



WHOLE KIDS  
FOUNDATION



*sweet!*  
A world of  
honeybee fun  
awaits.

# *the* inside buzz

Journey into the incredible world of honeybees  
with games, facts, activities and more!

Discover fun facts for everyone, with  
activities for kids ages 5-11.



Perfect for  
sharing with  
your pals!



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Inside this booklet, you'll find amazing facts about honeybees, plus hands-on activities, games and more. But there's a whole world of info — and a few surprises — we couldn't fit in these pages! Visit us at [WholeKidsFoundation.org/GiveBeesAChance](https://WholeKidsFoundation.org/GiveBeesAChance) for videos, recipes, and more awesome honeybee info.

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Here's a sneak peek at some of the cool stuff you can learn on our site:

### **DID YOU KNOW?**

Honeybees have 5 eyes, 4 wings, and 2 stomachs.

A honeybee beats her wings about 11,400 times per minute!

Honeybees have been producing honey for at least 150 million years.



The background of the page is a vibrant yellow and orange honeycomb pattern. Several stylized bees are scattered throughout, some with dotted lines trailing behind them as if flying. The text is centered on a white rectangular area.

# Welcome to the wonderful world of honeybees!

Did you know that honeybees are responsible for 1 in every 3 bites of food we eat? That's right! They're the world's busiest pollinators, with a really big job to do.

Inside this guide, you'll find pages of fun activities, puzzles and facts that will help you learn about honeybees and the important role they play in our world.

At Whole Kids Foundation, we want to help you get the honeybee buzz so you'll *bee* inspired to help spread knowledge about this downright amazing insect!

It's getting harder to survive as a honeybee because of pesticide use and loss of habitat, but you can help. Explore this guide for ways to help these food-system superheroes thrive — and invite your whole hive to join you!

– Your friends at Whole Kids Foundation

A light blue speech bubble with a tail pointing to a bee illustration in the bottom left corner.

*Bzzzt: For extra info about bees, plus recipes, book picks, videos, and even more activities, visit [WholeKidsFoundation.org/GiveBeesAChance](https://WholeKidsFoundation.org/GiveBeesAChance).*

# UN-BEE-LIEVABLY COOL HISTORY



Thanks to honeybees, humans have been consuming honey for a very, very long time. In fact, explorers found pots filled with honey in the tombs of ancient Egyptian pharaohs. And even though it was thousands of years old, it was still perfectly edible!



GOOD NEWS FOR MUMMIES...

## HOW?

Honey has strong antibacterial properties — that means it kills germs. You can even use honey to help heal a cut or a scrape. Those same properties also mean that it never spoils or goes bad!



*parent tip:*  
Try a dot of honey on a bandage to help speed healing.

## *kitchen tip:*

If your honey has crystallized, or gotten hard, it's still good! To melt it back to liquid, simply place the bottle in a pot or bowl of warm water.



# WHAT BUSY BEES MAKE

Besides pollinating 1 in 3 bites of food we eat, honeybees offer a bounty of other goods. Check out all of the surprising uses for the things busy honeybees create.

## WAX

To make a pound of beeswax, honeybees visit over 30 million flowers. Beeswax flakes out from under the bees' abdomens, and then they pack it together to construct a honeycomb. Humans use beeswax for everything from candles to makeup to medicine.

## POLLEN

Honeybees mix pollen and nectar to make "bee bread" to feed to baby bees. Beekeepers collect pollen from hives, and some people take it as supplement to their food — or blend it into smoothies, yum! It contains lots of protein and more than 90 nutrients!



## PROPOLIS

Sometimes known as "bee glue," propolis is used to seal up cracks in the hive, or defend against other insects by creating a sticky barrier. No wonder this word literally means "protect the city" in ancient Greek. Propolis was used to care for wounds in ancient civilizations, and sometimes even for chewing gum!

## HONEY\*

The sweet stuff! Honeybees have to visit more than 2 million flowers to make a pound of honey. It's important to remember that honey is actually bee food, used to power and sustain their hives. Humans are lucky that they make enough to share! We've been using it as a sweetener and medicine for thousands of years.

