Bar Graphs and Tables and Pie Charts... Oh my!

How to make your Science Fair project look more like a picture book and less like a novel.

Presenting Your Information at a Science Fair

- Students like seeing pictures in textbooks
- Science Fair judges like seeing graphic organizers on science fair projects
- Graphic organizers include graphs, charts, and tables
- Graphic organizers highlight important info

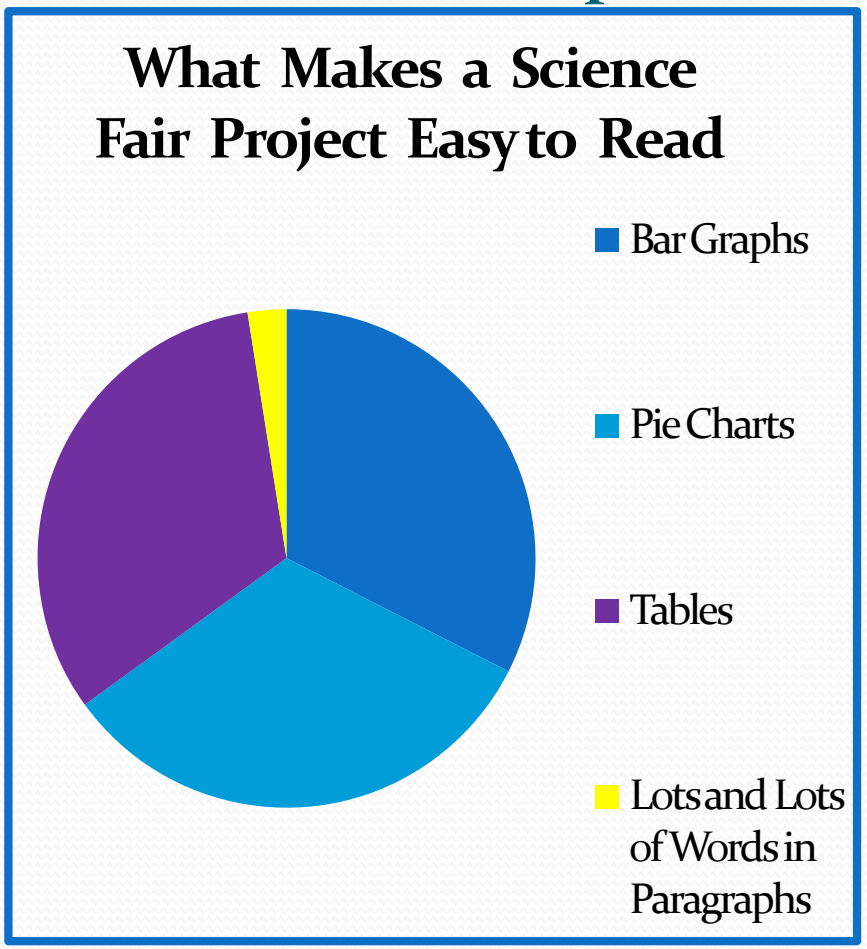
Present Your Data with Clarity

Results Presented With Words Only

v.s.

Results Presented With Graphs

When you make an awesome project, but you present the results of your science experiments and research with only words it looks like this and it is not very effective. When there are too many words to read, the important information does not jump out and the readers get bored. After all your hard work, you owe it to yourself to present your results in more clear and interesting ways – like the other side of this page. Science Fair judges love the use of graphic organizers such as graphs, tables, and charts.



Graph Facts

A few things to know…

- Graphs are drawn on a grid made up of 2 axes

- X-AXIS = horizontal
  - Shows independent variable
- Y-AXIS = vertical
  - Shows dependent variable
- Both axes need to be labelled
  - A description of what they show

- Each graph needs a title!

What is all this talk about dependent and independent variables?

Independent variable:
The data you have control over

Dependent Variable:
The results of changes

When do I use a bar graph?

