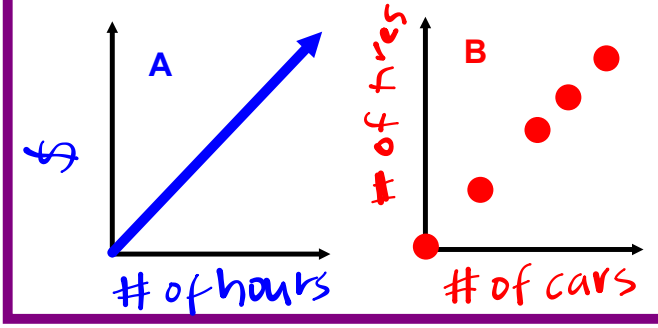
# Warm Up

9/4

Which graph could **model** each of the following situations? Explain how you know.

1. The total number of tires for different numbers of cars in a parking lot.

2. How much money you will be paid for working different amounts of hours at Roche Brothers.



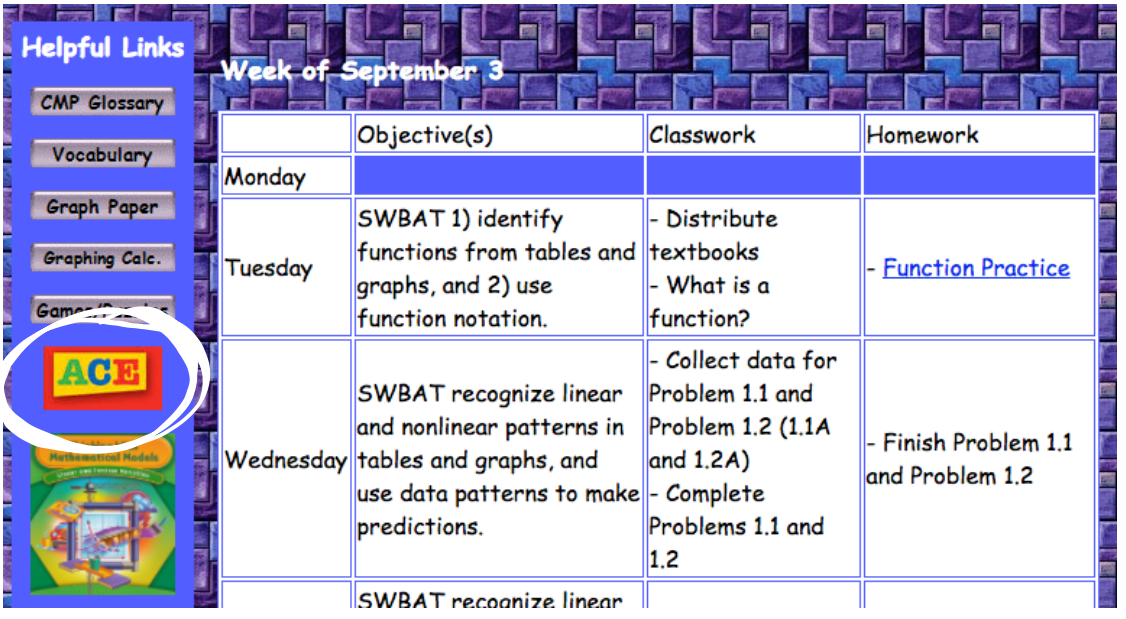

(3.5, 7.8) could not be a data point

Check out Units

if you cannot have a fraction of one or both units it is discrete data and you CANNOT connect the data points with a line.

