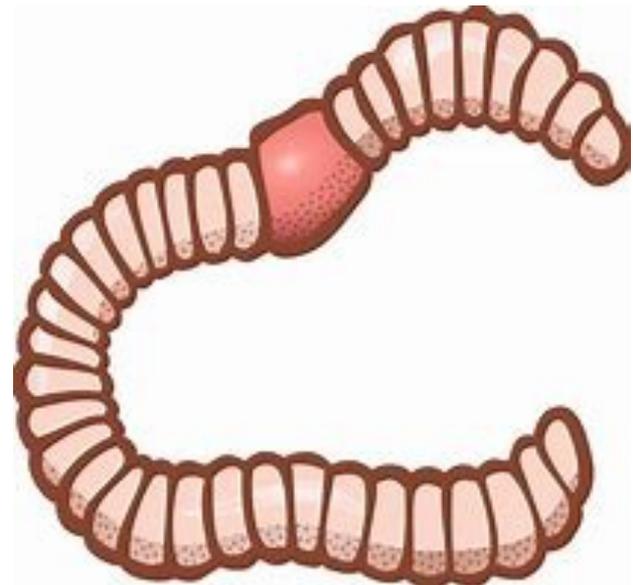


# Worm Tracks

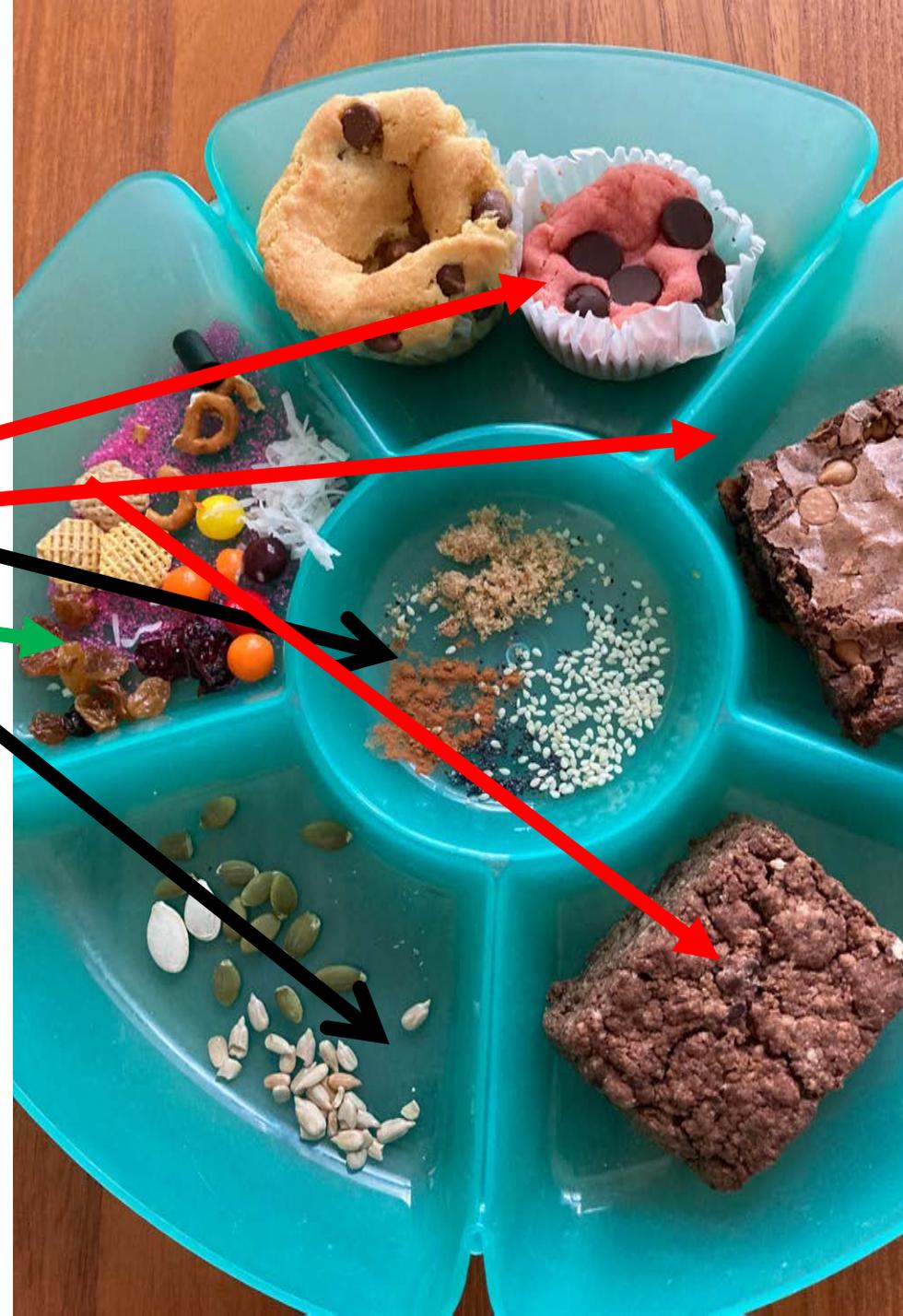
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Nature's  
Gardeners