\*Note: honey should never be given to babies less than 1 year old!

**BONUS:**

Color this page when you're done!

Beekeepers are busy folks, with an important job and some pretty neat tools. Can you find the hidden pictures below?



So, what is all this stuff and what does it do? We're glad you asked! You can discover more about beekeeping at [WholeKidsFoundation.org/GiveBeesAChance](http://WholeKidsFoundation.org/GiveBeesAChance).

# FESTOONING



Teamwork makes the dream work, even for bees! They do this cool thing called “festooning” where they link up their bodies to measure the spaces where they’re building honeycomb.

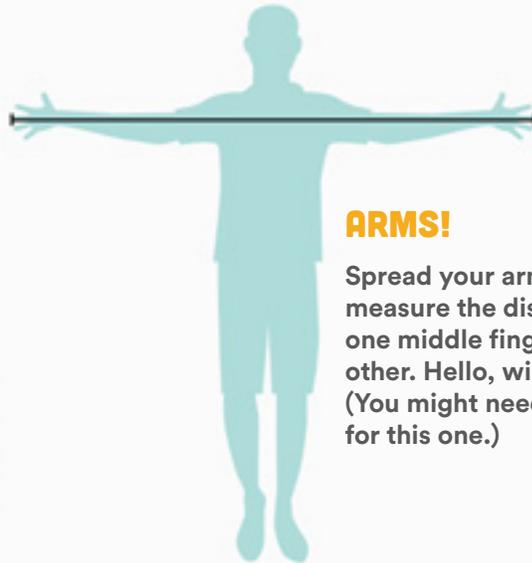
You can *bee* your own measuring tool, too! Grab a ruler or tape measure to get started.

## WHICH PARTS OF YOUR BODY CAN YOU USE TO MEASURE THINGS?



### HANDS!

Spread your fingers wide and measure the distance from the tip of your pinky to the top of your thumb. Now, you have a ruler!



### ARMS!

Spread your arms wide and measure the distance from one middle finger to the other. Hello, wingspan! (You might need a helper for this one.)

### FEET!

Measure the length of your foot in a shoe. Now, you can walk heel-to-toe to measure a space.



## GET BUSY MEASURING!

How wide is your front door? (use your hands)

How long is your bed? (use your arms)

How far is it from your refrigerator to your sink? (use your feet)

### BONUS FACT:

The word “festoon” refers to decorations like ribbons and garland. But now you know — these bees aren’t prepping for a party!

Watch bees festoon at [WholeKidsFoundation.org/GiveBeesAChance](http://WholeKidsFoundation.org/GiveBeesAChance).

# MEET THE HONEYBEES AND LEARN WHAT THEY DO!



## QUEEN BEES

Truly hive royalty! Queens are selected at a young age and fed lots of nutrient-rich royal jelly. They're the only bees in the colony that are able to lay fertilized eggs — up to 2,000 eggs in a single day! They can live up to five years, much longer than worker bees.



## WORKER BEES

Most of the bees in a hive are worker bees, and they are ALL female. They do lots of important jobs to keep the hive running smoothly, from guarding the hive to finding nectar-rich flower patches to making honey. Worker bees usually live to be about six weeks old.



## DRONES

These are the only male honeybees. There aren't many of them, and they have just one job: to mate with new queens to make baby bees. Sometimes called the “couch potatoes” of the hive, drones live about 12 weeks.

