

Teachers' Learning Resource

Wriggle!

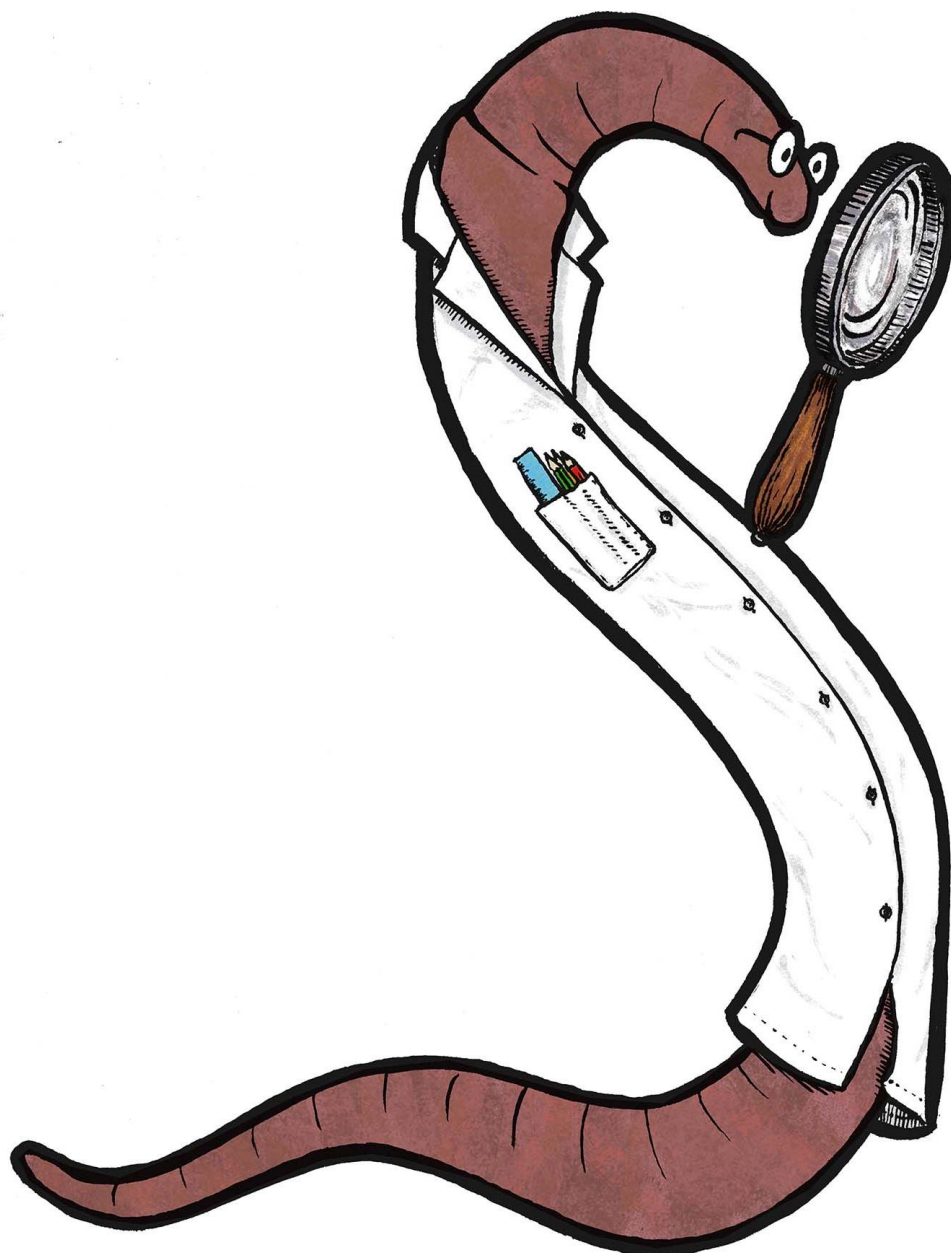
National Museum Cardiff

18th June 2016 – October 2017

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This resource will help you prepare for a self-led visit to the Wriggle exhibition. It includes information about the displays, ideas on what to do, and suggestions for pre- and post-visit activities. It is primarily aimed at Key Stage 2 pupils but can be easily adapted for older or younger students.

