LEARN ABOUT PLANTING

Plants go through several stages of growth – most of these we don't get to witness, because they happen underground. Learn about the life cycle of a plant by planting your own. In this activity, you will use a clear plastic CD case to observe the different stages of growth of a plant.

YOU WILL NEED:

- A clear plastic CD case
- Seeds - for example, cress, grass or bean seeds
- Potting soil
- Water
- An elastic band

WHAT TO DO:

1) Prep your CD case. If needed, remove the cover and film so all that is left is the clear plastic casing. Make sure to give your CD case a wipe with a wet paper towel so it is clean.
2) Place a small amount of soil into a bowl and add a small amount of water until the soil is moist. Make sure you don't overwater your soil – it just needs to be damp to touch.
3) Place your CD open on a flat surface. Add a small amount of soil to the bottom of the CD case – you should put a layer that is just thicker than the CD case, and fill it about halfway up.

4) Place your seeds in the centre of the soil. If you are using large seeds, such as beans, place two with plenty of space between them. For cress seeds, you can use more.
5) Close the CD case and use an elastic band to secure it shut. Use a marker pen to write the planting date and your name on the CD case.
6) Place the CD case on a sunny windowsill and wait for your plant to grow! Depending on the type of plant, you should start to see growth within a week or two. If the soil begins to look dry, open the case and use a spray bottle to lightly water the plant.
7) Take photos or create drawings of your plant every day, and capture the different stages of growth. You can watch as your seeds germinate, root and shoot! Make sure to label your pictures and drawings.
8) Continue to monitor the growth of your plant. Once the seed has germinated and produced a small plant sprout, you can remove it from the case and place it in some soil in a small pot. Tend to the plant throughout the year, adjusting the size of its pot as it grows and making note of the different parts of the life cycle, such as flowering or growing fruits or vegetables. If you've used a vegetable seed, such as a bean, looking after it through the year will mean that it will produce beans for you to eat!

Did you know? Trees not only take in carbon, but also store it, so the UK Government has committed to increase tree planting. Deforestation is a double threat, in that it releases the carbon that has been stored whilst also removing a forest's ability to take carbon in from the atmosphere.

PITFALL TRAPS

Forests are perfect homes for insects. The bark, leaves and branches create lots of habitats, while the leaf litter and soil provides a great food supply. Certain areas of forests, and of other habitats, will have more insects than others. As insects are so small, we have to survey them in very specific ways. We can do this using pitfall traps. In this activity, you will build your own pitfall traps and survey the insects in your local area or woodland.

YOU WILL NEED:

- Clean yoghurt pot
- Hand trowel
- Magnifying glass
- Flat soft ground

WHAT TO DO:

1) Choose some flat ground in your outdoor space. You will get better results if your spot is near plants or vegetation.

2) Use a hand trowel to dig a hole a little bit bigger than the size of your pot.

3) Place your pot in the hole and make sure that the top edges of the pot are level with the ground. Do this on a dry day otherwise the rain will fill it!

4) Fill the gaps around the pot with some of the soil that you removed. Keep the remaining soil to one side to refill the hole again after you have completed your pitfall trap experiment a few hours later, or overnight.

5) Put some leaves and small twigs at the bottom of your pot to give any mini-beasts somewhere to shelter if they fall inside.

6) Revisit your pot a few hours later or the following day. See what minibeasts you have gathered! You could use an online identification key, an app or an ID chart. Avoid handling any of the insects, and instead choose to survey them from inside the pot. If you have lots of insects, you could use a white tray or large dish and gently tip the minibeasts into it to survey. Write down everything you have found.

7) Once you have finished identifying your insects, gently place them back in the area that they were found. Fill in the hole with the remaining soil.

8) You could repeat your pitfall trap in several areas to see what you can find in different places. Make sure to complete all of your surveys at the same time so it is a fair test!

Did you know? In the last ten years, the rate of ice melt in Antarctica has tripled.

DESIGN YOUR OWN TINY FOREST

A Tiny Forest is a dense, fast-growing, native woodland that is roughly the size of a tennis court. These miniature forests are not only an attractive location for wildlife, but for people as well, and can provide a range of benefits (ecosystem services) in the fight against climate change. Each forest uses native tree species, planting over 600 individual trees in a small area to maximise the benefit they provide. In this activity, why not have a go at designing your own Tiny Forest?

YOU WILL NEED:

- Pen
- Paper
- Map

WHAT TO DO:

1) Think about your local area, where would be a good place for a tiny forest? A tiny forest is about the size of a tennis court, so you will need somewhere with this much space. You will also probably want to have it somewhere people can access easily, and where it isn't replacing another really important habitat. You could use an online or OS map to look around your local area and find somewhere with a good space for it.

