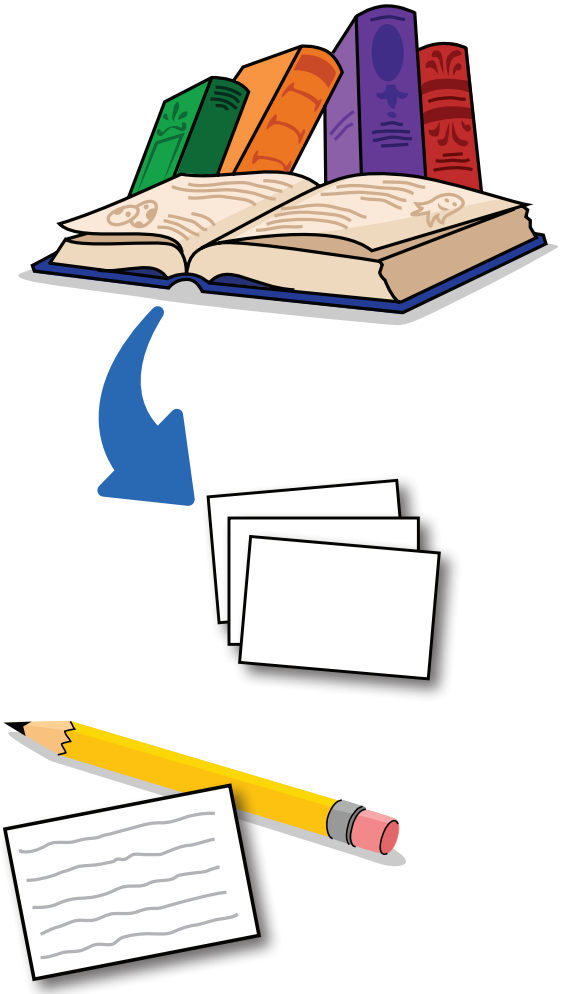
Biology Bits

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!

Honey Bee

B BITS

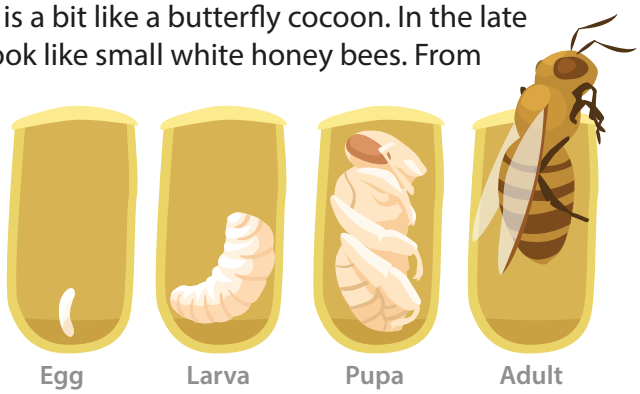
Written by Ruth Biggs, Danielle Houseman, and Amanda Wojtalik

For more information on honey bees, visit:
https://askabiologist.asu.edu/explore/honey-bees

This set of bits will teach you about life in and out of the colony of an insect that is very important to humans: **honey bees.**

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

A bee starts its life as an egg. It hatches out of the egg as a larva. Larvae look like tiny, white caterpillars. Later, they go into the pupae stage which is a bit like a butterfly cocoon. In the late pupal stage, they look like small white honey bees. From this stage, the bees continue to grow and change color until they become adult honey bees.



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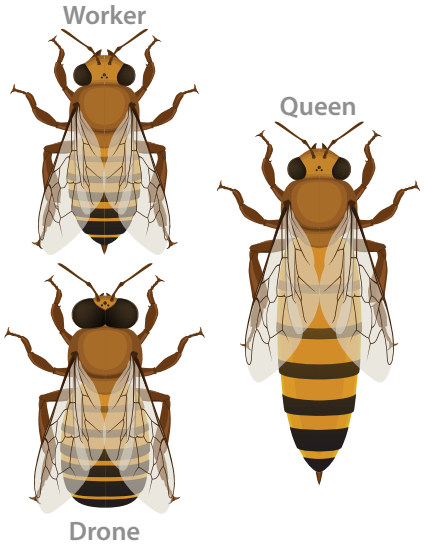
A honey bee colony has one queen bee and many worker bees. Queens are in charge of laying eggs and can lay over a thousand eggs a day. Most eggs turn into female worker bees, who gather nectar, care for young, and build the colony. A few eggs become male bees, or drones, that leave the colony to mate with other queens.



