










Netherton C of E Primary

Subject: Science – Seasonal Changes (1)

Year: 1	Big Question: What seasonal changes occur in autumn and winter and why?
Context and curricular links	<p>Prior units and knowledge: Understand the key features of the life cycle of a plant and an animal (Nursery – Plants & Animals, excluding humans); Explore the natural world around them (Reception – Seasonal changes); Describe what they see, hear and feel whilst outside (Reception – Seasonal changes); Understand the effect of changing seasons on the natural world around them (Reception – Seasonal changes).</p> <p>Future learning: Recognise that light from the sun can be dangerous and that there are ways to protect their eyes (Y3 - Light); Use the idea of the Earth’s rotation to explain day and night and the apparent movement of the Sun across the sky (Y5 - Earth and space); The seasons and the Earth’s tilt, day length at different times of year, in different hemispheres (KS3).</p>
School values, spirituality and school vision <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="font-size: small;">Our vision is for all children to believe</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  I am loved. </div> <div style="text-align: center;">  I am accepted. </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;">  I can grow. </div> <div style="text-align: center;">  I can do it. </div> </div> </div>	<p>Fairness: Each season having the same (fair) number of months.</p> <p>Acceptance: Accepting the changes that occur, knowing the seasons are a constant loop.</p> <p>Perseverance: Persevering through the cold, dark winter – hibernation.</p> <p>Respect: Respect for nature – admiring flowers without picking them.</p> <p>Forgiveness: Forgiving the weather for damage it can often cause – killing / damaging plants (farmers).</p> <p>Positivity: Looking for the positives in all seasons, despite everyone having a particular favourite.</p>
Key Milestones for the unit	<p>Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p> <p>Gather and record data to help in answering questions.</p>
Essential Information for Teachers	<p>Common Misconceptions:</p> <ul style="list-style-type: none"> • It always snows in winter • It is always sunny in the summer • There are only flowers in spring and summer • It rains most in the winter

<p>'Golden Nuggets' To be reviewed orally at the beginning of each lesson and accumulate across the unit</p>	
<p>'Golden Nugget' based on previous unit</p>	<p>What are the seasons? Spring, summer, autumn and winter.</p>
<p>'Golden Nugget' based on Lesson 1</p>	<p>How do weather and daylength change in autumn? The temperature begins to fall so the days get colder. The days get shorter and the nights get longer.</p>
<p>'Golden Nugget' based on Lesson 2</p>	<p>How can we observe and describe the weather in autumn? Rain gauges measure rainfall; weathervanes indicate the wind direction; thermometers measure the temperature; anemometer measure the wind speed. Generally, autumn weather can include: rain, wind, cool temperatures, some mist.</p>
<p>'Golden Nugget' based on Lesson 3</p>	<p>What signs of autumn are there? Signs of autumn: red leaves; brown leaves; yellow leaves; orange leaves; acorns; conker husks; conkers; seeds; pine cones; leaves on the ground that have fallen from the trees; blackberries; mushrooms and toadstools.</p>
<p>'Golden Nugget' based on Lesson 4</p>	<p>What happens in the transition from autumn to winter? Temperatures fall so we often have ice and frost, particularly in the morning; the days get much shorter (the shortest of the year) and the night get much longer; lots of trees (not all) lose their leaves, which fall to the ground.</p>
<p>'Golden Nugget' based on Lesson 5</p>	<p>How do animals adapt to winter? Animals either adapt, hibernate or migrate. Adapting involves changing their behaviour or body; hibernation involves finding a safe place to fall into a very deep sleep; and migration involves travelling to somewhere warmer where more food can be found.</p>

Week 1	Key Question for Lesson 1: How do weather and daylength change in autumn?	Key Vocabulary
<p>Key Milestone: Observe changes across the four seasons</p> <p>Secondary Milestone: Observe and describe weather associated with the seasons and how day length varies</p> <p>Useful Links:</p> <ul style="list-style-type: none"> - https://www.bbc.co.uk/bitesize/topics/zkvv4wx/articles/zcx3gk7 - https://www.bbc.co.uk/teach/class-clips-video/the-changing-seasons/zh4rkmn - https://explorify.uk/en/activities/whats-going-on/seasons <p>- Prior Unit Exit Ticket: Share the prior unit exit ticket with the children, discuss it, then allow them to complete it and stick it into their books.</p>		<ul style="list-style-type: none"> • seasons • autumn • winter • spring • summer • month • weather • event
<p> Speak clearly and confidently in a small group of known peers.</p>		Evaluation
<p>- What Are Seasons: <i>What do we already know about the seasons?</i> Share read and discuss questions (see PPT) as prompts to support their discussion.</p>		
<p>- The Four Seasons: Share read the names of the four seasons. Look at the months in each season. <i>What events happen in these months?</i> Link all these thoughts together and discuss what the weather is usually like at these times, e.g. Christmas is in December and December is in the winter. <i>What is the weather usually like (in the UK) at Christmas?</i></p>		
<p>- Which Season?: Play video clips (see resource folder) and talk about what they show. <i>Which season do you think this is?</i> Discuss their answers and encourage them to explain their reasoning.</p>		
<p> Include 'because' in their contribution to justify ideas.</p>		
<p>- Changing Seasons: Explain that over the next few lessons they will be learning about the seasons and the changes which happen across the seasons, especially how the weather changes. Explain the first season they will be thinking about is autumn. Watch a time-lapse video (see resource folder) and ask children to put their hand up when they think it is autumn. <i>Why do you think this point in the video is autumn? What clues are there?</i></p>		
<p> Use non-verbal signals to indicate agreement or disagreement.</p>		
<p>- Autumn: Share read information about (see PPT) and discuss some of the changes which happen in the autumn.</p>		

- **Day Length:** Consider Bonfire Night and discuss watching fireworks. *When do we usually have fireworks parties? Could we have a firework party in the summer?* Share read information (see PPT) and discuss how many hours of daylight there are in autumn and what happens to the nights.

- **Changes Around Us:** In their books, children record what the trees look like and the clothes that people wear in autumn.

Cross Curricular Links

English: Shared reading

'Exit Ticket'

Children tick the statements about autumn that they believe to be true:

Tick the statements that are true about autumn:

The temperature begins to fall so it gets colder.	<input type="checkbox"/>	Exit Ticket
The days get longer and the nights get shorter.	<input type="checkbox"/>	
Leaves on some trees change colour and fall off.	<input type="checkbox"/>	

Week 2	Key Question for Lesson 2: How can we observe and describe the weather in autumn?	Key Vocabulary
<p>Key Milestone: Observe and describe weather associated with the seasons and how day length varies</p> <p>Secondary Milestone: Gather and record data to help in answering questions</p> <p>Useful Links:</p> <ul style="list-style-type: none"> - https://www.youtube.com/watch?v=y39W3nDjtdU (video in resource folder, if link expires) - https://www.bbc.co.uk/programmes/p01152s1 - https://explorify.uk/en/activities/who-is/clare-nasir <p>- Prior Lesson Exit Ticket: Display the prior lesson's exit ticket with the children and review their responses to it.</p>		<ul style="list-style-type: none"> • observe • observations • data • record • weather • symbol • temperature • rainfall • wind direction • thermometer • rain gauge
<div style="display: flex; align-items: center;"> Speak clearly and confidently in a small group of known peers. </div>		

- **What is Weather?:** Talk partners discuss what children understand by the word 'weather'. Use prompt questions (see PPT) to help structure their discussion. Share read the information about weather, encouraging discussion and comments from the children. You may wish to watch today's weather report (depending on whether it is a typical autumn day): <https://www.itv.com/news/weather-forecast> or show the children a weather app – post something about weather watching at home on Class Dojo!

- **Weather Symbols:** Discuss how in different weather people do certain things to keep safe, things they wouldn't always do. As a class match the picture to the weather and then to the weather symbol.

- **Measuring the Weather:** Challenge children to think of sensible ways we could measure the weather, focusing particularly on rainfall, temperature and wind direction and discuss their suggestions.

- **Weather Station:** Watch the video <https://www.bbc.co.uk/programmes/p01152s1> showing children using tools to measure and record the weather.

- **Our Weather Station:** Introduce the different tools children will be using to measure the weather which will make up our weather station (see rain gauge craft sheet in resource folder). Explain how each tool measures the weather and the unit it will measure it in (for example, the rain gauge measures the rainfall in mm). Explain that we will use these tools to measure and record the weather for certain weeks during the year, across all four seasons – this links to the Seasonal Changes – Spring and Summer unit.

- **Weather Report:** Children use the differentiated 'Weather Report Activity Sheet' to record the weather for today. (Monitor the weather for the rest of that week using the weather station and record it on the weather chart each day). Use the 'Weather Symbols Prompt Sheet' to remind children of the weather symbols if needed.

