

Advent 1
Science Year 1: Seasonal Changes (Physics)

Scripture Link: Genesis Chapter 1: 14

National Curriculum Objective

Enquiry Question: What are the names and features of the different seasons?

	Lesson 1	Lesson 2	Lesson 3
Learning intention for each lesson	To know and describe the 4 seasons.	To identify changes that happen in Autumn.	To describe conditions in Winter
Recall and Retrieval	From EYFS: talk about the changes they see each season.	That the seasons are called: Winter, Spring, Summer and Autumn Name some of the features/similarities and differences of each season	that the Autumn months are September, October and November. that Autumn leads into Winter. that the season after Summer is called Autumn.
Sequence of substantive knowledge throughout the lesson	I know that there are 4 seasons I know that the seasons are called: Winter, Spring, Summer and Autumn. I know that the seasons have different features and that some things are the same and some are different.	I know that the season after Summer is called Autumn. I know that Autumn leads into Winter. I know that the Autumn months are September, October and November. I know some of the seasonal features of Autumn.	I know that the season after Autumn is Winter. I know some of the seasonal features of Autumn. I know that the Winter months are December, January and February.
Key Skills/disciplinary knowledge	<ul style="list-style-type: none"> • Asking simple questions and recognising that they can be answered in different ways; • Using their observations and ideas to suggest answers to questions. 	<ul style="list-style-type: none"> • Asking simple questions and recognising that they can be answered in different ways; • Using their observations and ideas to suggest answers to questions. • gathering and recording data to help in answering questions. 	<ul style="list-style-type: none"> • Asking simple questions and recognising that they can be answered in different ways; • Using their observations and ideas to suggest answers to questions. • gathering and recording data to help in answering questions.
Key Vocabulary	Seasons (winter, summer, spring, autumn)	sun, sunrise, sunset, Day length, weather, leaves, colours, migration	Weather, icy, snow, freezing, hibernation
Main teaching activity	Children to sort the items of clothes with the seasons, children may have different thoughts, this will make good discussion.	Follow the steps on the screen. 1- Go outside in small groups to collect a different leaf for each person in the group. Teacher demonstration with	Slide 30- Let's grow our own crystals. Follow the instructions on the screen.

