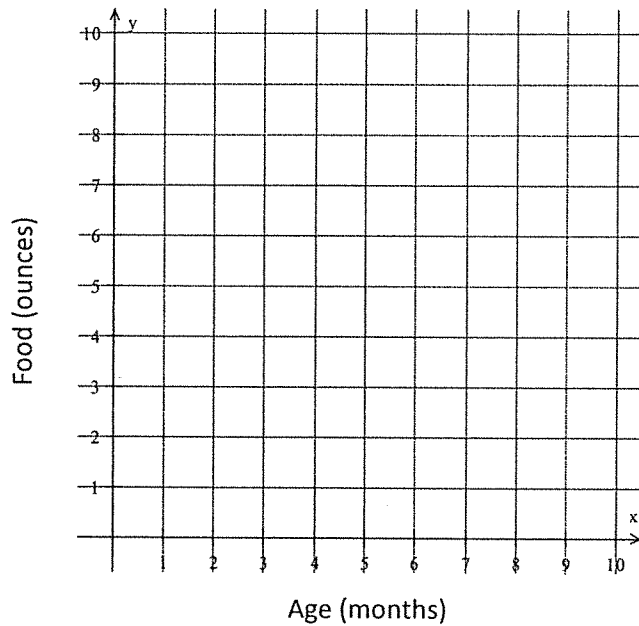


Scatterplots

Here is some data. It shows the relationship between a baby's age and the amount of food it eats.

Age (months)	1	2	3	4	5	6	7	8	9
Food (ounces per day)	5	5	7	6	7	9	9	10	10

1. Graph the points on the graph below. A graph of data like this is called a **scatterplot**.



1. Does there appear to be a relationship between the age of the baby and the amount of food it eats?

We can see we have a **roughly linear** data set. Let's find an equation of a line through the data. Of course, it's not going to fit all of the points. We just want a line that **approximates** the data. Then we can use it to make predictions.

2. Pick two points from the data set that make you think, "If I draw a line through those two points, it will go through the cloud of the data."

Point 1: (,) Point 2: (,)

3. Draw the line through your points. Did it go through the middle of the cloud?
4. Now find the equation of the line through the two points you chose.

5. What is your slope? Interpret the meaning of the slope in the context of this problem.

6. What is your y-intercept? Interpret the meaning of the y-intercept in the context of this problem.

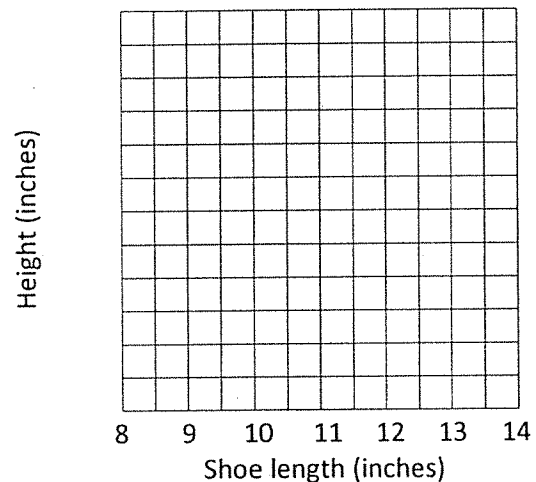
Using your equation to predict beyond your data is called **extrapolation**.

There is a way that a graphing calculator can find a "best-fit" line (also called a **line of regression**) for any set of data. We will see how the calculator can do that later in the year.

Here is another set of data. It shows shoe length and height in inches for 12 women.

Shoe length	Height
8.9	61
9.6	61
9.8	64
10.1	64
10.2	64
10.4	65
10.6	65
10.6	67
10.5	66
10.8	67
11.0	67
11.8	70

1. Make a scatterplot of this data.



2. Find an equation through this data. You may need a calculator.

3. Suppose that these women are representative of adult women in general. Use your equation to predict the height of a woman whose shoe length was 10 inches.

4. Explain the meaning of the slope in the context of this problem.

5. Explain why the y-intercept here doesn't make sense if you try to interpret it.