

GUARDIANS OF THE FOOD GALAXY

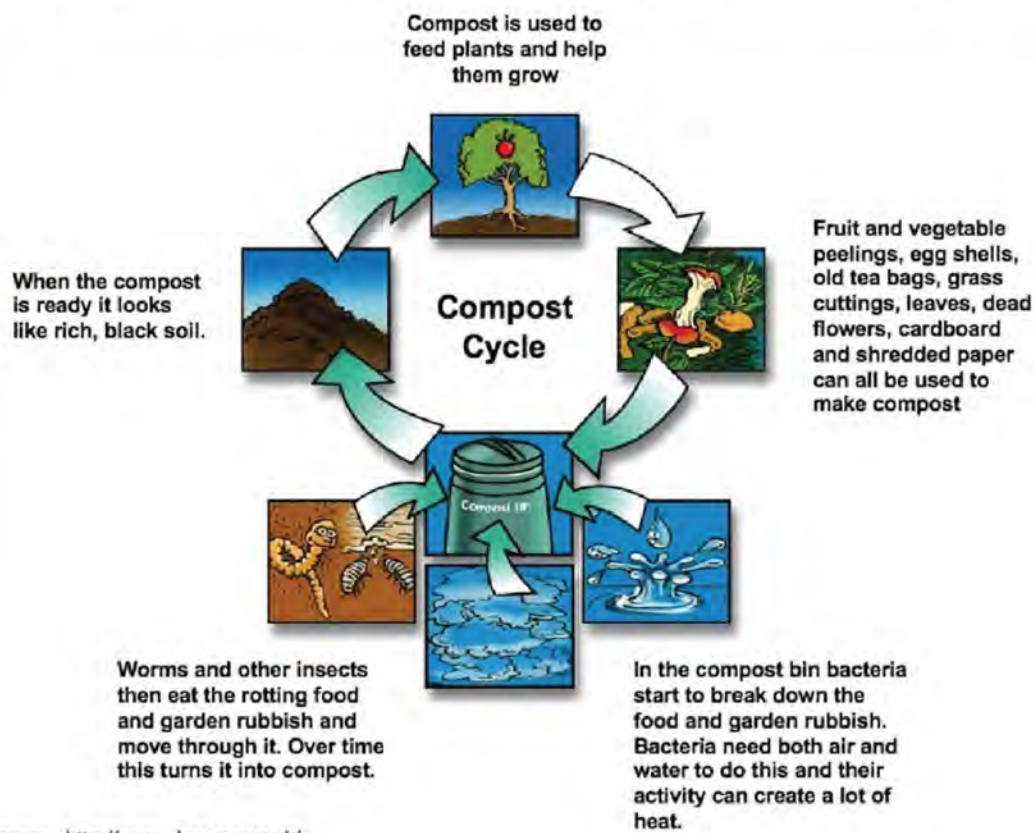
LESSON 14



Composting: Decomposers Help Us Reduce Climate Change!

Take a few minutes to review the image below.

Matter and Energy Flow Through The Compost Cycle



Source: <http://www.devon.gov.uk/>

Figure 2

NAME: _____ DATE: _____

NOTICE AND WONDER

What I
Notice

What I
Wonder

NAME: _____ DATE: _____

VIDEO GUIDE

Using the worksheet, answer the following questions.

1- What is composting and how does composting help our environment?

2- What are decomposers?

3- What are some foods that can be composted?

