IN-1: How accurate will I be in estimating different kinds of measurements?
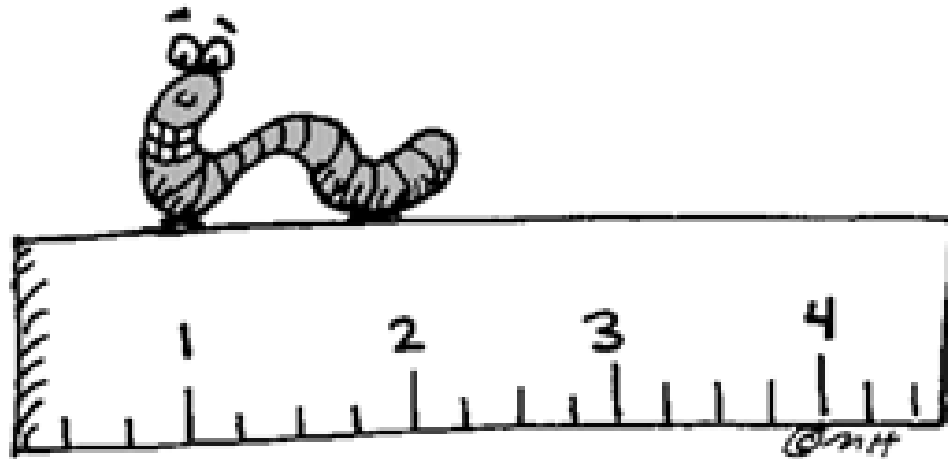
Please Share

There are only 7, 10 ml graduated cylinders and only 2 electronic scales

Please complete your time or length measurements while waiting for the scale or the cylinders

Fill out your data table and then record your average on the clip board under the ladybug

Accuracy Data Table

Dimensions	Estimate	Correct Units	Units off	% Error	% Accuracy	Calculations
Length	11	10	1	10%	90%	1/10= .1 X 100=10%
Volume						
Weight						
Time						

Step 1: $\underline{\text{units off}}$ x 100 = % error
correct units

Step 1: $\underline{\hspace{0.3em}1\hspace{0.3em}}$ = .1 X 100 = 10%
10

Patience!

If you have all your work done up to posting your data on the class data table and you have drawn a similar data table for your lab report, please be patience with the rest of us.

Please help any lab group member or class mate to catch up.

