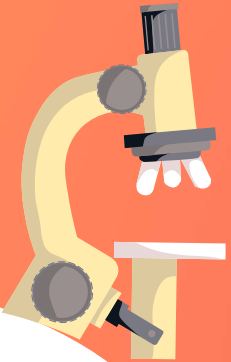




BNExplorer S T E M

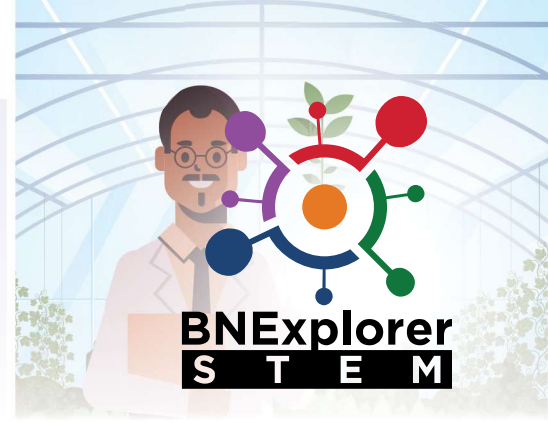


MISSION: COMPOSTING



K-2





SPARK

Have you ever heard of composting? What do you already know about it? Watch this video to learn more.

<https://www.youtube.com/watch?v=Q5s4n9r-JGU>



Vocabulary:

Biodegradable - capable of being decomposed by bacteria or other living organisms

Decay - rot or decompose through the action of bacteria and fungi

IMAGINE

Ask your family or friends if they have ever done composting? How do you think it will help the environment?





CHALLENGE

Now that you know what composting is, it's time to make your own compost bin!

These websites

(<https://www.pbs.org/parents/crafts-and-experiments/make-a-composter>

and

<https://kids.nationalgeographic.com/books/article/create-compost>)

include various ways to make a compost bin. Here are some steps to follow in making your compost bin:



Steps:

1. You can use a plastic bottle or bin, such as a 5 gallon bucket, depending on how large you would like your compost to be.
2. Layer your green and brown waste in the compost bin. Be sure to put the brown waste in first.
3. Add water to your compost bin.
4. Wait for your waste to compost. Turn it, or mix it, every so often to help the process go along.
5. Use your compost, which should now look like and smell like soil, to grow a plant. This will most likely take a while. In the meantime, check out these pictures of compost bins to see what yours will look like!





CHALLENGE QUESTION

What did you put in your compost bin, and how long did it take to compost?
What are you going to use your compost for?

EXPLORE

Visit the Ecology Action Center, which has community composting for Bloomington-Normal.

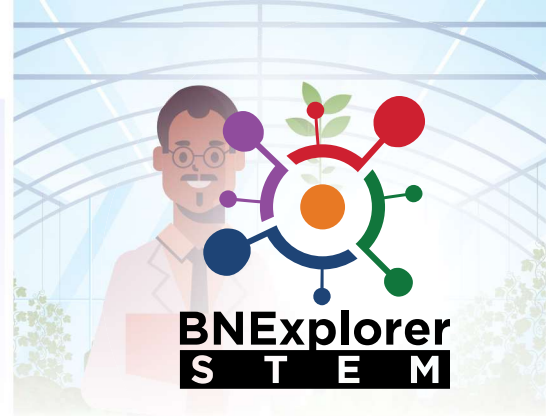


FUN FACT

Compost soil can reduce erosion and help control diseases and pests in plants.

<https://sites.google.com/site/compostheroes2/compost-fun-facts>





CAREERS

Elizabeth Reed, Director of Sustainability at ISU talks with BNExplorer Guide, Siri, about composting.



IDENTIFY

Go to this website

<https://www.epa.gov/sustainable-management-food/reducing-impact-wasted-food-feeding-soil-and-composting#benefits>

and click on “Benefits of Compost” to learn more about how composting helps the environment. Celebrate Earth Day this year by composting!

