

Science big questions for this term:

Are solutions and mixture reversible or irreversible? How can they be reversed?

Which chemical changes can create new materials? Are these reversible or irreversible changes?

Today's deep question ...

Which chemical reaction creates the most gas?





The focus for today's science lesson ...







2. DO YOUR RESEARCH

- See if anyone has asked your question before.
- Research similar questions.
- Ask others for advice.





4. TEST 1. Construction

- Design an experiment.
- Perform your experiment carefully.
- Record your data.







• Make a chart or graph.

- Compare your data to others'.
- See if your data fits your hypothesis.



5. ANALY SE YOUR DATA



Outcome	Apprentice scientist	Expert scientist
Year 1 Sorting and using materials		
that every material has many properties which can be recognised using our senses and described using appropriate vocabulary		
to record observations of materials that there are many materials and these can be named and described		
 Making observations and comparisons 		

Outcome	Apprentice scientist	Expert scientist
<i>Year 3 Magnets and springs</i> that magnets attract some metals but not others and that other materials are not attracted to magnets		
 .that magnets have a variety of uses 		
making simple predictions planning what evidence to collect to make careful observations to use results to draw conclusions, indicating whether they were right in their prediction about which materials were magnetic		

Outcome	Apprentice scientist	Expert scientist
<i>Changing state</i> that melting, freezing, condensing and evaporating are all changes of state which can be reversed		
turning ideas into a form that can be tested to plan to change one factor and keep others constant to make predictions using scientific knowledge and understanding to obtain evidence by making careful observations deciding whether the evidence supports the prediction and suggesting explanations in terms of their knowledge of science.		

Outcome	Apprentice scientist	Expert scientist
 Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic demonstrate that dissolving, mixing and changes of state are reversible changes explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda 		

Outcome	Apprentice scientist	Expert scientist
 <i>Year 5 – Properties and changing materials</i> demonstrate that dissolving, mixing and changes of state are reversible changes 		
• explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda		

SCIENCE RECORDING

<u>Floor Books to record the other elements of the lesson which are not the focus</u>
-small group discussions
-whole class discussions
-whole class predictions/conclusions
-experiment records- photographs
-Questions

-Whole class results

Individual science books -the focus of the lesson will be recorded in the individual book - individual research - independent observation diaries over time - independent charts/graphs/tables - independent predictions

-independent conclusions