When you are comparing different categories to each other

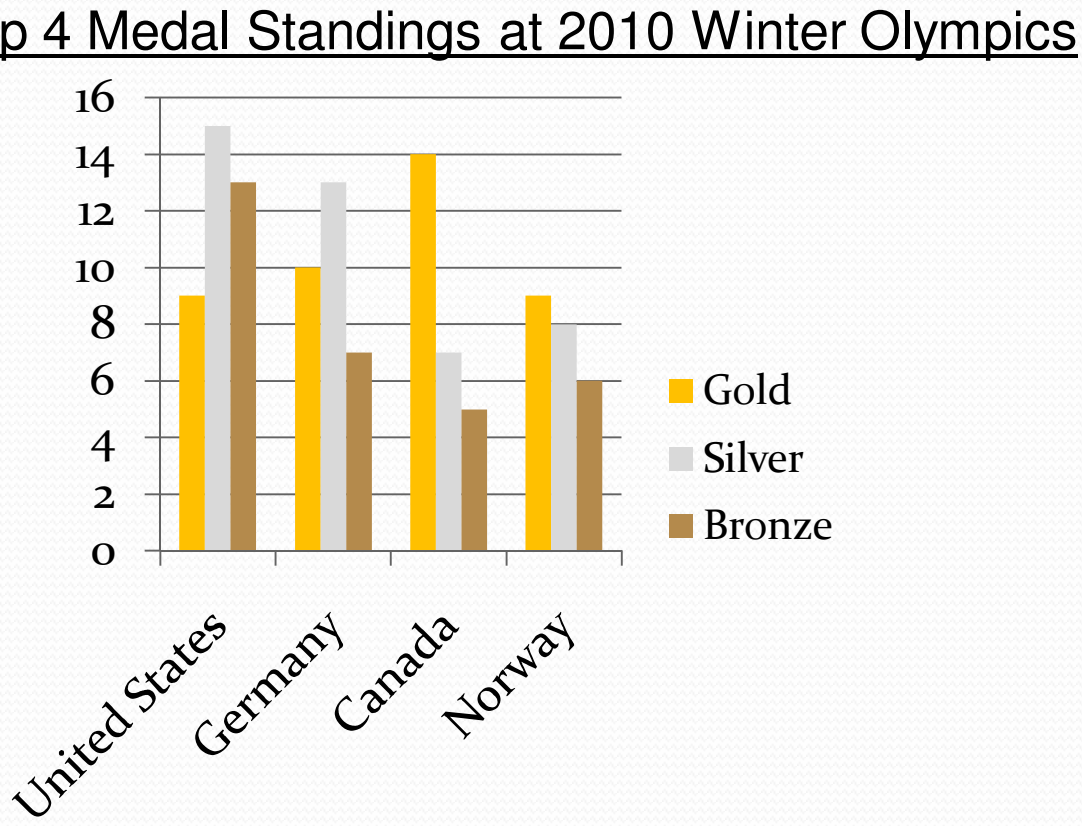
Example:

What is the dependent variable??

The number of medals

What is the independent variable?

The countries



When do I use a line graph?