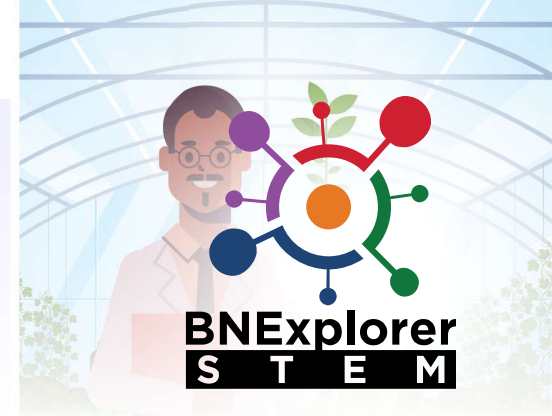


EXTEND YOUR KNOWLEDGE:

Now that you have created a compost, try to identify some of the bugs and insects that make their home in composts. After you have identified some of the critters living in your compost use the information sheet to learn more about those critters.

https://www.cvswmd.org/uploads/6/1/2/6/6126179/do_the_rot_thing_cvswmd1.pdf





COMPOST CRITTERS WORKSHEET

Circle Me If You Can Find Me



collembola



springtail



mite



sow bug



slug



worm cocoon



beetle



fruit fly



white worms



redworm



spider



snail



mold



ant



centipede



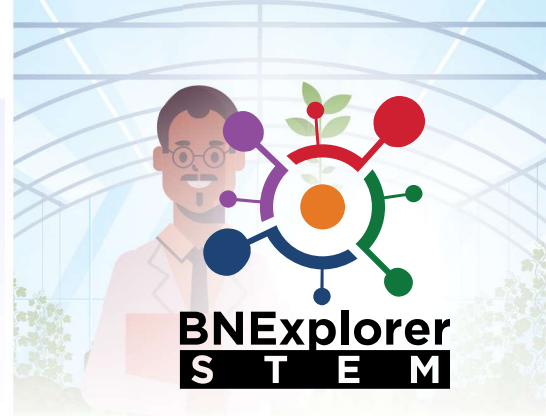
bacteria



millipede



pill bug



Compost Critters Information Sheet

Pill Bug or Roly Poly

I am an isopod, which means I have ten pairs of legs that look very similar to each other. I eat old leaves and veggie scraps. I am about $\frac{1}{2}$ inch long and I roll up in a ball if I am disturbed. Some people think that I look like a little armadillo. I am a grayish, dark color.



Centipede

I move quickly on my many legs. I have 15-137 segments with a pair of legs on each. I am a fierce hunter. I love to eat earthworms. I use my pair of poison claws to help keep my prey from getting away. I am about 1 to 2 inches long. I am usually reddish brown.



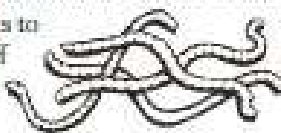
Ant

I am an insect with 6 legs. I help to decompose by breaking materials into smaller particles. I create tunnels, and move soil into clumps. Some people would rather not have me around their homes. I am black, brown, or red.



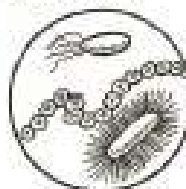
White Worm

I look like a frayed piece of thread. I am a skinny, white worm. I am $\frac{1}{2}$ to 1 inch long. I am related to an earthworm. I like to eat rotting food after the other bugs get to it. You might think of me as one who likes to finish off the job.



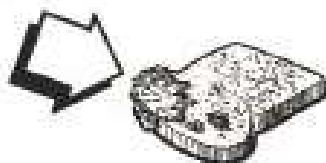
Bacteria

We are so tiny that you can't even see us. We are everywhere. I am colorless. I can eat almost anything. Some of us live together in groups and others don't.



Mold

I am a fungus. I am related to mushrooms. Most of us live on old food. You might see me on old food in your home or your worm bin.



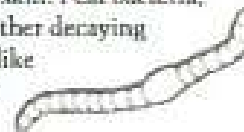
Sow Bug

I have 10 pairs of legs. That makes me an isopod like my cousin the Roly Poly. I eat vegetation and old leaves. My $\frac{1}{2}$ -inch-long body is oval and flat with flattened plates, but I can't roll up into a ball like Roly Poly. I am related to crayfish and lobsters. I breathe with gills so I must live in a damp, moist place. I am a dark, grayish color.



