Conducting an Investigation

There are many different types of investigations, but in this type of investigation the aim is to determine how

- one "variable" (the independent variable that you will change in a systematic way)

affects

- another "variable" (the dependent variable that you will measure).

All other variables (the "fixed" variables) have to be kept the same so that at the end we can say for sure how (or whether) the independent variable affects the dependent variable.

The Investigation will need to include the following:

INTRODUCTION/AIM (all practical reports should have an introduction and an aim):

Must include:

- a brief explanation of the science involved. For example, if you're going to investigate ice melting, you will need to mention that ice melts as it absorbs heat.
- a very brief description of what you will do;
- a clear statement along the lines of "we will investigate how Variable A affects Variable B" such as "we will investigate how the surface an ice block is on affects the time that it takes to melt";

HYPOTHESIS (kind of like an educated guess on what may happen, a hypothesis is based on previous experiments or something you already know): Write your hypothesis.

EQUIPMENT (all prac reports should have a list of the equipment that was used):

METHOD (prac reports of this nature should have a step-by-step method):

Must include:

- a diagram;
- a step-by-step description of what you did which makes obvious…
- the independent variable you varied, the dependent variable you intend to measure, and the variables you will try to "fix" (keep constant);

RESULTS (usually presented in a table or a graph or both):

Must include:

- tables with appropriate headings;
- graphs with appropriate lines of best fit.

DISCUSSION: in the discussion, you will describe in your best English what your results were and identify any trends.

Must include:

- a clear statement along the lines of "As Variable A did this, Variable B did that" Eg. As the sound level meter got further and further from the amplifier, the sound level intensity decreased…"
- A description of any trends in the data.
- an explanation of why the results were the way they were which means you will have to explain the science underlying the prac. You may want to ask your teacher for help on this.
- limitations to the method and possible improvements.

CONCLUSION: A very brief summary of your results that directly refers back to the aim.