<p><i>If the school has another short term planning format, this does not need to be included.</i></p>	<p>Children to complete their cut and stick sheet sticking the clothes in the correct columns. Share as a class- show next slide. Slide 10- Share typical answers, did children have anything different? Why does our clothes change depending on the season? Children may talk about weather and temperature. Also they may mention activities they may do in each season.</p>	<p>spinach leaves also works really well. (Note- if you pick an evergreen leaf, you will see shades of green, if you have a deciduous you will see some yellow) 2- Break the leaves into tiny pieces and put into a jar or beaker. 3-Teacher/TA to add some surgical spirit to cover the leaves. 4- Using a spoon, mash the leaves into the surgical spirit- take care not to splash the liquid. They key is to mash the leaves thoroughly. NOTE- IF CHILDREN GET SURGICAL SPIRIT ON THEIR SKIN, RINSE UNDER COLD WATER IMMEDIATELY. 5- Cover the jar/beaker with cling film. Place the jar into a small bowl of hot water. (Ensure children do not touch the hot water) 6- Wait for 30-45 mins, stirring occasionally- the alcohol should be a very dark green- leave longer if needed)</p> <p>Whist children are waiting move to slide 21 Children to draw some dots of colour on filter paper with felt tip pens. Use a pipette and place a few drops of water on each dot. Wait and observe- what do children notice? Children will notice- some unexpected colours in the inks spread across the paper. It is important for children to know that these colours have been there all the time but we don't see them because they are hidden by the main colour of the pen. Slide 22- Children to PREDICT what colours are hiding in their leaf. Children to draw a picture of their leaf and colour it in with the colours they think they might find inside e.g. yellow/orange/red or a mixture. Children to use the STEM sentence to write under their leaf. Stick in LO and children to draw leaf and write sentence below. Stick WS assessment under that.</p> <p>Now go back to slide 20 (After 30-45 mins) Give children pre-cut strips of filter paper and place into the jar so it reaches the liquid (tape the top of the strip over the top of the jar. The liquid will travel up the filter paper and the colours will separate as the alcohol evaporates off the coffee filter. Leave</p>	<p>1- In the beaker, stir ½ cup of Epsom salt with ½ cup of very hot tap water for at least one minute. This creates a saturated solution. You may still see some salt at the bottom of the beaker. 2- Add a couple drops of food colouring if you want your crystals to be coloured. 3-Put the beaker in the fridge 4- Check on it in a few hours to see a beaker full of crystals. Pour off the remaining solution to examine them. Note- Epsom salt is another name for the chemical magnesium sulphate. The temperature of the water determines how much magnesium sulphate it can hold; it will dissolve more when it is hotter. Cooling the solution rapidly encourages fast crystal growth, since there is less room for the dissolved salt in the cooler, denser solution. As the solution cools, the magnesium sulphate atoms run into each other and join together in a crystal structure. Crystals grown this way will be small, thin, and numerous.</p> <p>Slide 31- Let's make snow. Recap how snow is formed. Follow instructions on the screen. 1. Pour 3 cups of baking soda in a bowl 2. Add ½ bottle of white hair conditioner gradually and stir. 3. As it starts clumping together use your hands to mix together. Note- Recap first- how is snow formed? There are many recipes for making snow- this one involves just 2 ingredients, others have shaving foam and some with cornflour. If you have time, it would be great to make different kinds and compare the snow samples you have made. This also works with equal amounts of cornflour and baking soda and adding water as you go to the correct consistency. You can also use nappies to make snow!</p> <p>(NOTE- You may decide you only have time to make either crystals or snow)</p>
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		<p>this for about an hour for full effect. Children can come and observe later in the day or the next day. Take a picture for working walls or floor books.</p> <p>Note- The leaves we used turn to a beautiful yellow in autumn. Each leaf collected will give a different colour.</p>	
Scaffolding	This can be done in small groups or kept together as a whole class activity.	In small groups.	In small groups.
Challenge	Children complete independently but can talk and discuss on their tables.	In small groups.	Children may need support with some scientific vocabulary. TA could work in a small group and scribe ideas if recording is a barrier
Diversity Links			
Catholic Social Teaching Principles	Stewardship – Learning from Gods creation	Stewardship – Learning from Gods creation	Stewardship – Learning from Gods creation
British Values			
Wider links			

Advent 1
Science: Year 1 Seasonal Changes (Physics)

