Biology Bits

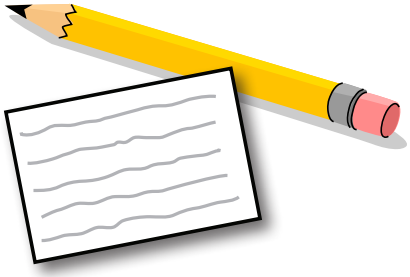
Bite-size Science

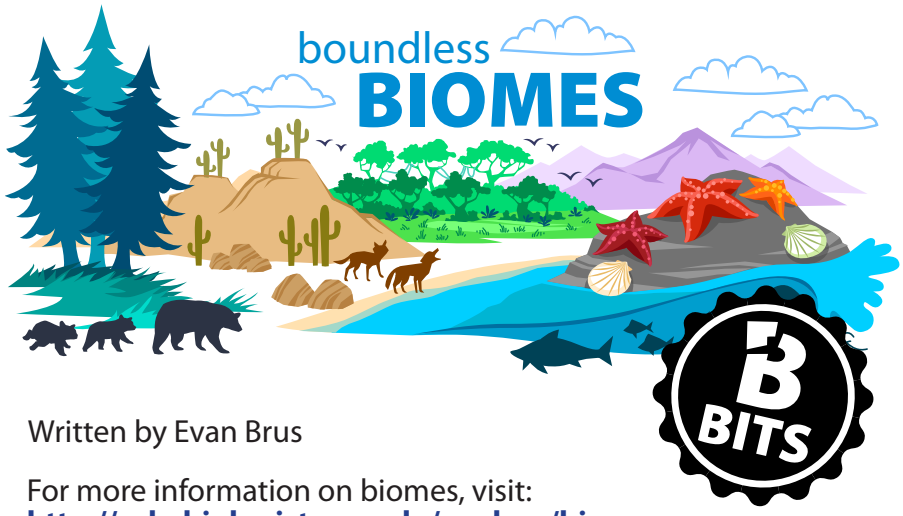
Trying new things can be hard. When you play a new sport, you have to learn and remember a whole new set of rules. When you try new food, you may end up not liking it (and you may even wish you could spit it out). The same goes for school. Learning information can be really hard and sometimes scary.

With food, what's the best way to start with something new? Trying a very small piece. You can take a tiny bite…taste it, feel the texture of it, and decide if you want more. Just like with new food, new information can also be easier to learn if you start off with really tiny bites.

Biology Bits stories are a great way for you to learn about biology a little bit at a time. We've broken down information into pieces that are very tiny—bite-sized, we call them. You can try just reading the Biology Bits at first. Cutting out the cards will let you organize them however you want, or use them as flashcards while you read.

Then, when you're ready to move on, use the empty cards to write out what you learned. You can copy what was already written, or try to write it in your own words if you are up for a challenge. Just remember, don't bite off too much at once!





Written by Evan Brus

For more information on biomes, visit:
http://askabiologist.asu.edu/explore/biomes

This set of bits will teach you about one set of categories we use to describe the world around us:
biomes.

Hungry for more bits? Visit:
http://askabiologist.asu.edu/activities/biology-bits

The world is complex. There are so many plants, animals, and environments that it's hard to keep track of it all. But what if we divide everything into groups? Groups make things simpler. Areas that are similar can be thought of as a group, no matter where they are. We call these areas biomes. Biomes let us talk about an area and all the life that has been affected by that area.

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Not all biomes are the same size. Rainforests are shrinking, while deserts are growing. Rain patterns and temperatures can change. In turn, this affects the plants and animals that can live in an area. With enough time, biomes of one type turn into another. The middle of North America is a grassland now, but it used to be an ocean.

Certain conditions can cause one type of biome to slowly turn into another.

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Tropical rainforests are full of tall trees, buzzing insects, and colorful birds. They are home to half of the kinds of animals and plants on Earth. Near the equator, up to 260 inches of rain fall each year. That's enough water to reach higher than three people standing on each other's shoulders. All this water helps many living things to grow in a small area.

