DRILL DOWN DEEPER INTO DEEP DARK LIFE

IN SEARCH OF EARTH'S SECRETS
A Pop-Up Science Encounter

What is microbe poop?

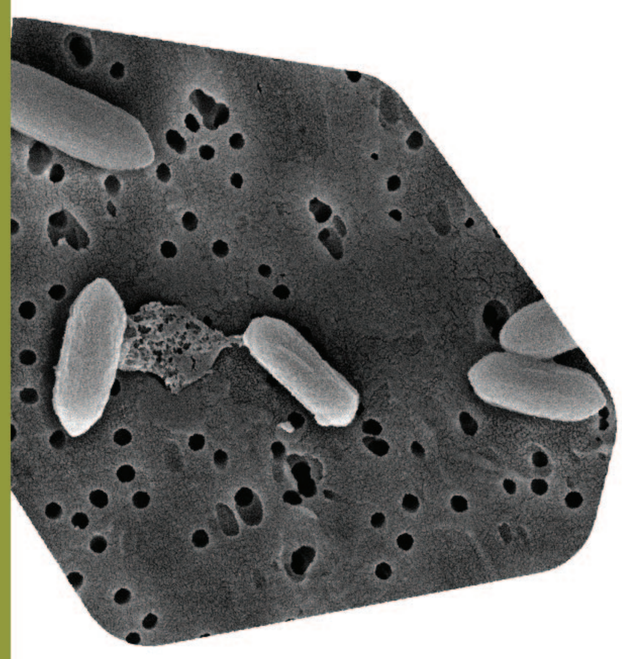
Microbes are tiny one-celled living things like bacteria and archaea. Like us, they need to eat and breathe to get the energy they need.

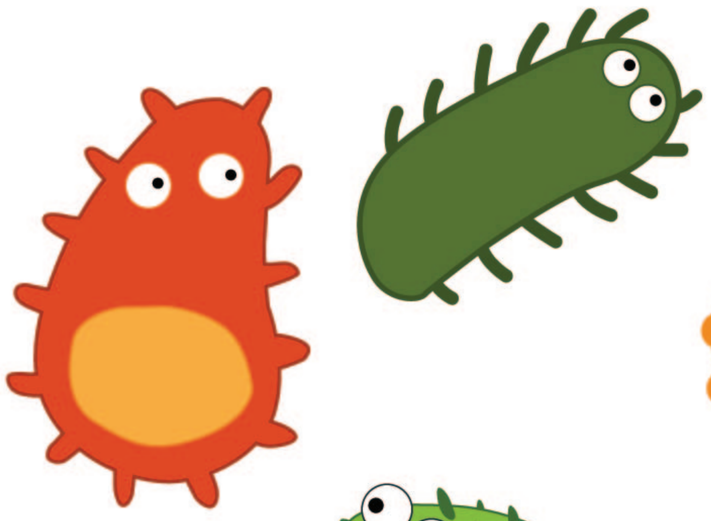
We eat plants and animals and breathe oxygen. Many microbes do too. The environments under the seafloor have little to no plant and animal remains or oxygen, so the microbes who live there eat and breathe things we would not consider food. Many of them eat the poop of other microbes.

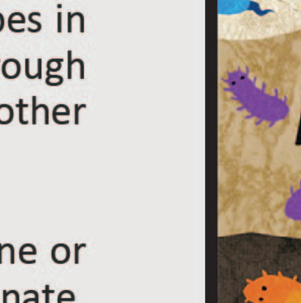
Microbe "poop" is not what we normally think of as poop. Microbes in the seafloor typically eat minerals, metals, and chemicals. Through digestion and respiration, they then turn these materials into other minerals, metals, and chemicals, which are then pooped out.

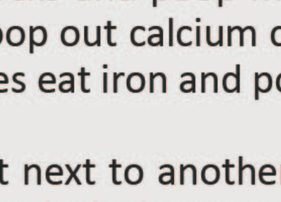
Some seafloor microbes eat minerals from rocks and poop methane or hydrogen sulfide. Others eat methane and poop out calcium carbonate, the stuff in seashells and chalk. Some microbes eat iron and poop rust.

One group of seafloor microbes will live right next to another group of microbes that is pooping out the metals or chemicals they need to eat. In some places, the species of microbes divide into layers where each species feeds on the chemical poop of the species above it.









Try this!

Check out the "Deep Dark Life" backpack from the front desk. Use the magnifier to see how many microbes live in one square inch on a variety of surfaces.

Learn more about how scientists are finding microbes in the seafloor at www.insearchofearthssecrets.com.

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Collect your *Deep Dark Life* passport sticker

What are some of the cool microbe species we've discovered living in the seafloor?

