

Objective: SWBAT write an equation to model data trends within a dot plot (line of fit).

Warm Up:

Find the slopes of the following:

1. $(-19, 3)$ and $(8, 9)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{9 - 3}{8 - (-19)} = \frac{6}{27} = \frac{2}{9}$$

2. $(7, 11)$ and $(23, 20)$

$$m = \frac{20 - 11}{23 - 7} = \frac{9}{16}$$

Solve for the variable:

3. $-2(3 + x) = -10$

$$\begin{aligned} -2(3 + x) &= -10 \\ -6 - 2x &= -10 \\ +6 &+6 \\ -2x &= -4 \\ x &= 2 \end{aligned}$$

4. $3x + 8 = 2x - 10$

$$\begin{aligned} 3x + 8 &= 2x - 10 \\ -2x &-2x \\ x + 8 &= -10 \\ -8 &-8 \\ x &= -18 \end{aligned}$$

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When you plot real-world data, most of the time you will see a linear pattern.

What does that mean?

goes in a straight line, constant rate
could contain point A and point B.

We can write an equation to model the trend of the data.

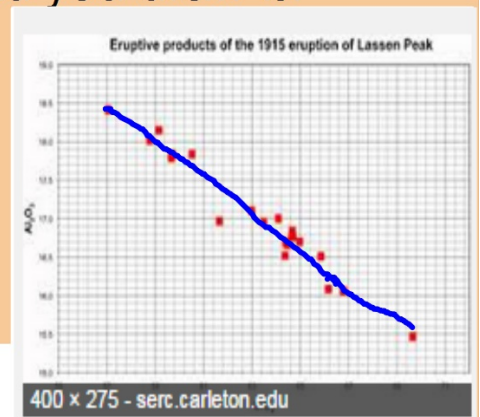
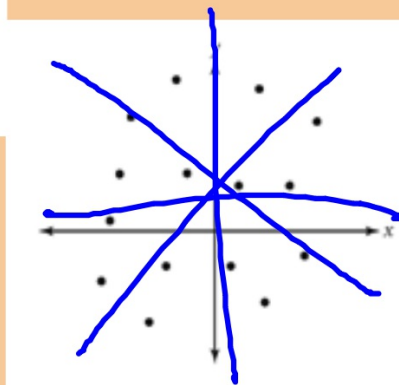
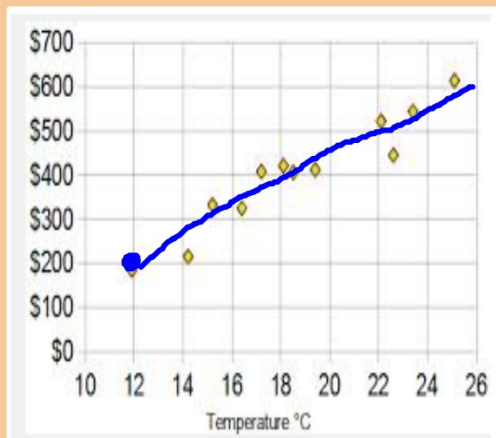
What would the equation form be? What will it look like as an equation?