- **Autumn Photos:** Look at the 'Autumn Display Photos' and discuss them. *Do they give us any clues about what the weather is like in Autumn?* Encourage children to think about autumn weather using the questions on the slide. Children to record simple predictions using weather symbols in their books, which can then be revisited after the observations are made.



Include 'because' in their contribution to justify ideas.

- **Autumn Weather:** **Following the recording of the weather over a week**, discuss the results. *What do you notice about the weather over the week? What has the temperature been? What has the weather been like? Who has been watching the weather report or checking their weather app? Did it match what actually happened? Were your predictions correct?*



Maintain eye contact when talking about a topic of interest.

• weathervane

Evaluation

Cross Curricular Links

English: Shared reading



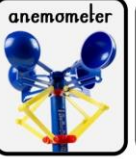





Maths: Measures – measuring and comparing temperatures and rainfall using ‘greater than’ and ‘less than’ or reading simple scales

Maths: Direction – reading directions from a weathervane


‘Exit Ticket’

Children match the equipment to what it measures:

Match the equipment to what it measures:

 rain gauge	 thermometer	 anemometer	 weathervane
 temperature	 rainfall	 wind direction	 wind speed

Exit Ticket

Week 3	Key Question for Lesson 3: What signs of autumn are there?	Key Vocabulary
	<p>Key Milestone: Observe changes across the four seasons.</p> <p>Useful Links:</p> <ul style="list-style-type: none">- https://www.youtube.com/watch?v=m4pjj70nC8E- https://explorify.uk/en/activities/whats-going-on/falling-into-place <p>Resources: pencils, clipboards, iPad for camera</p> <ul style="list-style-type: none">- Prior Lesson Exit Ticket: Display the prior lesson’s exit ticket with the children and review their responses to it. <p> Speak clearly and confidently in a small group of known peers.</p> <ul style="list-style-type: none">- Signs of Autumn: Look at the autumnal picture (see PPT). With a partner, children discuss any signs in the pictures which suggest it is autumn.- Out and About: Explain that today they will be going on a short local walk and doing their science learning outside. Remind children of the rules they must follow to keep them safe and go through them to ensure their understanding. Show the children a transparent plastic bottle (2 litres might be best) and explain that it is your ‘season discovery bottle’. The bottle is	<ul style="list-style-type: none">• observe• signs,• record• leaves• conkers• conker husks• acorns• seeds• pinecones• blackberries <p>Evaluation</p>

to be used to collect signs of autumn found on the ground. Remind the children not to pick leaves that are still attached to trees, and not to put any creatures in the bottle intentionally.

- **Look Closely:** Explain they will be looking out for signs of autumn- show them the Signs of Autumn Activity Sheet. Explain they will be working in pairs so will be sharing a clipboard, sheet and pencil. Alternatively, photos can be taken and the sheets can be completed upon your return, using the contents of the 'season discovery bottle'.

- **Autumn Walk:** Children go on a short local area walk, identifying and collecting signs of autumn. Take photos for books, Class Dojo and the Science display board.

- **Observations:** When back in the classroom, ask the children to feed back their observations – the contents of the 'season discovery bottle' can be used. *What different signs of autumn did we find?* If possible, share any photos taken with the whole class on the whiteboard. *How different might this be in winter / spring / summer? Why?*



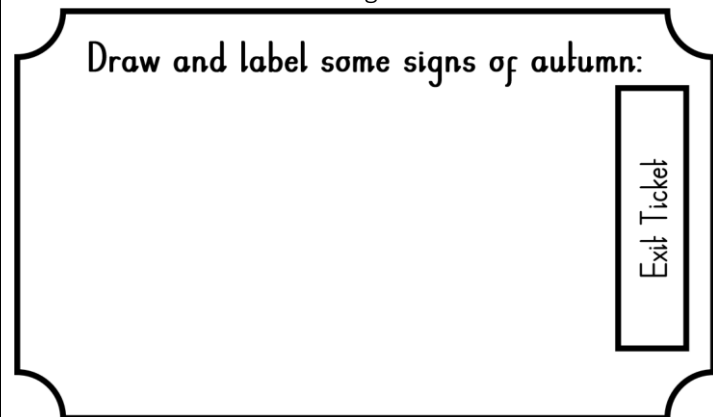
Speak clearly so they can be heard by peers and familiar adults.

