

The Importance of Bees



Imagine a world without bees. Some might rejoice at the thought of never being stung by one of those little yellow buzzers, and others might miss the taste of honey. Very few of us, however, could easily imagine how different the world would be without bees in it. Picture a barren land without the vibrant colors of spring, in which no one has ever tasted certain fruits and vegetables like watermelon and broccoli.

That's a scary thought isn't it? You may begin to wonder, can bees really make such a difference? What is it that bees really do on our planet?

Bees and their anatomy

Bees' physical characteristics are unique and play a major role in helping them accomplish tasks that are important for the planet. So before we delve any further, let's first take a look at some of their most important features.

A bee's body is hairy and is made up of three parts, the head, the thorax, and the abdomen. Bees have a pair of **compound eyes** on their head. Under the microscope, compound eyes are made up of thousands of small hexagonal units called ommatidia. Scientists have reasoned that compound eyes are useful because due to their ability to help with seeing the



Hairy body

Compound eyes

Thorax



Reading Sample

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Decorators and keepers of our planet

Bees are often called the decorators of our planet. One reason for this special designation is that bees are necessary for enabling flowering plants to reproduce. Without bees, many of the flowering plants we see could not exist!

How do bees play a role in that process? Flowering plants reproduce through a process called **pollination** (Pollination, 2015). During pollination, pollen grains from the anther, the male reproductive organ of the plant, are transferred to the stigma, the female reproductive organ of the plant. This process leads to the production of fruit, seeds, or nuts, which grow up to be new plants (or eaten). Coincidentally, bees rely on pollen as a major food source, and, using their compound eyes and antennae to search for nourishment, they collect pollen particles as they buzz around throughout the day.



One of the first things you may notice about bees, beside their signature black and yellow-striped bellies, is the hairiness of their bodies. Other than making these little guys look cute and cuddly, the hair actually plays a major role in collecting pollen dust from flowers by acting like tiny little brushes.



Note: Pollen is the male half of the plant seed that is used for plant reproduction.

When bees are flying from flower to flower, pollen dust gets all over their body. As they move to other flowers, they transfer this pollen, allowing for plant reproduction. Ecologists call the relationship between a bee and a flowering plant a **symbiotic relationship**, which means both parties depend on or benefit from each other for survival.

While some plants can pollinate themselves or rely on the wind to do it for them, others rely on animals to help with this process. Some of the fruits and vegetables that we eat, such as apples, blueberries, pumpkins, and asparagus, are in this category. Bees are so

important to our food, that it has been said that one in every three bites we take should be attributed to the work of bees (Tucker, 2014). Many animals that graze on these bee-dependent plants would go extinct if bees weren't around to help them grow! In a way, bees are keepers of diversity.

Honey production



Ecobottle Sample



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Conservation efforts and future of bees

The decline of the honeybee population is a real concern. Every year since 2006, the managed honeybee population has been steadily declining at a rate of 30 percent due to disease, parasites, poor nutrition, pesticide exposure, destruction of natural habitats, and other issues that we may not even fully know about. The disappearance of bees is known as the “**colony collapse disorder**”. Some people who believe in the importance of bees have tried “planting cover crops, wildflowers and native grasses, and limiting the use of certain pesticides to help nurture bees back to health” (Conservation Work for Honey Bees, 2015). Some scientists are even preparing for the worst and researching ways to replace bees in case there are no longer enough remaining on Earth. At Harvard University, researchers are developing robotic bees that mimic bees’ collective behavior, or “intelligence”, with the

hope of making them effective “pollination machines” (Robobees, n.d.). Other scientists are studying alternatives to the honeybee species, such as the blue orchard bees, to serve as potential successors to them (Mims, 2009).

It is undeniable that bees are important in our lives. Without them, the world would not be as colorful, vibrant, or diverse as it is today.

Reading Comprehension Questions

1. How do plants reproduce? And how does the bee help in that process? Describe using the terms anther, stigma, pollen.
2. Imagine
3. Why

Extension Questions

4. What is a
5. Why do you think bees are important for our world?
6. Do some research and summarize what scientists think would happen if bees suddenly disappeared.
7. Create a

Ecobottle Sample



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References

- Conservation Work for Honey Bees. (2015, May). Retrieved April 16, 2016, from <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/plantsanimals/pollinate/?cid=stelprdb1263263>
- Honey Bee - External Anatomy. (2015, December 16). Retrieved April 16, 2016, from <http://www.insectidentification.org/external-anatomy-of-honey-bees.asp>
- How is Honey Made. (n.d.). Retrieved April 16, 2016, from <http://fordshoneyfarm.com/honeymade.html>
- Mims, C. (2009). Plan Bee: As Honeybees Die Out, Will Other Species Take Their Place? *Scientific American*. Retrieved April 16, 2016, from <http://www.scientificamerican.com/article/other-bee-species-subbing-for-honeybees/>
- Packham, C. (n.d.). Would we starve without bees? Retrieved April 16, 2016, from <http://www.bbc.co.uk/guides/zg4dwmn#zckjq6f>
- Pollination. (2015, July 30). Retrieved April 16, 2016, from <http://nativeplants.msu.edu/pollination>
- Robobees. (n.d.). Retrieved April 16, 2016, from <http://robobees.seas.harvard.edu/>
- Tucker, J. (2014, June 17). Why Bees Are Important to Our Planet. Retrieved April 16, 2016, from <http://www.onegreenplanet.org/animalsandnature/why-bees-are-important-to-our-planet/>