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| **How do deciduous trees change?** |
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| Describing how a deciduous tree changes over a year |
| **Stay safe** |
| Whether you are a scientist researching a new medicine or an engineer solving climate change, safety always comes first. An adult must always be around and supervising when doing this activity. You are responsible for: • ensuring that any equipment used for this activity is in good working condition• behaving sensibly and following any safety instructions so as not to hurt or injure yourself or others  Please note that in the absence of any negligence or other breach of duty by us, this activity is carried out at your own risk. It is important to take extra care at the stages marked with this symbol: ⚠ |
| **Subject(s):** Science**Approx time:** 30 minutes introduction  then ongoing weekly work by learners |  | **Key words / Topics:** * Blossom
* Deciduous
* Leaf / leaves
* Seasons (Spring/Summer/Autumn/Winter)
* Tree
* Bark
* Branch
* Trunk
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| **Suggested learning outcomes** |
| * To be able to describe how a deciduous tree changes with the seasons.
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| **Introduction** |
| This is one of a set of resources developed to support the teaching of the primary national curriculum. They are designed to support the delivery of key topics within maths and science. In folklore or Greek mythology, a dryad is a nymph that inhabits a tree or wood. In this activity, which needs to be carried out over a school year, learners will record the changes in a deciduous tree within the school grounds. Trees and their leaves are an important part of our natural environment. We can use our science knowledge to better understand them and hence the environment around us! |
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| **Purpose of this activity** |
| In this activity learners will be shown how a deciduous tree changes across the seasons, then either as a class or individually recording how an individual tree changes over the school year.This activity could be introduced as part of a main lesson activity at the start of the school year. It could then be followed up on a weekly (or periodic) basis over the year, with learners building up a record of how identified tree within the school grounds changes over time. This could be used either to create a book of or a classroom display.It could be used as one of several activities within a wider scheme of learning focussing on the use of science to understand the natural environment. |
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| **Activity** ⚠ |  | **Teacher notes** |
| **Deciduous Trees (10 minutes)**Presentation by the teacher explaining what a deciduous tree is and how it changes over the year, with Q&A as appropriate.**Our Tree Diary (20 minutes)**Teacher to identify the tree that will be used as a focus (or trees, if different trees are being monitored by different learner groups). For continuity it is advantageous to have a set position from which the observations are made (or pictures are taken). The teacher should model completion of the tree diary for the first week. Depending upon the capability of the learners, the diary could involve digital pictures, drawings or prose descriptions.Subsequent weeks will be completed by the allocated learners or groups (reminders will probably be needed!). |  | This is a long-term activity which can run for the duration of the school year. Following an initial introduction, individual learners or table groupings could be responsible for completing the diary on a weekly basis. If carried out by individuals, different learners could be allocated the responsibility each week, progressing through the class register. An appropriate tree within the school grounds needs to be identified. Ideally a tree visible from the classroom would be used. As applicable by local requirements, risk assessments may need to be carried out if the learners need to go outside the school building to carry out this activity. In either case for continuity it is advantageous to have a set position from which the picture or observations are made.**Deciduous Trees**Use the presentation to introduce deciduous trees and their seasonal changes. The other type of tree is an evergreen tree, which keeps its needles (or pines) all year. Deciduous is the term used in the national curriculum, but some learners may find hardwood easier. This term also fits in well with understanding needed in Key Stage 3 design and technology. With relation to seasonal changes, the sequence shown represents progression over the school year, assuming that this activity starts in the Autumn term. Autumn leaves turn red and brown and fall, Winter has bare branches, Spring has blossoms and Summer green leaves.**Our Tree Diary**The outcome could be assembled into a diary or log book, or form the basis for a display.  |
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| **Differentiation** |  |  |
| **Basic** |  | **Extension** |
| Learners could take a picture of the tree using a digital camera, rather than providing a written description. |  | Use prose to describe the tree and annotate the important features and changes on images of the tree and associated wildlife and birds. Produce comparisons with other local trees (particularly evergreen trees). |
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| **Resources** |  | **Required files** icon-docicon-pdficon-ppt |
| * Projector
* Copies of the ‘How deciduous trees change’ handout
* Digital cameras (if required) with access to suitable printing facilities
 |  |  How do deciduous trees change presentationicon-pdf How do deciduous trees change worksheet |
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| **Additional websites** |  |  |
| * **Bitesize – film clip** explaining the difference between deciduous and evergreen trees and their seasonal cycles**:** <https://www.bbc.co.uk/teach/class-clips-video/science-ks1-ks2-ivys-plant-workshop-are-plants-the-same-all-year-round/zdvct39>
* **Quiz – types of tree:** a multichoice quiz of types of tree and how they are affected by the seasons. <https://www.educationquizzes.com/ks1/science/plants-tree-growth/>
* **Identifying different types of trees:** (note - requires a Pinterest login) a printable sort card activity **for deciduous and evergreen trees** <https://www.pinterest.co.uk/pin/35043703330694260/> and a poster showing different trees and their leaves <https://www.pinterest.co.uk/pin/426223552229845667/>.
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| **Related activities (to build a full lesson)** |  |  |
| **Starters** (Options) * Discuss the importance of trees to the natural environment.
* Identify the parts of a tree (trunk, branches, leaves, bark, roots)
 | **Extension** (Options)* Identify different types of deciduous and evergreen trees.
* ACTIVITY – Fashionable forests!
* ACTIVITY – Put a ring on it
* ACTIVITY – Leaf it

**Plenary*** Q&A on the changes in the tree.
* Creation of an assembled diary or display of the outcomes.
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| **The Engineering Context** film |
| * Environmental engineers are tasked with improving the quality of the natural environment around them. The more they understand about this, the better they can do their jobs.
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| **Curriculum links**  |
| **England: National Curriculum**ScienceKS1 Year 1 Plants:* identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.
 | **Northern Ireland Curriculum**KS1 Strand 3: My EnvironmentScience & Technology:* Changes in the local natural environment, including how they can affect living things

KS2 Strand 3: My Environment:Science & Technology* Similarities and differences among animals and among plants
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| **Scotland: Curriculum for Excellence**SciencesPlanet Earth - Biodiversity and Interdependence:* SCN0-01a
* SCN1-01a
* SCN2-01a
 | **Wales: National Curriculum** Foundation – Knowledge and understanding of the world – Myself and other living beings:* identify some animals and plants that live in the outdoor environment
* identify the effects the different seasons have on some animals and plants
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| **Assessment opportunities** |
| * Oral feedback and response to questions from the teacher about characteristics of the different types of tree.
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