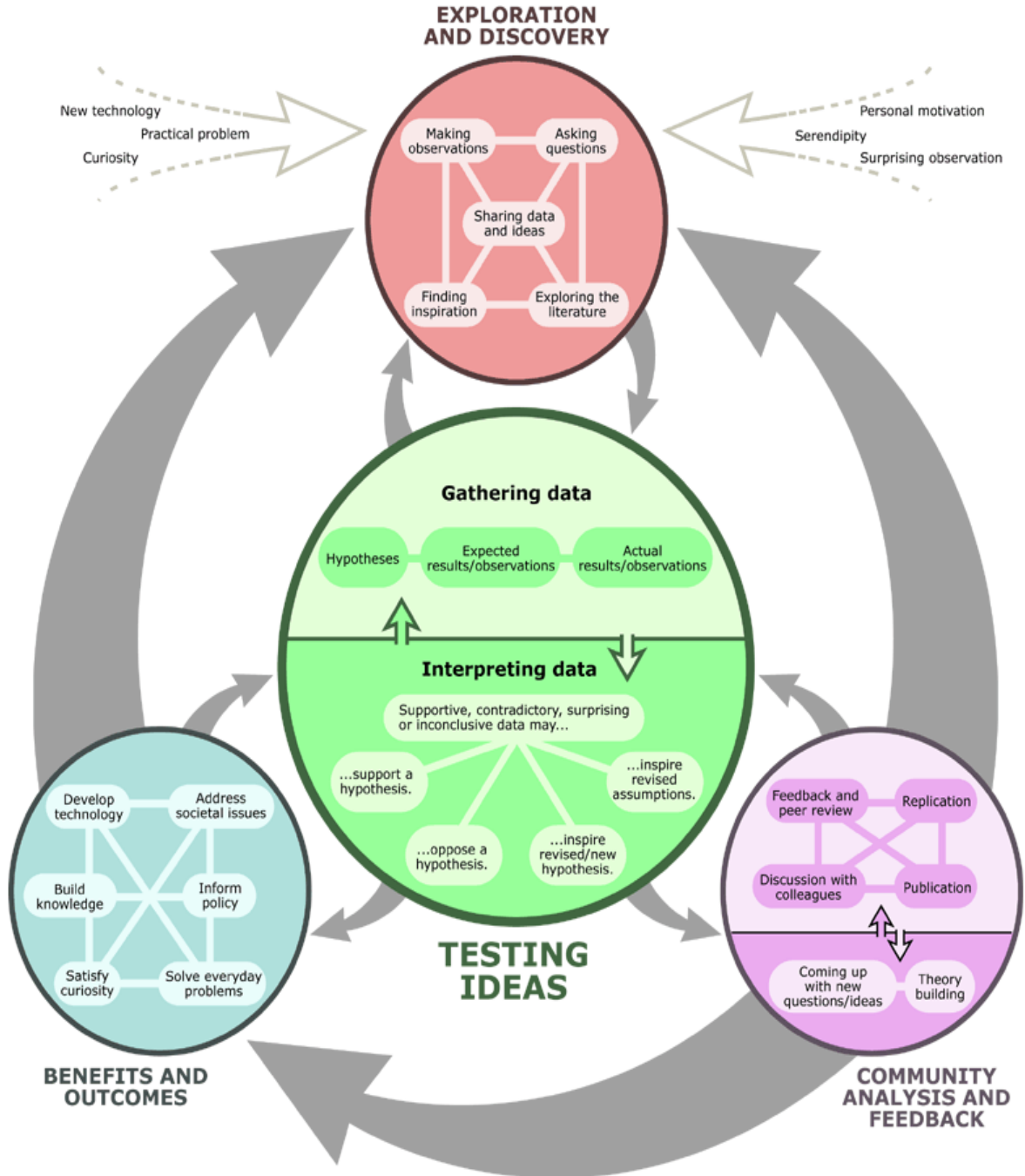


How Science Works



What is science? Asking questions about the world around us is the first step to becoming a scientist.

Science covers; Life processes and living things.

Materials and their properties.

Energy, forces and space.

Investigations in Science

- What is an experiment?

An experiment is a way of collecting information to check out explanations. Before a scientist begins an experiment, he or she will have a definite purpose or aim. The aim of an experiment is a way of stating carefully what you are trying to find out. In science the aim is often backed up by a hypothesis.

A **hypothesis** is a proposed **explanation** for a **phenomenon**. For a hypothesis to be a scientific hypothesis, the **scientific method** requires that one can **test** it.

Example: Aim: to investigate the effect of protein on the effect of protein on the growth of mice. Hypothesis: High protein diets results in faster growth rates and larger species.

- The experiment must be a fair test.

An experiment will not be a fair test if you change more than one variable at a time.

Step 1: Identify the variables. Variables are factors that might affect the results.

Step 2: Choose which variable you will change. The **input variable**.

Step 3: Choose the variable that you think will be affected by changing the input variable. This is called the **outcome variable**.

Step 4: Decide what equipment you will need to measure any changes.

- Work safely.

Always wash your hands after touching anything in the lab.

Carry equipment carefully.

Don't run.

Wear suitable clothing.

- Making a record of your results.

Results or observations are usually recorded in a table.

Always remember a title or heading.

Display your results on charts and graphs. Remember always put the independent variable on the horizontal axis and the dependent variable on the vertical axis.

Graphs enable you to make predictions.

- Making conclusions.

Summing up is called a conclusion. Tips:

1. Your conclusion should be related to the aim of the experiment.
2. Try to write your conclusion simply and comment on whether your hypothesis was correct.
3. Don't just describe your results.