# How to check your homework.

Answer keys can be found on line for all ACE questions.




| | Objective(s) | Classwork | Homework |
|---|---|---|---|
| Monday | | | |
| Tuesday | SWBAT 1) identify functions from tables and graphs, and 2) use function notation. | - Distribute textbooks<br>- What is a function? | - Function Practice |
| Wednesday | SWBAT recognize linear and nonlinear patterns in tables and graphs, and use data patterns to make predictions. | - Collect data for Problem 1.1 and Problem 1.2 (1.1A and 1.2A)<br>- Complete Problems 1.1 and 1.2 | - Finish Problem 1.1 and Problem 1.2 |
| | SWBAT recognize linear | | |

# Homework Questions?

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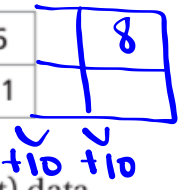
**2.** A group of students conducted the bridge-thickness experiment with construction paper. The table below contains their results.

**Bridge-Thickness Experiment**

| Number of Layers | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Breaking Weight (pennies) | 12 | 20 | 29 | 42 | 52 | 61 |




**a.** Make a graph of the (number of layers, breaking weight) data. Describe the relationship between breaking weight and number of layers.

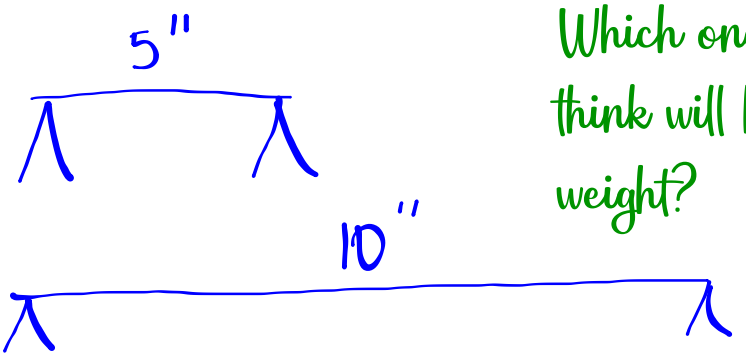
**b.** Suppose it is possible to use half-layers of construction paper. What breaking weight would you predict for a bridge 3.5 layers thick? Explain.

★ **c.** Predict the breaking weight for a construction-paper bridge of 8 layers. Explain how you made your prediction.

# 1.2 Bridge Length and Strength

In the last problem you tested the strength of some paper bridges. You found that bridges with more layers are stronger than bridges with fewer layers.

- How do you think the length and strength of a bridge are related?
- Are longer bridges stronger or weaker than shorter bridges?




Which one do you think will hold the most weight?

# Set up your notebook:

1.2 Bridge Length and Strength Date

| Length of Bridge (# of inches) | 4 | 6 | 8 | 9 | 11 |
|---|---|---|---|---|---|
| Breaking Weight (# of pennies) | | | | | |

- Start with the 4-inch bridge. Suspend the bridge between the two books as you did before. The bridge should overlap each book by 1 inch. Place the paper cup in the center of the bridge.
- Put pennies into the cup, one at a time, until the bridge collapses. Record the number of pennies you added to the cup. As in the first experiment, this number is the breaking weight of the bridge.
- Repeat the experiment to find breaking weights for the other bridges.

**A** Make a graph of your data.

**B** Describe the relationship between bridge length and breaking weight. How is that relationship shown by patterns in your table and graph?

**C** Use your data to predict the breaking weights for bridges of lengths 3, 5, 10, and 12 inches. Explain how you made your predictions.

**D** Compare your data from this experiment to the data from the experiment on bridges with different numbers of layers. How is the relationship between the number of layers in a bridge and its breaking weight similar to the relationship between bridge length and breaking weight? How is it different?

# COLLECT DATA FIRST!!

## Before you begin to gra

**What will go on the x-axis (x-variable):**

**What will go on the y-axis (y-variable):**

**What is the range of your x values?**

**What is the range of your y values?**

**What are easy intervals?**

**What are easy intervals?**

**How long does the x-axis need to be?**

**(Divide the highest number** by the interval size)

**How long does the y-axis need to be?**

(Divide the highest number by the interval size)

We want to spread our data out as much as possible in our graph.

**Homework**

Finish Problem 1.2