

Why are bees vanishing?

Sorting and delivering packages of live honeybees isn't the favorite task of postal workers. Still, it is a job they have to handle more and more often. That's because beekeepers in the United States and Europe have been losing bees to a mysterious condition known as colony collapse disorder, or CCD. Each mail-order package contains the seed of a new honeybee colony to replace one that has vanished.

Stevens, A. P. (2014 January 10). Why are bees vanishing? Science News for Students <https://www.sciencenewsforstudents.org/article/why-are-bees-vanishing-pesticides-disease-other-threats>

The Mystery Of The Vanishing Honeybees

Honeybees are vanishing from their colonies all across the United States. Western States like California have lost 30-60% of their honeybees, while the East Coast and Texas have lost almost 70%. It appears that bees leave to look for nectar and pollen and never return to their colonies. The problem is so severe that researchers are calling it the '*colony collapse disorder*'.

Dolasi, M. (2007 October 29). The mystery of the vanishing honeybees. <https://www.dogonews.com/2007/10/29/the-mystery-of-the-vanishing-honeybees>

I'm a Bee Researcher



Station #1: Why are bees important?

Use the different posters about bees to answer the following questions.

Why are many of the foods we eat available because of bees?

Explain the sequence in this image.



What food do bees make themselves that we use?

Explain what this quote means: "The world would be less diverse and less delicious without pollinators."



Station #2: How does pollination happen?

Part 1: Watch the video.

What do you observe happening in the video?

Stop the video at 32 seconds and observe the bee closely. What do you notice about the rear legs? Explain what you observe.



How does a bee collecting pollen help other flowers?



Part 2: Interact with the Google Doodle Game from Earth Day.

In this activity, you will move the bee with your cursor and try to capture pollen from some flowers and pollinate other flowers.

Flowers with pollen -



(have moving dots near them)

Flowers to be pollinated -



(no moving dots)

Play until you get through three stages and read the information.

Google Doodle Earth Day Game

<https://www.google.com/doodles/earth-day-2020>

Click on the arrow in the middle of the box to start.



Move the bee from flowers with pollen to those without. What happened as you did this?



What do bees produce to help feed the other bees in the colony?

When the hair on bee's legs get charged with static electricity, what happens?

Pollination helps to produce how much of the food humans consume daily?



Station #3: What are threats to bees?

Part 1: Watch the video.

What has been happening to bees recently?



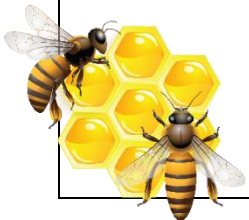
What are three threats to bees?

#1	#2	#3

Part 2: Return to the article

Read the article and identify questions you still have about bees.

What questions do you still have?





why bees matter

85% of plants exist
because of bees.



Bees are responsible for
food quality and safety.

We can thank a pollinator for as
much as 1/3 of all food we eat!



You can thank bees for the
grasses that feed our cows.

Without them there would be no milk,
cheese or beef.



WHY BEES MATTER



BEES POLLINATE
MORE THAN **100**
TYPES OF CROPS
IN THE US

1 OUT OF **3** 
BITES OF FOOD **DEPENDS**
ON POLLINATORS

BEES ARE VITAL FOR THE GRASSES THAT
FEED CATTLE. **WITHOUT THEM,** THERE
WOULD BE LESS BEEF, MILK AND **CHEESE** 

THE FUTURE OF FOOD DEPENDS ON HEALTHY BEES!
LEARN MORE AT WHOLEFOODSMARKET.COM/SHARETHEBUZZ.



BEES. WHY CARE?

WITHOUT POLLINATORS, THE WORLD WOULD BE **LESS DIVERSE**
AND **LESS DELICIOUS!**

HONEY BEES ARE **ESSENTIAL** IN THE PRODUCTION OF **VEGETABLES, FRUITS,**
LIVESTOCK FEED AND OILSEED.



80%

of flowering crops
are pollinated by
honey bees and
other insects

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No bees = **a major food
crisis**
Rise in food prices
Big losses in agriculture
& food industry



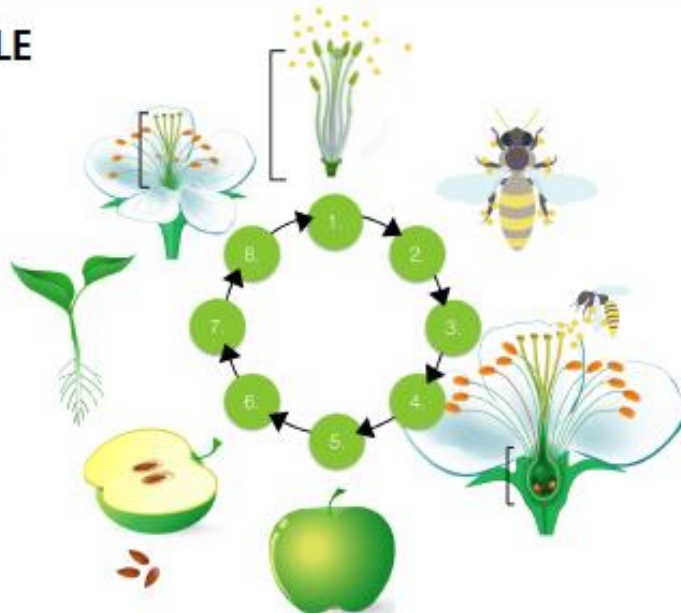
To produce just a
thimbleful of honey,
bees visit between
60,000 & 90,000
flowers



Back at the hive
bees **convert**
nectar to honey

THE POLLINATION CYCLE

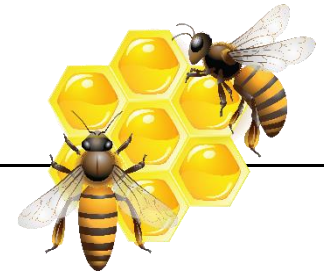
1. **Anthers** produce & release pollen
2. **Bees pick up pollen** on their fuzzy bodies
3. Bees rub off the pollen onto another flower's **stigma**
4. The flower is **pollinated**
5. The flower becomes a **fruit / vegetable**
6. The fruit / vegetable produces a **seed**
7. The seed **germinates**
8. A new plant is grown and **continues the cycle**



WHAT YOU CAN DO

Plant more plants. For example, bees love lavender, rosemary, echinacea, sunflowers and catnip - **Purchase honey** and other bee products from local beekeepers.

It's about bees KLEWS Chart



Question: Why are bees important to food production?

What do we think we
KNOW?

What are we
LEARNING?

What is our **EVIDENCE?**

What are we
WONDERING?

What **SCIENCE** words
and principles help us
explain?





Claim-Evidence-Reasoning



Question: Why are bees important to food production?

Claim: What is your group answer to the question?

Evidence: What information have you gathered through your research and investigations that help to support your answer?

Reasoning: How does scientific principles/ideas connect to your evidence?