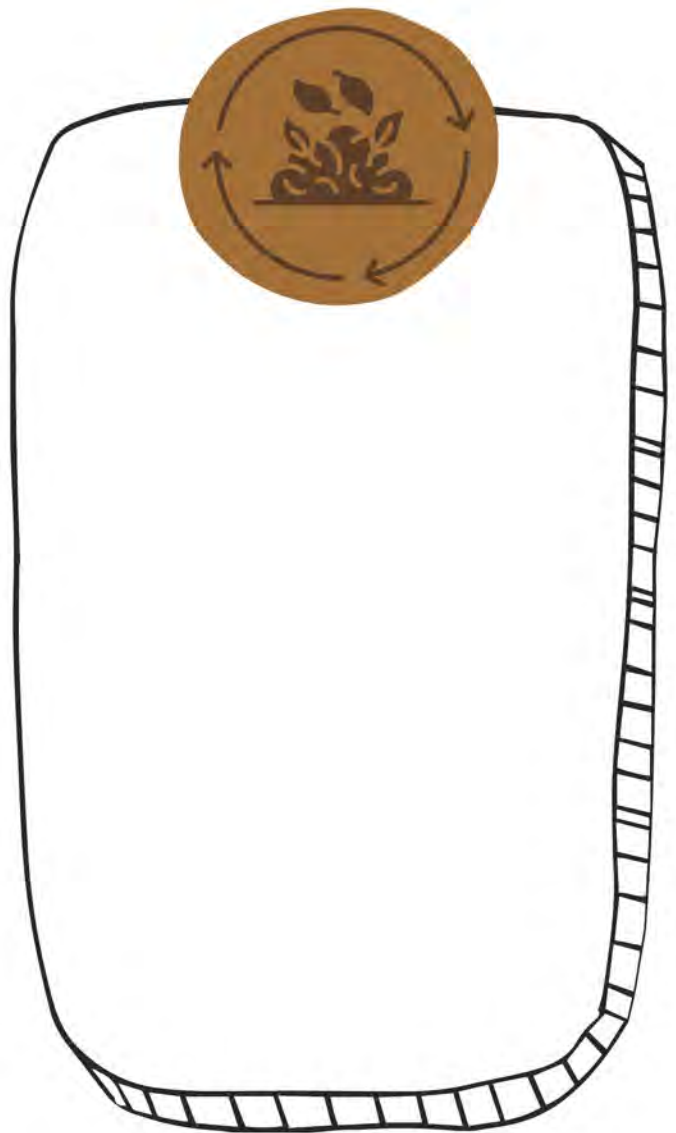
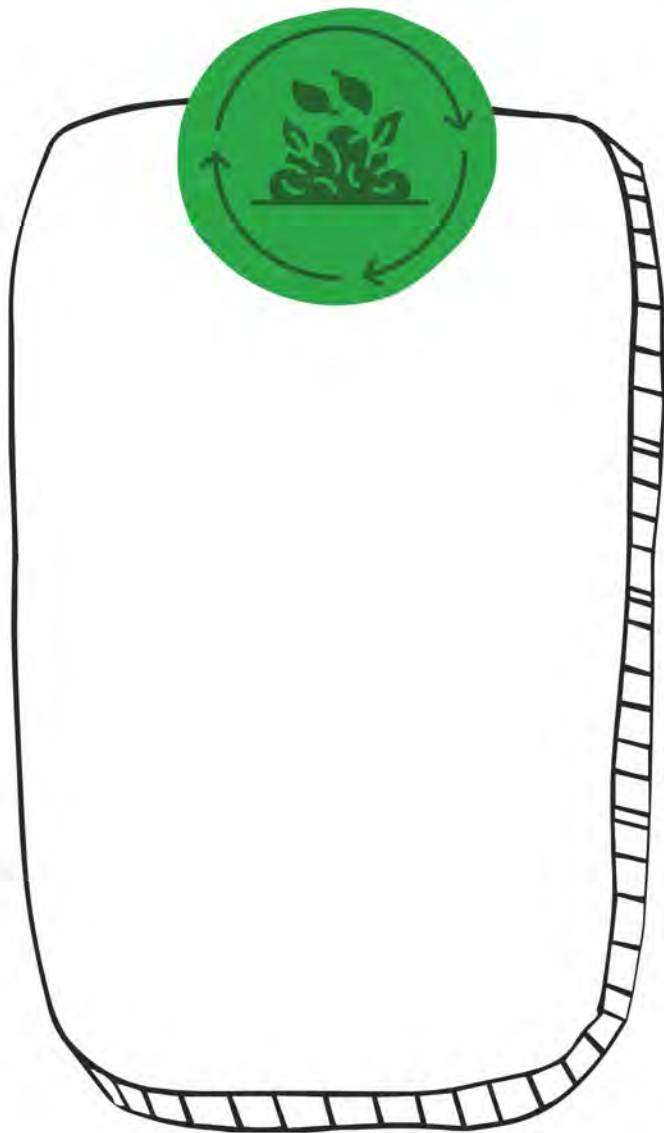


COMPOST INGREDIENTS

Let's gather materials for your compost!

