

TYPES OF INVESTIGATIONS

A natural part of human nature is to ask WHY? We want to understand the world around us. Humans are born as scientists, it's in our DNA and sets us apart from other animals.



Below are the key types of ways humans as why. You may not realize it, but you do science every day in a lot of ways. It also might be a completely different subject like PE or social studies, but you still use the scientific skills listed below. You will often find that you will use multiple types of investigations to answer one question. They interlink and you might go back and forth between the different types of investigations.



Exploring & Observing

Often the first step of science is just noticing things around us.

This type of investigation uses our **five senses**: sight, sound, touch, smell, and taste.

It is important that you do not rush this step because you will use what you gather to design experiments on the four other investigations mentioned on this sheet.

Modelling

Model (def): a representation of something, a thing to use as an example.

Modelling experiments are **recreations** of a real life phenomenon that are often on a smaller, cheaper, or simpler scale to make is more assessable.

Example: Using a parachute toy to model sky diving.

Classifying & Identifying

Basically, you are trying to answer the question, **what the heck is this?**

In order to do this, you will probably need to use other investigation skills like exploring and observing to notice features about what you're trying to identify and then using something like a classification key.

This type of investigation also includes grouping things.

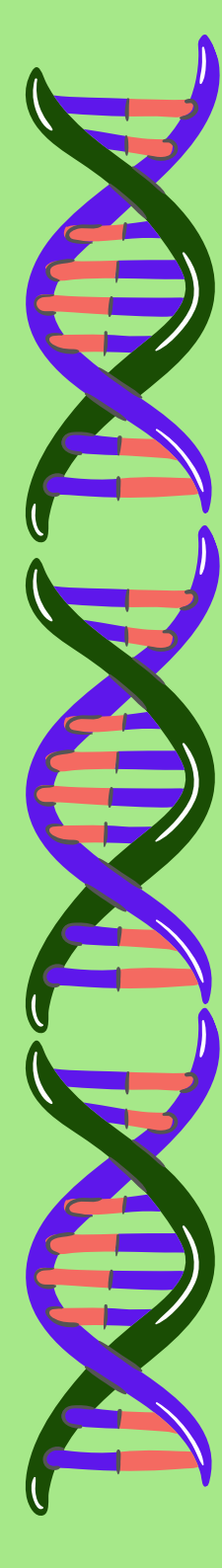
Pattern Seeking

Pattern seeking is very similar to exploring and observing, but the key difference is that you are collecting **numerical data** to see if there is a relationship. There is no limit to the number of variables you can compare to see if there is a relationship.

Example: Seeing if aspects of the human body have a ratio. Height to arm span should be a 1:1 ratio. But you can also compare height to foot size.

Fair Testing

Fair testing is similar to pattern seeking but the key difference is that for one of the variables that you are measuring, you have **control over how you change that variable** (independent variable). Then, you see the effects of that change (dependent variable).



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