

LESSON PLAN

CREATED FOR TEACHERS BY EDEN'S EDUCATION TEAM

Growing Wildflowers- From Seed to Seeds

Overview:

During this set of science-focused sessions, pupils will start by learning about seeds. They will compare different types of seeds and discuss what they need in order to germinate and grow. They will then learn about the importance of wildflowers and be given the opportunity to sow wildflower seeds somewhere around your school. Pupils will observe these plants as they grow, providing context to their learning about the stages of growth for flowering plants. Finally, pupils will get the chance to share the product of their efforts with the wider community.

Who: Year 1-2 Science

How long: An initial 2-hour session, followed by frequent 30-minute follow-up sessions.

Curriculum links:

This lesson addresses many of the KS1 Science objectives, outlined in the National Curriculum, relating to Plants, Living things and their Habitats and Seasonal Change. These are:

Year 1- Plants:

- Identify and name a variety of common wild and garden plants.
- Identify and describe the basic structure of a variety of common flowering plants.

Year 1- Seasonal Changes:

- Observe changes across the four seasons.

Year 2- Living things and their habitats:

- Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of plants.
- Identify and name a variety of plants in their habitats.

Year 2- Plants

- Observe and describe how seeds grow into mature plants.
- Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.

Students will:

This lesson enables students to:

- Compare and contrast different types of seeds.
- Understand the requirements of plants for germination, growth and survival.
- Understand the importance of wildflowers within a habitat.
- Observe the growth of wildflowers that they have planted.
- Identify the different parts (seeds, roots, stem, leaves, flowers, petals) of flowering plants.
- Describe changes in plants associated with the seasons.

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Resources

For this lesson, you will need:

- 'Growing Wildflowers- From Seed to Seeds' Slideshow (see ppt.)
- Access to a free [Explorify](#) account.
- A selection of real seeds for groups to study/ pictures of different seeds (see downloads).
- Photographs of wildflowers (that pupils will sow) for display wall.
- What do plants need? Sorting cards
- Bloom or Doom- The Seedling Game resources:
 - 1 x large Germination Cards A4 (see the link in the lesson plan)
 - 5 x sets of ribbons of different colours (at least one ribbon per child). Each set should match the themes of the germination cards.
 - 5 baskets or bags
 - 1 x chicken hat / bird mask
 - An open space
- Resources for sowing wildflowers. This will include:
 - Wildflower seeds.
 - Gardening equipment (rakes, gloves, trowels, watering cans)

Getting Started [30 minutes]

Begin by showing your pupils a 'zoomed in' image of a seed (excellent examples of these can be found on the science resources website [Explorify](#)- This website contains hundreds of free-to-use resources but does require you to create an account). Two suggested images that you could use are:

1. Brown shapes: <https://explorify.uk/en/activities/zoom-in-zoom-out/brown-shapes> and,
2. Red and bumpy: <https://explorify.uk/en/activities/zoom-in-zoom-out/red-and-bumpy>

Begin by showing the closest view of the image. Ask: What do you think the image is? Why?

What does the image remind you of and why? After hearing some of the pupils' initial thoughts, slowly start zooming out. As you do so, ask: Can you describe the colours, shapes and textures? What do you think the image is now – have you changed your minds?

Continue to zoom out until the children recognise what the picture is of. Make sure they realise the original image was a seed!

Ask the pupils, what is a seed? Why do plants have them? Establish that a seed is the part of the plant that can grow into a new plant.

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Ask: Do all seeds look the same? Explain to the children that they are going to have the opportunity to look at lots of different seeds and compare ways in which they are similar and ways in which they are different:

Activity 1

If possible, provide groups of children with a selection of seeds and some magnifying glasses that they can use to look at them closely. Ask them to compare similarities and differences in terms of their size, shape, colour and texture. Alternatively, print sets of seed pictures (see attachment) for each group to compare.

Allow the children five minutes to look carefully at the seeds and talk about them in their groups. After this discussion time, revisit the original question: Do all seeds look the same? What similarities did you notice? What differences did you notice? Why do you think seeds all look so different? Take some feedback from the class.

Teacher note: *The size and shape of a seed usually depends on the way that seed is distributed. Some seeds roll, some seeds float, some seeds hook on to animals' fur, some seeds are eaten and some seeds fly on the wind. Their size and shape will help them to be distributed most effectively.*

Extension Activity: Depending on the time of year, pupils could go on a 'seed hunt' around the school grounds. They should look at the different plants and trees growing around the school and see how many different examples of seeds they can find. They could record this by taking photographs, drawing sketches or even collecting samples (**this may need to be supervised by an adult to ensure the plants are not damaged**). You may be surprised at how many different seeds they can find!