**EACH HIVE HAS ONLY ONE QUEEN, AND ABOUT 100 FEMALE WORKER BEES FOR EVERY ONE MALE DRONE BEE.**

# WORKER BEES HAVE LOTS OF JOBS!

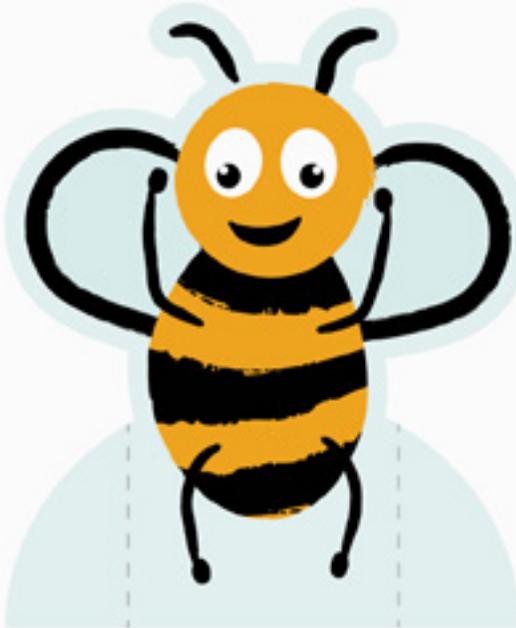
They work together to keep the hive healthy and make sure everything works smoothly.

Cut out the worker bees and their accessories below, then have fun exploring their different roles! \*Ask a grownup if you need help with scissors.



## POLLEN PACKERS

store pollen in honeycomb cells when foraging bees bring it back to the hive. (Pollen is used to feed the baby bees.)



## DRONE FEEDERS

feed the baby drones.



## QUEEN'S ASSISTANTS

groom and feed the queen.



## FORAGERS

search for food and gather it for the hive.



## UNDERTAKERS

take any bees that have died out of the hive.



## GUARDS

protect the hive from outside invaders.



## FANNERS

fan the hive with their wings to keep it cool and clean. They're like the air conditioners of the hive!



## BUILDERS

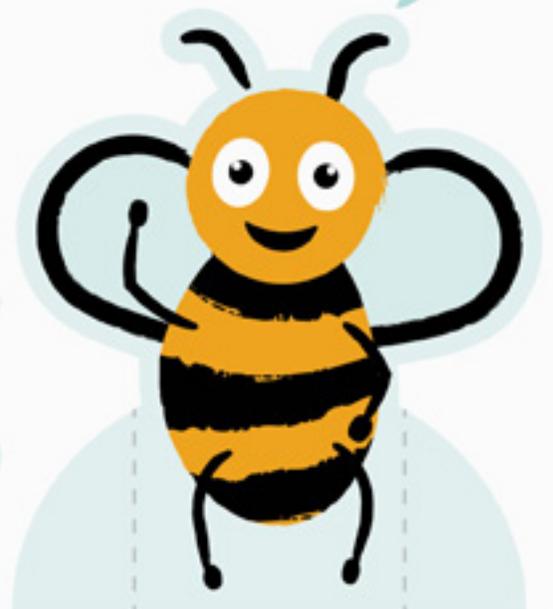
use wax to build the honeycomb.

## HONEY SEALERS

fan the hive's honey with their wings to make it less watery, then cap it off in a honeycomb cell.



Want to see some of these worker bees in action? Check out videos at [WholeKidsFoundation.org/GiveBeesAChance](http://WholeKidsFoundation.org/GiveBeesAChance).





### Keep an eye out!

There's only one queen per hive, and whenever she moves, a bunch of other bees usually move near her. She's also much bigger than the average worker bee, because she's fed a lot of royal jelly once she's chosen to be queen.

### CAN YOU SPOT THE QUEEN?

Find out if you're right — and see more cool hive photos — at [WholeKidsFoundation.org/GiveBeesAChance](https://www.wholekidsfoundation.org/GiveBeesAChance).



# SPOT THE QUEEN

Queen honeybees don't wear crowns, so how can you tell which one she is? Here are a few ways to spot the queen in a colony.

Look for a long, pointed abdomen

Look for a bee with a shiny black spot

Look for the largest bee

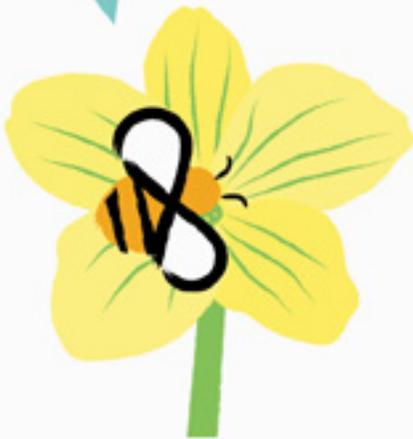
# WHAT IS POLLINATION, AND HOW DO HONEYBEES DO IT?



