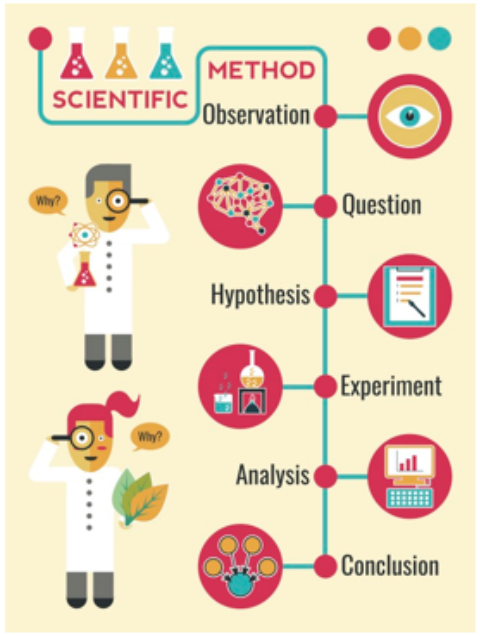
Knowledge Organiser – Science – Year B – Scientific Enquiry - Lower Key Stage 2 (Years 3 and 4) – Spring 2

Careers connected to this unit: chemist, baker, renewable energy scientist

Sticky Learning - What I already know

- No prior unit specific learning
- I have used the enquiry approaches - Identifying, grouping & classifying, pattern-seeking, research, observation over time comparative/ fair testing and problem-solving
- I know how to use observations, data and findings to name, label and organise items in a variety of ways.
- I have used the enquiry skills - Interpreting and communicating results, setting up tests and recording data, results and findings, making predictions

The Scientific Method



Writing a method and completing a practical test

Equipment: lemonade, ketchup, vinegar, measuring cylinders, beakers, litmus paper, timer.

1. First, measure out 20ml of the chosen substance.
2. Next, perform a pH test and record the results in a table.
3. Then, submerge a dirty coin and leave it in the substance
4. After 10 minutes, carefully remove the coin and observe how it has changed.
5. Record if the substance was successful or unsuccessful at cleaning the coin.
6. Repeat with a different substance.

Keep everything the same, apart from the independent variable.

Use a table to organise and record the results.

Use numbers and time words to organise the steps.

The independent variable is the only thing that is changed in the experiment

Asking questions and writing predictions

A good scientific question asks what happens when something is changed, or how it compares to something else. This means it can be tested.

A good scientific prediction says what you think will happen, and why you think that based on what you already know about the investigation.

Writing a conclusion

1. First, say what you have found out.
2. Next, give evidence for the experiment that proves what you have found out.
3. Then, explain your evidence (results) using scientific knowledge.
4. Finally, say if your prediction was correct.

If you can, write further questions you could investigate.

Core Learning

1. How can a solar oven be made more effective: asking questions and writing predictions

2. How can a solar oven be made more effective: recording and presenting results

3. Cleaning coins: writing a method and carrying out a practical test

4. Cleaning coins: writing a conclusion

5. Making a cake: fair testing, controls and variables

6. Making a cake: scientific enquiry

Rocket Words

scientific investigation	finding answers to questions using research methods
prediction	explaining what you think might happen
method	instructions for carrying out an experiment
diagram	a drawing or plan that shows the parts of something or how the parts work together
equipment	the objects needed to complete a method
fair test	where one variable is changed and all other elements are kept the same
variables	something that is changed in an experiment
results	information from a scientific test, such as the temperature of something
conclusion	the end result or outcome