Pollution-eating bacteria

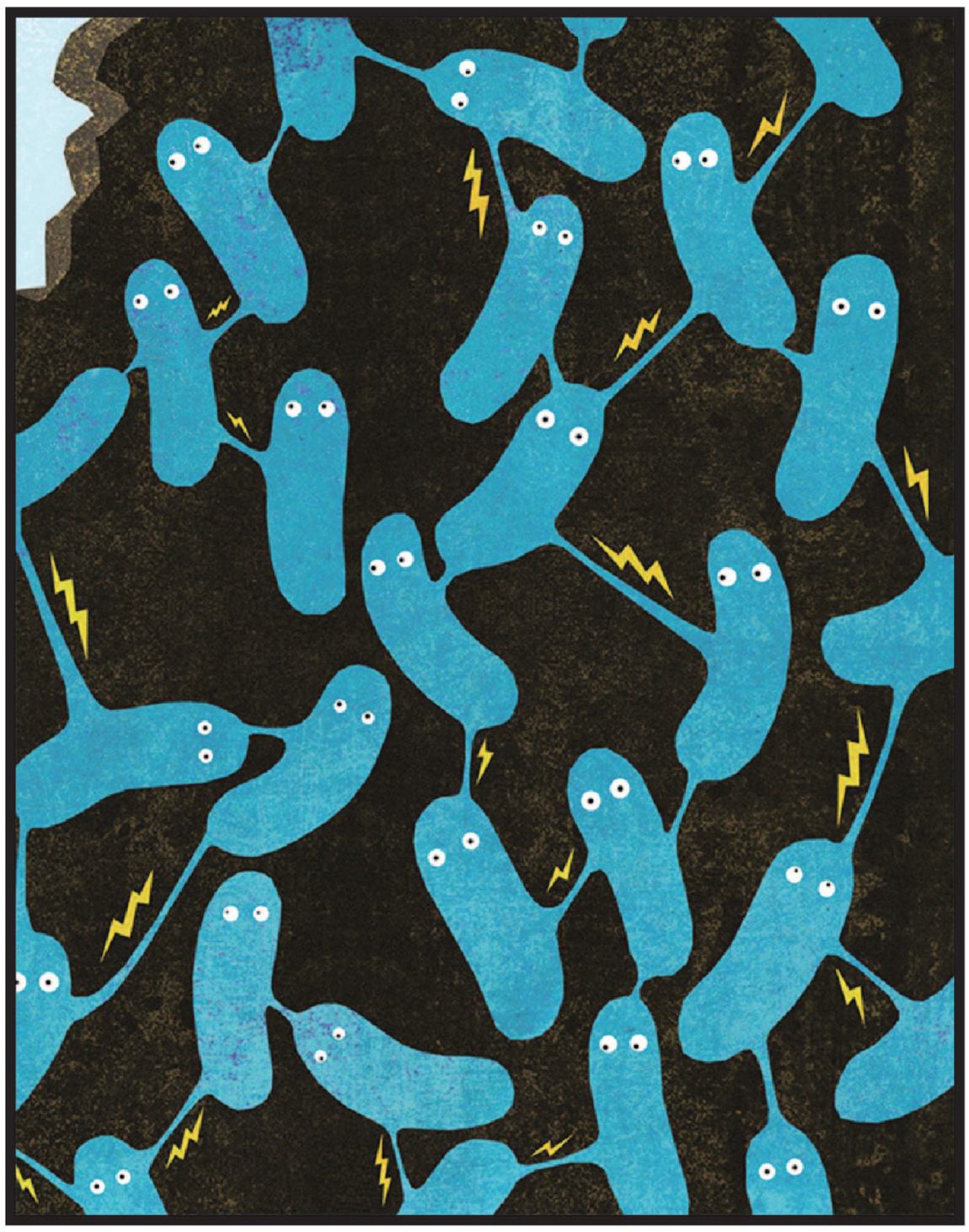
Some bacteria have been found in the seafloor that feed on oil and other chemicals and turn them into materials that are less toxic to wildlife. These bacteria can be used to cleanup oil spills or other forms of pollution.

Metal-making bacteria

Some bacteria poop-out chemicals that then attract metals that are valuable to people like copper, magnesium, zinc, and rare earth metals.

Electricity-generating bacteria

Some bacteria wire together to conduct electricity from the rocks in the seafloor. These bacteria can be used to make living batteries that generate electricity. They also create super strong, microscopic wires that may have industrial uses.



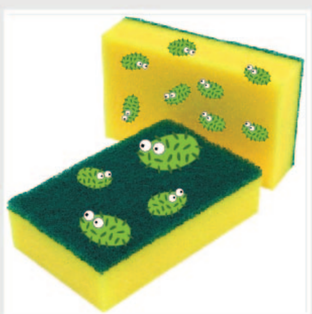
Everything is microbe habitat!

Try this!

Check out the "Deep Dark Life" backpack from the front desk. Use the magnifier to see how many microbes live in one square inch on a variety of surfaces.

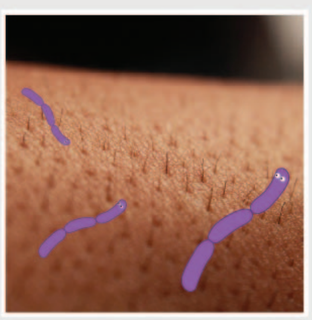
Our planet's surface is covered with microbes, but some surfaces are better habitats than others. Use the magnifier to see the average number of bacteria per square inch on each of these four habitats. Which is the best microbe habitat? Why? (Hint: microbes need to eat, drink, and breathe in their habitats).

About 100 million bacteria on a square inch of soil



About 135,000 bacteria on a square inch of sponge

About 64 bacteria on a square inch of keyboard



About 50 million bacteria on a square inch of skin

PS: Before you get too grossed out, almost all of the microbes on each of these surfaces are harmless to people.

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Learn more about the amazing things seafloor microbes can do at www.insearchofearthssecrets.com.