**1** Honeybees have millions of tiny hairs on their bodies. Basically, they are like tiny flying teddy bears!



**2** When they land on a flower looking for nectar, some of the pollen from that flower sticks to the hairs on the honeybee.



**3** Then, when the honeybee visits another flower, some of the pollen from the first flower rubs off on the next one.

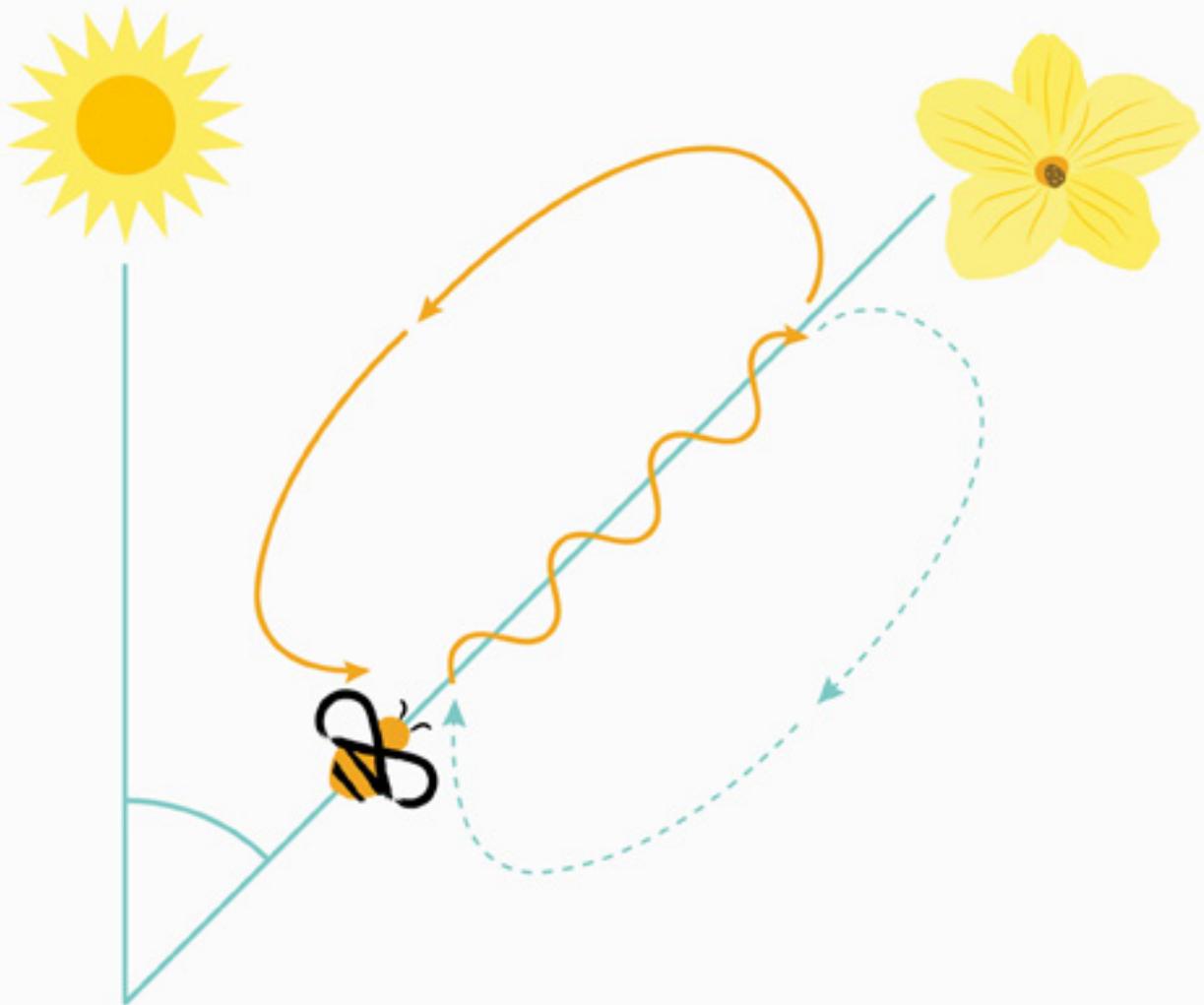
**4** When this happens, it helps the flower to reproduce, or make more of itself. It's also super important for fruits, nuts and veggies. Without pollination, the plant can't make these healthy foods for us to eat!