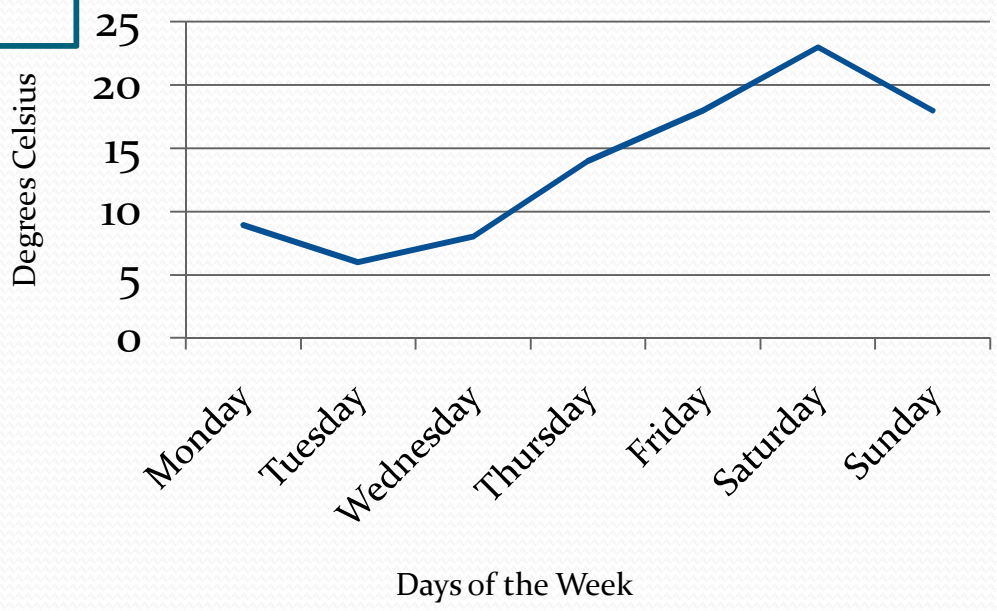
When you are looking at how something changes over time.

Example:

Highest Daily Temperature in Fredericton from March 29 - April 4, 2010

Independent variable?

The days of the week



Dependent variable?

