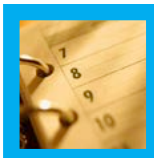

Date:

SCHEDULE | WWW.TAPINTOTEENMINDS.C

Download Handout #1 From Website & Name It:
4.8.RLastNameUnit4ReviewPart2.pdf

Problems With Homework?
Descriptions, Tables, Graphs and Equations

Minds On:
Linear and Non-Linear Equations

Real World Math
Stacking Paper

Consolidate:
Bring it all together...

Learning Goals:

See Unit 4 Learning Goals on the Next Page. All of which will apply to the Unit 4 Test.

Desmos Math Art

How is it coming along?

TECUMSEH VISTA ACADEMY
MATHLETES
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Unit 4 Learning Goals

#1 - I can identify properties of linear relations and apply them to determine whether a relation is linear or non-linear.

#2 - I can compare the properties of direct variation or partial variation and identify the initial value.

#3 - I can determine whether an equation represents a linear or non-linear relation.

#4 - I can determine the rate of change (slope) of a line using rise over run.

#5 - I can identify the slope (m) and initial value (b) in the equation, y = mx + b and explain how changing their values would impact the graph of the line.

#6 - I can find the first differences in a table of values to determine whether a relation is linear.

#7 - I can determine the slope of a line using the differences in a table of values.

#8 - I can describe the meaning of the slope and y-intercept for a linear relation.

#9 - I can determine the values of a linear relation by using a table of values, an equation, and by interpolating or extrapolating from the graph.

#10 - I can determine the equation of a line of best fit for a scatter plot.

#11 - I can represent linear relations in four different ways: description, tables of values, graph, and equation using a variety of tools.

#12 - I can graph a line by hand, using a variety of techniques.

#13 - I can make connections among the representations of a constant rate of change (slope) of a linear relation.

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EQAO: Linear and Non-Linear Equations

15 Which of the following equations does **not** represent a line?

a $x = 5$

b $y = 10$

c $xy = 10$

d $5x - y + 10 = 0$

15 Which of the following **cannot** be an equation of a line?

a $x = 2$

b $y = 7$

c $y = 2x^2 + 7$

d $2x + y + 7 = 0$

15 Which of the following represents an equation of a line?

a $y = 2^x$

b $y = x^2 - 5$

c $x^2 + y^2 - 25 = 0$

d $2x + 3y - 5 = 0$

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Learning Goal:

#3 - I can determine whether an equation represents a linear or non-linear relation.

Student

Stacking Paper

REAL WORLD MATH | WWW.TAPINTOTEENMINDS.COM

What's the question?

Estimates:

TOO LOW	BEST GUESS	TOO HIGH

Given Information:

Answer the Question:

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Independent Variable:

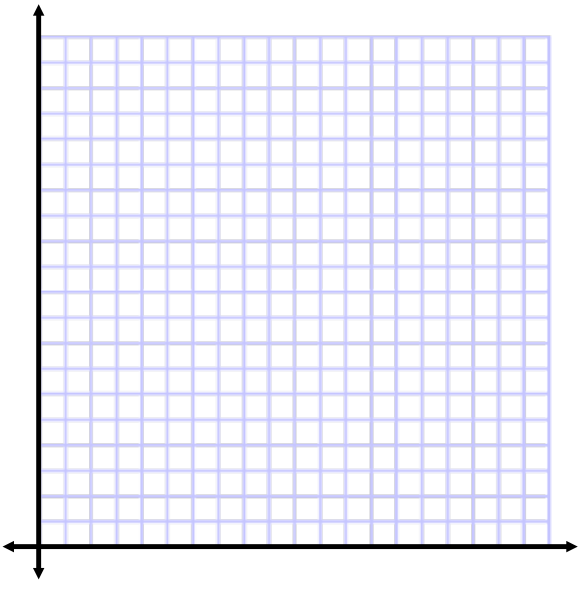
Dependent Variable:

1. Write a Description:

2. Create a table of values.

Equation:

3. Graph this relationship



Learning Goal: #11 - I can represent linear relations in four different ways: description, tables of values, graph, and equation using a variety of tools. **Student**

Learning Goal: #12 - I can graph a line by hand, using a variety of techniques. **Student**

4. Is this a ***direct*** or ***partial*** variation? Explain to demonstrate the learning goal below:

Learning Goal:
#2 - I can compare the properties of direct variation or partial variation and identify the initial value. **Student**

Stacking Paper (Continued...)