Use this worksheet to make a list of everything from your lunch box that can be composted!

Decide what is "green" material and what is "brown" materials



Compost in a bottle



Introduction

The Compost in a Bottle activity allows children to observe the decomposition process of organic materials, such as, fruit peelings, vegetable peelings, grass cuttings, leaves and flowers.

It is this decomposition process that West Lothian Council uses to turn food waste and garden waste into compost and soil conditioner via the green food waste caddies and the brown garden waste bins.

The Compost in a Bottle activity shows how plastic bottles can be re-used as mini composters and food waste and garden waste can be recycled into nutrient rich compost that helps seeds grow.

The activity itself will take approximately an hour including clean up time but the composting process can take several months especially in colder weather. Children can see the changes in colour, texture and volume over time and the bottles create a great interactive classroom display in schools.

The plastic bottles can then be cut down into plant pots and seeds can be planted directly into the compost and grown indoors. Alternatively, the compost can be mixed into outside plant pots, flower beds and vegetable plots.

Please note that schools, organisations and parents/guardians should carry out their own risk assessments and adhere to any school or organisation health and safety policies and procedures.



What you'll need



Compost in a Bottle activity sheet



Compost 'Booster' (can be purchased online or from garden centres and is often named composter accelerator, activator, maker or starter)



Materials to make compost e.g. leaves, flowers, fruit and vegetable peelings, tea bags, grass cuttings



Scissors (younger children will need an adult to help)



Permanent marker pens



Water spray bottles



Soil/compost



Sticky tape



Seeds



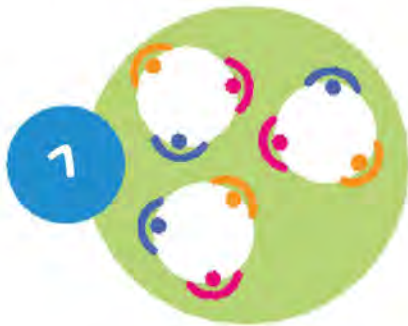
Newspaper and light card (no glitter/glue or foil)



1 x 2 litre clear plastic bottle



Bottle and work space preparation



1 Divide the children into smaller groups around tables and make sure there are enough materials and equipment for each group (it gets a bit messy if children try to carry compost mixture and bottles between tables!)



2 Remove any labels and rinse the inside of the bottle (put the bottle top back on).



3 Cut the top of the water bottle just below the 'neck' and leave a small 'hinge' like strip.

For safety reasons, an adult should pierce the bottle so it is easier for the children to cut. If the children are too young to cut the bottle then this should be completed by an adult. Please take care as the plastic edges can be sharp.



Compost in a bottle

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Adding layers

1

Follow the diagram to build up your layers. Each layer of material should be 2-3 cm. Each layer of soil compost should be 1-2cm (except the bottom layer that needs to be a bit thicker). Add as many layers as you need depending on how tall and wide your bottle is.