The temperatures

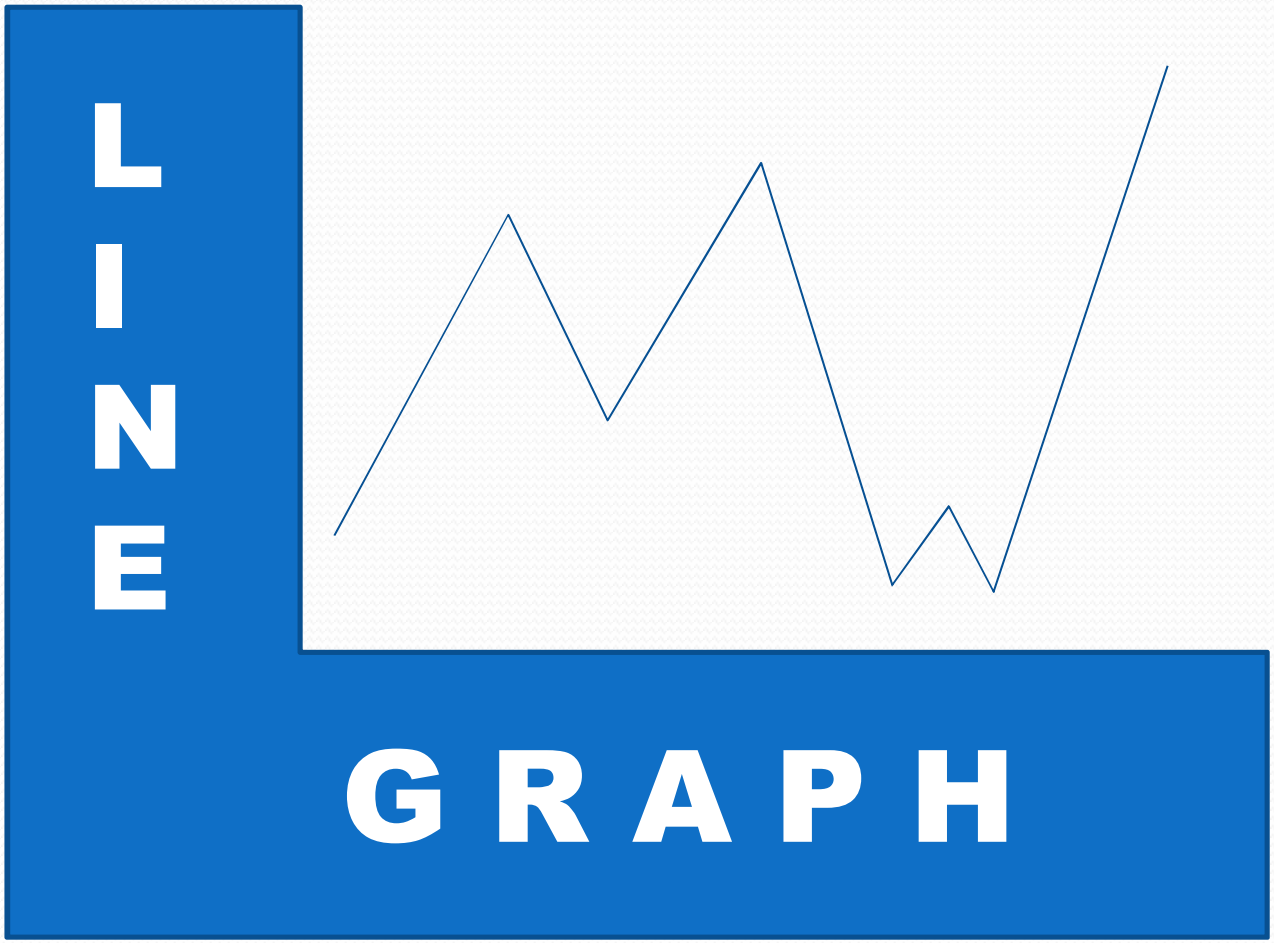
QUESTION

What is the best way to present these results?

I measured the height of a snowman in my yard every day for a month.

ANSWER

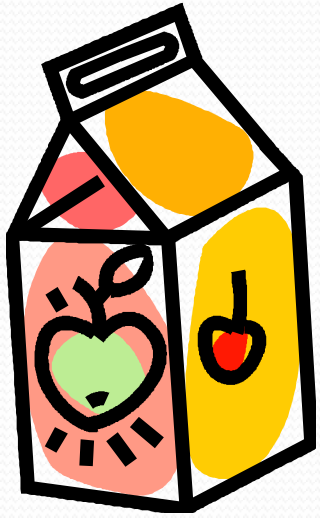
The graph shows the change of the snowman's height over time.