# WAGGLE DANCE

Honeybees tell each other where to find food. If they find flower patches full of nectar, they let others in their hive know with something called a WAGGLE DANCE.

The waggle dance kind of looks like a figure eight, and it communicates two things: how far away the food is from the hive, and which direction to fly to find it.



First, the honeybee flies a half-circle in one direction, then flies straight while wagging her abdomen back and forth. Then she flies a half-circle in the other direction. If she found a lot of food, she'll repeat the dance several times! And the faster the dance, the closer the food.

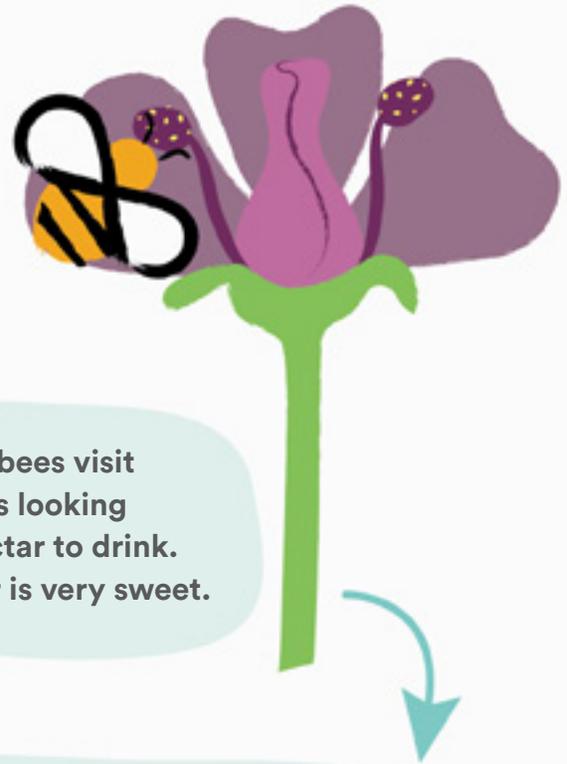
Bees watch the waggle dance and decode the directions, then head off to find their sweet treat.

**NOW IT'S YOUR  
TURN TO WAGGLE!**

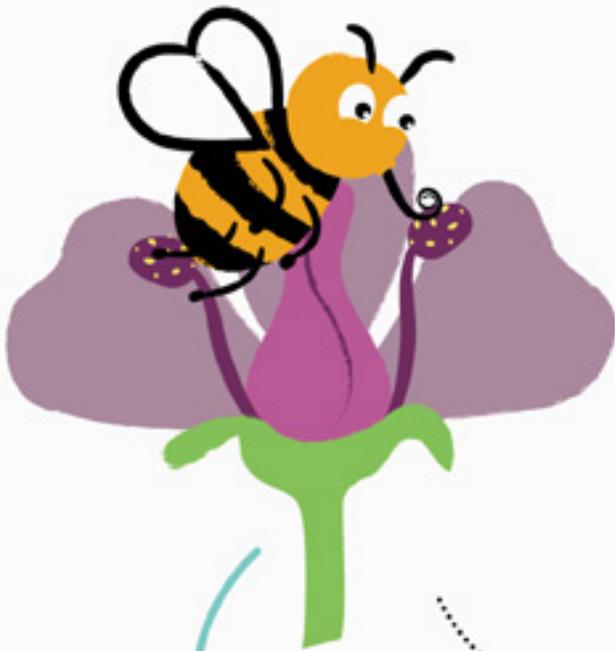


Check out a waggle dance video on our site, and try your best to waggle along. Share with #GiveBeesAChance!