# Things to teach with edible soil.....

- Soil particle size
- Soil horizons
- Organic and mineral components

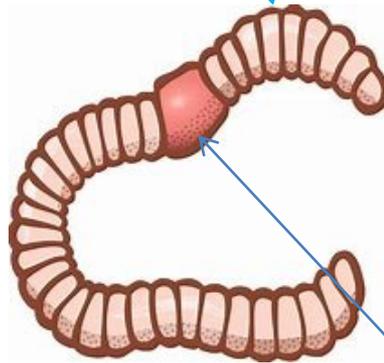


# How Worms Work Part 1

Worms don't have teeth to chew so they eat sand and small rocks. These go into the gizzard which is like a food grinder. They also have a crop, like a bag, for storing food.



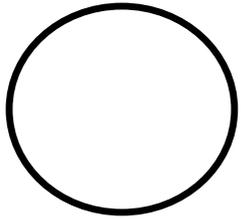
Worm bodies are divided into segments, or tiny divisions, and each segment (except the first and last) has 8 bristly setae (like a toothbrush) for anchoring the worm as it moves.



The smooth part on the worm is the clitellum; that is where the eggs and the cocoon are made. Worms are both boys (male) and girls (female)!

# How Worms Work Part 2

Worms have circular muscles to squeeze them forward, and longitudinal muscles to pull the back end up to the front.



Make your hands in a circle and squeeze.



Now reach your hands way out to the sides and bring them back together.

Worms do not have eyes, nose, ears or mouth. They get information from vibrations. They have a flap called a prostomium, like an envelope, to keep the food from falling out of their mouth-like opening.



Worms have 5 paired hearts.



Worms don't have lungs—they breathe through their skin. That's why they must stay moist.



Worm analogs

# Finger Learning



- Earthworms break up garbage (mixing with hands), earthworms are neat (cheer).

- Earthworms turn the soil (mixing motion) and birds find them a treat (Pretend to be a bird pecking at an earthworm.)!





You can sing a worm  
song!

(Tune of "Mary Had a Little  
Lamb")

The worms are mixing up the  
soil, (mixing motion)  
Up the soil, up the soil.  
The worms are mixing up the  
soil  
So we can plant our seeds.  
(fingers to ground)

The soil is loose and all mixed  
up, (tossing motion)  
All mixed up, all mixed up.  
The soil is loose and all mixed  
up,  
The seeds are growing well.  
(hands moving up)

From [Growing Up WILD](https://www.fishwildlife.org/projectwild/growing-wild)  
[https://www.fishwildlife.org/p  
rojectwild/growing-wild](https://www.fishwildlife.org/projectwild/growing-wild)

# You can be finger worms!



(Tune of "Row, Row, Row Your Boat")

Wiggle, wiggle, wiggle worms (wiggling fingers side to side)

Wiggling all around.

Wiggle here, wiggle there, Wiggle in the ground.

Crawling, crawling, crawling worms (crawling fingers on ground)

Crawling all around.