QUESTION

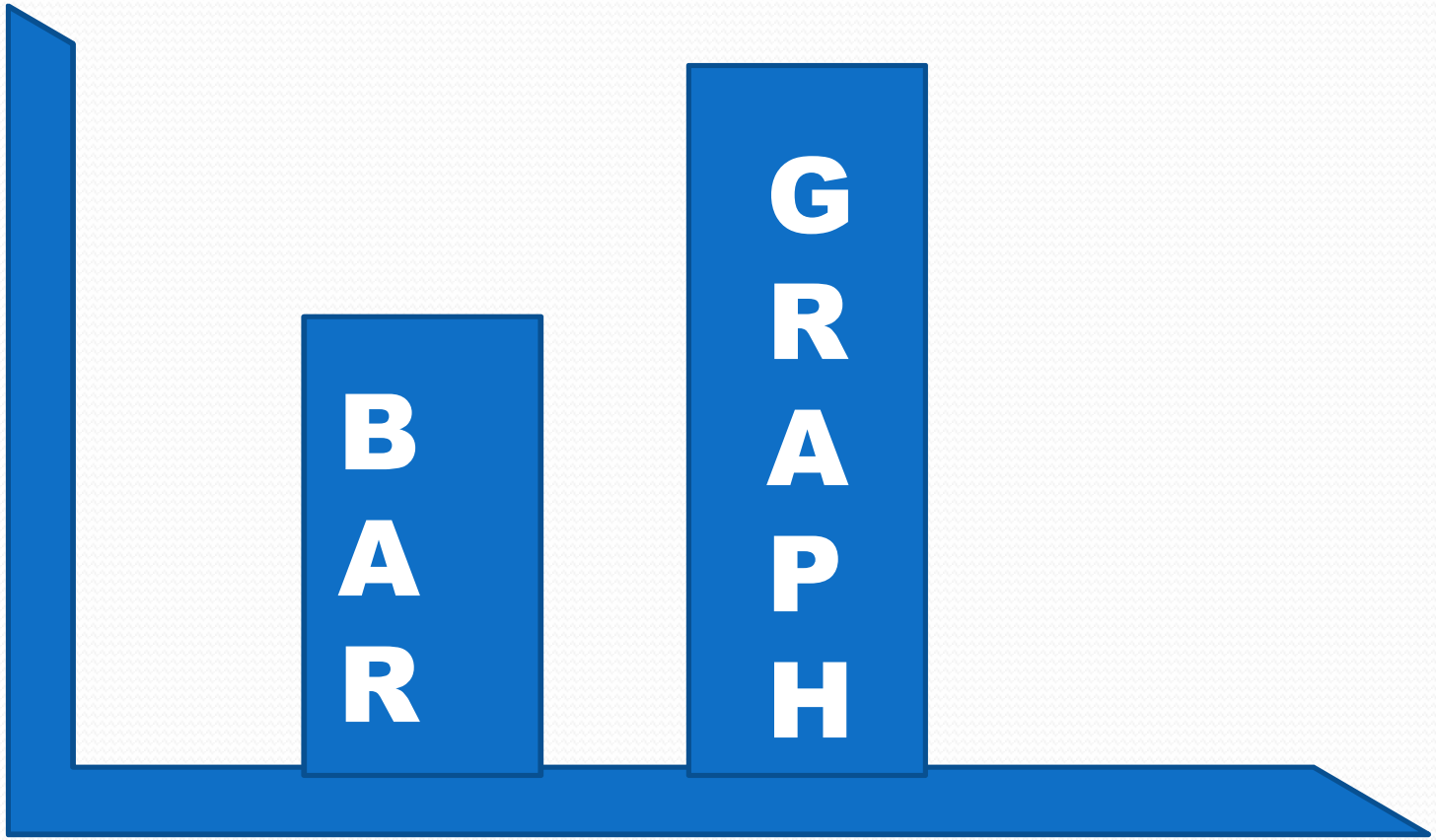
What is the best way to present these results?

I compared the amount of sugar in different types of beverages.



