Feb 16, 2011

**Making Graphs**

1. Draw and Label the Axis. X-horizontal and Y-vertical
2. Indicate what each axis represents, be sure to write in both what is measured and units in which is measured
3. Give the graph and appropriate and descriptive title
4. Calculate the scale for each axis. This is done by dividing the number of squares on the axis into the maximum value to be plotted on that axis

**Grid Paper**

|  |  |
| --- | --- |
| **X** | **Y** |
| 1 | 2 |
| 10 | 4 |
| 20 | 7 |
| 30 | 11 |
| 40 | 17 |
| 50 | 21 |
| 60 | 23 |
| 70 | 26 |

X scale

Max value = 70m

# of squares 40 square

= 1.75 m/square

X axis = scale of 2m/square

\*round up\* 0 2 4 6 8 10 etc.

Y value

Max y value = 26s = 0.65 s/squares

# of squares 40 squares

= 0.75

When calculating scale remember

* The data should cover most of the graph
* The scale must be even; each square must have the some value
* K.I.S.S each square should have a simple value; ex 2m not 1.7
* Plot data carefully
* Draw the best fit line

**Best Fit Line**

* Don’t connect the dots
* The line that you draw is best fit to the most of the points on graph
* The line drawn should have approximately as many points above as below

\*you are really finding an average value

\*it does not have to be straight

**Slope**

* Is a measure of average change of one variable on a line graph with respect to a second variable
* Slope = Rise (y2 – y1)

Run (x2 – x1)

* Pick 2 widely spaced points on the best fit line
* Determine the distance between the 2 point in the x direction and y direction
* Use formula to determine slope

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**Graphing**

Interpolate: estimate the value of one variable on a graph when…

* You know the second variable
* The unknown point lies between two known points

Extrapolate: estimate the value of one variable on a graph when…

* You know the second variable
* The unknown point lies outside the range of data point you have
* You can logically assume the data point will follow the same pattern outside the range as inside the range