**Independent and Dependent Variables**

Independent and dependent variables are mathematical tools used in an experiment to keep track of what's going on.  They allow you to maintain control over your experiment in a quantitative way.  That is, using them, you will be able to measure your results and draw accurate conclusions

Independent and dependent variables are related to one another.  The Independent part is what you, the experimenter, changes or enacts in order to do your experiment.  The dependent variable is what changes when the independent variable changes - the dependent variable *depends* on the outcome of the independent variable.

For instance: if you were measuring the growth rate of plants under full sunlight for 8 hours a day versus plants that only have 4 hours of full sunlight per day, the amount of time per day of full sunlight would be the independent variable - the variable that you control.  The growth rate of the plants would be ***a*** dependent variable.

A dependent variable?  Yes, there **can be** ***more than one* dependent** variable.  In our example, for instance, the growth rate of the plants might be one dependent variable and the overall height of the plants might be another dependent variable.   Both of these variables ***depend***upon the independent variable.

When we talk about independent and dependent variables, we mentioned that you can have more than one dependent variable.  Can you have more than one *independent* variable?  No, there **should be only one independent variable** for any valid experiment (advanced forms of research do allow for more than one independent variable but unless you are doing this kind of research, you should probably stick to one.)