	Lesson 4	Lesson 5	Lesson 6
Learning intention for each lesson	To describe the features of Spring	To describe features of Summer and the dangers of the sun.	To compare elements of the 4 seasons
Recall and Retrieval	some of the seasonal features of Autumn that the Winter months are December, January and February. Some of the seasonal features of Winter	that the Spring months are March, April, May. some of the seasonal features of Spring. that the season after Winter is Spring.	The names and some of the features of the 4 seasons.
Sequence of substantive knowledge throughout the lesson	I know that the season after Winter is Spring. I know some of the seasonal features of Spring. I know that the Spring months are March, April, May.	I know that the season after Spring is Summer. I know some of the seasonal features of Summer. I know that the Summer months are June, July and August.	I know that the seasons change because the earth tilts I know that the length of the days change I know that the amount of sunlight varies.
Key Skills/disciplinary knowledge	<ul style="list-style-type: none"> Asking simple questions and recognising that they can be answered in different ways; Using their observations and ideas to suggest answers to questions. gathering and recording data to help in answering questions. 	<ul style="list-style-type: none"> Asking simple questions and recognising that they can be answered in different ways; Using their observations and ideas to suggest answers to questions. gathering and recording data to help in answering questions. 	<ul style="list-style-type: none"> Asking simple questions and recognising that they can be answered in different ways; Using their observations and ideas to suggest answers to questions. gathering and recording data to help in answering questions.
Key Vocabulary	Weather, rain, shoots, buds, blossom,	Weather, hot, sun, shade, sunburn, danger, sunscreen, protection, thirsty, dehydrated, damage,	Earth tilt, compare, different, similar, seasons,
Main teaching activity <i>If the school has another short term planning format, this does not need to be included.</i>	Slide 38- Spring. Take children on a spring walk (If this is being taught in spring) If not use the extension part of the lesson. Give children the spring spotters guide from Nature Detectives. If you are teaching this unit in spring the take children on a spring walk. Go hunting around the school grounds and local environment for signs of spring. Use spotter sheets in resources to see what children can find this can include: blossom, frogspawn, butterflies, caterpillars,	Slide 50- Lets investigate the sun's rays. Thread some UV beads on a pipe cleaner and give to children (this will prevent them dropping everywhere) Take children outside briefly so they can see their beads change colour. Explain that the darker the colour the more sun UV rays. Go back inside- ask- why have the beads gone back to colourless? (No sun) Slide 51- Print this page and take outside. Take the children to the different areas of the school so they can look at what happens to their beads. Children to wear their	Slide 60- Children to use the cloud viewers (you may want to print and laminate and cut out the middle) children to hold up the cloud cards to the sky and try to identify the type of clouds they can see. Ask children to keep asking questions about the shapes and patterns of the clouds to identify the clouds in the sky. SK- Clouds- Show children examples of cirrus, cumulus and stratus clouds. Use the meaning of the names of each cloud to help children remember them. Discuss how cloud formations can indicate what kind of weather we might be about to

	<p>catkins, birds and birds nests, spring flowers such as snowdrop, daffodil, primrose, crocus, buds appearing on branches and shoots appearing through soil. Children could make a journey stick or a spring time bracelet using a strip of card with double sided tape and secure items to. This makes a good memory prompt about the things they have found along the way.</p> <p>Slide 39- What does spring feel like? Children use memory sticks and spotters guide to record all of the signs of spring. Remind children to label their pictures.</p>	<p>beads on their wrist (using pipe cleaner to attach) and cover with jumper sleeve until they get to the area, ask children to make a prediction about the colour using dark, quite dark, light, very light (record majority) then take them out and observe the colour (record the colour) agreed by majority of children. You could get children recording their own observations and change the focus to recording if required. Repeat in different areas.</p>	<p>experience. Would cirrus clouds indicate a heavy rainstorm? What do darker clouds often tell us? Cirrus- from the Latin 'cirrus' meaning lock or curl of hair Cumulus- 'cumulo' means heap or pile in Latin. Stratus- from the Latin prefix 'strato' meaning layer.</p> <p>Slide 61- Cloud in a glass. Lets observe how a cloud is made. Follow the instructions on the screen.</p> <ul style="list-style-type: none"> -Place ice into metal dish -Pour a small amount of warm water into the bottom of the glass. -Wait until the dish is really gold. Then place it on top of the glass. -Watch the inside carefully. You should see a 'cloud' form near the top of the glass. <p>In the real world, clouds form when warm, moist air, like that in your glass, is cooled (your ice). When it is cooled it condenses into tiny water droplets, which appear as clouds.</p> <p>Slide 62- I can make careful observations. Children to draw their cloud in their jar- labelling the different equipment used. Children can use the cloze procedure sentence STEM to write what they can see by looking closely. Take pictures for the floor book of children looking closely into the glass.</p> <p>I have observed that the (cloud) was formed when the (water vapour) cooled down and started to stick to (dirt, ice or salt). I observed a (add name of cloud from viewer) in the sky. EXT- children to draw the cloud they observed and label it.</p>
Scaffolding	Children may need support reading the scales.	Work as a whole class and take children's suggestions to record on class recording sheet.	Teacher modelling- ask children to support with the demonstration.
Challenge	Challenge: Make a rain gauge out of an old plastic water bottle.	Writing frame and STEM sentences available for LA	Cloze procedures and STEM sentences available.
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