Wriggle is an exhibition all about worms.

You can find out about Earthworms, Bone Eating Snot Flower worms, Ice worms, Copycat worms, Fireworms, worms that bite or have venom, worms that live in extreme environments, and worms that lived before the dinosaurs roamed the Earth.

Come along and...

- Step inside a giant earthworm den - the Wriggloo.
- Meet live worms and hermit crabs.
- Discover how museum scientists are working to find out more about worms, and what you can do to explore worms in your area.

Booking a visit

Learning Office – for bookings and general enquiries

Tel: **029 2057 3240**

Email: **learning@museumwales.ac.uk**

The exhibition is FREE to visit.

All groups must book in advance, whether visiting independently or on a museum-led visit.

Bookable workshops are available to support the exhibition. See our website for more details:

www.museumwales.ac.uk/learning/cardiff/

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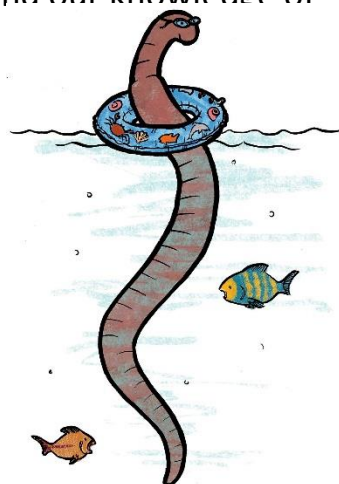


What can you see in the exhibition?

Explore the wonderful world of worms – from fossils to fantasy, from food to spectacular beauty, and the scary ones too! See life from a worm's point of view and find out what museum scientists do to extend our knowledge of these fascinating animals.

There are 6 displays:

1. The Wriggloo
2. Awesome Worms
3. Measuring Worms
4. Diversity of Worms
5. From Fossils to Fantasy
6. Museum Science



Tip for Teachers

Split your class into groups to explore each of the sections.

The gallery has one entrance and exit, so the class can remain in the one area.

Use the Activity Resource Sheets at the end of this pack to help focus the pupils, after they have had chance to explore.

1. The Wriggloo

The Wriggloo is a giant walk-in earthworm den. Go inside the worm's habitat, listen to the sound of the underground, see live wriggly worms, and meet the creatures that share their home.

- Find out who eats who as you look for fox, badger, mole, bugs and beasties.
- Look closely at how worms move through soil, and how they are adapted for life underground.
- Discover why worms are so important for our gardens.
- The props bucket will provide facts and things to do to help you explore the Wriggloo.

Things to do...

- As pupils explore the Wriggloo they can fill in the 'Food Chains' resource with their own food chain. The 'Who Eats Who?' information panel will provide them with help and information.

2. Awesome worms

Here you can explore some of the amazing adaptations worms have to survive.

Find out about Bone Eating Shot Flower worms, Ice worms, Copycat worms and Fireworms, as well as worms that bite, have venom and attack.



Things to do...

- Look very closely at the live hermit crabs. Can you see the fan worms on their shells?
- Compare the habitats in the 3 floor boxes. Each floor box has a different worm habitat:
 - Ragworm habitat
 - Lugworm habitat
 - Earthworm habitat
- Consider the differences in the habitats and how the worms might adapt to live there.
- How are they adapted to feed in their habitat? What do they eat? And what eats them?
- Make your own worm fact cards, using the activity sheet in the gallery. Once you have designed them, use your cards to play top trumps!

