

VERMICOMPOSTING FOR KIDS

World Soil Day

"Keep soil alive, protect soil biodiversity"

5 December 2020



M^a Desamparados Soriano Soto
Cristina Lull Noguera
Laura García-España



A great diversity of organisms with very significant functions for life on earth lives in soils. Among them are earthworms that contribute to improving the soil. Let's see how these earthworms work and what benefits they bring to the lands.

We all participate in the transformation of our world. Taking care of the soil and giving value to organic waste is something we all do together. Educating for the sustainability of our planet is our challenge. Encouraging schoolchildren to take care of the earth will be beneficial for their future and everyone else's. In this booklet, we propose the apprenticeship of vermicomposting as a process of organic waste recovery and learning about the soil.

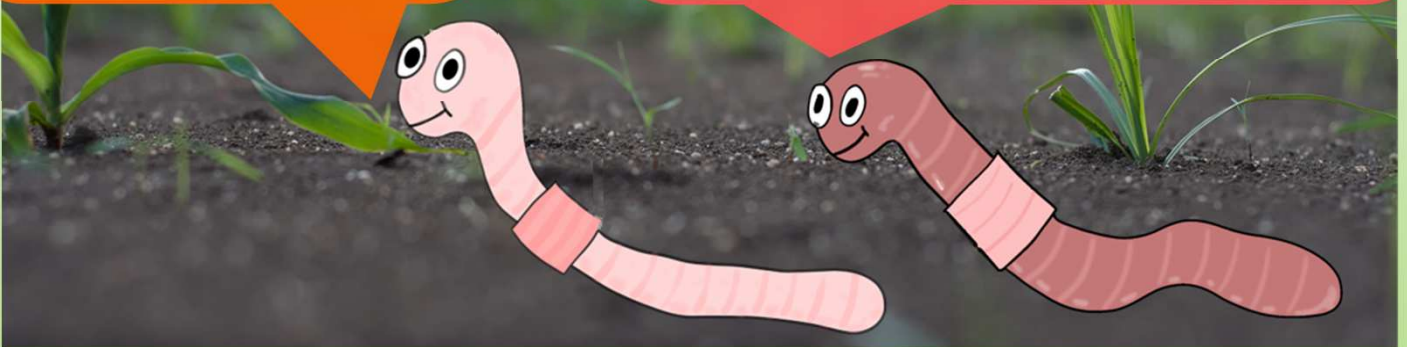
Didactic material for
primary school students



Introductions

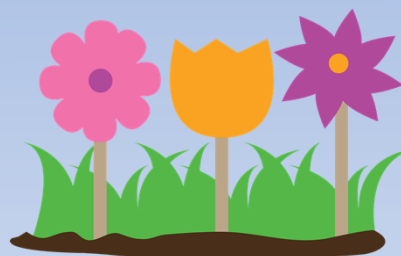
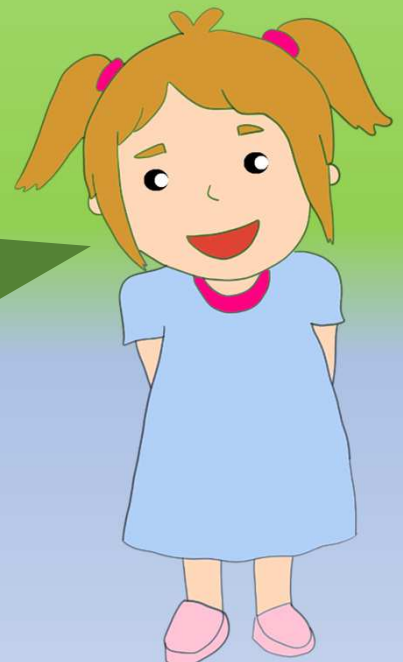
Hello, I am Galeriana, an earthworm. Have you heard of me?

Hi, I'm Cali, I'm also an earthworm, and I'll tell you later why I have this name. We would like you to get to know us and our work.