Cross Curricular Links

English: Shared reading

'Exit Ticket'

Children draw and label the signs of autumn:



Week 4	Key Question for Lesson 4: What happens in the transition from autumn to winter?	Key Vocabulary
<p>Key Milestone: Observe and describe weather associated with the seasons and how day length varies. Secondary Milestone: Observe changes across the four seasons.</p>		<ul style="list-style-type: none"> • winter • day length • varies

Useful Links:

- <http://www.bbc.co.uk/education/clips/zrjd7ty>
- <https://explorify.uk/en/activities/odd-one-out/three-seasons>

- **Prior Lesson Exit Ticket:** Display the prior lesson's exit ticket with the children and review their responses to it.



Speak clearly and confidently in a small group of known peers.

- **The Four Seasons:** Recap the names of the four seasons. Then match the months with the season they are in. *Do you know any events which happen in these months?*

- **Changing Seasons:** Watch this video <http://www.bbc.co.uk/education/clips/zrjd7ty> and ask children to, this time, put their hand up when they think it is winter. Stop and discuss why children think it is winter and the changes they noticed as autumn turns to winter.



Include 'because' in their contribution to justify ideas.

- **Winter:** Share read (see PPT) about and discuss some of the changes which happen in winter. Explain some trees (evergreens) don't lose their leaves in winter and always stay green.

- **Day Length:** Look at the table. *What do you notice about the average number of hours daylight during the winter? How does this compare to the number of hours of daylight in the autumn?* If the days in the winter are shorter then encourage children to think about what happens to the nights.



Include 'because' in their contribution to justify ideas.

- **Changes Around Us:** Children use the differentiated 'Changes around Us Activity Sheet' as a guide to record what the trees look like and the clothes people wear in winter.

- **Winter Changes:** *What have you noticed about winter? How have we dealt with the weather? What have we been wearing? What has happened to some of the trees? How does it compare to autumn? What changes have we noticed?*



Speak clearly so they can be heard by peers and familiar adults.

- hours

Evaluation

Cross Curricular Links



English: Shared reading

'Exit Ticket'

Children tick the statements that are true about the transition between autumn and winter:

Tick the statements that are true about autumn turning to winter:

Temperatures fall so we often have ice and frost.	<input type="checkbox"/>	Exit Ticket
Days get much shorter and nights get much longer.	<input type="checkbox"/>	
Trees grow lots of leaves.	<input type="checkbox"/>	

Week 5	Key Question for Lesson 5: How do animals adapt to winter?	Key Vocabulary
<p>Key Milestone: Observe changes across the four seasons.</p> <p>Useful Links:</p> <ul style="list-style-type: none"> - https://www.youtube.com/watch?v=OhrhcsICrE8&list=PLufN2DYEVG_1oXfX255J7nNhODI4nGF9p&index=11 - https://www.youtube.com/watch?v=hMAS4SdPj-w&list=PLufN2DYEVG_1oXfX255J7nNhODI4nGF9p&index=8 - https://explorify.uk/en/activities/odd-one-out/winter-seeds <p>Resources: rulers, pencils, colouring pencils</p> <p>- Prior Lesson Exit Ticket: Display the prior lesson’s exit ticket with the children and review their responses to it.</p> <div style="display: flex; align-items: center; margin-bottom: 10px;">  Speak clearly and confidently in a small group of known peers. </div> <p>- Winter Weather: <i>What do we already know about the winter?</i> Talk partners discuss.</p> <p>- How People Adapt: Using prompt questions (see PPT) support children to think about the changes humans make in winter to adapt to the changes in the weather and conditions. Discuss how we do things differently in the winter to adapt to the weather, such as wearing warmer clothes, turning the heating on, having more lights on, and possibly eating different types of food. Also discuss what happens in the evenings (gets darker earlier than it does in the summer).</p> <div style="display: flex; align-items: center; margin-bottom: 10px;">  Take turns in a conversation with a peer. </div>		<ul style="list-style-type: none"> adapt adaptation cope survive hibernate hibernation migrate migration
		Evaluation

- **How Animals Adapt:** *How might animals adapt to winter?* Share ideas.

- **How Animals Survive Winter:** Share read about the different strategies that animals have to cope with the winter months. Look at examples of animals that use the strategies. *Can you think of any other animals that use the same strategies?*

- **What Animals Do in Winter:** Children complete the differentiated 'Animals in Winter Activity Sheet' (crop this for their books).

- **Animals in Winter Quiz:** Complete the quiz (see PPT), discussing the answers as you go.

Cross Curricular Links

English: Shared reading

'Exit Ticket'

Children match the key vocabulary to its meaning:

Match the key vocabulary to its meaning:

Travel to a warmer place where there is more food.	hibernate
Find a safe place, fall into a very deep sleep and don't eat.	adapt
Change their behaviour or bodies.	migrate

Exit Ticket