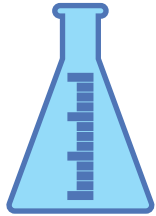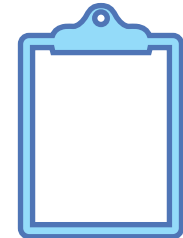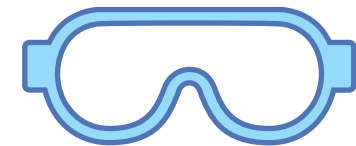Fair Testing

Researching

Pattern Seeking

Scientific Enquiry

Observing Changes over Time

We need different ways of working scientifically to answer different kinds of questions.

Identifying and Classifying

Fair Testing

Skills

- Suggest improvements and raise further questions
- Use scientific language
- Use scientific illustrations
- Draw conclusions and make predictions
- Talk about findings
- Use equipment to measure
- Gather, record, present and classify data in different ways
- Make observations
- Use results to set up re-tests

Example Questions

- Which materials makes the best parachute?
- How can we make the light bulb brighter?
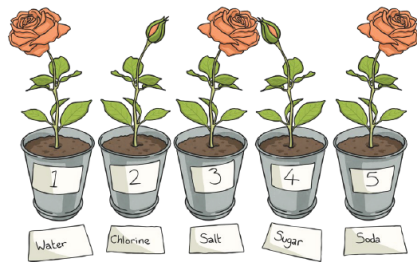
Researching
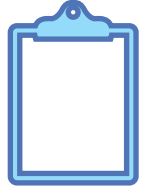
Skills

- Recognise when research using sources will help to answer questions
- Decide which sources of information might help
- Recognise how data has been collected
- Present findings in suitable formats
- Draw conclusions from research
- Explain research using scientific knowledge and understanding
- Evaluate how well the research answered the questions
- Notice when information is biased or based on opinions

Example Questions

- Why does the moon change every night?
- What do different animals eat?

Observing Changes over Time

Skills

- Make careful observations
- Use scientific language
- Draw and label any observations
- Create graphs and tables from observations
- Use equipment and take accurate measurements
- Draw conclusions about the changes found
- Think about the effect of changing the time and number of observations
- Talk about and explain the changes using scientific knowledge and understanding

Example Questions

- What happens to the bean seed after they are planted?
- What happens to a puddle on a hot day?

Identifying and Classifying

Skills

- Recognise when identifying and classifying will be helpful to answer questions
- Use tests to sort and classify materials
- Use secondary sources to identify and classify things
- Make keys and databases with four or more items
- Use more than one piece of scientific evidence to identify and classify things
- Look for similarities and differences

Example Questions

- Is it a living thing or not?
- Can you sort the toys by how they are powered?
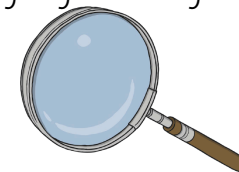
Pattern Seeking

Skills

- Recognise when variables cannot be controlled and when pattern seeking will help to answer questions
- Decide how detailed data needs to be and which equipment to use, to make measurements as accurate as possible
- Use equipment accurately to collect observations
- Record data appropriately and accurately
- Present data in scatter graphs and frequency charts
- Recognise patterns in results
- Recognise the effect of sample size on reliability

Example Questions

- Do bigger musical instruments always make deeper sounds?
- Do taller plants grow from bigger seeds?