Hello! My name is Pablo. We are going to learn a lot from Galeriana and Cali. They are going to teach us how to make vermicompost. Do you know what it is?

Morning! I'm Claudia, Pablo's little sister. I love to learn about nature, just like my brother.



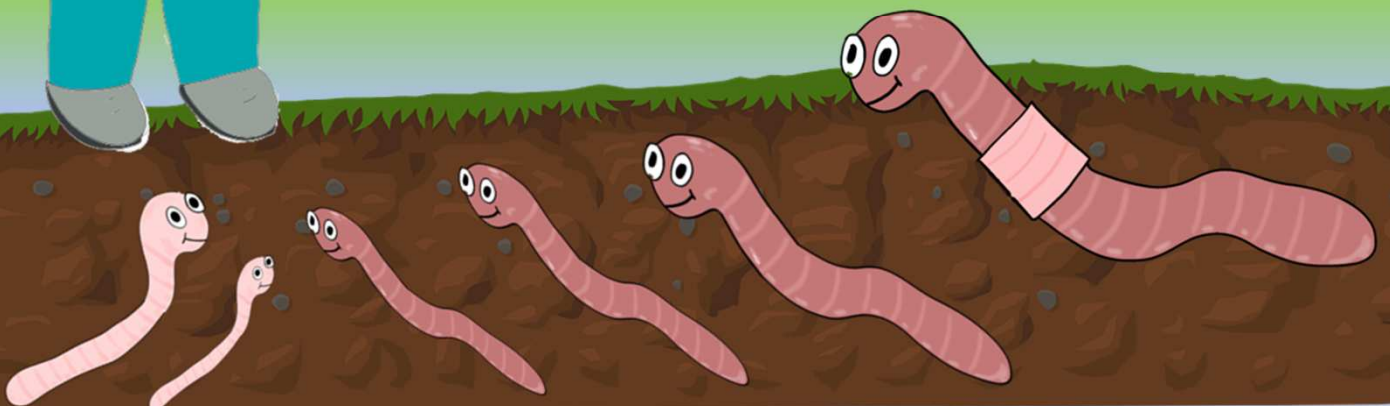
WHAT ARE WORMS LIKE?

So let's get started. I will tell you about our life with the help of Pablo and Claudia. You will see that it is not at all boring

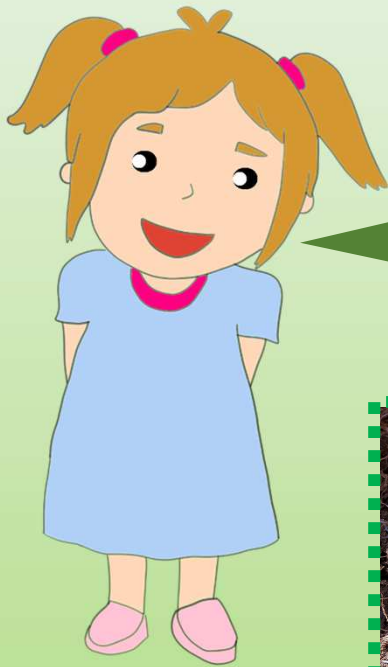


Do you know the size of Cali and Galeriana?

We are born very small, but when we reach our maximum size, we can measure between 9 and 30 cm and more. We like to stretch out.



WHAT ARE WORMS LIKE?



Surely you have noticed that *Galeriana* and *Cali* have different colors. Earthworms are pink, brown, or reddish-brown.