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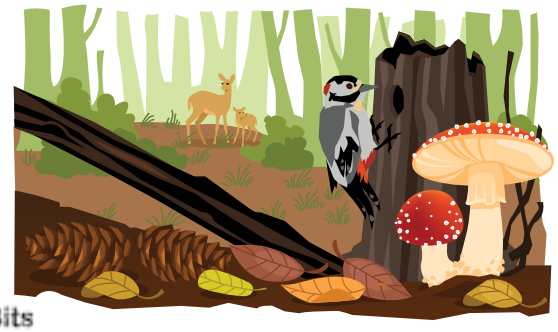
Temperate forests have four seasons: spring, summer, fall, and winter. These seasons affect the organisms that live in the forest. Some trees change colors and lose their leaves in fall. They regrow them when spring returns. Deer grow and lose antlers. Many animals either leave or stay out of sight for most of the winter.



Temperate forests almost seem like different places in summer and winter.

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You might think deserts are always hot, but some deserts are cold. Even Antarctica is a desert. But all deserts are dry and receive very little rain or snow. When warm air passes over high mountains, it cools off and loses moisture. You might find a dry desert on the other side. Because there is so little water in the air, deserts are usually very hot in the day and very cold at night.

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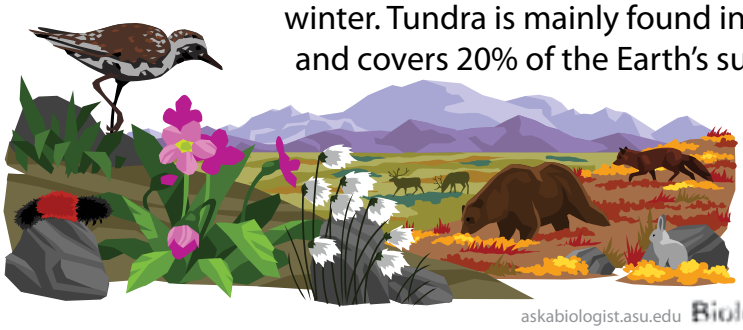
The tundra is frozen almost all year. It only warms up enough for plants to grow in the short summer. Long winters make a layer of frozen soil called permafrost. The frozen soil, along with the cold and wind, makes it hard for trees to grow. Animals grow quickly in the summer and often migrate in the winter. Tundra is mainly found in the north and covers 20% of the Earth's surface.



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The taiga is not as cold as the tundra, but it is still too cold for some trees. The trees that do grow in taiga have leaves that look like needles. These trees are called conifers. Some animals can use conifer seeds as food, but food is still scarce in winter. Before winter, most birds migrate away from these forests. Many furry animals sleep all winter to save energy. Some grow white fur to blend in with the snow.

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Grasslands look plain, but they are very complex. Though it may seem like it's just a lot of grass, many kinds of plants and animals live there. Grasslands can change into forests or deserts if they get too much or too little rain. Fires and grazing both clear out tall plants so they do not take over. Grasslands are found all around the world.

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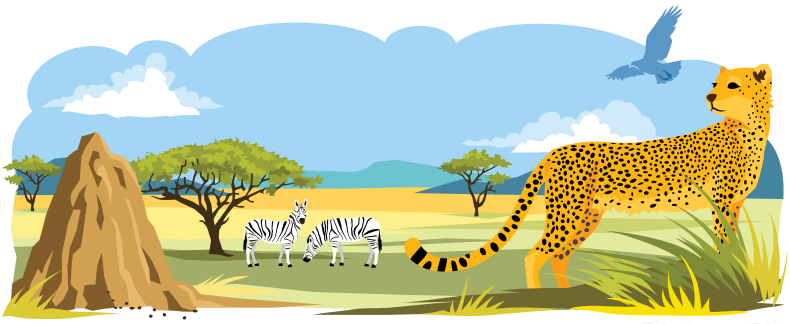
Savanna looks like grassland, but with more trees. It only has two seasons: wet and dry. Long grass grows in the wet season. Huge animals like elephants and rhinos eat this grass. They also survive months without rain. Animals may have to travel long distances to find water holes. Most savannas are found in Africa.



