



# Introduction to Graphing

## Collecting the data.

Measure the length of the fingers and thumb on your left hand in centimeters. Fill in the data table below with your information.

Fingers	Length in cm
Thumb	
Finger 1	
Finger 2	
Finger 3	
Finger 4	

## Determining what type of graph to use.

There are two types of graphs normally used in science, the bar graph and the line graph. To determine which type of graph should be used with any data, the investigator should examine the independent variable and determine if the information is discrete data or continuous data.

- The independent variable is the variable you started the investigation knowing. The dependent variable is what you found out once you completed the investigation.

1. What is the independent variable in the data table above?

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2. What is the dependent variable in the data table above?

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What kind of data do you have?

Discrete data is information that is usually in categories or objects - not numbers. Continuous data is usually in numbers. It starts (usually at 0) and continues on and on until the investigation stops.

3. Is the independent variable discrete data or continuous data? \_\_\_\_\_

Discrete data should be placed on a bar graph.  
Continuous data should be placed on a line graph.

4. What type of graph should be made from the finger length investigation? \_\_\_\_\_

## How to Make an Excellent Graph

All graphs have **five** essential parts: **TAILS**  
(Title Axis Intervals Labels Scale)

**TITLE:** Describe what your graph shows

**AXIS:**

**DRY** – The Dependent or Responding Variable is graphed on the Y-axis.

**MIX** – the Manipulated or Independent Variable is graphed on the X-axis.

**INTERVAL:** The numbers you count by (by 2, by 5)

**LABELS:** Write the names of the variables along the sides

**SCALE:** You always want to fill the graph paper with your data.



## Graphing the data.

In a graph the independent variable goes along the bottom (X axis) and the dependent variable always goes up the side (Y axis).

1. Label the independent variable, FINGERS.
2. Label the dependent variable LENGTH IN CM.
3. When making a bar graph, the spaces of the independent variable are labeled, not the lines. In the spaces at the bottom, between the boxes, indicate which finger is being graphed by placing a T for thumb, F1 for finger 1 and so forth.
4. Number the side lines of the graph, starting at 0 and go to the top. Remember to make your scale fill the graph paper.
5. Place a descriptive title along the top of the graph.
6. Graph the information from your finger lengths below.




## Graphing part II

### Collecting the data.

Determine how to take your pulse, either at your neck or at your wrist. Do some light exercise such as standing up and sitting down in your chair 25 times. As soon as you have finished the exercise take your pulse for 10 seconds and then every 30 seconds thereafter. Record your information in the data table below.

Time in sec.	Heartbeats
0	
30	
60	
90	
120	

### Determining what type of graph to use.

1. What is the independent variable in the data table above?

\_\_\_\_\_

2. What is the dependent variable in the data table above?

\_\_\_\_\_

Discrete data is information that is usually in categories or objects - not numbers. Continuous data is usually in numbers. It starts (usually at 0) and continues on and on until the investigation stops.

3. Is the independent variable discrete data or continuous data? \_\_\_\_\_

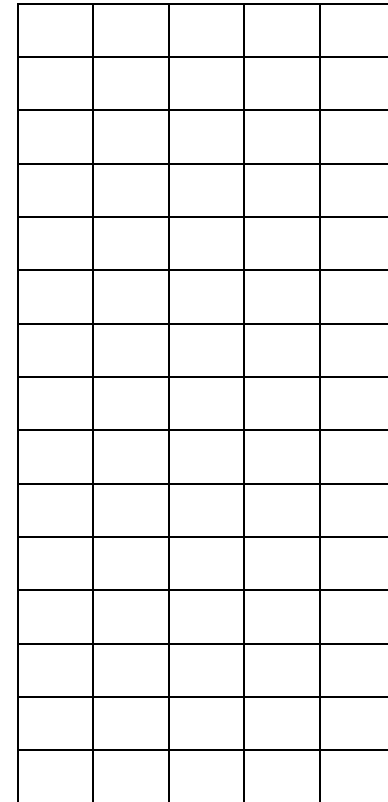


Discrete data should be placed on a bar graph.  
Continuous data should be placed on a line graph.

4. What type of graph should be made from heart rate investigation? \_\_\_\_\_

## Graphing the data. Remember TAILS!

1. Label the independent variable TIME IN SECONDS.
2. Label the dependent variable HEARTBEATS.
3. When making a line graph, the lines of the independent variable are numbered. Number the lines 0, 30, etc.
4. Number the side lines of the graph, starting at 0 and go to the top. Remember to make your scale so it fills the graph paper.
5. Place a descriptive title along the top of the graph.
6. Graph the information from your heartbeats on the next page.



Name \_\_\_\_\_

period \_\_\_\_\_

## EXIT TICKET

### Introduction to Graphing

1. On what side of the graph does the independent variable go?

- A. top
- B. bottom
- C. left side
- D. right side

2. On what side of the graph does the dependent variable go?

- A. top
- B. bottom
- C. left side
- D. right side

3. What is discrete data?

- A. data that has numbers
- B. data that has numbers and categories
- C. data that has categories
- D. data that only has colors

4. What type of graph is best for continuous data?

- A. line graph
- B. bar graph
- C. pie chart
- D. you shouldn't graph continuous data

Name \_\_\_\_\_

period \_\_\_\_\_

## EXIT TICKET

### *Introduction to Graphing*

1. What type of graph is best for continuous data?

- A. line graph
- B. bar graph
- C. pie chart
- D. you shouldn't graph continuous data

2. On what side of the graph does the dependent variable go?

- A. top
- B. bottom
- C. left side
- D. right side

3. What is discrete data?

- A. data that has numbers
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4. On what side of the graph does the independent variable go?

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