Earthworm

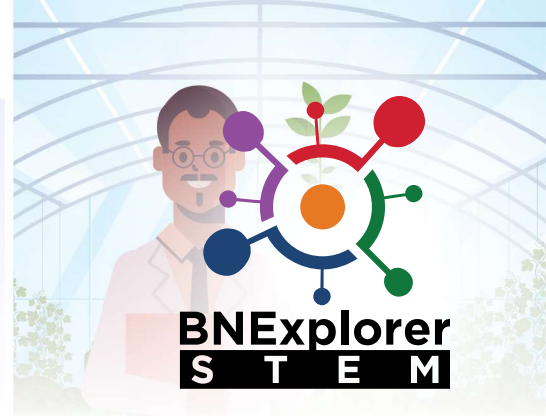
I am a long, thin, soft-bodied animal. My body is made up of little segments. I do not have legs or eyes. I sense light and I breathe through my skin. I eat bacteria, fungi, and other decaying materials. I like dark, moist places.



Fruit Fly

I am a very small fly. People don't like me, but I don't bite, sting, or make buzzing sounds. I don't harm earthworms either. Sometimes you will see me around a worm bin if a person forgot to bury their food. I like to lay my eggs where it's moist and warm.





Compost Critters Information Sheet

Slug

I have muscular discs on my underside that are adapted for creeping and crawling. I lay egg masses that look like jello. I eat living material but will make an appearance from time to time in your pile to eat fresh garbage and garden trimmings.



Springtail

I am a tiny insect less than $\frac{1}{16}$ inch long. I eat molds and decaying materials. I have a little spring that helps me jump high into the air. I am white in color.



Snail

Like my friend, the slug, I am a mollusk and creep around on my muscular belly. I carry on my back a spirally curved shell. I also have a broad retractable foot and a distinctive head. Like slugs, I prefer to eat living material, but I will also show up in your compost pile or worm box from time to time for lunch.



Mite

I am tiny. It would take 25 of us to cover an inch-long line. My body is round and fat so it's hard to see my 8 legs. I eat plant materials such as mold and soft tissues of leaves. Some of us eat the manure of other organisms. I am usually white or brown.



Collembola

I am a close relative of the springtail but I can't jump. I am tiny, and less than $\frac{1}{16}$ of an inch long. I eat molds and decaying matter. I am white in color.



Spider

I am related to mites and have 8 nifty legs. I am one of the least appreciated animals in the garden and compost. I feed on other insects and work hard to help control pests that will hurt a garden.



Millipede

I have so many legs you would have a hard time counting them. My name means "thousand legs," but I don't have that many. I am very shy and I roll up into a ball to avoid danger. I am a vegetarian and eat soft, moist, decaying plants. I am dark-red in color and am 1 to 3 inches long.



Beetle

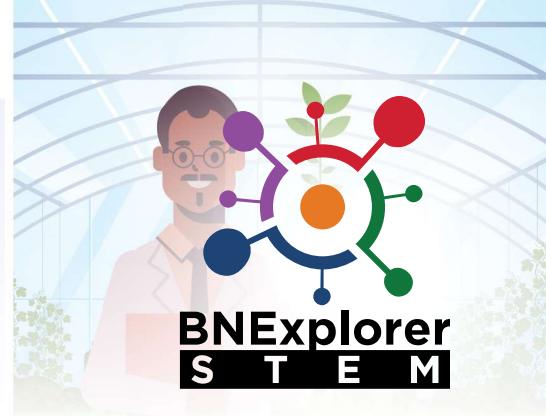
I am an insect with shiny, black, tough wings and am about $\frac{1}{8}$ inch long. I am a predator and eat slugs, snails, and soft insects such as caterpillars. I live beneath stones, boards, and other moist places.



Worm Cocoon

You can find me in a worm bin or compost pile. Before I have hatched, I am clear and yellowish and the shape of a lemon, and $\frac{1}{8}$ inch long. After I have hatched I turn pea green. Two or more baby worms are hatched at once.





Watch this short video that helps to explain the differences between landfills, recycling, and composting. Making small changes to how we get rid of waste can make a big difference to our environment.

<https://youtu.be/StuuSArAxnk>



Compost Stew by Mary McKenna Siddals is a great book to listen to with your family that allows you to learn more about composting.

<https://youtu.be/mQvzuliEsB4>





EXPERIMENT NOTES