A few words on on interpreting graphs

If you were to draw a graph that represented the relationship between temperature and the number of people wearing coats, what would the line look like?
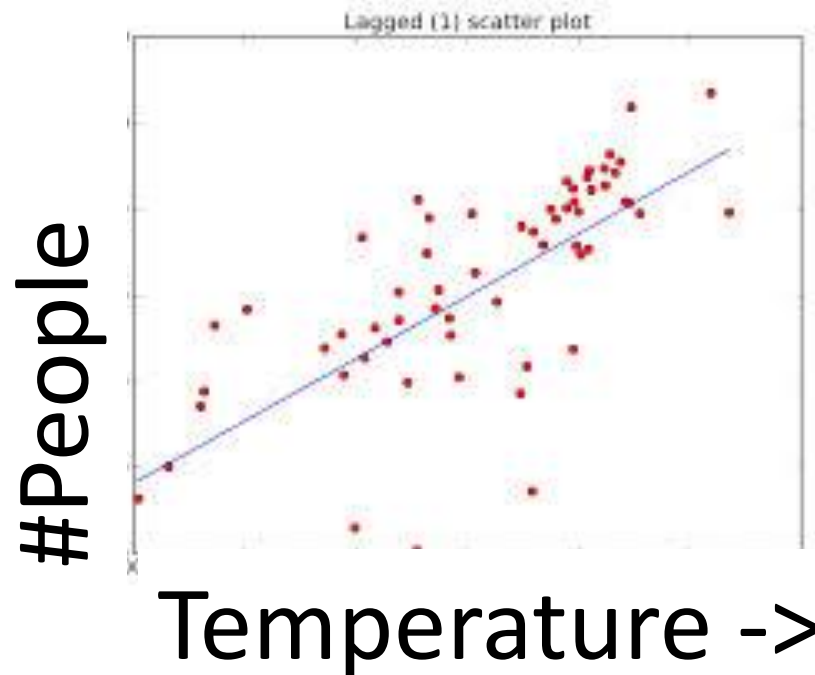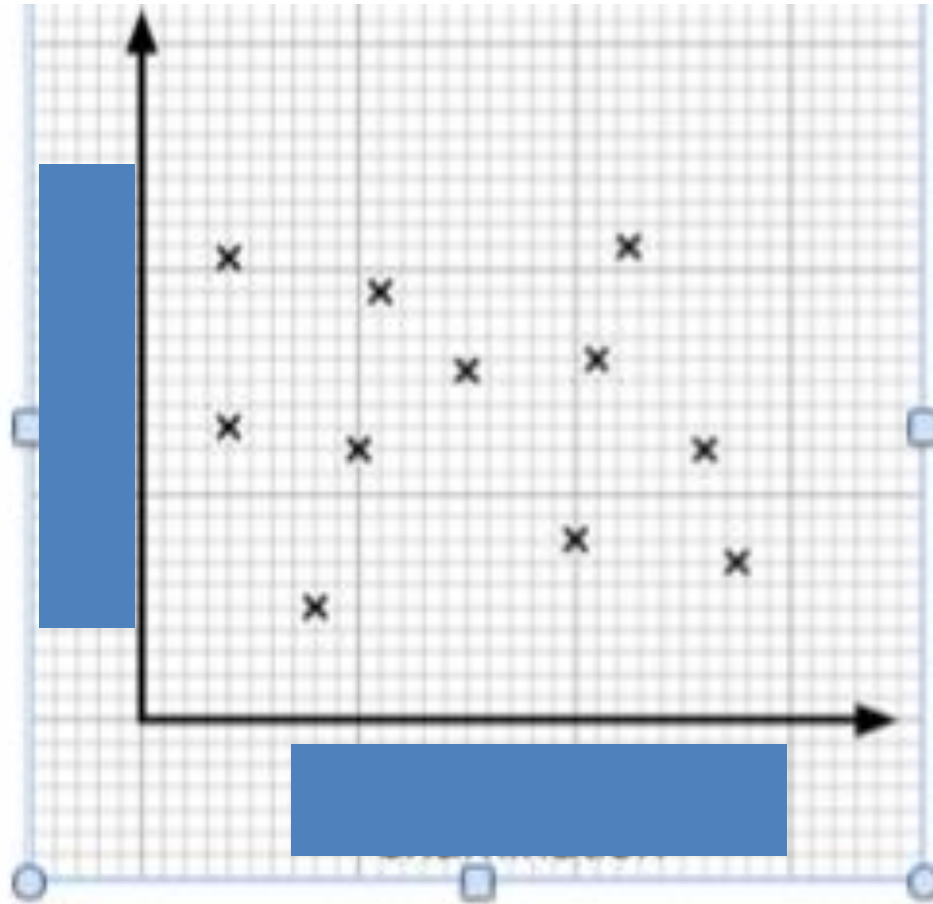
Coats and Temperature
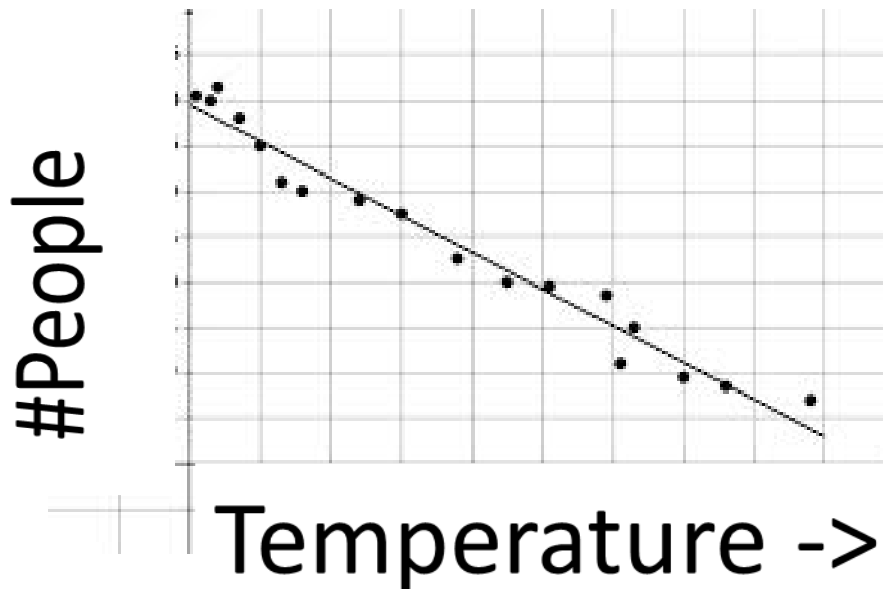
A few words on on interpreting graphs