Learning Goal:

#1 - I can identify properties of linear relations and apply them to determine whether a relation is linear or non-linear.

Student

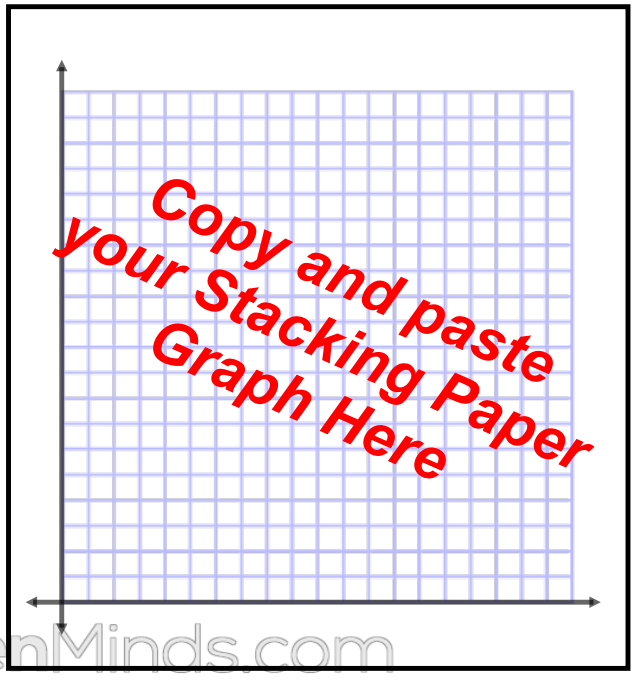
5. Describe some of the properties of linear relations that help you determine if this relation is linear or non-linear.

Learning Goal:

#4 - I can determine the rate of change (slope) of a line using rise over run.

Student

6. Find the ***slope*** / ***rate of change*** / ***constant of variation*** using ***rise over run***. Clearly label the rise and the run on your graph to assist in your explanation.



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Stacking Paper (Continued...)

Learning Goals:

#6 - I can find the first differences in a table of values to determine whether a relation is linear.

#7 - I can determine the slope of a line using the differences in a table of values.

Student

7. Find the ***first differences*** for both variables. What do they tell you about the linearity of this relationship? How can you use them to find slope?

Copy and paste the table of values here

8. Explain the meaning of ***slope, m,*** and the ***initial value*** in words with respect to this scenario.

Learning Goal:

#8 - I can describe the meaning of the slope and y-intercept for a linear relation.

Student

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Stacking Paper (Continued...)

9. Determine how many packages of paper it would take to stack has high as a 20 m tall building.

Learning Goal:

#9 - I can determine the values of a linear relation by using a table of values, an equation, and by interpolating or extrapolating from the graph.

Student

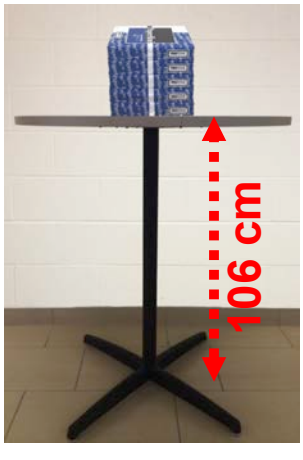
10. What would happen to the equation if we stacked the paper in the same room, but on this table instead of on the floor.

Learning Goal:

#5 - I can identify the slope (m) and initial value (b) in the equation, y = mx + b and explain how changing their values would impact the graph of the line.

Student

Original Equation:	**New Equation:**



Explain how you got your new equation and then use it to determine how many packages of paper you'd need to reach the ceiling in this new situation.

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Stacking Paper (Continued...)

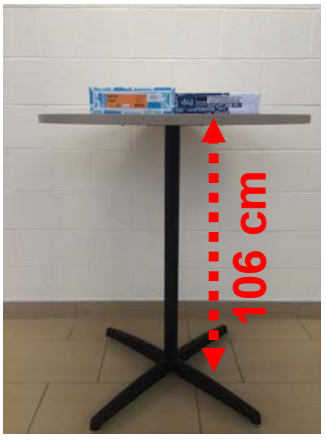
11. What would happen to the equation if we stacked thicker packages of paper on the table in the same room.

Learning Goal:

#5 - I can identify the slope (m) and initial value (b) in the equation, y = mx + b and explain how changing their values would impact the graph of the line.

Student

Original Equation:	**New Equation:**



Explain how you got your new equation and then use it to determine how many packages of paper you'd need to reach the ceiling in this new situation.

12. Write the slope in as many different ways as you can.

Learning Goal:

#13 - I can make connections among the representations of a constant rate of change (slope) of a linear relation.

Student

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Independent Variable:

Dependent Variable:

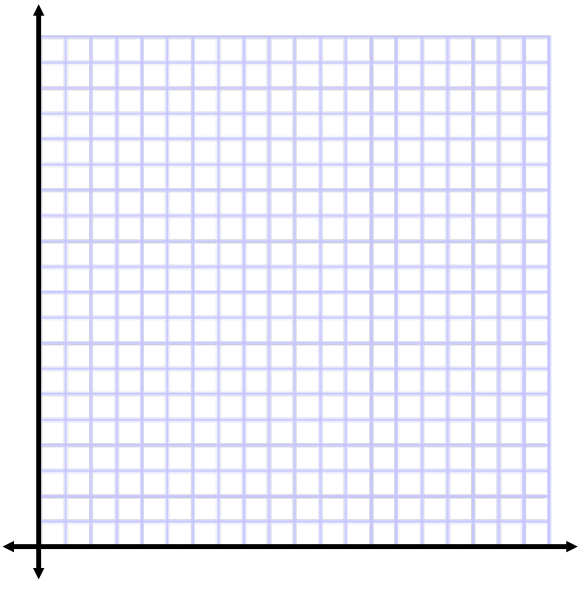
YOUR TURN TO CREATE A SCENARIO!

1. Write a Description:

2. Create a table of values.

Equation:

3. Graph this relationship



Learning Goal: #11 - I can represent linear relations in four different ways: description, tables of values, graph, and equation using a variety of tools. **Student**

Learning Goal: #12 - I can graph a line by hand, using a variety of techniques. **Student**

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Learning Goal:
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YOUR TURN (Continued...)

Learning Goal:

#1 - I can identify properties of linear relations and apply them to determine whether a relation is linear or non-linear.

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5. Describe some of the properties of linear relations that help you determine if this relation is linear or non-linear.

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Student

6. Find the ***slope*** / ***rate of change*** / ***constant of variation*** using ***rise over run***. Clearly label the rise and the run on your graph on the previous page to assist in your explanation.

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Stacking Paper (Continued...)

Learning Goals:

#6 - I can find the first differences in a table of values to determine whether a relation is linear.

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Student

7. Find the ***first differences*** for both variables. What do they tell you about the linearity of this relationship? How can you use them to find slope?

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#8 - I can describe the meaning of the slope and y-intercept for a linear relation.

Student

8. Explain the meaning of ***slope, m,*** and the ***initial value*** in words with respect to this scenario.

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Stacking Paper (Continued...)

9. Create a problem that you can use your equation to solve.

Learning Goal:

#9 - I can determine the values of a linear relation by using a table of values, an equation, and by interpolating or extrapolating from the graph.

Student

10. Create a situation that would cause the initial value to change.

Learning Goal:

#5 - I can identify the slope (m) and initial value (b) in the equation, y = mx + b and explain how changing their values would impact the graph of the line.

Student

Original Equation:	**New Equation:**

Explain how you got your new equation and then create a question you can solve using this new equation.

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Stacking Paper (Continued...)

11. Create a situation that would cause the slope to change.

Learning Goal:

#5 - I can identify the slope (m) and initial value (b) in the equation, y = mx + b and explain how changing their values would impact the graph of the line.

Student

Original Equation:	**New Equation:**

Explain how you got your new equation and then create a question you can solve using this new equation.

12. Write the slope in as many different ways as you can.

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#13 - I can make connections among the representations of a constant rate of change (slope) of a linear relation.

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