Crawling here, crawling there, Crawling in the ground.

Squirming, squirming, squirming worms (squirmy fingers side to side)

Squirming all around.

Squirming here, squirming there, Squirming in the ground.



# Wonderful Worms

A story to read!



**Earthworms break up garbage.**



**Earthworms are neat.**



**Earthworms turn the soil.**



**And birds find them a treat!**

# What do worms eat?

## Worms like to eat:

- Rotting food
- Fruits
- Vegetables
- Leaves
- Paper



## Worms don't like:

- Meat
- Dairy
- Citrus
- Onions



Play the Yummy Yucky Game! Cut out the pictures on the next page. Put the ones worms like to eat on the yummy plate and the ones they don't like to eat on the yucky plate.

**Yummy**



**Yucky**



Play the Yummy Yucky Game! Cut out the pictures on the next page. Put the ones worms like to eat on the yummy plate and the ones they don't like to eat on the yucky plate.

**Yummy**



**Yucky**





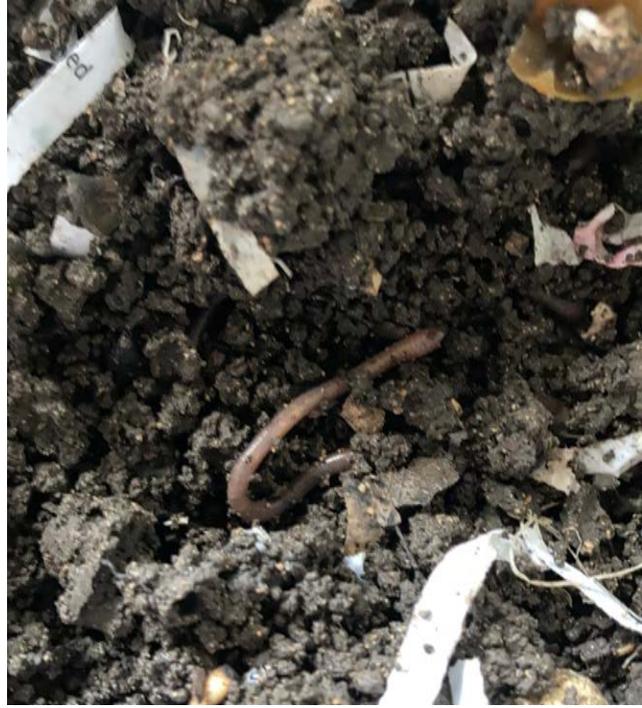
## Foods for the Yummy Yucky Game



# You can make make a worm composting bin!

- Poke holes in the lid.
- Put a layer of soil at the bottom.
- Dig up some worms and put them on the soil.
- Place some rotting food on the soil.
- Place a layer of shredded paper on the food.
- Spray the paper layer with water to moisten.
- Place a layer of dry shredded paper on top.
- Cover with a piece of paper to minimize insects.
- Put on the lid.
- Put a piece of rotting food in each week.





## All the Children Find Some Worms

*(To the tune of "Old McDonald's Farm")*

All the children find some worms, (wiggle fingers)

In their compost bin.

And wormy worms make perfect soil (wiggle fingers)

In their compost bin.

With a squiggle, wiggle here and a wriggle, squiggle there, (move side to side)

Here a squiggle, there a wiggle everywhere a wriggle, squiggle. (move side to side)

All the children find their worms (wiggle fingers)

In their compost bin.



## **Wormy Pokey**

*(To the tune of "Hokey Pokey")*

Putting soil in and dig some earthworms out. (hands in and out)

You spray some water in and compost all about, (spraying hands)

Doing the Wormy Pokey and helping the environment, (turn in a circle)

that's what it's all about. (clap, clap)

You put some shreadings in, making sure there's lots of air. (pretending to shred and puffing)

Putting rotting food in, a clean paper on the top (hands in and patting)



Doing the Wormy Pokey and helping the environment, (turn in the other direction)

that's what it's all about. (clap, clap)

Adapted from a song <http://resourcefulschools.org/sing-along-composting-songs>

# You can make an edible worm composting bin!

- First make the soil.