OK, what if the information was on the relationship of temperature and the number of wearing flip flops?
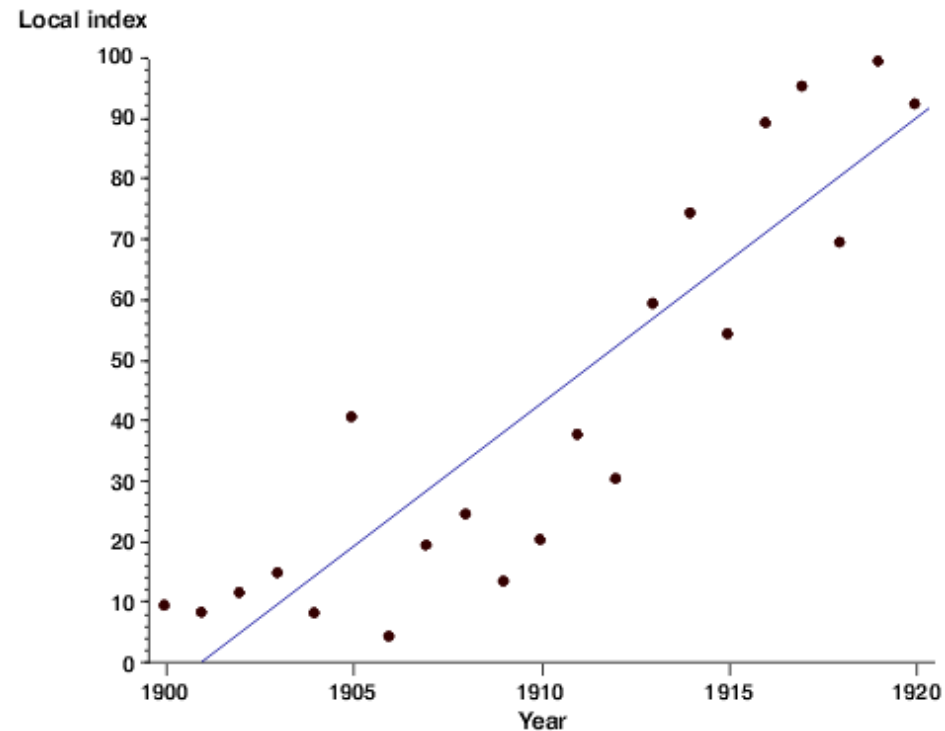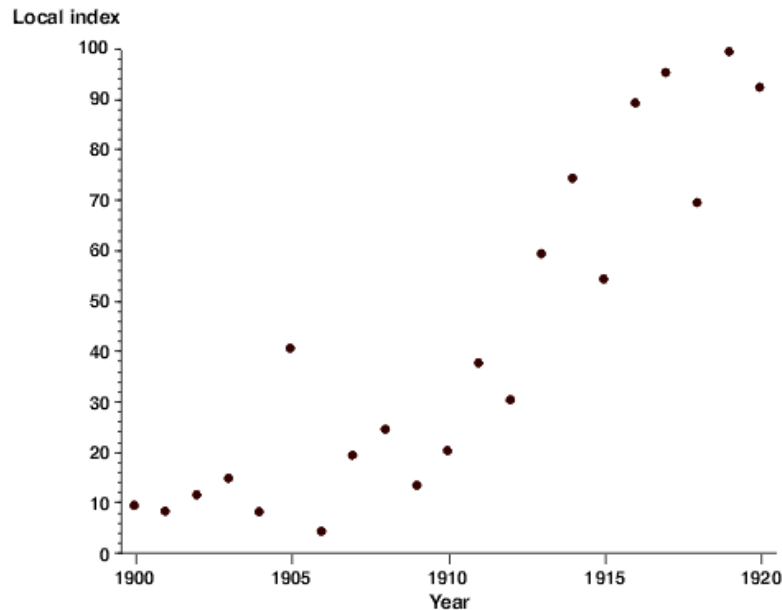
Flip flops and Temperature

Lagged (1) scatter plot

#People

Temperature ->

What is the relationship between the two variables in this graph?

Scatter Plot Graphs help us to find trends in the data when comparing 2 quantitative variables. We don't connect the dots but look for a trend in the data and then draw a straight line, or curve to help visualize that trend

Graphing

- **<u>Requirements for Graphs</u>**
- Graphs must be made on graph paper
- Graphs must be made by hand and in pencil.

- **<u>Rules for Proper Graphs</u>**
- 1. **The graph must have a title that describes the relationship or information it shows.** *"The Average Blood Pressure of Humans at Different Ages"*
- The same graph could also be called, "The Relationship between Age and Blood Pressure" – *there isn't just one right way!*

- 2. **The two axes** [vertical (or "Y") and horizontal (or "X")] **must each be labeled as to what they measure and what units are used.**
- A graph without both axes labeled is meaningless!

- 3. **Set the numerical value of the increments** (spaces) **in each axis so that your data will be spread out as much as possible in the space you're given.**

- Should be a <u>minimum</u> of 1/3 of a page. No teeny-tiny graphs please!

- 4. **Numbering of the graph does not necessarily have to start with 0. Start numbering at a point that is slightly lower than the lowest data value and stop numbering slightly higher than the highest data value.**

- 5. **All spaces on each axis must have equal value with every other space on that axis.**

- If one square on the x-axis equals 1 second, then every other square on the x-axis must also equal 1 second – and a distance of 3 squares equals 3 seconds, 14 squares = 14 seconds, etc.

- 6. **If two sets of data are plotted on the same set of axes: 1)** *use different colors of pencil for each* **and 2)** *label each line*

- 7. **Do not draw lines connecting the dots on a graph of data from an experiment.**

Use the guidelines and the instructions to create your graph.

Please, pretty pretty please, remember to Label your X and Y axes and give your graph a Title

Remember the "Best Fit Line" it may a straight line or a curve

Answer the Discussion questions and then……..

Answer you conclusion on a separate piece of lined paper and staple it to your lab report

Please read

"Successful Conclusions"

From your

Successful Laboratory Work Handout before writing your conclusion