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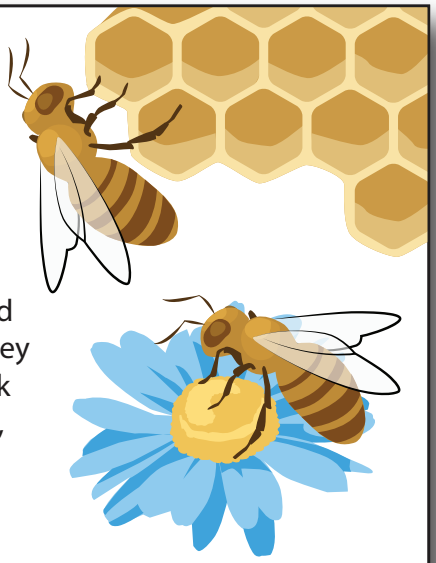
A worker honey bee's lifespan is only about 51 days. The job of a honey bee changes as it gets older. Young honey bees have jobs inside the nest. They may take care of the queen or the larvae. Young bees also make wax they use to build new cells of honeycomb. As the honey bees get older, they will start to work outside of the nest collecting nectar, pollen, and water.



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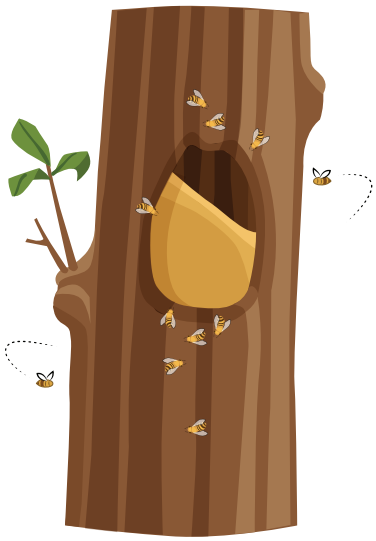

You see the gold of wax honeycomb from a bee nest in the hollow of a tree. Honey bees build wax comb where they raise young and store food. A single nest may hold up to 60,000 bees. Bees collect nectar from flowers and store it in the nest to make honey. A large colony can make 100 pounds of honey per year. Many humans make bee nests called hives to keep bees so they can collect honey.

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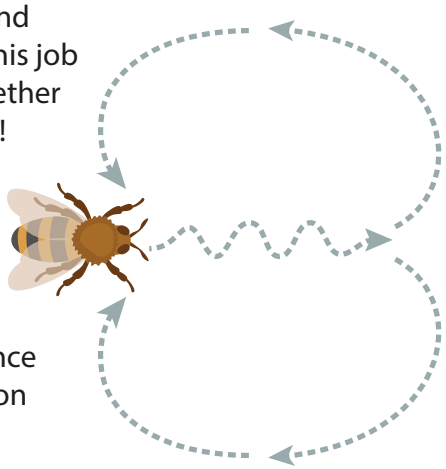
Most honey bees work hard to find honey for the colony. Wouldn't this job be easier if the bees worked together to find the best flowers? They do! Bees "talk" to each other about where to find nectar. Well, they don't talk, they dance. Bees use the waggle dance to tell each other about the best flowers they have found. The dance tells the distance and the direction from the nest to the flowers.



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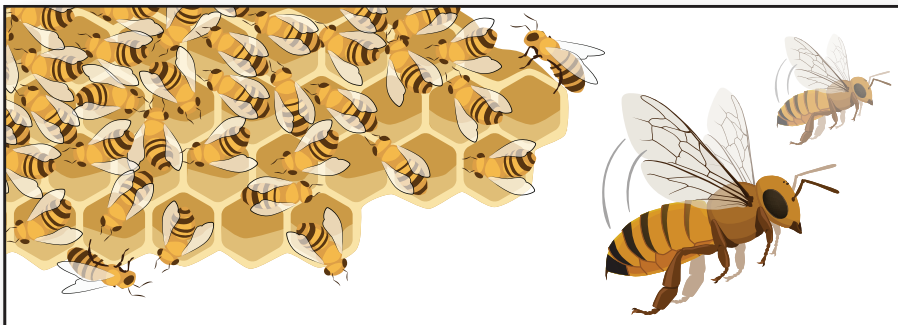

BUZZZZ! That's the sound of a honey bee. Honey bees have two wings on each side of their bodies. The buzz is the sound of their wings beating back and forth over 230 times per second. Honey bees fly together in a loud swarm when they run out of space in their nest. The queen and half of the worker bees move to a new area to build a new nest.