Crumble a sandwich cookie

—the cake part is soil, and the filling is the clay.

Sprinkle cinnamon for silt, turbinado sugar for coarse sand and white sugar for fine sand.

Sprinkle sunflower seeds for big rocks, sesame seeds for small rocks too, coconut for Mycorrhizal, and raisins for organic matter.



- Now assemble your bin.

Take a square or rectangular container and put your soil in the bottom.

Add some gummy worms.

Crumble up a graham cracker and sprinkle on top.

- And how you have an edible worm composting bin!



You can make a hypothesis about gummy worm flavors.

First think about what you already know about food colors and food flavors. Have you ever eaten a colored cereal, popsicle, powdered drink, jello or candy? Then you probably have some ideas of what flavors might go with different colors. You don't know what flavors go with the colors of your gummy worm, but you can make some guesses and test them out by tasting the different colored segments. We call a guess based on your past experiences a hypothesis if we can test each guess out and accept or reject it.



# Find some worms!

After rain the worms come up near the surface. You can dig in the dirt to find some worms.



- You can play the Worm Wandering Game. Your parent can hide the worms around the house, and you can wander the house to find them.





Worm Wandering Game



# You can do worm painting!

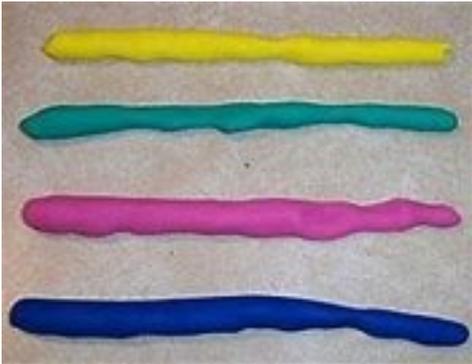
- Roll a rubber fishing worm lure, or a gummy worm in paint or on an inkpad. Now roll it on a sheet of paper to make a worm trail. You can use the end of the worm to paint more worm tracks.
- Now glue some soil and leaves on for the worm to eat!



You can make a segmented worm!

Get some clay or play dough.  
Roll it into a long “snake”  
shape,

Get a fork and use the fork  
tines to press down and make  
the segments.

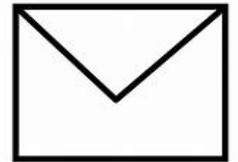


You can use the worm picture  
on the next page.

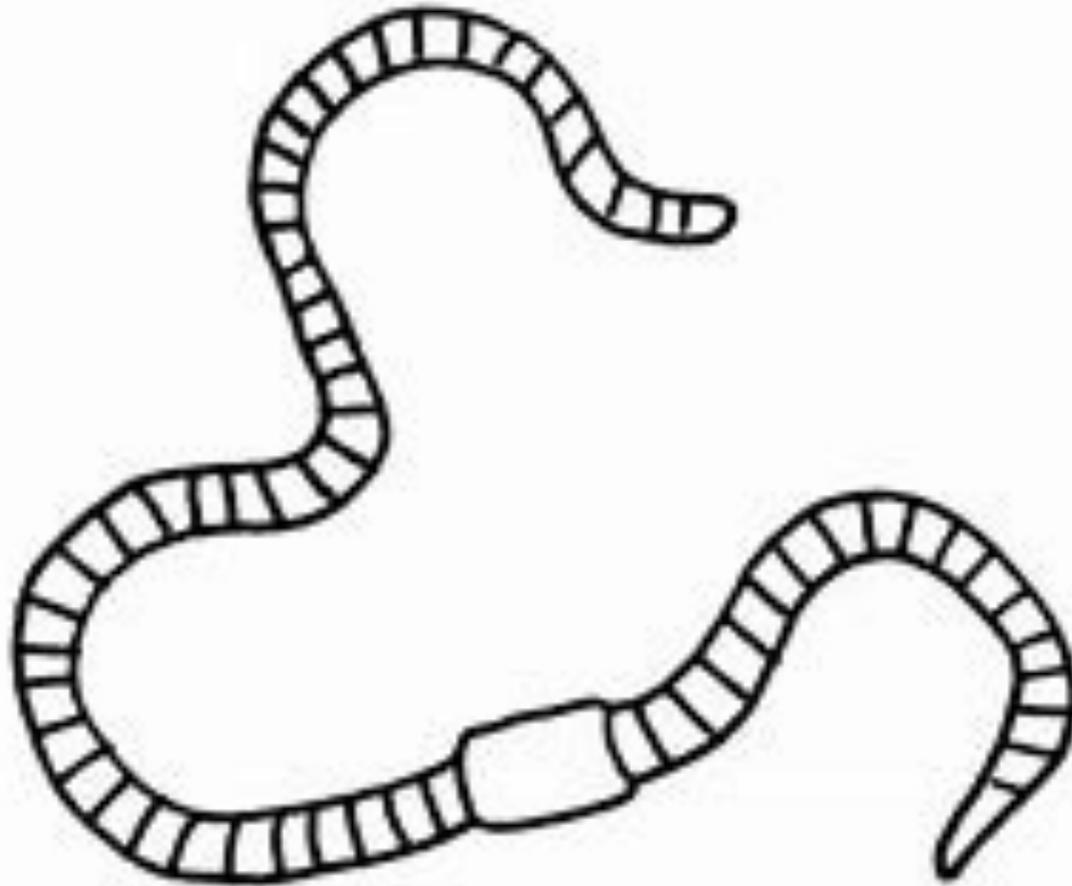
Color the worm.