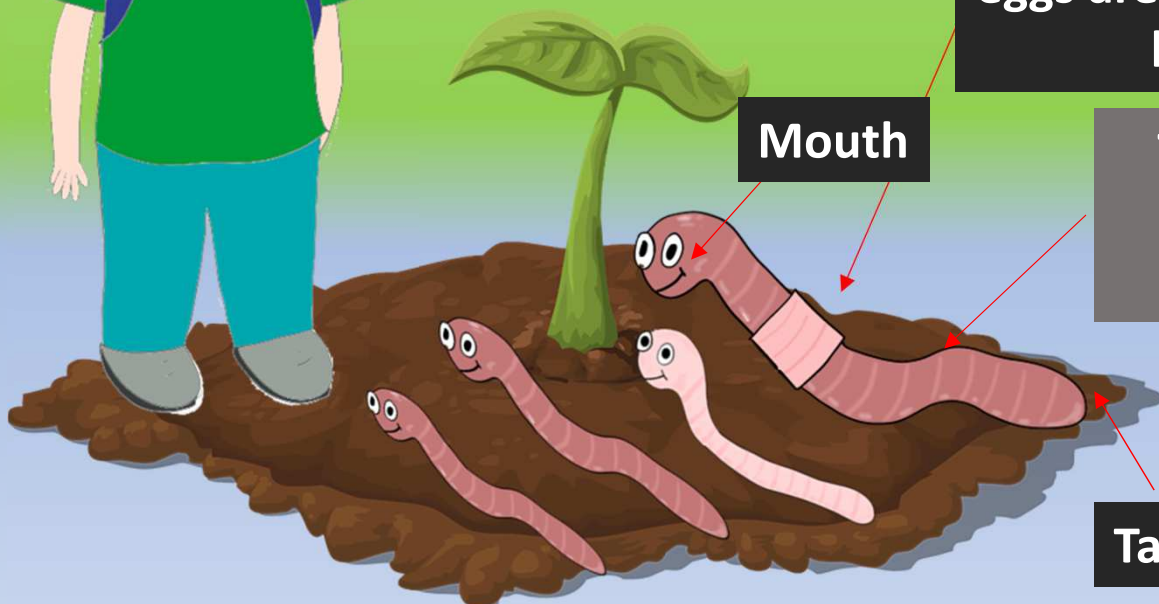
Sure, they have a mouth! They have a half-life of 4 years, although some earthworms live longer. And the incubation period is between 14 and 21 days.

Clitellum, where the eggs are stored before laying.

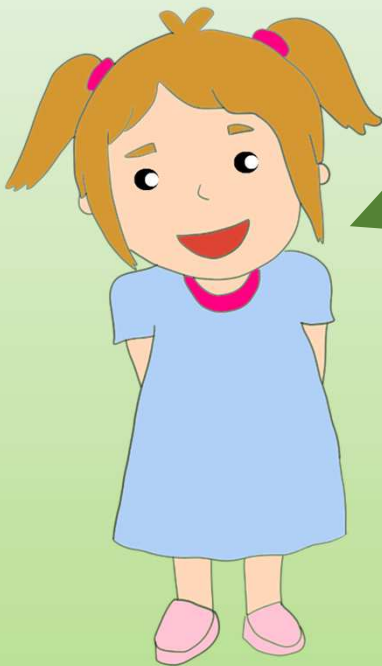
Mouth

The body is segmented into rings.

Tail



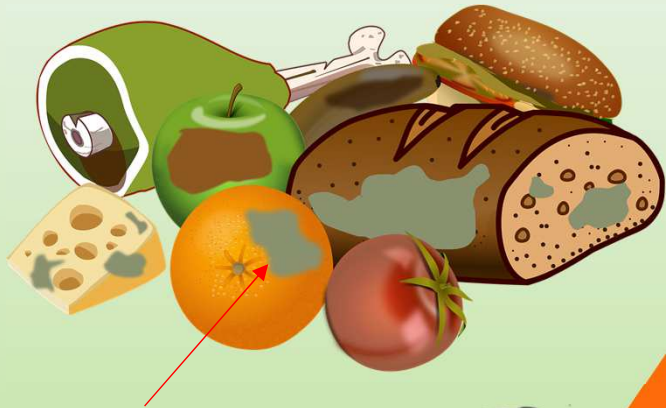
AND WHAT DO THEY EAT?