<p>Find these Awesome Worms in the gallery. Draw, measure and fill in the blanks to create your own set of playing cards. Plus make up your own mystery card!</p> <p>TOP TRUMPS</p> <p>Supported by the project of the National Science Foundation Awarded with the permission of the National Science Foundation © 2016 Winning Moves UK Ltd. 7 Praed Street, W2 1NJ</p>		<p>NAME FIREWORM <i>Amphionidae</i></p> <p>SIZE in CM</p> <p>SPEED 5</p> <p>WEAPONS 60 Venom</p> <p>DEADLINESS</p>	<p>NAME BONE EATING SHOT FLOWER <i>Oenothera lutea</i></p> <p>SIZE in CM</p> <p>SPEED 1</p> <p>WEAPONS 50 Acid</p> <p>DEADLINESS Eats whales</p>	<p>NAME EARTHWORM <i>Lumbricus terrestris</i></p> <p>SIZE in CM</p> <p>SPEED 4 underground</p> <p>WEAPONS 0</p> <p>DEADLINESS</p>
<p>NAME SEA MOUSE <i>Aphrodite aculeata</i></p> <p>SIZE in CM 10</p> <p>SPEED 5</p> <p>WEAPONS 5 Spines</p> <p>DEADLINESS 50 Eats worms</p>	<p>NAME ICE WORM <i>Mesenchytraeus solifugus</i></p> <p>SIZE in CM</p> <p>SPEED 1 Lives in ice</p> <p>WEAPONS 0</p> <p>DEADLINESS Melts</p>	<p>NAME BOBBIT WORM <i>Eunice aphroditois</i></p> <p>SIZE in CM</p> <p>SPEED 10</p> <p>WEAPONS 90</p> <p>DEADLINESS</p>	<p>NAME ?</p> <p>SIZE in CM</p> <p>SPEED</p> <p>WEAPONS</p> <p>DEADLINESS</p>	

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3. Measuring worms

This display is all about the size of worms. Did you know that worms can range from just a few millimetres to several metres? Compare yourself to the size of different worms. Are you as tall as a giant Gippsland Earthworm?

There are 3 interactives in this area

- How many worms high are you?
- The worm spaghetti game.
- The rope 'worm'

How many worms high are you?

Here you can use our non-standard worm measures to measure your height.

Pupils can work in 2s or 3s to measure their height in worms. Place the worm magnets top to tail on the measuring wall until they are the same height as you.

Are you 4 earthworms and 1 lugworm tall, or 3 lugworms tall?

Compare to your friend or teacher. You could even add all the pupil worms together to calculate your class 'worm height'?

Why not take photos to record your heights?

To extend the activity, you could play adding and subtracting games using the worm magnets or make table or bar chart of 'worms' according to your heights.

Worm spaghetti

Measuring worms is tricky. They are usually coiled up and you have to unravel them to measure accurately.

Take a look at the plate of worm spaghetti.

Estimate how long you think each worm is.

Measure to see if you were right.

Don't forget to put the spaghetti back on the plate!

The rope worm

Follow the rope 'worm' to find the length of the longest worm in the world.

Can you calculate how many pupils-long the worm is?



The Gippsland Earthworm,
(*Megascolides australis*)

- You could do this by adding together the height of all the pupils in the class
– is your class the same length, bigger or smaller?
- Why not demonstrate this in a class assembly back in your school hall?

4. Diversity of Worms

There are over 9000 different types of worm on our planet. This display shows you a snapshot of their diversity.

To make things even more confusing, there are some animals (and even some plants) that could easily be mistaken for worms. Some even have the word worm in their name!



Explore the vast variety of worms in our wall of worms.
Discover how scientists sort worms into groups.
Find out what a worm is, and what it isn't!

Things to do...

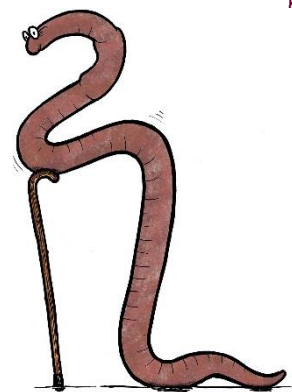
- Have a go at the 'worm or not' quiz. Can you decide which worms are imposters?

5. From Fossils to Fantasy

This display is split into 2 sections

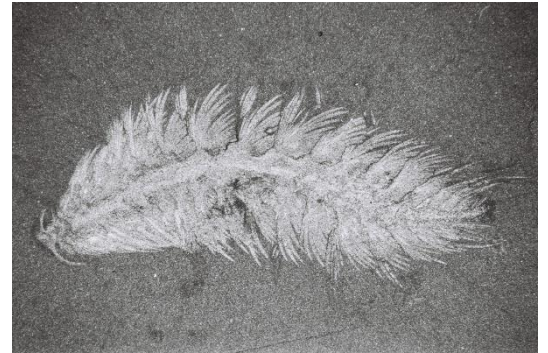
- Fossil worms
- Worms in stories and folklore

Fossil worms



Did you know that worms existed millions of years before the dinosaurs? This section explores how long worms have lived on our planet. You can see worms that lived over 510 million years ago!