2) Begin thinking about the design of your forest and start to draw out your design on paper. Use the questions below to help you think about how it will look:

- What shape do you want your Tiny Forest to be?
- Where would the paths go?
- Would you have an outdoor classroom?
- Where would this fit?
- What other features would your forest have? Think about things like benches, ponds, picnic tables and bins.

3) What would you put in your forest? Think about the types of trees that grow near you, and other native plant species. Could you also add other spaces for wildlife, such as bird boxes, insect hotels and other wildlife friendly ideas? You could write a list, or add these into your design drawing.

4) Who would use your tiny forest? Is it for school children, or other groups of people, like a hospital garden or for support groups to use? Is it for people who live in the local area who want to connect with wildlife, or is it for nature entirely? Maybe it is all designed around different habitats that animals like to use? Have fun with your design, draw and write and change it however you like.

Did you know? Over half (56%) of UK species assessed have declined in population size since 1970.

MONITORING PROJECT

A Tiny Forest not only benefits the planet, but is an amazing resource to learn about climate change and nature. Forests can help to immerse yourself in nature and learn more about the environment. One way to do this is to conduct a project about your forest. In this activity, we will guide you through the process of creating a project, and what you can do with your results.

WHAT TO DO:

1) Choose the forest that you will research. This could be your Tiny Forest, a local forest or a forest from around the globe.

2) Pick the type of project you'd like to do. If you're using a local forest, you could conduct your own research and experiments (make sure you have permission to do so first!). If you are using a forest from another country, you could conduct a research project using online data. Lots of governments, charities and organisations have great banks of data that are free to use.

3) Pick your research question. You should base this around what you'd like to find out. We've given an example below!

What happens in a forest as it grows – you could monitor growth of the forest, factors such as temperature and rainfall, or factors like wildlife and plants. Doing this throughout the seasons could tell you how a forest changes around the year. Doing it every month could indicate changes over time.

4) Choose your sampling method. Will you count numbers of things, measure things using equipment like tape measures or thermometers, use questionnaires to gather data or conduct interviews with people?

5) Go out and sample! Make sure you have all the equipment you may need and a method of recording your results. You should always sample in a group and take care to be safe when outdoors.

6) Once you have gathered your results, you should begin to think about what they mean. For example, if you are monitoring growth, which months do woodlands grow the best and why do you think that might be? If you are monitoring wildlife, which areas had the most and what can you do to encourage more wildlife to the area?

7) Tell the world about your project! Your project could provide valuable information or advice for how to help the environment and encourage more people to interact with nature. You could create posters or a presentation about your project, make a short film, write a blog or send a letter to your local MP.

Did you know? The 6 warmest years recorded globally have all fallen after 2014, with 2016 being the hottest year ever recorded.

TREE ID SKILLS

There are more than 60,000 species of tree across the globe, each one different in its own unique way. Identifying trees is a useful skill, and can be helpful in learning more about the environment. In this activity, you can learn more about the native trees you have near your home or school, and begin to learn about identifying them.

YOU WILL NEED:

- Leaves
- Twigs
- Photographs of trees

WHAT TO DO:

1) Head outside into your local green space, garden or school grounds. You should pick an area that has several different looking trees.

2) Take photos of each of the trees you can see. If there are no trees nearby, you can download pictures of UK trees from the internet.

3) Write notes about the shape of the tree, how the canopy looks, how tall you estimate it is, whether its trunk is thin or thick.

4) Approach the tree and look at the bark. What colour is it? What texture or pattern does it have? Draw a picture of the way the bark looks so you remember.

5) Look at the leaves. If there are some on the floor, gather them up to identify later. If not, look at the leaves on the tree and inspect them. What colour are they? What shape are they? Do they have any interesting features? Draw a picture of the leaf next to your picture of the bark, taking care to label key features.

6) Does the tree have any fruit, flowers or seeds? What do they look like? What colour are they? If there are seeds of flowers on the floor, gather them up to identify later, but avoid picking new ones. Draw a picture of any fruit, flowers or seeds next to your other pictures.

7) Repeat the same process with several trees. Be sure to keep any gathered items with your drawings, so you know which tree they belong to.

8) Using the items you have gathered, begin identifying the trees! You can use online tools or apps, or use identification charts.

9) Once you have identified your trees, you could create ID guides to use in the future, including sketches of the tree's key features and information about the tree.

Did you know? A Tiny Forest can have up to 600 trees planted in a space the size of a tennis court!