



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 – Sound

Year 3	Learning Objective	Key Vocabulary	Lesson Overview	Assessment Questions
Session 1	Can I explore how sounds are made? WS- recording & reporting. Preassessment	sound, vibration, pitch, volume, instrument	Children to begin with a preassessment to gauge their previous knowledge. Children to then explore how sound is made, using a variety of instruments.	• Preassessment- Can I share my knowledge of sound? • What is happening to the rice when the drum is making a sound? • Why is this happening? • Can they explain how their instrument makes noise? Does it need to be hit, shaken, blown, scraped, plucked?
Session 2	Can I identify a pattern between the volume of a sound and the strength of the vibrations that produce it? WS- Prediction, observation & recording.	sound, vibration, pitch, volume, instrument	Children to investigate the relationship between volume of sound and the strength of vibrations needed to produce it. Children to make predictions and record their findings during the investigation.	• How is sound created? • What else do you know about sound? • Were any misconceptions encountered? • What were the findings of your investigation?
Session 3	Can I understand that sound travels from a medium to the ear? WS - Observation	Medium, vibration, source, air, materials, sound wave, particles	Children to investigate vibrations in the air (sound wave) caused by vibrations of objects, that travel into our ears. Look at the structure of the ear.	• Does anyone know of any animals that are particularly good at hearing? • How does sound travel? • How do we hear things?

				• How does the ear work?
Session 4	Can I investigate how sound is effected by distance? WS – Plan enquiry/ record	Medium, vibration, source, air, materials, sound wave, particles, solid, liquid, gas	Children to discuss and reflect on scientific enquiry question: How far does sound travel? Take suggestions from the chn as to how this could be investigated.	• How will you investigate the relationship between sound and distance? • What happened to their friend’s voice during the investigation? • How will you keep it a fair and accurate investigation? • Why has it got fainter? What happened to the sound waves? • How can we hear people on the telephone when we are so far away from them?
Session 5	Can I explore different ways of changing the pitch of a sound? WS – Recording	frequency, vibration, source, air, materials, sound wave, particles, pitch	Children to discuss the word pitch- Pitch refers to how high or low a sound is. A high-pitched sound has a high frequency. A low-pitched sound has a low frequency. Frequency is the number of vibrations per second. Children to create instruments and explore pitch.	• Does anybody know a meaning of the word ‘pitch’? • Can you make a high-pitched sound using your voice? • A low-pitched sound? • Why is it sometimes important to prevent sounds travelling?
Session 6 <u>TAPS</u>	Can I find patterns between the pitch of a sound and features of the object that produced it? WS- Plan enquiry & questioning	acoustic, pitch, medium, vibration, source, air, materials, sound wave, particles, solid, liquid, gas	The children will be acoustic scientists. Invite children to brainstorm and record questions that they could investigate, focusing on changing pitch.	• Can children carry out simple tests of these ideas? • Can children suggest how to alter the pitch? • What are the differences between these sounds? • Which sound is the highest/lowest? • How could we alter the pitch? • Does your question include what you want to change and what you are going to notice?

				How will you investigate your question?
Session 6.5	Postassessment- Can I share my knowledge of sound?			Postassessment- Can I share my knowledge of sound?

Autumn Term 2 – States of Matter

Year 3	Learning Objective	Key Vocabulary	Lesson Overview	Assessment Questions
Session 1	Can I compare/group materials based on whether they are a solid, liquid or gas? WS – Identifying & classifying Preassessment- Can I share my knowledge of solids, liquids and gases?	properties, materials, solid, liquid, gas, particles	Children to begin with a preassessment to gauge their previous knowledge. Children to then group materials based on their properties. The children examine a selection of materials, and decide whether each is in its solid, liquid or gas state.	Preassessment- Can I share my knowledge of solids, liquids and gases? - Can they refine their definition of a solid? - Can they refine their definition of a liquid? - Can they refine their definition of a gas?
Session 2	Can I observe and report on my findings when a material changes state? WS- Recording & reporting	change of state, properties, materials, solid, liquid, gas, particles, thermometer, melting point, below freezing, temperature	Children to observe changes of state and record their findings. Show the class previously prepared ice hands or very large ice cubes, and ask them to pass them round. Through discussion, establish what state of matter they are and what material they are made of.	- Could you make a hand shape or a large ice cube out of liquid water? Why, or why not? - What are the differences between liquid water and solid water (ice)? - Does water exist in any other form? - Can they have water and ice at the same time?

Session 3	Can I understand that different materials melt at different temperatures? WS – Report & evaluate	change of state, properties, materials, solid, liquid, particles, thermometer, melting point, temperature, degrees Celsius	Children to conduct an investigation that explores different melting points. Continue to explore solids and liquids and the conditions required to trigger changes of state.	• What causes a material to change state? • What does melting point mean? • What about freezing point? • How can we investigate melting point? • Is it an irreversible change?
Session 4	Can I explain how evaporation and condensation effect the water cycle? WS – recording	change of state, properties, materials, liquid, gas, particles, thermometer, boiling point, temperature, degrees Celsius, condensation, evaporation, water cycle	Children to identify the part played by evaporation and condensation in the water cycle. They will need to associate the rate of evaporation with temperature. Give the names and a simple definition for boiling and condensation. Provide one for evaporation as well.	• What affect does temperature have on the rate of evaporation? • What can the children observe? • What is the water doing? • What state changes are going on? • Is it an irreversible change? • Is it a fair test?
Session 5 <u>TAPS</u>	Can I use a thermometer to measure temperature accurately? WS – Enquiry/fair testing	change of state, properties, materials, liquid, gas, particles, thermometer, boiling point, temperature, degrees Celsius, condensation, evaporation, water cycle	Children to be chemists for the day. Children to understand temperature of materials can be measured in °C. They will need to take accurate measurements using standard units, using a range of equipment including thermometers and data loggers	• Where are you holding the thermometer? • What happens when you put the thermometer in colder/hotter water? • Which thermometer do you think is the most accurate? • Has the temperature changed? How? Why?
Session 5.5	Postassessment- Can I share my knowledge of solids, liquids and gases?		An image could be given to allow children to discuss and record their understanding from the unit.	Postassessment- Can I share my knowledge of solids, liquids and gases?

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				•