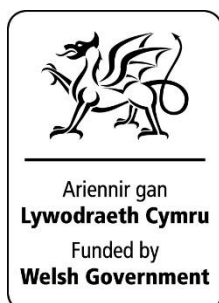


Topic based resource

Waste Minimisation

Upper Key Stage 2



cadwch keep
gymru'n wales
daclus tidy

Background information

Wales aim to be a Zero Waste Nation, by 2050. Disposing of waste in landfill sites produces harmful gases such as the greenhouse gas, methane, which contributes to global warming. Resources are being wasted rather than reused or recycled and space in landfill sites is running out.

Wales is a global leader for recycling household waste - we are currently third best in the world. A target has been set by the Welsh Government to recycle 70 percent of the waste in Wales by 2025. Recycling prevents rubbish being sent to landfill, saving millions of tonnes of carbon emissions a year. New technologies are being used to recover the energy from waste to provide heat and electricity. The next steps to achieving a zero waste status include creating a circular economy where resources are used for as long as possible, repaired or re-purposed before being recycled and to be recycling 100% with no waste.



Climate perspective

In 2015 the United Nations agreed on 17 Sustainable Development Goals for 2015-2030 to tackle current global challenges, these include sustainable habitats and energy. Sustainable living, waste management, and responsible consumption are ways we can all work towards reducing carbon emissions and slowing down global warming as well as improving our local surroundings. When we take steps to improve the social, economic, cultural, and environmental wellbeing of Wales we must also consider the effects our decisions and actions may have for the rest of the world.

Considering the energy and resources needed to meet all our daily needs including food, water, fuel, clothing, and shelter can play an important part in reducing waste. As we take responsibility for our consumption and habits, the choices we make, and our individual actions may seem small in the face of the global challenge of climate change. But when we all take positive action, the small things will add up to make a big difference.

Wormery

Upper Key Stage 2

Make your own wormery

Worms play a vital role in keeping our soil healthy and are experts at recycling waste into nutrients! They also improve the structure of the soil which can help with drainage to prevent flooding. This activity will help children to understand how organic matter and food waste can be recycled and used to enrich soil to grow healthy new plants. Children could work in pairs to create a bottle size wormery or groups to create a larger size.

Materials needed:

- Clear plastic bottle or deep container with wide top
- Dark coloured card or fabric to fit around bottle or container
- Skewer or palm drill, scissors
- Soil or peat-free compost
- Sand
- Worms
- Fruit and vegetable 'food waste scraps' (e.g. peelings, salad leaves etc, avoid onions and citrus fruit)



Step 1

Go on a worm hunt to find a few worms for each bottle or container. Try looking under logs, stones, flower pots and leaves, dig some earth or try some worm charming to get the worms to come to the surface of the ground! Remember to handle the worms with care. Keep them in a cool, dark place while you make your wormery.

Worm charming could be stamping up and down or dancing in the same area for a few minutes, soaking an area of the ground with water or rocking the prongs of a garden fork back and fore in the ground for a few minutes! Why not try them all between your groups and see which one is the most successful!



Step 2

Cut around the bottle about $\frac{1}{4}$ of the way from the top to form a lid. An adult may need to start this off by making a hole in the side of the bottle with the skewer or palm drill.



Step 3



Fill the container with alternating layers of sand and soil. Spray each layer with water until damp before adding the next. Keep the layers loose, do not press them down. End with a layer of soil on the top.

Step 4



Place a few worms on the soil at the top of the container and watch as they burrow down into the soil away from the light. Place a layer of food scraps on the surface of the soil at the top. Each group could use a different food type to see which one the worms prefer.

Step 5



Wrap the card around the outside of the container to block out the light. Put on the lid/top, making sure there are holes for ventilation. Leave the wormery for a few days, remove card to observe and make sure the soil is kept damp and the worms have food.

Step 6

Return the worms back into the garden.

Curriculum Links

Areas of Learning and Experience - Humanities

Statement of what matters:

Our natural world is diverse and dynamic, influenced by processes and human actions

Informed, self-aware citizens engage with the challenges and opportunities that face humanity, and are able to take considered and ethical action

Areas of Learning and Experience - Science and Technology

Statement of what matters:

Being curious and searching for answers is essential to understanding and predicting phenomena

The world around us is full of living things which depend of each other for survival

Next steps and other ideas

- Find out more about earthworms and create an information leaflet
- Research the 'science' behind worm charming
- Set up a compost bin and/or wormery in your school grounds
- Make up a worm charming song and dance, or poem to tell other people how important worms are
- Create a mini-beast area in your school grounds
- Look at how you feed the plants and deal with weeds in your school grounds – is it worm friendly?
- Find out more about food chains and what other animals eat worms

Useful websites

<https://www.soilassociation.org/causes-campaigns/save-our-soil/meet-the-unsung-heroes-looking-after-our-soil/why-are-worms-important/>

<https://www.farmingismagic.co.uk/it-works/explaining-earthworms/>

<https://walesrecycles.org.uk>

<https://wrap.org.uk>



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33-35 Heol yr Eglwys Gadeiriol, Caerdydd, CF11 9HB | 33-35 Cathedral Rd, Cardiff, CF11 9HB
029 2025 6767 keepwalestidy.cymru info@keepwalestidy.cymru



Cadwch Gymru'n Daclus yn gwmni wedi ei gyfyngu trwy warant. Rhif Cwmni: 4011164 Rhif Elusen: 1082058 Rhif TAW: 850 3958 13
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