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Bodies of freshwater come in all shapes and sizes. These include lakes, rivers, and streams. All of this water has one thing in common: it's not salty. This can be bad news for some freshwater animals because they can take on too much water and lose too much salt. Some have special ways to keep enough water out and enough salt in. For example, many freshwater fish deal with this problem by peeing lots of water-like fluid.

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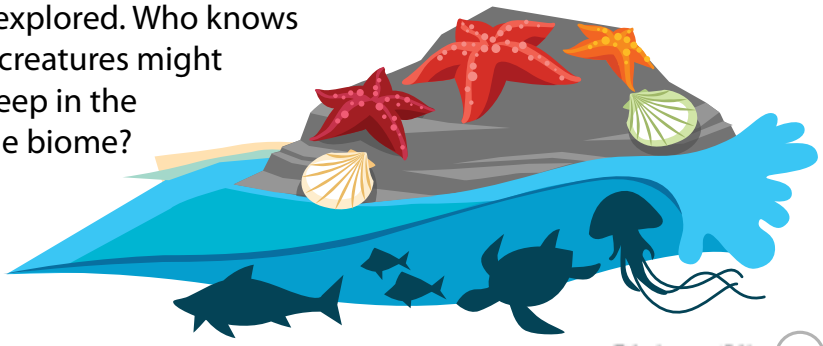
The marine biome is mostly made up of five oceans that cover 70% of the Earth. No matter where in the ocean you go, seawater is always salty. This is because minerals wash off land and end up in the ocean. This biome is the biggest and also the least explored. Who knows what creatures might live deep in the marine biome?



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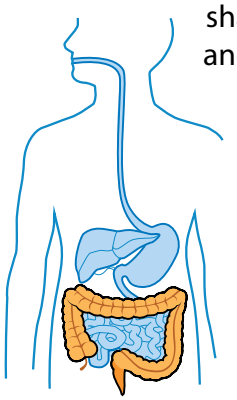
You might think that biomes only describe the world around us. But there's another biome that lives in and on our bodies: the microbiome. The microbiome is made of all the microbes that share our body space. These are mostly bacteria and they live in our guts, our mouths, and all over our skin. Many help us digest foods or protect us from harmful microbes.



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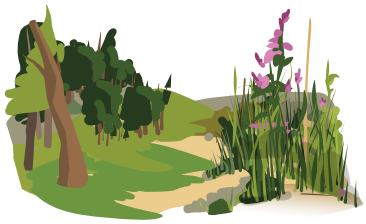

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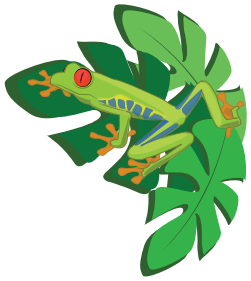

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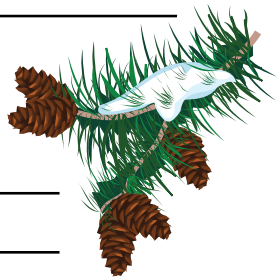

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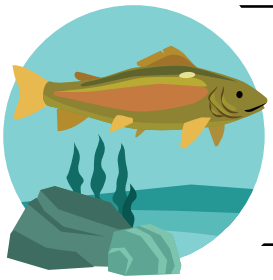

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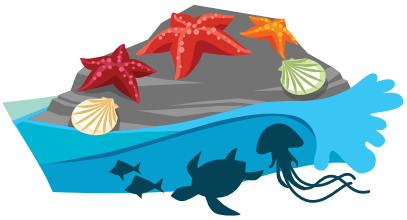

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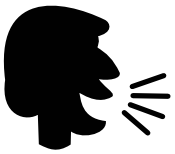
Biome – [**by**-ohm]

Complex – [**com**-plecks]

Conifer – [**con**-uh-fur]



Equator – [ee-**kway**-ter]

Grazing – [**grey**-zing]

Migrate – [**my**-great]

Moisture – [**mois**-cher]

How do you say?