We don't find many worm fossils because they have soft bodies which rot quickly. But we sometimes find hard body parts such as their jaws. We can also learn about ancient worms by studying their tracks or the remains of their burrows.



Worm in stories and folklore

Here we look at how worms have been used as inspiration in folklore and popular culture. Can you think of a story, book, film or TV show that features a worm?



Find out about worm heroes and villains. Worms are loved and feared for many different reasons.

The display explore stories of mythical monster worms, as well as modern examples like Richard Scarry's Lowly Worm, Julia Donaldson's Superworm, Roald Dahl's The Twits, and even Spongebob Squarepants.

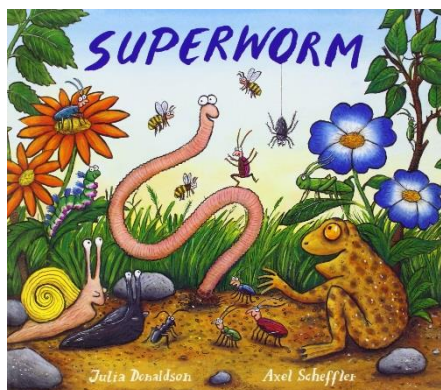
You can also learn about how worms are used as food in different places around the world.

Things to do...

- Activity resource – Worm Writing. Children can use the displays and their imagination to finish the starter sentences. There is space at the bottom to create your own worm creative writing.
- When people think of fossils they often think about dinosaurs, but there were a huge variety of animals and plants in the ancient world. Visit the Evolution of Wales gallery and see how many different fossils you can discover.

Reading area

A comfy space and selection of reading books are available in the gallery for a storytime or individual reading.



6. Museum Science

Scientists at the Museum are working to find out more about worms. Little is known about the vast majority of worms on our planet. The more we know about our planet's wildlife the better informed we are to make decisions about its future.



There are three interactives

1. Magnifying worms
2. Virtual slide magnifier
3. Worm lightbox

Magnifying worms

A selection of magnifying glasses and worms will help pupils explore worm features in more detail. Drawing materials are provided for observational drawings.

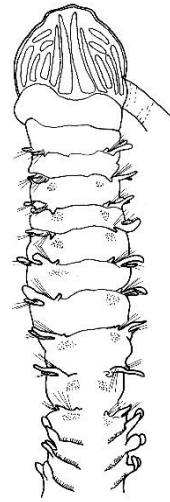


Virtual slide magnifier

This digital slide viewer will allow pupils to see tiny worms in extreme close-up.

Worm lightbox

Place the images of worms on the lightbox and have fun making your own scientific drawings by accurately tracing the worms.



Post-visit ideas

OPAL earthworm survey

Amgueddfa Cymru's Community Scientist can come to your school and lead a science investigation about the earthworms on your school grounds. Sessions are suitable for KS2 to A level and address the interdependence of organisms. Field guides and supporting resources are available and the sessions are free in Wales as OPAL is funded by the National Lottery. For further information visit opalnatureexplore.org

Contact: barbara.brown@museumwales.ac.uk
02920 573 233

Creative Writing

Use the cartoons to create your own worm short stories. Why not write a story about a day in the life of a worm? You could use *Diary of a Worm* by Doreen Cronin to help you.

Research

Worms are just one type of minibeast. Research other minibeasts and think about how they are different from worms. Is there anything that's the same?

Numeracy

In the Measuring Worms area you used non-standard measures to measure your height. What makes a good unit of measurement? Are worms really the best choice? Design some non-standard measurements of your own.

Art/Literacy

Play a description drawing game. Pupils work in pairs, and one of each pair is given a picture of a species of worm. They study it for one minute and then describe it to their partner. The listener must draw the worm based on their partner's description. At the end they can compare the drawing to the photo to see how accurate the description was.

Art

Using the Wriggloo as inspiration make a triarama ([instructions here](#)) that shows life above and below the ground. Draw the above-ground scene on the top two panels and the underground scene on the bottom panel (see below). You could even use pipe cleaners to make 3D worms poking their heads from the soil.

