Advent 2 Science Year 4: Changing State (Chemistry)			
Scripture Link: *Genesis* 1:2			
National Curriculum Objective •			
Enquiry Question: What are the 3 states of matter and how do they react?			
	Lesson 1	Lesson 2	Lesson 3
Learning intention for each lesson	To investigate solids, liquids and gases.	To investigate gas in an experiment.	To investigate the effect of heat on chocolate.
Recall and Retrieval	know that there are 3 states of matter; solid, liquid, gas and what defines them know that some materials change when they are heated or cooled**.** Explain what evaporation and condensation are.	know that a gas is a substance whose particles are constantly moving rapidly. know that a solid is a substance that holds its shape because its particles are packed closely together. know that a liquid is a material whose particles have gaps between them.	know that some materials change when they are heated or cooled. know the melting and boiling points of water. know that different types of matter behave in different ways. know that some liquids can contain gas.
Sequence of substantive knowledge throughout the lesson	I know how to make a prediction I explain the results seen – based upon their knowledge and observations. (what will happen to the contents of 3 balloons when emptied over a tray in relation to solids, liquids and gases (balloon containing 1 each of air, water and solid (e.g. Lego))	I know that some liquids can contain gas. I know what happens when raisins are added to lemonade and why	I know that when heat is applied to chocolate it will melt and become a liquid.
Key Skills/disciplinary knowledge	• **asking relevant questions and using different types of scientific enquiries to answer them;** • **setting up simple practical enquiries, comparative and fair tests;** • **making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers a**	• **asking relevant questions and using different types of scientific enquiries to answer them;** • **setting up simple practical enquiries, comparative and fair tests;** • **making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers** • **gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;**	• **asking relevant questions and using different types of scientific enquiries to answer them;** • **setting up simple practical enquiries, comparative and fair tests;** • **making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers** • **gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;**

	• **gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;** • **using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;** • **identifying differences, similarities or changes related to simple scientific ideas and processes**	• **using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;** • **identifying differences, similarities or changes related to simple scientific ideas and processes**	• **recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;** • **using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;** • **identifying differences, similarities or changes related to simple scientific ideas and processes**
Key Vocabulary	Solid, liquid, gas, state, change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle, matter, air, oxygen, ice, water, water vapor, steam, heated, heat, cooled, cool, temperature, degrees Celsius, melt, melting point, freeze, freezing point, solidify, boil, boiling point,	Solid, liquid, gas, state, change, melting, freezing, boiling point, evaporation, temperature, water cycle, matter, air, oxygen, water vapor, steam, heated, heat, cooled, cool, temperature, boil, boiling point,	Solid, liquid, gas, state, change, melting, melting point, boiling point, temperature, water, water vapor, steam, heated, heat, temperature, melt, point, solidify, boil, boiling point,
Main teaching activity ***If the school has another short term planning format, this does not need to be included.***			
Scaffolding	Any children who are still struggling with the 3 states could work with TA to embed language and focus more on each state and relate to real life substances.	You could provide pictures/word bank or children could draw the items If recording is a barrier. LA children could work in a group with TA/Teacher and complete this as a group- take picture and put in books.	
Challenge			Challenge - children draw diagrams to accompany the explanation..
Diversity Links			
Catholic Social Teaching Principles	Stewardship – All things are connected		Stewardship – All things are connected
British Values			

Wider links			

Advent 2 Science Year 4: Changing State (Chemistry)			
	Lesson 4	Lesson 5	Lesson 6
Learning intention for each lesson	To investigate the impact of adding salt when freezing a liquid.	To explain the water cycle and its part in our world.	Assessment lesson
Recall and Retrieval	Know what is meant by 'make a prediction' know that different types of matter behave in different ways. Know the stages of the water cycle - labelling	know that not all liquids freeze at 0 degrees. know that adding salt lowers the freezing point of a liquid. Explain evaporation and condensation	
Sequence of substantive knowledge throughout the lesson	I know that adding salt lowers the freezing point of a liquid. I know that not all liquids freeze at 0 degrees.	I know that the water cycle is continuous and has been in operation since the creation of the earth.	
Key Skills/disciplinary knowledge	• **asking relevant questions and using different types of scientific enquiries to answer them;** • **setting up simple practical enquiries, comparative and fair tests;** • **making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers** • **gathering, recording, classifying and presenting data in a variety of ways to help in answering questions;** • **recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables;** • **using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;**	• **asking relevant questions and using different types of scientific enquiries to answer them;** • **reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions;** • **using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions;** • **identifying differences, similarities or changes related to simple scientific ideas and processes**	

	• **identifying differences, similarities or changes related to simple scientific ideas and processes**		
Key Vocabulary	Solid, liquid, gas, state, change, freezing, evaporation, temperature, matter, air, ice, water, water vapor, cooled, cool, temperature, freeze, freezing point, solidify,	water cycle, evaporation, condense, condensation, precipitation, infiltration.	
Main teaching activity ***If the school has another short term planning format, this does not need to be included.***			
Scaffolding	Children to work in mixed ability groups and targeted questions to be used.		
Challenge			
Diversity Links			
Catholic Social Teaching Principles	Stewardship – All things are connected	Stewardship: All things are connected. An option for the poor and vulnerable: why are some parts of our world richer or poorer than others.	Stewardship – All things are connected
British Values			
Wider curriculum links			