Learning Objective: To discover how soil keeps water in the landscape so it can be used by plants and animals

Introduction

When it rains, a large amount of water soaks into the ground and is stored in the soil. As we have seen, this is incredibly useful for both animals and plants. After the rain has stopped, the soil remains damp and continues to provide moisture for worms and nutrients to plants. In this activity, your task is to create a miniature garden that will store rainwater and includes a range of habitats for a mini-beasts.

You will need

- A plastic tray that is a few centimetres deep. A seed tray is best but you could use: a take away tub or tray from fruit or veg, or for a larger garden line a shoe box lid or a cereal box with a plastic bag
- Some soil or compost - use a mix of both if you can
- A bag or a box - to collect your natural materials in
- Scissors
- Access to a green space. We recommend you use your own garden if you have one so that you are sure that what you are collecting is free from Covid-19.
- Optional extras: small toy animals and accessories, plasticine, pipe cleaners, a milk bottle lid to make a pond, a block to make a bench, any other ideas?

Bonus Activity - Use the garden you create to carry out a scientific test

If you want to carry out this challenge, you need to use a tray with holes in the bottom like a seed tray or a punnet (plastic tray for fruit).

Instructions

1. Add the compost / soil
If you are using both soil and compost, add a few handfuls of each and mix it together in the tray. Make sure the bottom of the tray is completely covered with about 2 cm.

Ideas:
- Twigs with leaves to use as trees or shrubs
- Flower petals to make a wildflower meadow
- Sticks to use as logs
- Grass clippings, moss, gravel, leaves, stones

2. Gather materials
Head outside with your scissors and your collection bag or box to gather some natural materials to use.

It’s best to gather things that have fallen to the ground, but you can use your scissors to carefully cut small bits from plants. Watch out for thorns and only cut what you need!
3. Create your garden
Start landscaping. Add some features for mini-beasts (see the list below). Add in some extra things you would like in your garden - a path, a pond, a bench.

Features for minibeasts
Honey bee - wildflowers
Ladybird - leafy plants
Woodlouse - a log pile
Garden spider - trees / shrubs
Earthworm - a leaf pile

You can make a neat and organised garden or one that is messy and wild. It’s up to you!

4. Bring your garden to life
What creatures would like to make your garden their home? Worms? Bees? Squirrels? Birds? People? Add in some extras to bring your garden to life. You could use small toys or make some creatures out of plasticine or pipe cleaners.

5. Rain on your garden
When your garden is complete, its time to add some rain to see what happens to it.

If you are NOT completing the Bonus Activity:
Use a small watering can, a water bottle or a jug to sprinkle water all over your garden (pour it gently). Write a conclusion that explains what happened to the rainwater. Where does it soak in? Where does it pool? Can you find any droplets of water left behind? Write your conclusion in your River Journal if you have one.

Bonus Activity
1. Measure the water before you pour it on your garden. You need 200 ml of water.
2. Put your garden in a place where any water that comes out of the holes in your tray can be collected. You can do this by placing it into a larger tray without holes or holding it over a bucket (you may need someone to help with this).
3. Sprinkle the water or pour it slowly all over the garden.
4. Wait for 1 minute to allow the water to soak in and pour out the holes in your tray.
5. Measure how much water came out of the bottom by pouring the water you collected into a measuring jug.
6. Find the difference: 200 ml take away the amount you collected.
7. Write your conclusion. Describe what happened to the rainwater and include a statement that explains how much rainwater your garden captured.