

ACET Junior Academies'

Scheme of Work for Science

Big Idea - Our World

Year 1 – Seasonal Changes



About this unit:

PoS - Seasonal Changes

This unit is an excellent introduction to science, as it covers a topic with which the students will be broadly familiar but has opportunities for scientific observation and measurement. It's a good way of introducing what a scientist is and does - they make detailed observations, collect data, and look for patterns. Ultimately, we're looking for evidence to explain things – even things with which we're already familiar.

In all these lessons the priority is what the students are doing now – collecting data and making observations for comparison later on. Greater depth students can begin to discuss what they think might happen in future months.

The class year book is crucial for this unit, as it is not until later in the year that the students will be able to make the comparisons necessary to conclude the work that is begun in this unit. The teacher will need to photograph the larger plants in particular – trees, bushes and hedges, so that the students can compare them later in the year. Also take general pictures showing as much of the surroundings as possible.

Students should be shown examples of tally charts, pictograms, and should learn how to fill them out, but are not expected to construct any themselves. GD students may want to do this, but the priority for most students is the concept of recording the data in an organised way.

Unit structure

This unit is structured around seven science enquiries:

1. What is different at different times of the year?
2. How do we know what season it is now?
3. How can we compare the seasons?
4. Can we get evidence like scientists?
5. Is it just the weather that's different?
6. How do we know what the weather is doing?
7. How long does it take for changes to happen?

Links to previous and future National Curriculum units

- Y1 Summer 2 – Plants
- Y2 – Habitats
- Y3 – Plants
- Y4 – Classification and keys
- Y5 – Lifecycles
- Y6 – Habitats

| Enquiry 1: What is different at different times of the year? | | | |
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| Links to previous learning | Scientific skills | Assessment criteria | Curricular links |
| <p>In EY, children should have developed an understanding of change.</p> <p>They should make comments and ask questions about the place they live or the natural world.</p> | <p>EA – Observation over time (a relatively long time)</p> <p>EA - Research</p> <p>Asking questions</p> <p>Making predictions</p> | <p>Can your children:</p> <ul style="list-style-type: none"> - Name the four seasons - Recognise and name/describe different types of weather <p><i>GD – discuss typical temperatures during the year.</i></p> | <p>Horizontal:</p> <p>Vertical:</p> <p>All years study living things and their habitats. An understanding of seasons underpins this work through to Y6.</p> |
| | <p>Key concepts:</p> <p>There are four seasons in the year, called spring, summer, autumn and winter.</p> <p>There are lots of different types of weather.</p> <p>Sometimes it is hot outside, sometimes it is cold.</p> | | |
| | <p>Key terms</p> <p>Seasons, spring, summer, autumn, winter, temperature</p> | | |
| <p>Suggested activities</p> <p>Find books with which the children are familiar. Look at the weather in the background. Is it snowy? Hot? Are there leaves on the trees? What colour are they? Group the different types of weather. Can you link the weather to different events? Starting school (what's it like now?), Christmas, Summer holidays.</p> <p>Make a timeline on the floor and identify the four seasons. Discuss what happens when, and put the books with pages open to illustrate the season.</p> <p>Cut out pictures – internet/magazines – showing different seasons, and get the children to make their own lines. They should include weather, significant events (Christmas, their birthday), trees, what animals are doing – particularly native animals like frogs,</p> <p><i>The timeline will be used again in lesson 5</i></p> | <p>Resources</p> <p>Books that refer to the seasons</p> <p>Pictures of UK habitats in different seasons – these should look like the local area, with similar landscapes and trees.</p> | <p>Useful links</p> | |

