



St Andrew's Church of England Junior School – Scheme of Work: [Science](#)



At St Andrew's our vision statement is 'Shining Light on a World of Possibilities' and we have designed our curriculum to be relevant, exciting and creative, underpinned by our school values and based around our 'curriculum drivers':

- Curiosity, enquiry and creativity
- Community
- Possibilities

WS-Working Scientifically

Autumn Term 1 – Properties of materials

Year 3	Learning Objective	Key Vocabulary	Lesson Overview	Assessment Questions
Session 1	Can I identify the properties of a range of materials and identify their uses? WS- Plan enquiry Preassessment- Ask them to write what they know about materials	Material Solubility Transparency Conductivity Dissolve Solution Substance Filter Evaporation Reversible/irreversible change	Children to plan an investigation. They will be investigating the properties of materials. A key focus here is ensuring it is a fair test.	• Preassessment- Ask them to write what they know about materials • How will you make it a fair test? • Which is the bounciest ball? • Which is the hardest material? • Which is the best moppper-upper? • Which is the best packaging material? • Which is the best elastic band or the stretchiest fabric?
Session 2	Can I give reasons, based on evidence for the particular uses of everyday materials? WS- Fair testing	Material Solubility Transparency Conductivity Dissolve Solution Substance Filter Evaporation Reversible/irreversible change	Children to share their planning with their partner. Discuss what variables they are changing and what they are keeping the same to make it a fair test. Children carry out their investigation and record their results.	• How will you make it a fair test? • What variables will you change? • What will you keep the same? • How will you record your results? • How will you use the evidence you gather?
Session 3	Can I describe how some materials dissolve in liquid?	Material Solubility Transparency	Children to investigate different liquids and the process of solids	• Watch the clip – what changes can you see occurring in the images?

	WS – Plan enquiry & fair testing	Conductivity Dissolve Solution Substance Filter Evaporation Reversible/irreversible change	dissolving in a liquid. Discuss with the children how they know if something has dissolved and challenge them if they say it has disappeared. There are a number of standard experiments to let children find out about factors affecting dissolving. In this unit, we recommend that they work in small groups and take a different factor each to quickly find out what affects dissolving.	• What is happening to the solid? • What is a solution? • Is it a reversible change?
Session 4 <u>TAPS</u>	Can I investigate the fastest way to dissolve jelly? Can children plan a fair test to investigate factors affecting the speed at which solids dissolve in water? WS – Plan enquiry & report	Material Solubility Transparency Conductivity Dissolve Solution Substance Filter Evaporation Reversible/irreversible change	Today we are going to be chemists. Ask children to think of everyday example of dissolving solids in water (e.g. sugar in tea, salt in cooking water). Ask them to suggest ways of making the sugar dissolve faster (e.g. stirring, temperature of the water, size of sugar grains, volume of water). Ask them to choose a factor to investigate and to plan a fair test. Post it planners or planning boards could be used to focus on types of variable. Carry out tests and discuss outcomes.	• What is your question? • How will you investigate this? • How will you keep your test fair? • What will you change? • What will you measure? • What will you keep the same? • Can you explain why you have made these decisions?
Session 5	Can I use my knowledge of solids, liquids and gases to decide how mixtures might be separated? WS – Observation & planning	Material Solubility Transparency Conductivity Dissolve Solution Substance Filter Evaporation	Explain that the children are going to apply what they know about solutions and separating mixtures to plan how to do one of the following. 1) Extract some sugar out of sugar beet or starch from potatoes. 2) Extract drinking water from dirty water.	• How can we separate the mixture? • What do you know about the water cycle? • How can our knowledge of the water cycle help us? • How will you create a fair test?

		Reversible/irreversible change	3) Try to make tea powder. Explain that they are allowed to use <i>secondary sources</i> to help them with their investigations.	
Session 6	Can I explore reversible and irreversible changes? WS- Observe & report	Material Solubility Transparency Conductivity Dissolve Solution Substance Filter Evaporation Reversible/irreversible change	Discuss reversible and irreversible changes with the class. Children to investigate irreversible change. Children to note down their observations and explain what new material has been produced to make an irreversible change.	• How can our knowledge of the water cycle help us? • What is your question? • How will you investigate this? • How will you keep your test fair? • What will you change? • What will you measure? • What will you keep the same? • Can you explain why you have made these decisions? • What is a reversible change? • What is an irreversible change?
Session 7	Can I give reasons, based on evidence for the uses of everyday materials? WS- Observe & report	Material Solubility Transparency Conductivity Dissolve Solution Substance Filter Evaporation Reversible/irreversible change	Explain that today we will be finding out about the properties of different materials to determine which would be best to use in the construction of a model boat.	• Why is stainless steel a good material to use for making a frying pan? • How could we ensure that this is a fair test? • Which of the materials floated best? • How do you know? • Do you think the materials that floated best are also the best building materials for the hull of a model boat?
Session 7.5	Post Assessment- Ask them to write what they know about materials. This could be from a stimulus such as an	Material Solubility Transparency Conductivity		

	image from Explorify, zoom in/out or odd one out.	Dissolve Solution Substance Filter Evaporation Reversible/irreversible change		
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Spring Term 1

Year 3	Learning Objective	Key Vocabulary	Lesson Overview	Assessment Questions
Session 1				•
Session 2				•
Session 3				•
Session 4				•
Session 5				•
Session 6				•