

BIOLOGY



No act of kindness,
no matter how small,
is ever wasted.

-Aesop



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What is biology?



Scientists who study biology focus on living organisms. Some biologists work to understand new things about specific plants or animals. Others spend their time investigating how parts of ecosystems interact.



Can biologists change the way that we think about plants and animals?

YES!

Scientists are always making discoveries that change how we think about our world.



What is the biosphere?

Everything on our planet makes up the biosphere. Even though it can be easy to think of built spaces as separate to natural ones, everything on Earth affects each other. All things are connected to and influence everything else.

Can pollution travel from cities into natural spaces?

Yes. This is one reason why it is important to think of the world as one biosphere.

Why do biologists research plants?

By studying plants, we can understand more about the role that they play in our world. Plants are a crucial part of a healthy ecosystem, and can show us when an area is having difficulties. We can also examine the relationship between plants and create new types.

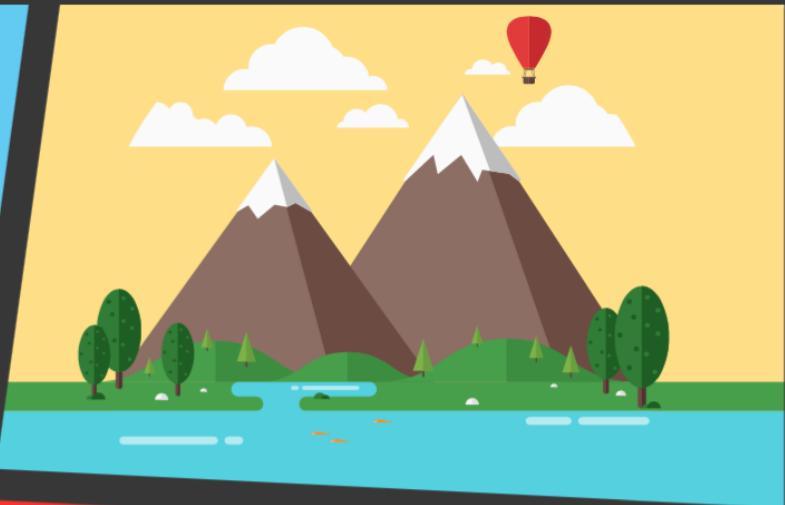


Why might we study plants for farming?



We can learn how to create plants that grow better under different conditions.

How are landscapes different?



Some biologists study the difference between ecosystems. Plants and animals adapt over time to survive in certain environments. We can get to know how landscapes differ in their climate, soil, rainfall, and many other aspects.

Do landscapes always stay the same?

No. One landscape can change over time, particularly with differences in climate.

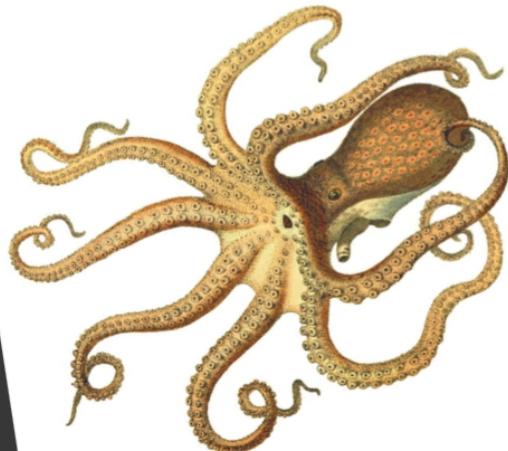
Why are some animals similar?



Consider the red panda and the raccoon. The octopus and the squid. These pairs of animals each have a lot of common ground in their behaviour and how they look. That is because they have a similar role in their ecosystems and are closely related.

Are octopuses and squid clever?

Yes, they are extremely intelligent creatures.



Why are other animals so different?

Now think about how varied the animal kingdom can be. Each animal is specialized for where it lives and the way that it needs to survive. That's why monkeys, insects, jellyfish, and cassowaries have such different bodies and behaviour. They have all adapted to their environments over time.



Are all animals related?

Yes. Animals all share a common ancestor and are part of a big family. Even dinosaurs!

Why do biologists study animal behaviour?



Some biologists observe animal behaviour very closely. We can examine how they communicate, how they interact with their family and other animals, how they defend themselves, how they hunt for food, and changes in his behaviour over time.



What kind of tools can animals use?

So many animals! We have witnesses crows, monkeys, dolphins, and a lot of other animals use tools.

How are biology and health connected?

Biologists examine the bodies of all animals to understand how to prevent and treat illness and disease. Now, we can also sequence DNA to understand the uniqueness of each body and the traits that it inherited.

Can DNA sequencing show who you are related to?



Yes. DNA sequencing can show a very long family history.

What does farming have to do with biology?

By studying crops and farm animals, we can understand how to better care for them. It is easy for crops and animals to be affected by parasites and disease. Research in agricultural science can help farmers improve the way that they run their farm.



Do plants evolve like animals do?

Yes! In fact, we had a big hand in the way that plants have changed. The fruit and veggies that we know today were very different before we began to change them.

What is some important equipment for biology?



Scientists use a lot of different equipment in the lab and in the field. Those who study behaviour often use cameras and equipment suited to extremes. In the lab, microscopes and dissection tools allow biologists to get a detailed look at anatomy.

What is this large, yellow insect under the electron microscope?

It's a teeny, tiny dust mite!

What do biologists do when they aren't in the field?

In the lab, biologists examine the samples that they took in the field.

They can look at the cells of the plants and animals that they are studying. They can also do experiments on these samples to test different conditions.



If you grow mold in the light and the dark, where does it grow better?

In the dark.

Why is biology important for our future?

Biology can help us to understand our history and our future. In a world with a rapidly changing climate, biologists can do research to help us conserve our plant and animal diversity, as well as understand how to live more sustainably.



Are we living in an extinction period?

Yes, we are living in the Sixth Extinction. However, biology can help us learn how to lessen our impact on plants and animals.



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