Main Activity [1 hour]

Explain to the pupils that, in their groups, they will be sowing wildflowers somewhere in their school grounds. Depending on the wildflower seeds they will sow, show them some photographs of what these flowers will look like once they have grown. Ask the children to look carefully at the observable features of each of these flowers e.g. the colour, shape and number of petals, the size and shape of the leaves. This will help them to identify these plants when they have grown. You could display these pictures (along with the names of the wildflowers) on a science display wall. Each picture should be surrounded with quotes, from the pupils, about their appearance.

But why wildflowers?

Explain to the class, that you have chosen to plant wildflowers - over cultivated varieties - because, sadly, over the past one hundred years, nearly all (97%) of British wildflower meadows have been destroyed. However, wildflowers are really important! Explain that there are many advantages to planting wildflowers. These include:

- Connecting people with nature and the outside world.
- Changing unused spaces into bright, colourful places.
- Increasing the amount of different plants and animals in one place.
- Help pollinators (such as bees) that are currently under threat.



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Mini-beasts, such as bees, butterflies, moths, beetles and wasps play an important role in their habitats and also help us grow the food that we eat- nearly three quarters of the plants we grow for food rely on pollinators in some way! However, pollinators are under threat and this will have a significant effect on their habitats and on the food we are able to grow and eat. But don't worry, we can help. We can create special safe spaces for these mini-beasts by planting wildflowers!

Explain that before they can sow their wildflowers, they need to think carefully about what plants need to grow. This will help each group to choose a good spot to sow their seeds.

Activity 2

Split the class into smaller groups and give each group a set of picture cards (see downloads). Some pictures show things that plants need in order to germinate and grow and others show things that they don't need. Ask each group to sort their cards into two piles (things plants need/ things plants don't need). After an appropriate amount of time, take feedback from the groups and clarify anything that has been controversial.

Teacher note: *Plants need the following things to germinate and grow:*

- **Warmth** – like people, plants need to be the right temperature to grow – not too hot, not too cold.
- **Light** - Is absorbed through the plants leaves. Plants use energy from the sun to make food.
- **Water** - Plants need water just like people need water. Plants use sunlight and water to produce food inside their leaves. Water is taken into the plant by being absorbed by its roots.
- **Air** - Is taken in through the plants' leaves. Plants and animals constantly exchange air with one another. Animals breathe in oxygen and breathe out carbon dioxide. Meanwhile, plants use carbon dioxide and produce oxygen.
- **Soil**- contains nutrients that are essential for plant growth – but not food!

Pupils could also play our ['Bloom or Doom- The Seedling Game'](#) game (see main activity)

After establishing what plants need, each group should be allowed to explore the outside areas around your school and pick a spot that they think will be suitable for sowing their flowers. They should be encouraged to pick a spot that provides the wildflowers with the things they will need to grow.

Having chosen an area to sow their seeds, groups can start preparing the soil ready to sow their seeds. For advice on preparing spaces for planting, visit Eden's ['How to grow wildflowers in your school'](#) page.

As the video on our website explains, depending on whether each area has been previously weeded, children can either sow their seeds after raking and digging the soil or should weed their area and then wait for a couple of weeks to weed it again and then rake and dig the soil before sowing their seeds.

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After sowing their seeds pupils should capture the first stage of plant growth. This should be done using the tracking sheet provided (see downloads). A photo diary of this growth would also be a nice way to record the development of these flowers and may also provide an opportunity to capture changes over the seasons (by looking at features like the weather at the time of each photo and at the clothes the children are wearing in each picture).

Pupils could make signs, to stick in their spot, showing pictures of the wildflowers that they have sown (so they know what they expect to see as they grow) and displaying the names of the children who planted them. This will help them to remember which spot was theirs when they revisit their wildflowers throughout their growth.

Checking in [30 minutes per time]

Pupils should revisit their wildflower spots numerous times throughout the season and throughout the year. Each time they visit, they should record the growth of the flowers on their tracking sheets and photograph themselves next to them. They could also use wildflower identification sheets to name the flowers that they see growing.

What next? From Seed to Seeds!

After the pupils have observed their wildflowers complete their life-cycle, they can harvest the seeds and share them either within your school community, or with appropriate groups in the wider community, for them to use later in the year. This is a great lesson in sustainability and actually quite easy to do! When the seed heads have dried and turned brown, you can either snip them off with a pair of scissors or shake the seeds from the heads into an envelope. Store the envelope in a cool, dry place, such as in an air tight container in your fridge.

Pupils could even design seed packets to use when sharing these seeds:

