



Date:

SCHEDULE

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Download the Handout from the Website & Name It:  
**3.4LastNameRelationshipInvestigations.pdf**



**Mind Buster:**  
Manufacture This!



**Unit 3 - Relationships:**  
Sec. 3.4: Candle Burning



**Consolidation:**  
First Differences

**Goals:**

Today, we will apply our knowledge of **relationships** and **linear correlation** to complete real-world investigations.



TECUMSEH VISTA ACADEMY

**MATHLETES**

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## Manufacture This!

MIND BUSTER

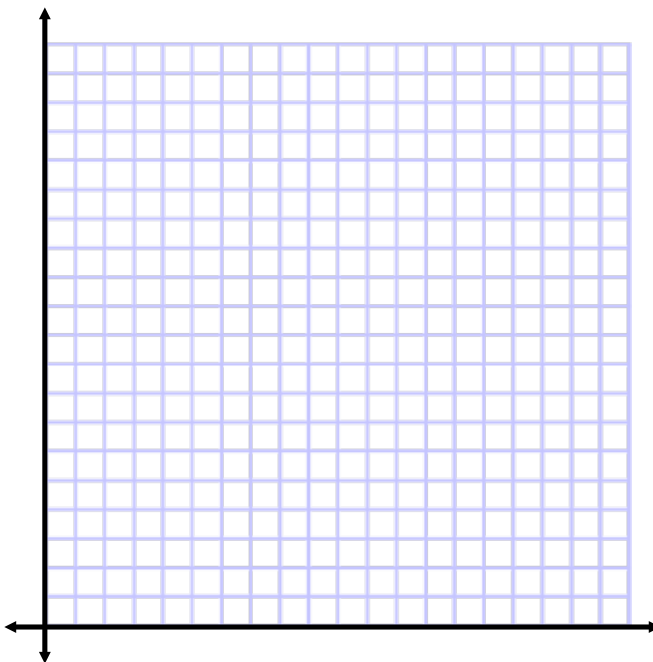
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The table shows the profits of a small manufacturing company from 1955 to 2005.

- a) Make a scatter plot of the data.

Year	Profits (\$1000s)
1955	48
1965	62
1975	87
1985	110
1995	117
2005	131

- b) Describe the **trend**, **relationship** and **type of correlation** in the profits which exist.



- c) Estimate the company's profits in 1980 and explain what type of estimate this is (interpolation or extrapolation).

- d) Explain what the point (1975, 87) represents in this relationship?



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# Candle Burning

REAL WORLD MATH

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How long do you think it will take for the candle to burn out?

Too Big: \_\_\_\_\_

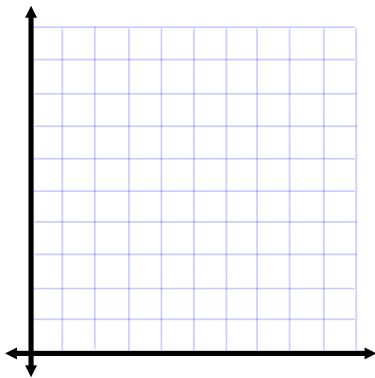
Too Small: \_\_\_\_\_

Your Best Guess:



What do you think the relationship will look like?

Make a quick sketch below:

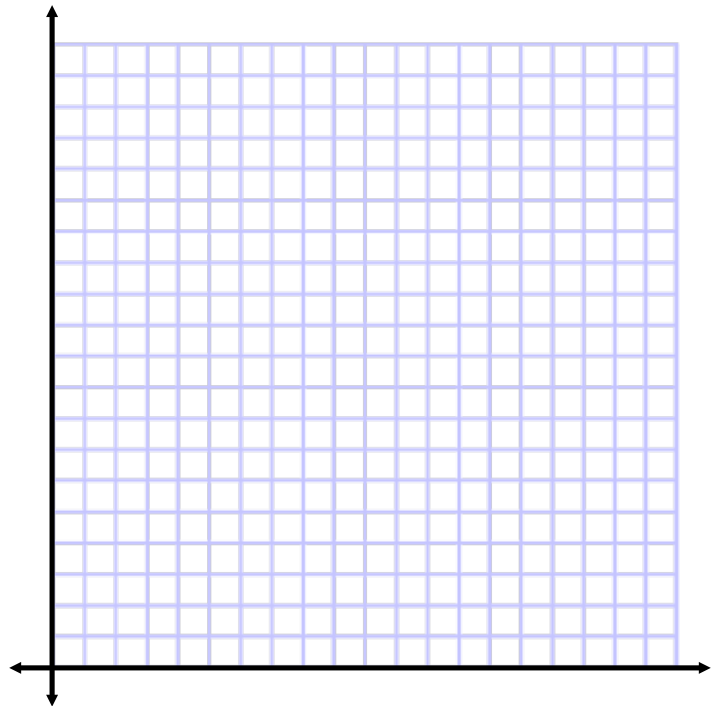


What do you think the trend will look like? (rising to the right, falling to the right, positive/negative, strong/weak)

Explain how you know what the **graph** and **trend** will look like.



## Candle Burning (continued...)



Describe the trend in the relationship.

Predict when the candle will burn out. Is this an interpolation or extrapolation?





## 3.14: Using What You Have Discovered

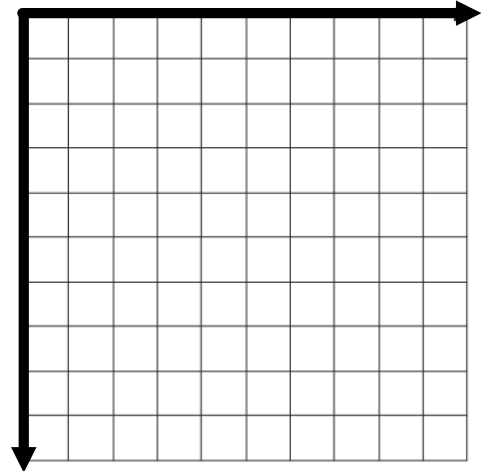
CONSOLIDATION & DEBRIEF

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### Deep Sea Divers

The table below shows data collected as divers descend below sea level. Calculate the first differences. Use the first differences to determine if the relationship is linear or non-linear. Check your solution by graphing. Include labels and titles.

Time (min)	Depth (m)	First Differences
0	-2	
1	-4	
2	-6	
3	-8	
4	-10	

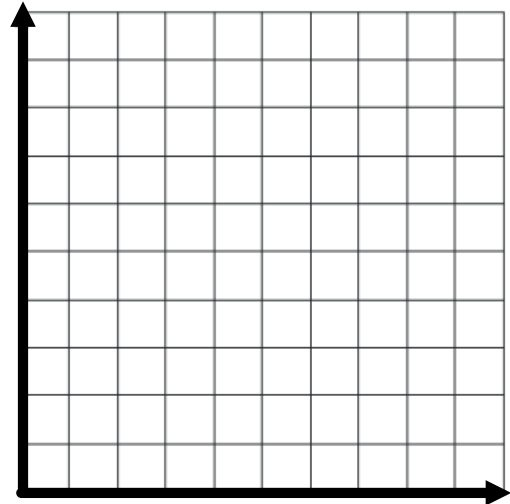


The relationship is:

### Hot Air Ballooning

The table shows data collected as a hot air balloon leaves the ground. Calculate the first differences. Use the first differences to determine if the relationship is linear or non-linear. Check your solution by graphing. Include labels and titles.

Time (sec)	Height (m)	First Differences
0	2	
1	4	
2	6	
3	8	
4	10	



The relationship is:



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**MATHLETES**

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