



















★ Children's prior learning in this area	★ Cultural Capital Opportunities	★ Key vocabulary and glossary
<p><u>Reception</u></p> <p>Know that it is colder in Winter and warmer in Summer in the UK.</p> <p>Know that there are some places where it's warm all year round or cold all year round.</p> <p>Know that weather can be sunny, rainy, windy, snowy or stormy.</p> <p>Know that leaves fall off some trees in Autumn.</p> <p>Know that changes in weather mean people dress accordingly.</p> <p>Know that some animals hibernate in Winter.</p> <p>Know the difference in day and night.</p>	<p>Exploring natural environment.</p> <p>Know about Christopher Wren and Robert Hooke and their contributions to Science and technology – tipping bucket rain guage.</p>  <p>Christopher Wren (1632 – 1723)</p>  <p>Robert Hooke (1635 – 1703)</p>	<p>day</p> <p>night</p> <p>moon</p> <p>sun</p> <p>light</p> <p>dark</p> <p>seasons</p> <p>Spring</p> <p>Summer</p> <p>Autumn</p> <p>Winter</p> <p>weather</p> <p>sunny</p> <p>rainy</p> <p>windy</p> <p>snowy</p> <p>stormy</p> <p>foggy</p> <p>temperature</p> <p>length</p> <p>longer</p> <p>shorter</p> <p>leaves</p> <p>clothing names</p>

<p>Aut 1 Enquiry Question What are seasons?</p>	<p>Aut 1 and then ongoing throughout year Enquiry Questions What changes as the seasons change?</p>
<p>Working scientifically skill: present findings Enquiry type: Identifying, grouping and classifying</p>  	<p>Working scientifically skill: Observe closely; gather and record results Enquiry type: Observing over time</p>   
<p>Children will know: that the four seasons are Spring, Summer, Autumn and Winter.</p>  <p>Children will know: that the weather changes with the seasons. In the UK, it is usually colder and rainier in winter, and hotter and drier in the summer. The change in weather causes many other changes. Some examples are: numbers of minibeasts found outside; seed and plant growth; leaves on trees; and type of clothes worn by people.</p> <p>Children will know how to: present findings. They know that they can present what they have found out in different ways, such as drawing, writing, labelling and presenting ideas by telling an audience.</p> <p><i>Practise: Classify images to the correct season name in groups.</i></p> <p><i>Apply: Children work in groups to present what they have found out about a season. They will create a poster that represents a season. Scaffolds could be given if needed, e.g. a bare tree to draw on; a person to stick cut-out clothes on. They should include writing labels. These posters should later be stuck in the Seasonal Change Big Book.</i></p> <p><i>Deepen: Each group presents their poster to the class with the name of the season hidden. Can the class guess which season the poster is about? When the children guess, they should justify how they know. The presenting group should also add justification for why they included certain aspects rather than others.</i></p>	<p>Children will know: that scientists answer questions by observing closely. They will know that they can use their senses to learn about the world around them by seeing things, hearing things and feeling things.</p>  <p>Children will know: that we can observe a season is changing by observing the weather (seeing and feeling), wildlife (seeing and perhaps hearing), type of clothes worn by people (seeing) and changes in plants (seeing).</p> <p>Children will know how to: observe closely using appropriate senses. For safety, they will know that they do not use sense of touch without permission.</p> <p>Children will know how to: gather and record evidence by taking photos and videos. They will know how to access the camera on a tablet and change from photo to video camera. They will know which button to press to take a photo and which button to press to start and stop a video.</p> <p><i>Apply: Go on a welly walk around the school grounds, observing closely through the senses that the seasons are changing. e.g. seeing changes to plants across the seasons such as leaves changing colour and falling, seeing less minibeasts, seeing people wearing jumpers/raincoats, feeling that the air is cooler. They will gather evidence of the changing of the seasons by taking photos and videos to place in Big Book.</i></p> <p><i>Deepen: Review the evidence gathered on the screen in the classroom and answer the question: How do we know the season is changing? Orally answer and discuss, referring to evidence with stem sentences – The season is changing to _____ or The season is _____. I know because _____.</i></p> <p>Repeat this learning opportunity in other seasons throughout the year.</p> <p><i>Deepen 2: When additional welly walks have been completed, place images gathered side by side so that children can compare seasons and discuss similarities and differences.</i></p>

<p>BEGIN WEDNESDAY 1st NOVEMBER – END 30th November REPEAT MONDAY 3rd JUNE (check measurements from prior weekend) END 1st JULY</p> <p>Enquiry Question What is the weather like this month?</p>	<p>Aut 2 Enquiry Question Who are Christopher Wren and Robert Hooke?</p>
<p>Working scientifically skill: take measurements; gather and record results </p> <p>Enquiry type: observing over time </p>	<p>Working scientifically skill: present findings </p> <p>Enquiry type: Research using secondary sources </p>
<p>Children will know: that the weather changes as the seasons change. Scientists that study the weather are meteorologists and they measure and record the weather. They look for patterns to predict the weather. These are called weather forecasts. They will recognise symbols for weather, e.g. cloudy, rainy, foggy, sunny. Children will know: Meteorologists can measure and record rainfall. Rainfall is the measure of rain that has fallen in a certain amount of time. To measure rainfall over the month, the rain needs to be collected and measured in a rain gauge. Children will know how to: take measurements on a rain gauge by measuring how high the water level is. They will know how to use non-standard units, e.g. unifix cubes lined up against the rain gauge (flat-bottomed, clear bottle). <i>Practise: Read and record measurements on mock rain gauges. Questions to identify most rainfall/least rainfall.</i></p> <p>Children will know: Meteorologists can measure and record temperature. Temperature is a measure of how hot or cold a substance is. To measure temperature, you use a thermometer. The red line goes up the hotter it gets, and goes down the colder it gets. Children will know how to: Measure the temperature of the environment. To measure temperature, you make sure the red line is still and not moving. You find the top of the red line and read across to the scale to measure the temperature in degrees. (Standard units). For measuring in non-standard units, use the colour-coding that will be labelled with descriptors (dual coded) by the thermometer: Blue=very cold; green = cold; yellow=warm; orange=hot; red=very hot. Children should know how to read both the standard and non-standard units so that they can begin to develop an understanding of what the number means. <i>Practise: Read and record measurements on photographs of class colour-coded thermometer with red line drawn in for different temperatures. Read both standard and non-standard units. Questions to identify highest temperature/lowest temperature.</i></p> <p><i>Apply: Each day in November (Autumn month) and June (Summer month), have two children to be the the class meteorologists, choosing appropriate weather symbol, measuring and recording the rainfall and temperature in Big Book. Deepen: Class discussion Lissa says, "I think this rain gauge won't be very good for measuring rainfall over the whole month." Do you agree? Explain. (Possible thoughts – could topple over in the wind; overflow if it has been very rainy over a whole month and not checked and emptied everyday; water might dry out on a hot day).</i></p>	<p>Children will know: that whilst some questions in Science can be answered with investigations, some can't be investigated and so research is used. Sir Christopher Wren invented a tipping bucket system in 1662 (focus century) to solve the problems of the rain gauges at the time – overflowing when there was too much rain or drying out in hot weather, meaning measurements weren't accurate. Robert Hooke helped his friend, Wren to make it. We do not know what it looked like but through reading records about it, perhaps it looked like this:  Wren and Hooke's ideas for measuring rain helped later scientists build modern electronic rain gauges: The rain fills one bucket and when it is full it tips to the side like a seesaw, and the water fills a container below. The tipping activates a switch which makes a record of the amount of rainfall. The other bucket will then fill and tip, repeating the process. (26) Tipping Bucket Rain Gauge Interactive Experiment - YouTube</p> <p>Children will know how to: present findings by labelling a diagram.</p> <p><i>Practise: True/false about Wren, Hooke and invention.</i> <i>Apply: How does the bucket -tipping rain gauge work? Present findings by labelling a diagram of a rain gauge similar to video. Deepen: How have modern day tipping bucket rain gauges improved on Wren's design? N.B for teachers: Wren and Hooke were important architects building St Paul's Cathedral and a memorial following The Great Fire of London.</i></p>

<p>Aut 2 Enquiry Question How does day length change?</p>	<p>Sum 2 Enquiry Question How was the weather different in November and June?</p>
<p>Working scientifically skill Present findings</p>	<p>Working Scientifically skills Take measurements; Interpret results – answer the question Enquiry type Observing over time; pattern seeking</p>
<p>Children will know: know that the length of a day changes with the seasons.  In in the UK: In Summer, the days are longer. The mornings get lighter earlier because sunrise is earlier and the evenings stay lighter for longer because sunset is later. Day length is longest at mid-summer (about 16 hours). In Winter, the days are shorter. The mornings are darker for longer because sunrise is later and the evenings are darker earlier because sunset is earlier. Day length is shortest at mid-winter (about 8 hours). From Mid-Winter, the days gradually get longer. From Mid-Summer, the days gradually get shorter. <i>(Year 1 do not need to learn about the reasons why day length changes).</i></p> <p>Children will know how to: present findings by using appropriate scientific language to explain in sentences.</p> <p><i>Practise: Sort statements according to the season.</i></p> <p><i>Apply: Children have two pictures labelled ‘evening’. Children write which season each picture might be showing and explain why they think that.</i></p> <p><i>Deepen: Maria says, “In August, Dad lets me play in the garden after my dinner. In January, he says I must play inside after my dinner. It’s not fair! I want to play outside after dinner every day!” Use today’s Science knowledge to explain to Maria why her Dad does not let her play outside everyday.</i></p>	<p>Revisit: Children will know: that the four seasons are Spring, Summer, Autumn and Winter. The weather changes with the seasons.  They will revisit how the length of a day changes with the seasons. In the UK, it is usually colder and rainier in winter, and hotter and drier in the summer. The change in weather causes many other changes. Some examples are: numbers of minibeasts found outside; seed and plant growth; leaves on trees; and type of clothes worn by people. Children know that scientists that study the weather are called meteorologists, and know how to measure rainfall and temperature.</p> <p>Children will know how to: interpret their results to answer the question. They will know that scientists look at the information they have collected and use this as evidence to prove an answer is true. They will know how to compare the total rainfall of two months and understand that more rainfall/lower temperature can suggest a month is in Autumn/Winter and that less rainfall in June/higher temperature can prove a month is in Summer. They will know how to total each type of weather symbol and compare the totals across the two months.</p> <p><i>Practise: Compare the rainfall and temperature of two months in Dorset – e.g. October and July. Answer questions about rainfall, temperature and weather symbols. Then: stem sentences: The most common weather in October was _____ but in July it was _____. October had more/less rainfall than July. October’s hottest temperature was _____ and July’s hottest temperature was _____. October was hotter/colder than July. This is evidence that October is in the season of _____ and July is in the season of _____.</i></p> <p><i>Apply: Compare data collected in class about rainfall and temperature for November and June. Answer enquiry question.</i></p> <p><i>Deepen: Compare December data for UK and Africa. Why is the data different when it is the same month?</i></p>