2

Cut the materials into little pieces as you add them to the bottle

3

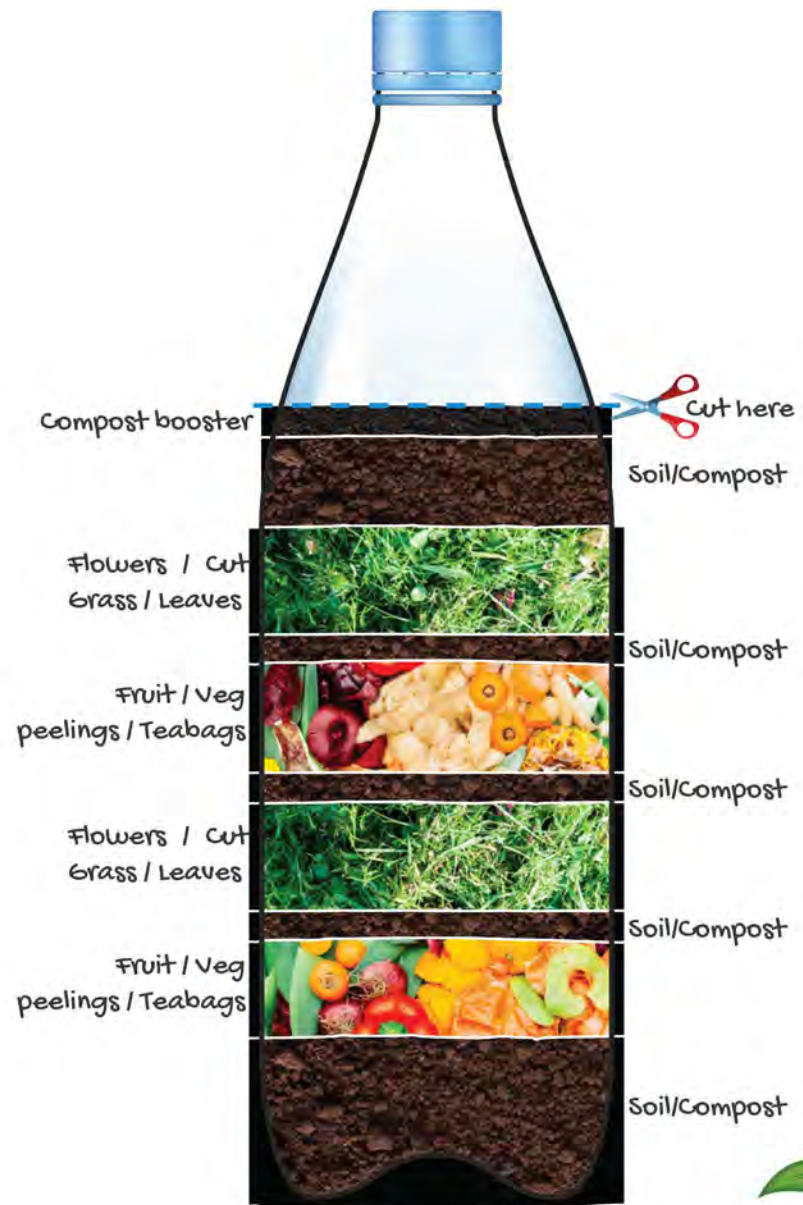
The last layer should be soil/compost and should stop just below the cut. Ask an adult to add the 'Compost Booster' for you.

4

Use a water spray bottle to dampen the contents.

5

Sticky tape the bottle shut.



Compost in a bottle

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observing the changes

1

Use a permanent marker pen to draw lines on your bottle so you can see how the layers change and how much your compost mix 'shrinks' as it rots down.

2

Make a note of what layers you have added and what colours you can see (or you could take a photograph so you can compare it to the compost you make).

3

Write your name and the date on the bottle.

4

Place the bottle in a warm and sunny spot, like a windowsill, as this will speed up the compost process.

5

Some gases can be produced during the composting process. If the bottle expands too hard just remove the bottle top for 5 minutes and replace. If the composting process really slows down then the compost might need more oxygen. Again, just remove the bottle top for 5 minutes and replace or you could pierce some small holes in the top of the bottle.

Remember to ask an adult for help with sharp scissors

Don't worry if you don't see much change to begin with. It can take months for the compost mixture to break down especially in colder months. You will start to notice the mixture 'shrink' and the colours will start to fade until the mixture turns a dark brown colour. Eventually, it will look like soil and the compost process is complete!



Planting your seeds

1

Cut the bottle 2-3 cm above the compost level.
For safety reasons, an adult should pierce the bottle so it is easier for the children to cut. If the children are too young to cut the bottle then this should be completed by an adult. Please take care as the plastic edges can be sharp.

2

Use the bottom of the bottle as a plant pot as this saves plastic waste and is a great way to re-use!

3

Plant some seeds and water the compost if it starts to dry out.

4

Place your plant pot back in a warm sunny spot and watch your plant grow.