My brother has told me that the leaves of trees, small twigs, fruits of trees, remains of crops, and much more reach the soil. And, I wonder if earthworms feed on what gets to the ground.



WE EAT



fungus

Let's see if you can guess from the foods in the image which ones we eat ...

I'll give you a hint:
I like vegetables and fruit.
Yum, yum!

Surely you have noticed that the food in the image is not in good condition. But don't worry, that's not a problem for me.

Yes, yes, we eat plant debris and also soil. We Californian red worms like to eat a lot. Now you know why my name is Cali.



THE HABITAT IN WHICH WORMS LIVE

Galeriana, do you like to be fresh, or do you like the heat?



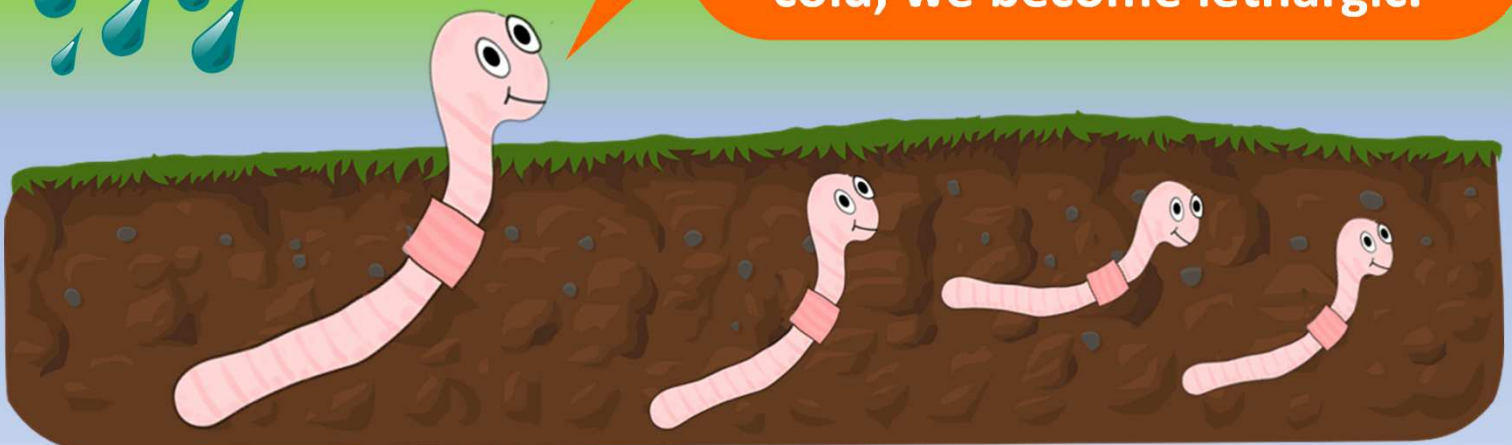
The sun warms the soil



The rain moistens the soil



You know that the soil is our home, and sometimes it is dry, and sometimes it is humid, sometimes it is fresh, and sometimes it is hot. We like to be cold and moist. With the cold, we become lethargic.



THE EARTHWORMS ALLIED TO THE SOIL

They dig galleries that they walk often.

While digging, we eat soil and organic waste, which we transform in our intestines and expel it in the form of "earthworm humus."



We don't eat the roots of the plants while they are alive, so we don't harm the crops.



THE EARTHWORMS ALLIED TO THE SOIL



I leave here some interesting information. If you have doubts, your teacher will surely help you to solve them.

