 169
2. 10.5913
3. $1\frac{8}{15}$
4. 4.005
5. $1\frac{1}{3}$

6-1. 8÷4=2, 2+2=4, 4x6=24
6-2. 6x2=12, 12+8=20, 20+4=24
6-3. 4-2=2, 6÷2=3, 3x8=24
6-4. 8+6=14, 14x2=28, 28-4=24
6-5. 6x2=12, 8÷4=2, 12x2=24
6-6. 4÷2=2, 8÷2=4, 4x6=24

7-1. 9-7=2, 2x4=8, 3x8=24
7-2. 9x3=24, 27-7=20, 20+4=24
7-3. 9-7=2, 4x2=8, 8x3=24
7-4. 9-7=2, 2x3=6, 6x4=24

Going over Homework – some answers are on the overhead projector and some are recited verbally by students. There is a brief discussion about a few of the problems.

"Quote of the Week" - posted on the blackboard and read by a student: "*What is best in mathematics deserves not merely to be learned as a task, but to be assimilated as a part of daily thought, and brought again and again before the mind with ever-renewed encouragement." -Bertrand Russell*

20 minutes

Public Class Work: Introduction to Writing Variable Expressions

Variable = A letter representing a value that can change.
You earn $7 an hour -> 7h.

Variable Expression = Contains a variable. E.g. 7h; 4w+7; $x+\frac{9}{2}$

What if you earn $7.50 an hour -> 7.5h.
Hot dogs sell for $3 each. Give me a variable expression for N hotdogs -> 3N.
If I get 2 hotdogs, how much money am I spending -> $6.

Evaluating Expressions = When you substitute a number for a variable, you evaluate the expression.
Evaluate the expression 4h+3 for h=2. Substitute 2 for h -> 4(2) + 3=11

Translating words to variable expressions means:
a) Take words and change them to numbers, b) Take numbers and change them to words
A number plus negative three -> n+(-3).
Six less than a number -> x-6
K÷8 -> K over eight, eight into K, or the quotient of K and eight.
15-B -> B less than 15 or fifteen minus a number.

Variable expressions with more than one operation = use order of operations (i.e., parentheses, exponent, multiplication, division, addition, subtraction)
Evaluate 1.5+2n for n=12 -> 1.5+(2x12)= 1.5+24=25.5

4 minutes

Public Class Work: Solving Practice Problems from the Textbook

1) Kim's height if she's 6 inches shorter than her mother. *N-6*
2) The number of calories in 3 slices of bread. *3C*
3) Mike's age if he is 3 years older than Jill. *3+x*
4) Twice a number. *2N*
5) The quotient of 3 divided by W. $\frac{3}{w}$
6) Seventeen less than N. *N-17*

T: Where do we use variable expressions in real life? S1: To find the price of clothes. S2: The density formula.

5 minutes

Private Class Work: Students Begin their Homework Assignment

Page 64 from workbook, problems 1-22. Quiz on Friday.

4 minutes

Public Class Work: Playing "24"

Students choose four numbers, and their classmates have to use them in three equations with the last equation equal to 24.