ANSWER

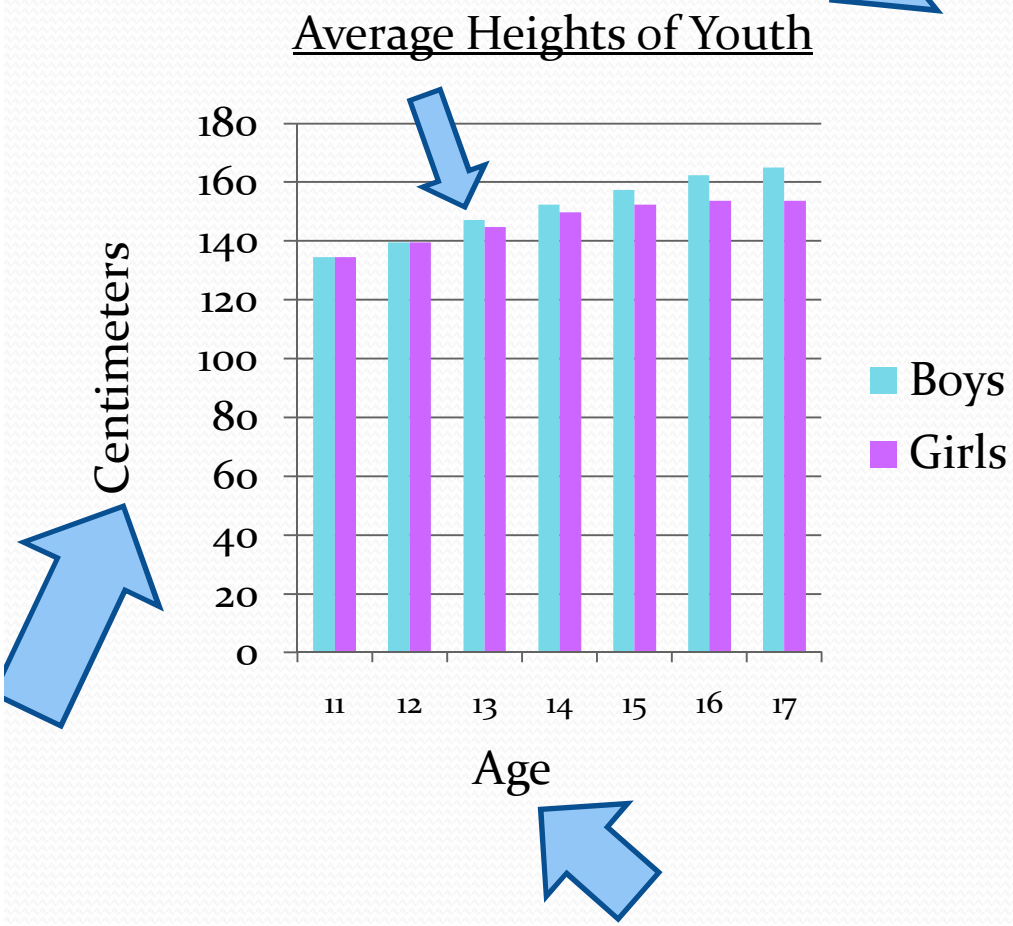
The graph compares different categories to each other: the amount of sugar in different beverages.