| Enquiry 2: How do we know what season it is now? | | | | |
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| Links to previous learning | Scientific skills | Assessment criteria | Curricular links | |
| <p>In EY, children should have developed an understanding of change. They should observe and explain why certain things may occur (e.g. leaves falling off trees). They should make comments and ask questions about the place they live or the natural world.</p> | <p>EA - Pattern seeking EA – observation over time (a relatively short time)</p> <p>Asking questions Making predictions</p> <p>Recording data</p> | <p>Can your children:</p> <ul style="list-style-type: none"> - Identify a season from pictures or a description - Tell you which features to look for in order to identify a season? <p><i>GD – the weather doesn't always fit the season – but that there is an overall pattern</i></p> | <p>Horizontal:</p> <p>Vertical: All years study living things and their habitats. An understanding of seasons underpins this work through to Y6.</p> | |
| | Key concepts: | | | |
| | <p>The weather is different in different seasons. Living things do different things in different seasons.</p> | | | |
| Key terms | | Common misconceptions | | |
| Seasons, spring, summer, autumn, winter, windy, sunny, cold, overcast, rainy, temperature | | | | |
| Suggested activities | | Resources | Useful links | |
| <p>Start your class year book!</p> <p>This lesson is about looking for the identifying features of a season, not just 'it's September', or 'it comes after summer' – although these are valid features that are <i>part</i> of the evidence we're looking for.</p> <p>Go outside. Observe, collect leaves, twigs etc (not living organisms), and take photos around the school site. Take hand lenses. Stay still for 1 minute and record all the things you can hear. Can you describe different areas today? Can you identify which areas might change?</p> <p>Are there areas of cut grass? Uncut grass? What might change? When? How? <i>Main priority is noticing what is happening NOW, and recording it. Then they can consider how it might change.</i></p> <p>Discuss with the students how you will record this data in the class year book, so that you can observe changes next term.</p> | | <p>Go outside</p> <p>Class year book</p> <p>Hand lenses</p> <p>Pictograms, tally charts and other forms of recording data as examples</p> | | |

| Enquiry 3: How can we compare the seasons? | | | |
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| Links to previous learning | Scientific skills | Assessment criteria | Curricular links |
| In EY, children should look closely at similarities, differences, patterns and change | EA – Pattern seeking EA – Observation over time (abstract – identifying features to do this) | Can your children: <ul style="list-style-type: none"> - Identify the features which are likely to change over the year - Predict how things will change over the year <i>GD – make links between the climatic changes and the environmental changes</i> | Horizontal: Vertical: All years study living things and their habitats. An understanding of seasons underpins this work through to Y6. |
| | Asking questions Making predictions Setting up tests Observing and measuring | | |
| | Key concepts: Scientists think of questions that they want answers to* – they always look for proof. Scientists try and think of what the answer might be before trying to find proof. | | |
| Key terms | | Common misconceptions | |
| Seasons, spring, summer, autumn, winter, windy, sunny, cold, overcast, rainy, temperature | | | |
| Suggested activities | | Resources | Useful links |
| More for your class year book. It's autumn now – document what is happening in autumn. Use things from last week, draw pictures, write descriptions. Set it out in such a way that comparative entries can be made in winter, spring and summer. <i>This could be a good opportunity to make a bug hotel, or other wildlife shelter that you can document during the year.</i> * Possible questions – are there more trees with leaves on in summer? Are the leaves bigger in Autumn than in spring? Are woodlice easier to find in autumn than in spring? Are woodlice bigger in autumn than in spring? | | Go outside Resources for making a bug hotel/wildlife shelter Hand lenses | https://www.wildlifetrusts.org/actions/how-build-bug-mansion https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/build-a-bug-hotel/ |

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| Are there more flowers to see in summer than there are in autumn? Are there more clouds in the sky in autumn than in summer? | | |
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| Enquiry 4: Can we get evidence like scientists? | | | |
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| Links to previous learning | Scientific skills | Assessment criteria | Curricular links |
| In EY, children should look closely at similarities, differences, patterns and change | EA – Identifying, grouping and measuring Asking questions Making predictions Observing and measuring – using measuring equipment | Can your children: - Measure length and width - Weigh <i>GD – gather data in a methodical way with an awareness that they will need to take measurements for comparison in the future</i> | Horizontal: Maths Vertical: All years study living things and their habitats. An understanding of seasons underpins this work through to Y6. |
| | Key concepts: | | |
| | Scientists take measurements, so that we can use numbers to compare how things change. When we take measurements, we need to be careful and try and get it exactly right. | | |
| Key terms | | Common misconceptions | |
| Seasons, spring, summer, autumn, winter, windy, sunny, cold, overcast, rainy, temperature | | | |
| Suggested activities | | Resources | Useful links |
| <p>Go outside. Look for woodlice and/or worms.</p> <p>Count how many you get from the different places. Do you think they are the same size all year round? Are they bigger in spring or summer? Are they bigger in different areas? Gather organisms from specific areas, and record their mass (if possible), length and width. Get the students to consider how well they are doing this – is it reliable data – will they be able to measure them in exactly the same way in the summer? What questions do they want to ask? – do they want to find out whether anything is different over the following seasons?</p> <p>Students could collect leaves or other objects instead – as long as they are currently living, so that they will have something to compare with later in the year. You could compare how much easier it is to measure a leaf than a wiggly worm – but that a scientist needs to find a way of getting evidence, and would have to measure the worm somehow!</p> | | Rulers – 30cm or smaller Scales Hand lenses | |