$$y = mx + b$$

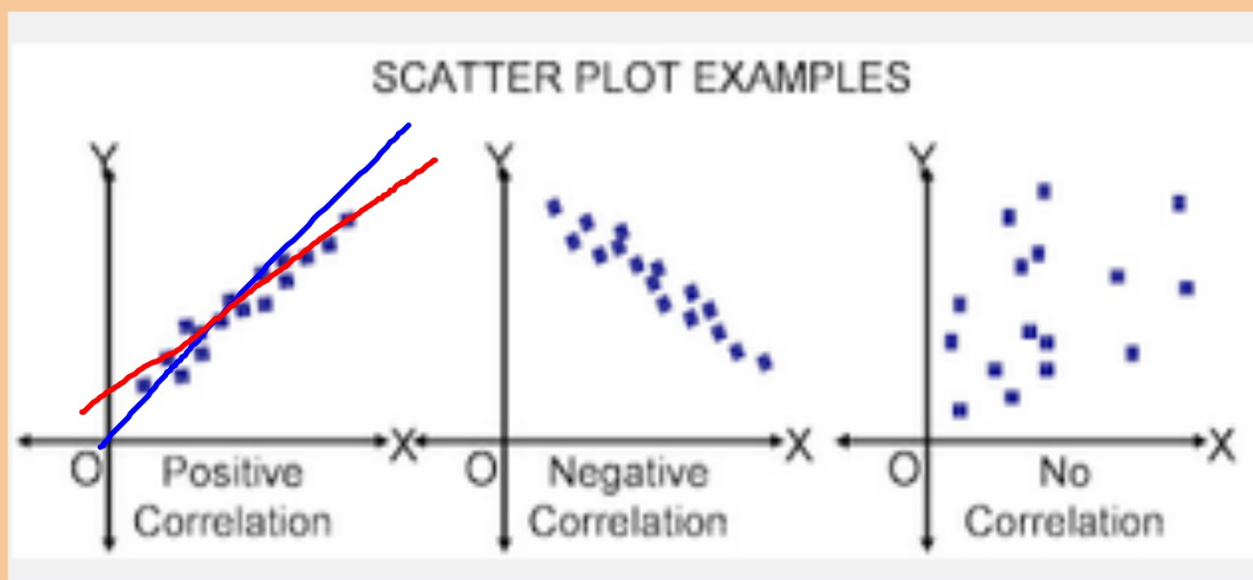
$$y - y_1 = m(x - x_1)$$

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Look at the plots below. If you were to draw a line to represent the data in each, where would you draw it?



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The goal of line of fit is to represent the data as a whole.

Your goal is NOT to connect the dots.

Not to make the line go through $(0, 0)$.

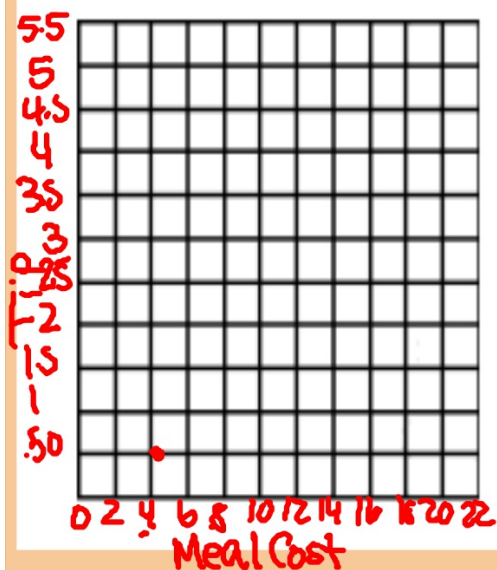
It IS there to show what is going to happen if the data were to keep going and make predictions.

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1. A student who waits on tables at a restaurant recorded the cost of meals and the tip left by single diners.

X
Y

Meal Cost	\$4.75	\$6.84	\$12.52	\$20.42	\$8.97
Tip	\$0.50	\$0.90	\$1.50	\$3.00	\$1.00



Line of Best Fit Equation: _____

If the diner orders a meal costing \$10.50, how much tip should the waiter expect to receive? (Show all work!)

Expected Tip: _____

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Now, please find the people with the same symbol and number from the back side of this sheet.

This will be your team to do the line of fit activity.


Everyone in the group needs to work.

You will be graded on the rubric on the next slide.

Follow the rubric to ensure more points on the assignment.

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Rubric:

	Not Meeting	Almost Meets	Meets	Advanced
Group Work	Group does not communicate	Two people in the group communicate	More than half the group communicates	All members communicate
Equation	Has no equation or real world meanings	Has the equation	Has the equation and explains the real world meaning of the slope OR the intercept	Has the equation and explains the real world meaning of the slope and intercept
Showing work and answering prompt	Shows no work and does not answer the prompt	Shows most work and attempts the prompt	Shows all work and answers the prompt 	Shows all work, answers the prompt, and explains what the solution means to the problem.

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