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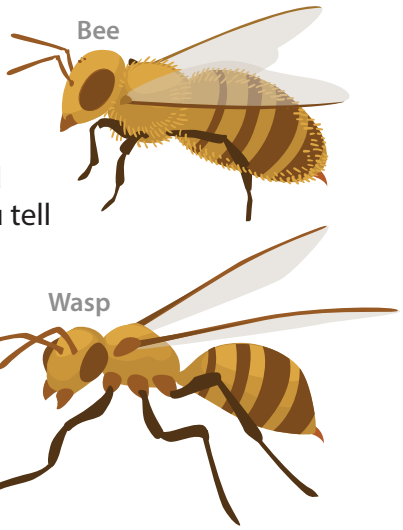
Honey bees are one of the most widespread bees, as they live on every continent except Antarctica. There are over 20,000 types of bees around the world. But lots of flies and wasps look like bees. So, how can you tell if you see a bee? There are two ways that can help. First, bee bodies aren't shaped like an hourglass—their bodies don't thin in the middle, like in wasps. Second, bees are covered in hair.



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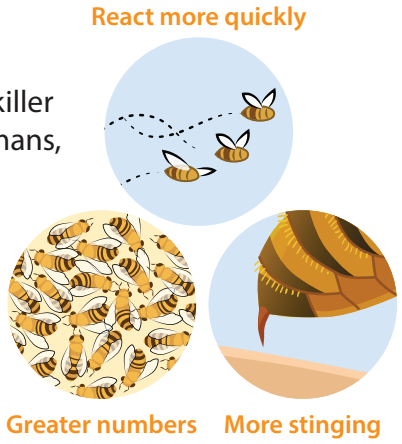
Is there such a thing as a killer bee? Africanized honey bees have a bad reputation. Some people call them killer bees. They can be dangerous to humans, but only if they are defending their colony. Africanized honey bees react to an attack more quickly than other honey bees, in greater numbers, and with more stinging. But if you leave them alone, they will leave you alone. Africanized bees look like other honey bees, but they are a little smaller.



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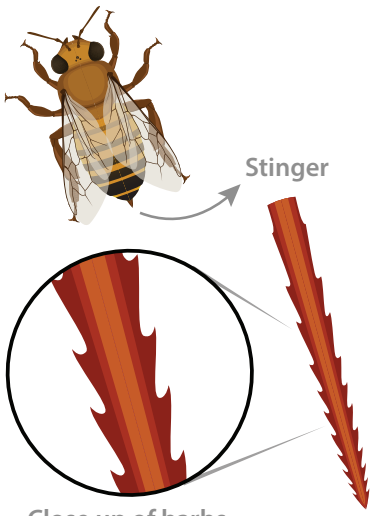
Bees do not want to attack. But if they are threatened, bees will protect themselves and their store of honey. Honey bees have stingers that are barbed with small spikes or hooks. This makes the stinger stick in the animal the bee stings. The stinger then can keep pumping venom into the attacker. But this also means the honey bee loses its stinger when it stings, and then the bee dies.



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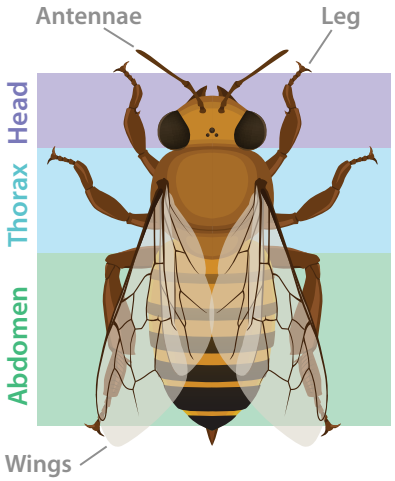
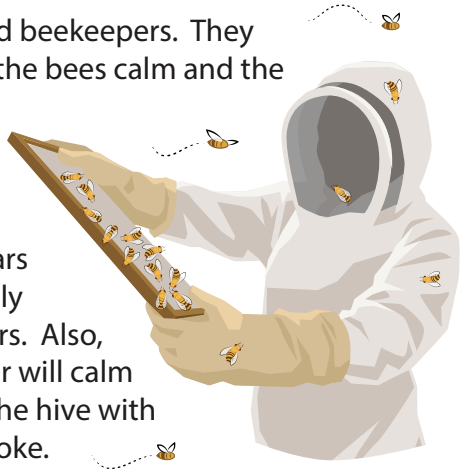
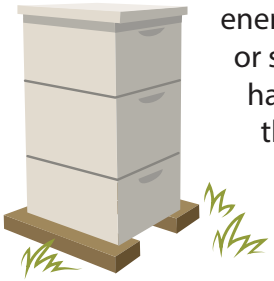
The purpose of a skeleton is to protect and support a body. Some animals have skeletons below their skin and muscles. But bees and many other animals have a hard exoskeleton. Exo means outside of the body. Bees have three main body parts: the head, thorax, and abdomen. They have two antennae, three pairs of legs, and two pairs of wings. Not all bee species look the same, but they have most of the same body parts.