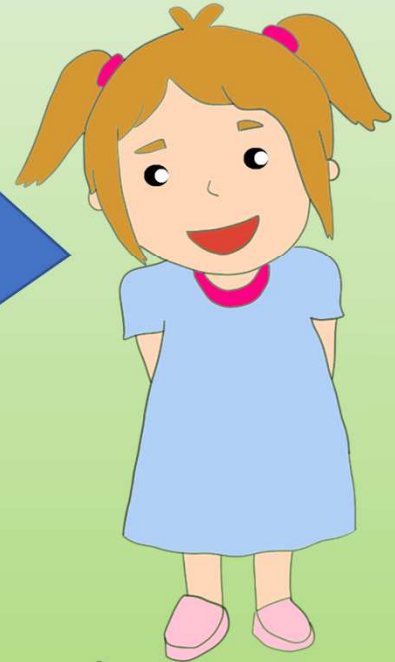


- ✓ The worms turn, aerate and fragment the organic waste that reaches the soil.
- ✓ Some worms can eat an amount of food equivalent to their weight in a day.
- ✓ Earthworm humus is rich in plant nutrients. Thus, it is a fertilizer product for the soils.
- ✓ Worm humus contains a large number of bacteria giving origin to a wide variety of enzymes that act beneficially on the soil.
- ✓ Thanks to the galleries that the earthworms make, the water circulates better in the soil.

VERMICOMPOSTING



We can all feed *Galeriana* and *Cali*, and we can help improve the soil. Remember that the vast majority of food comes from the soil.



Vermicomposting is a transformation of organic waste into high-quality natural fertilizer.


This fertilizer is called vermicompost when the worms intervene in the conversion of the residue.



Soil microorganisms are also involved.


VERMICOMPOST

VERMICOMPOSTING



Now, we are going to prepare a vermicomposter. Claudia and I are going to prepare two, one for our family garden and one for the school garden.

Find a container to put the soil, worms, and organic waste. We can use a white cork box to which we will make some holes in the lid.



Put in the box a mixture of soil with fresh organic material (vegetable remains, manure, etc.). Then, moisten it and put the worms in.

Do not forget that we need shade, water, and darkness to live.

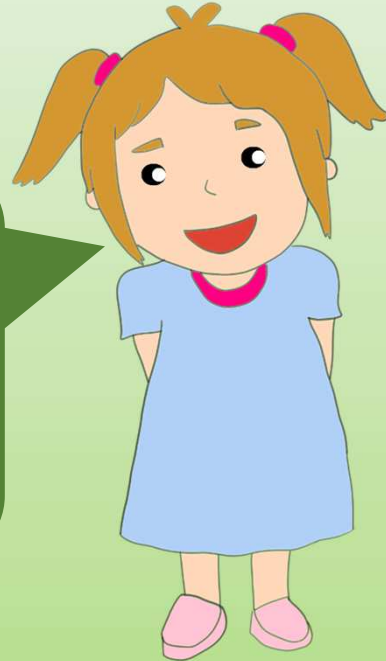


After a week, when we have gotten used to our new habitat, you can put organic waste on top of the soil.

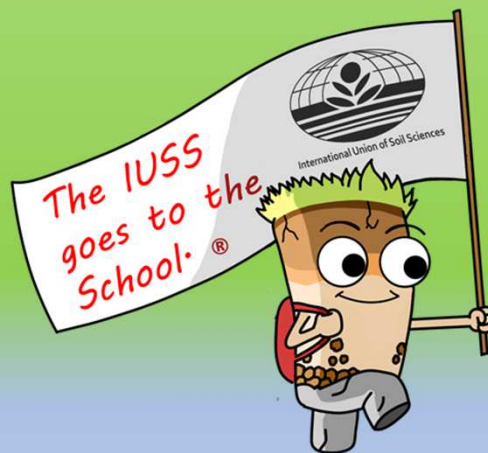


We say goodbye. If you have any questions, you can write to edafoeduca@upv.es

With this booklet, we want to contribute to achieving the Sustainable Development Goals, including SDG 2 and 15.



SDG 2. Zero Hunger	SDG 15. Life on Land
Improve the quality of land and soil to end hunger.	Protect, restore, and promote sustainable use of terrestrial ecosystems.



SOCIEDAD ESPAÑOLA DE LA CIENCIA DEL SUELO
SECCIÓN DE ENSEÑANZA DEL SUELO Y SEGURIDAD PÚBLICA