Challenge!

The next two slides will show some graphs.

Can you pick out important information from them?



1. Can you find the title?

2. What unit of measurement is being used?

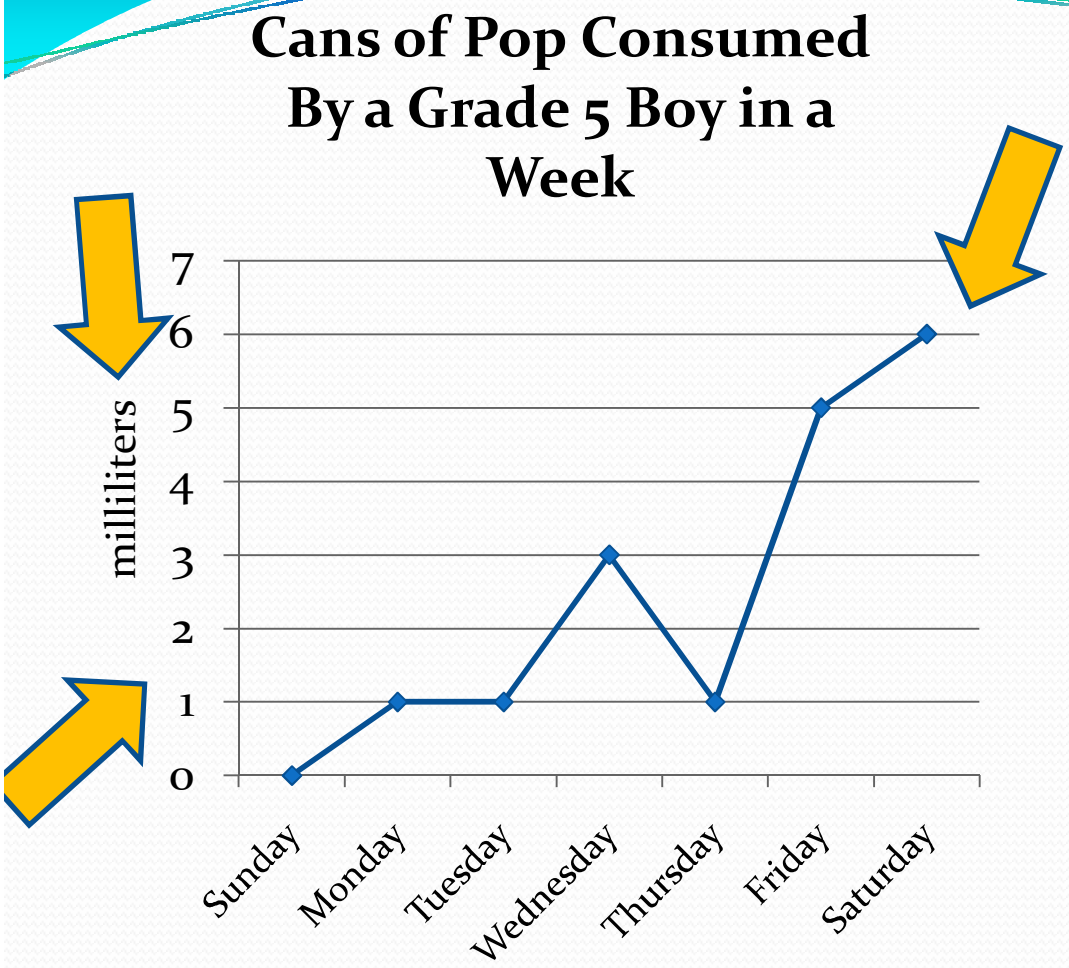
Centimeters!