People who raise bees are called beekeepers. They wear white because this keeps the bees calm and the keeper is less likely to be stung. Why are dark colors more likely to make bees sting? The bee's enemies, like bears or skunks, usually have dark colors. Also, the beekeeper will calm the bees in the hive with a can of smoke.





Honey bees are important pollinators of plants, including crops that humans depend on for food. But some bee colonies are dying, a problem that may have many different causes. Bee hives are often moved long distances to pollinate large crops, which can be stressful. Colonies are also sometimes mixed during travel, which can cause more disease in a colony. But people can help bee populations by planting bee-friendly gardens, using fewer pesticides, and only spraying pesticides at night.

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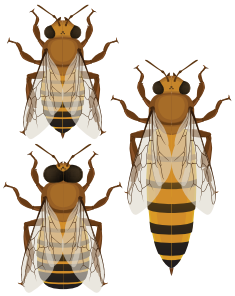

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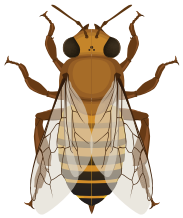

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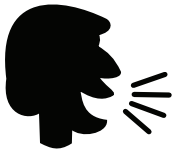

How do you say?

Africanized - [**aff**-rick-uh-nyzed]
Antennae - [an-**ten**-ee]
Colony - [**call**-uhn-ee]
Exoskeleton - [eks-oh-**skel**-eh-ton]
Larva - [**lahr**-vuh]
Larvae - [**lahr**-vee]
Nectar - [**neck**-ter]
Pesticides - [**pess**-tuh-sides]
Pupa - [**pyoo**-puh]
Pupae - [**pyoo**-pee]
Thorax - [**thohr**-acks]
Venom - [**veh**-nuhm]
Wax - [wacks]

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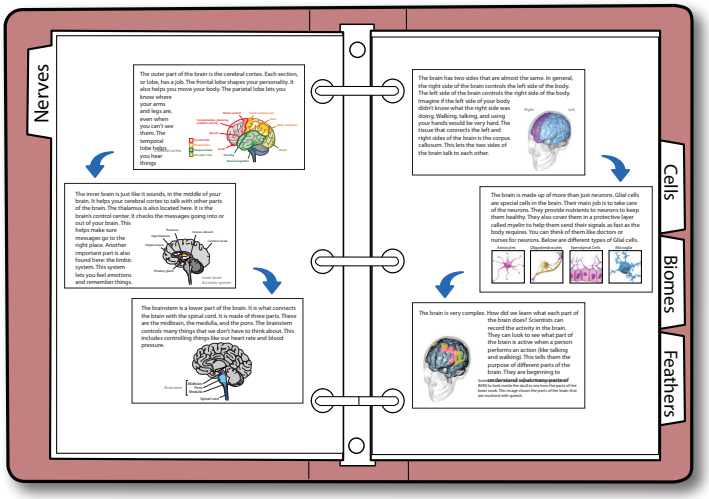

Instructions

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.

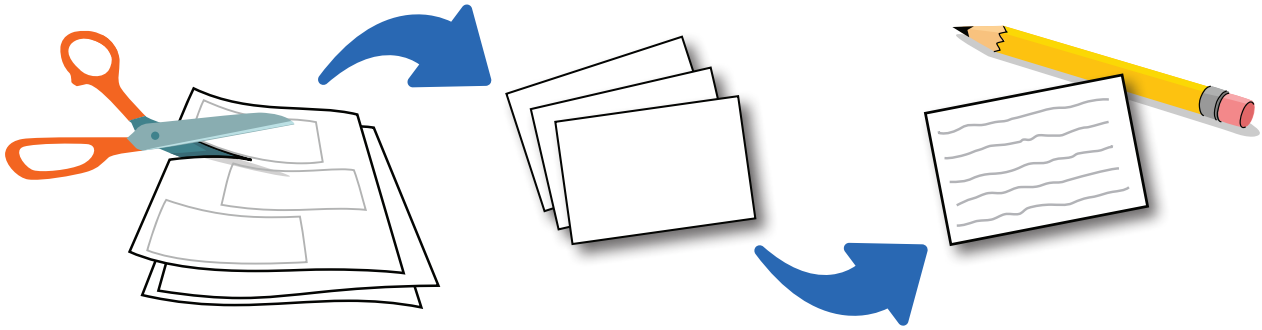

Illustration Credits

Sabine Deviche

Funding

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