

## Patterns and Measurements

0.01A - I can represent any number using scientific notation. I also know what that little "E" means and why I should never write it out by hand.

0.02A - I can convert between units and demonstrate complete mathematics using units.

0.03A - I can interpret linear mathematical models, including the meaning of slope, y-intercept, and individual points.

0.04B - I can interpret inverse or quadratic mathematical models, including the meaning of slope, y-intercept, and individual points.

0.05C - I can take a set of data and represent on a graph with the correct model. I can interpret any mathematical model, including the meaning of slope, y-intercept, and individual points.

0.06C - I understand all measurements have uncertainty. I can estimate the magnitude of this uncertainty and evaluate experimental design to reduce uncertainty.

## 4 types of Relationships

- Constant
- Linear
- Exponential growth/Decay
- Logarithmic

Points - ALWAYS give a prediction of our dependent variable for a specific ind. variable value

Slope - ALWAYS tells how the dependent variable changes as we increase the independent variable  
NOT ALWAYS CONSTANT

y-int: ALWAYS tells us about the dep. variable when our ind. variable is zero.

CONCLUSION: SLOPE is the difference

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### Determining Confidence in an experiment

#### 1. Lots of Data

5-10 different measurements

#### 2. Large Range

↳ 10x the smallest

#### 3. Multiple Trials

3-5

### Spring Lab

What is the relationship between mass added to a spring and the length of a spring.