3. At what age do boys start being taller than girls?

13!

4. What is the independent variable?

The x-axis: the ages!



1. When does the boy drink the most pop?

Saturday

2. What unit of measurement is being used?

millimeters

3. What is the dependent variable?

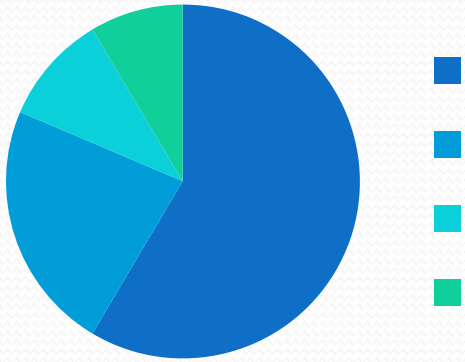
y-axis: the amount of pop consumed

4. Why could be the reason the line goes up dramatically at the end?

The boy consumes more pop on the weekend because he is not at school.

What other types of graphs and charts can I use?

Pie Chart



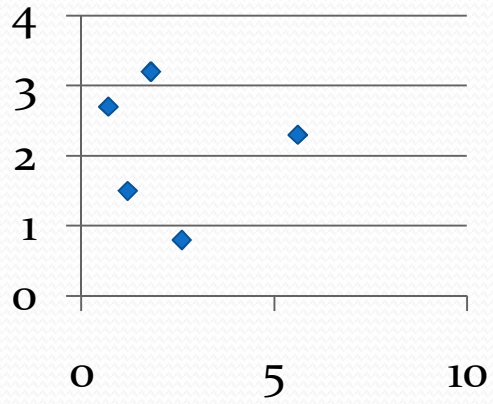
Pictograph

Number of Pets

Sally	
John	
Carl	

= 2 pets

Scatter Plot



Frequency Table

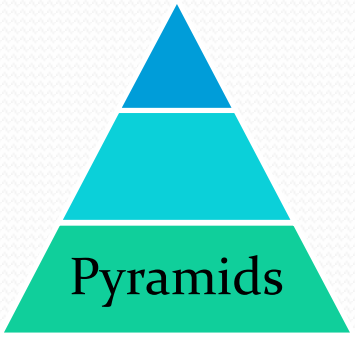
Grade 6 Student Test Scores

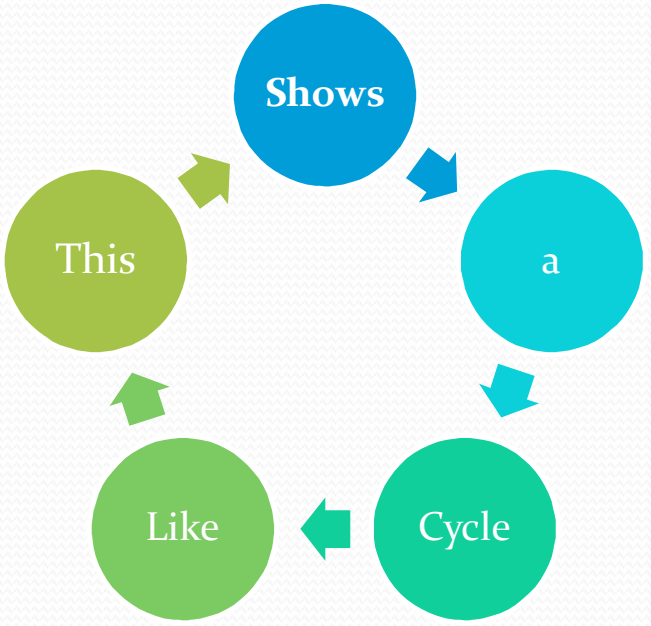
Mark	Tally	Frequency
4	II	2
5	II	2
6	IIII	4
7	~~IIII~~	5
8	IIII	4
9	II	2
10	I	1

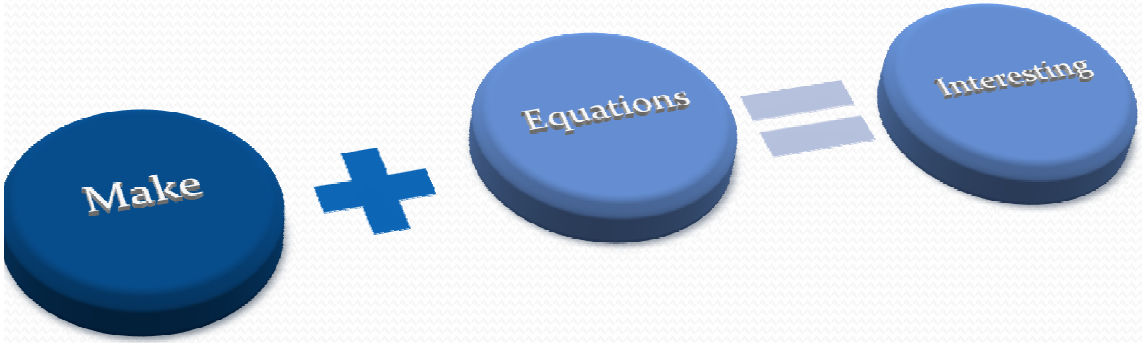
Are there any other graphic organizers?

YES!

- Lists
- Lists
- Lists







What else will organize my science fair project?

- Bullets are great.
- They keep information clear.
- Point form is easy to read.

Numbers

1. Number the steps that you took.
2. Then, people can quickly scan the list.
3. It will be clear what you did.

Creative Headings:

Why?

Fun Facts

Data Analysis Checklist

You should not circle the ☹ for any question	Do you have a Good Data Analysis Chart	You should circle the ☺ for every question
☹	Do you have enough data to know if your hypothesis is correct?	☺
☹	Did you include all the correct units of measurement?	☺
☹	Did you double-check your calculations?	☺
☹	Is your data presented clearly?	☺
☹	If you weren't standing next to your project, would someone be able to understand your data analysis?	☺

Graph Checklist

You should not circle the ☹ for any question.	Do you have a Great Graph?	You should circle the ☺ for every question.
☹	Is there a title for your graph?	☺
☹	Does the type of graph you chose match the data you are presenting?	☺
☹	Are both the axes labelled correctly?	☺
☹	Do you have the independent variable on the x-axis and the dependent variable on the y-axis?	☺
☹	Did you include the proper units of measurement?	☺
☹	Did you plot your information clearly and in the correct way?	☺

BE CONCISE

BE CLEAR

BE CREATIVE