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| Can they draw the organisms? What features do they notice about them? | | |
| Priority in this lesson is to notice facts and collect data, so that they can compare it later on. | | |

Enquiry 5: Is it just the weather that's different?

| Links to previous learning | Scientific skills | Assessment criteria | Curricular links |
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| In EY, children should look closely at similarities, differences, patterns and change. | EA – Pattern seeking | Can your children: <ul style="list-style-type: none"> - Tell you that days are longer and hotter in the summer - Tell you that days are shorter and colder in the winter | Horizontal: Vertical: All years study living things and their habitats. An understanding of seasons underpins this work through to Y6. |
| | Asking questions Interpreting & communicating data | | |
| | Key concepts: Day length changes with the seasons. | | |

| Key terms | Common misconceptions |
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| Seasons, spring, summer, autumn, winter, day, night, light, dark | |
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| Suggested activities | Resources | Useful links |
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| <p>Discuss what time the day starts and finishes. Is it light when you get to school? Is it light when you get home? When you go to bed?</p> <p>Telling the time with seasons – at Christmas, when you go to bed, it's already dark. It's dark in the mornings when you wake up. In the summer, you have to go to bed when it's still light, and the light wakes you up in the mornings.</p> <p>They could draw/write about/tell you about bedtime in summer compared to bedtime in winter.</p> <p>Pictograms to show the different day lengths.</p> <p>Return to the timeline from L1 and add the information in. Do any of the books or pictures you found then show a difference in day length?</p> <p>Use this lesson to reinforce all the content so far.</p> | <p>Day length pictograms</p> <p>Timeline from lesson 1</p> | |
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| Enquiry 6: How do we know what the weather is doing? | | | |
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| Links to previous learning | Scientific skills | Assessment criteria | Curricular links |
| In EY, children should look closely at similarities, differences, patterns and change. | EA – Pattern seeking | Can your children: <ul style="list-style-type: none"> - Add data in to a table that they are given - Read scales | Horizontal: Maths D&T Vertical: Taking measurements & recording data |
| | Asking questions Making predictions Observing and measuring Recording data | | |
| | Key concepts: Scientists take measurements, so that we can use numbers to compare how things change. Weather reports are made by scientists. | | |
| Key terms | | Common misconceptions | |
| Seasons, Spring, Summer, Autumn, Winter, Rain, Wind | | | |
| Suggested activities | | Resources | Useful links |
| <p>Look at TV weather reports. Discuss how they can be useful. How do the scientists know about the weather?</p> <p>Collect data over the week. Make a rain gauge. Wind gauge. Temperatures – morning, mid-day and evening. Make a record in the Class Year book.</p> <p>Students should practise adding data in to simple tables.</p> <p><i>Greater Depth – the TV weather is a prediction, made by scientists. They may want to discuss how scientists make predictions about the weather. They need to collect a wide range of data, look at what the weather has done previously, etc. What observations do they think that scientists need to make?</i></p> | | Resources for making a wind or rain gauge | https://www.metoffice.gov.uk/weather/learn-about/met-office-for-schools/other-content/other-resources/weather-station/index |

| Enquiry 7: How long does it take for changes to happen? | | | |
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| Links to previous learning | Scientific skills | Assessment criteria | Curricular links |
| In EY, children should look closely at similarities, differences, patterns and change | EA – Observation over time (abstract – collecting data to do this) | Can your children: <ul style="list-style-type: none"> - Tell you that plants will grow from bulbs - Predict which season the bulbs are most likely to grow in <i>GD – link the bulbs dormancy to the unfavourable conditions in winter</i> | Horizontal: Vertical: Plants will be studied in Summer 1, and again in Y3 & Y5. |
| | Asking questions Making predictions | | |
| | Key concepts: Bulbs will grow into plants. They will do this in spring or summer, when it is warmest and there is most light. | | |
| Key terms | | Common misconceptions | |
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| Suggested activities | | Resources | Useful links |
| Planting bulbs Plant some Spring flowering bulbs outside. Students should look at the pictures, and at the planting instructions. When do you expect the bulbs to start growing? When will they get their flowers? What will happen to them in winter? Will they die? Disappear? | | Bulbs Potting compost/soil Containers Trowels Labels | |