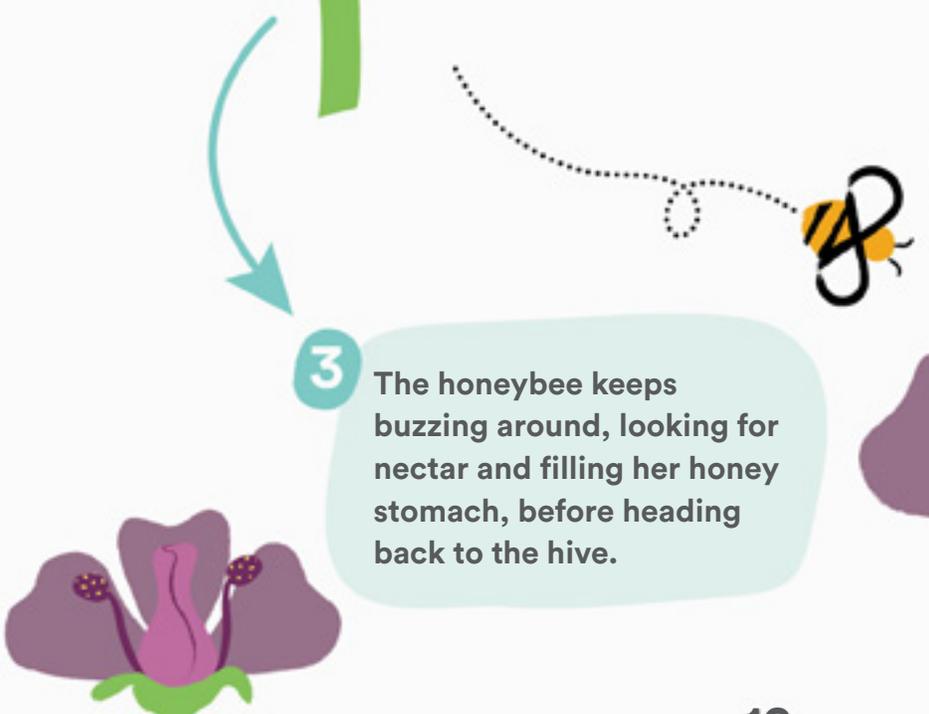
# HOW IS HONEY MADE?



**1** Honeybees visit flowers looking for nectar to drink. Nectar is very sweet.

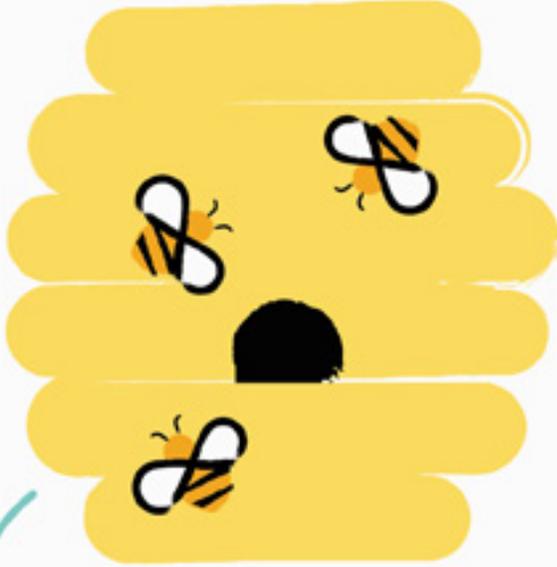


**2** When a honeybee finds nectar, she sucks it up using her *proboscis* — a hollow tongue that acts like a straw and looks like a party blower!  
The nectar goes inside the bee's *honey stomach* (remember, bees have two stomachs), where enzymes begin to break the nectar down.