Savanna – [suh-**van**-uh]

Taiga – [**tie**-guh]

Temperate – [**tem**-per-it]

Tundra – [**tun**-druh]

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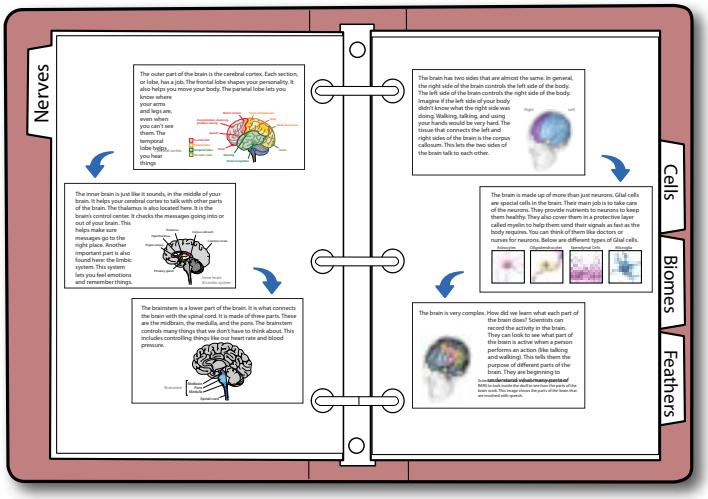

Instructions

Ready to begin? You can use these bits in many ways. You can print the pages and place them in a notebook for review. You can also cut each card out to re-organize them any way you want.

The empty cards can be used to write out what you learned in your own words, or to copy what's already written. Also included is a pronunciation guide, to help you learn how to say the more complicated words.

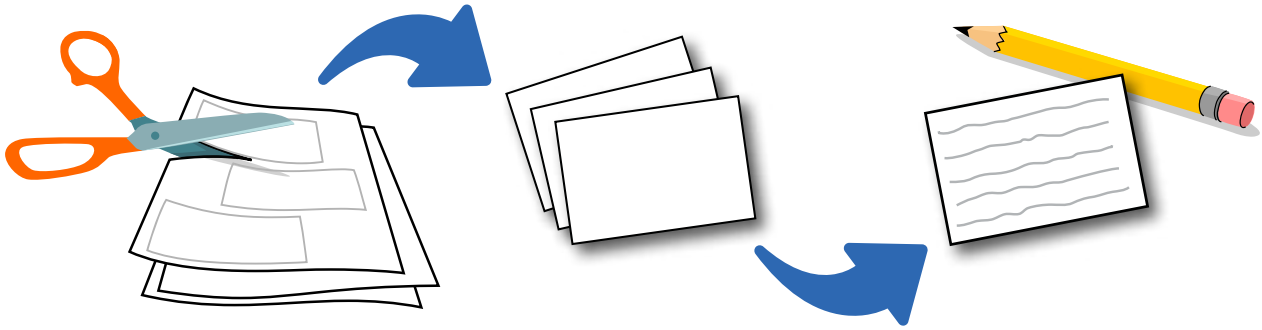

Illustration Credits

James Baxter - *Ask A Biologist*
- Grassland

Sabine Deviche - *Ask A Biologist*
- Temperate Forest, Desert, Tundra, Savanna, Freshwater, Ocean, Gut, Mouth, Skin

Brendan Koehler - *Ask A Biologist*
- Savanna, Temperate, Taiga

Marcella Martos - *Ask A Biologist*
- Rainforest

Jo Ramirez - *Ask A Biologist*
- Taiga