Now put an envelope on one  
end to be the prostomium.

Put 5 heart stickers in the  
middle to be 5 hearts.



You can make worm anatomy!

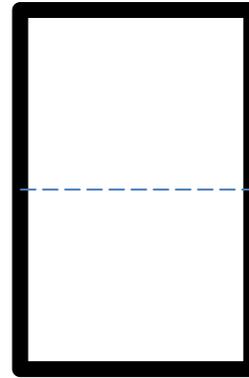
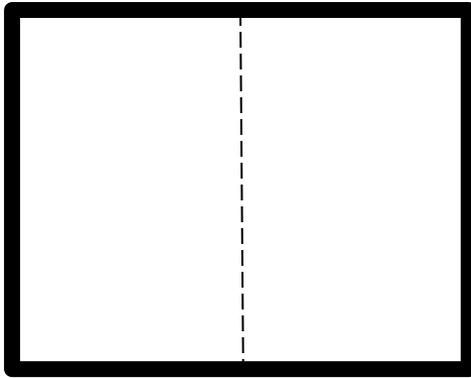


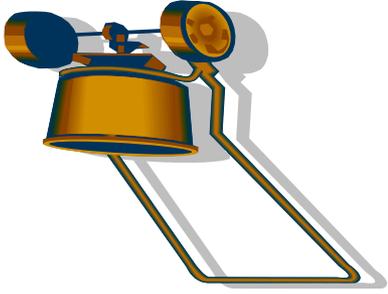
# Can you be a worm imagineer?



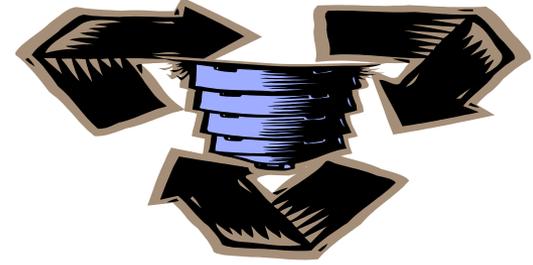
# You can make a mini-book!

- Fold the paper in half
- Then in half again.



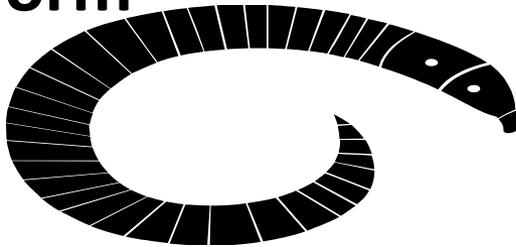


**Make fertilizer**



**Are good for  
composting**

**Worm**



**Help add air to soil**



# Worm books!

