

Teacher Earthworm FAQ - All the answers to your wormy questions

Why do earthworms come out of the ground when it rains?

Most think that earthworms come crawling out of the ground after rains because they are drowning but that isn't the case. Studies have shown that earthworms do fine in wet soil and can even live underwater for weeks! Scientists think that cloudy rainy days give earthworms the opportunity to come out of their burrows without drying out or getting burned by the sun. Earthworms come out of their burrows to find another earthworm to mate with or to find new spots with more food.

What do earthworms eat?

In general earthworms are decomposers so they eat dead organic material ("organic" is an adjective describing anything that is alive or was once alive). Earthworms often specialize on what they eat, with some earthworms eating leaves and others eating organic material in soil. Earthworms often gain a lot of nutrition from the microbes and fungi that are growing on dead leaves. Tell your students that the fungi and microbes are like the peanut butter on a cracker--they make it much more nutritious and tasty for the worm!

Why are some earthworms colored and others aren't?

Earthworms have colored skin for similar reason why people get tan, to protect them from the sun. Earthworms that feed on the surface often have dark backs to avoid damage from the sun's harmful ultraviolet rays. If you look at a night crawler (*Lumbricus terrestris*) it has a dark head and a light tail which reflects the fact that when night crawlers feed they keep their tail stuck in the ground.

How do earthworms move?

Earthworms have tiny stiff hairs (setae) on almost every segment, and these little hairs help the earthworm move. As earthworms stretch out and then contract their muscles the setae grab the soil and move the earthworm forward. The setae are visible under a microscope and their position on the body is used for identification. On larger earthworms the setae are so large that it makes the earthworm feel rough and bristly. If you get some big earthworms, be sure to have students feel the setae.

How do earthworms reproduce?

Earthworms are hermaphroditic, which means that a single earthworm has both male and female reproductive organs. The male reproductive organ is located on the 15th segment of the earthworm and the female reproductive organ is on the clitellum. Earthworms reproduce by lying next to each other head to tail and aligning their male pores with clitellums. A few species of earthworms can reproduce without finding a mate, and populations of these earthworms can grow very fast. Different earthworm species have their clitellum on different segments which means that only earthworms of the same species can align their reproductive organs. After reproducing, immature earthworms are released in "cocoons", which are hardy capsules that hold the earthworms until they are ready to hatch. When conditions are right, these cocoons open and young earthworms begin to feed and grow.

If I cut an earthworm in half, will it regenerate?

Most earthworms do not have the ability to regenerate into two worms when cut in half. However, if you cut the tail off an earthworm, the head section can still continue to live just fine. Some earthworms actually use this for defense and might drop their tail off in an attempt to avoid being eaten!

Can earthworms see?

Earthworms do not have eyes, so they cannot see like people do. However they can sense light through their skin which allows them to respond to light.

How big can earthworms get?

Earthworms can get to be very large! The largest earthworm in the world is the giant Gippsland earthworm from Australia. Although it is only 2 cm (<1 inch) wide it can be 3 meters (9 feet) long! In North America, the biggest earthworm is the giant Palouse earthworm from Washington and Idaho. It can grow to 1 meter (3 feet) long and is albino. Both of these species are very rare and threatened by human activity.

How are earthworms invasive species, aren't they good for the soil?

Earthworms can't simply be categorized as good or bad, it depends on what habitat they are found in. In your garden and in agricultural fields earthworms are often quite beneficial. Agricultural soils can be quite compacted (from tractors, etc.) and earthworms act like little plows and help aerate the soil. This can help water flow and increase nutrients in deeper soil. However, if these nutrients go too deep and get through riparian areas, there may be nutrient pollution or algal blooms in nearby streams. Forest soils are quite different and are often naturally aerated. When earthworms invade a forest they chew through surface soil layers and actually cause soils to become more compacted. Additionally, the diverse plants in the forest are adapted to low nutrient soils with thick leaf litter. When earthworms invade, they can cause some understory plants to go extinct. European earthworms are listed as "invasive" in Minnesota because they are destroying the habitat (leaf litter) of the endangered goblin fern. New research is showing that earthworms may be affecting larger forest animals (salamanders, shrews, mice, etc.) by consuming leaf litter which they use for habitat and finding food. The role of earthworms in different habitats is further complicated by the fact that we live in a patchy environment where areas where we want earthworms are right next to areas where we want to keep earthworms out.

Why do earthworms come out of the ground when we pour on mustard?

The oil from mustard seeds is a skin irritant for earthworms. When the mustard touches the earthworms they try to avoid it by crawling through their burrows, and since most of their burrows go up to the surface they crawl out. The mustard doesn't kill the earthworms, it just gets them moving.

If earthworms weren't here originally, how did they get here?

No one knows for sure, but it they most likely come over with the plants from Europe and Asia. When the people came to North America, they brought plants along, and those plants were often in soil, and that soil probably contained earthworms or cocoons! Earthworms have slow natural movement rates (<10 m a year) so humans helped them spread throughout North America with plants, on logging truck tires, with fishermen, and in compost.