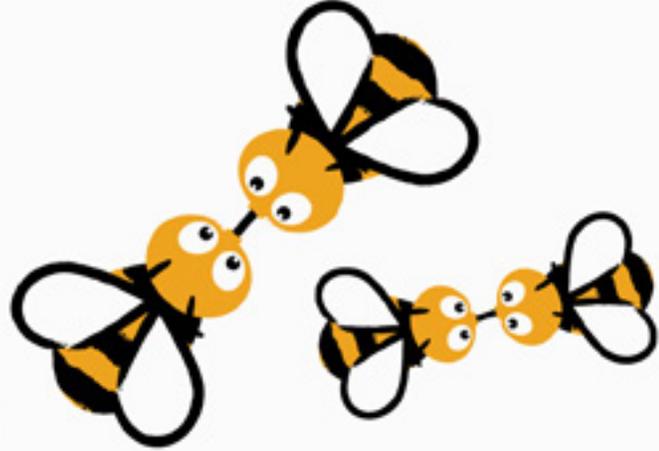


**3** The honeybee keeps buzzing around, looking for nectar and filling her honey stomach, before heading back to the hive.





**4** Once she's back with her colony, the bee moves this watery nectar mix from its stomach and into its mouth... then passes it into the mouth of another bee!



**5** The new bee's stomach breaks down the nectar even further, until she passes it to the next bee.



**6** After many bees have helped in this process, the mixture is put into the honeycombs of the hive. The honey-nectar mix is still watery, so the bees get rid of most of the water by fanning the mix with their wings.

**7** The mixture becomes thicker and resembles what we know as honey! To protect their honey, the bees seal the honeycombs with wax.





# **BEE** A HONEYBEE MVP

There are lots of ways you can make your yard a haven for honeybees.



## GO WILD

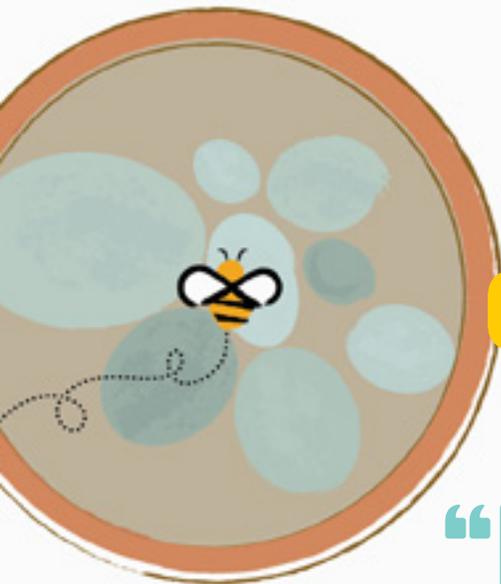


Let part of your lawn grow without mowing. Bees love flowering weeds and grasses.

## GROW NATIVE PLANTS



A patch of wildflowers will add color and a nectar source. Don't have a yard? Grow pollinator-friendly plants in an outdoor space in your city.

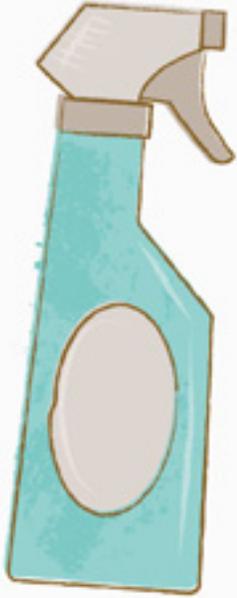


## CREATE A BEE "POND"

Bees can't swim or get their wings wet, but they need water, too! Try filling a shallow pie pan with pebbles and water, so bees have somewhere to land and sip some H<sub>2</sub>O.

**BONUS:** no cleaning required! Bees actually love "dirty" water, which is why they love the water that gathers in saucers under flower pots.





# DITCH THE HARMFUL SPRAYS.

The sprays we tend to use on plants and veggies hurt the good bugs and keep us from getting the nutrients we need. Try a sprinkling of cayenne pepper around pestered plants. Sometimes the best method is to pick unwanted bugs right off!



# BUY LOCAL, ORGANIC PRODUCE.

Support farmers who are doing their best to support bees. Anytime you choose organic food, you know pesticides that can harm our pollinators were not used.

# DON'T SWAT.



Honeybees very rarely sting. If a honeybee approaches you, be still as they check to see if you have any nectar. Once they know you're not a flower, they'll buzz along. While other kinds of insects can sting, like wasps and yellow jackets, they look very different from honeybees. Learn how to recognize these curious creatures, so you'll know they mean no harm. Once you know what a honeybee looks like, help your friends learn, too!

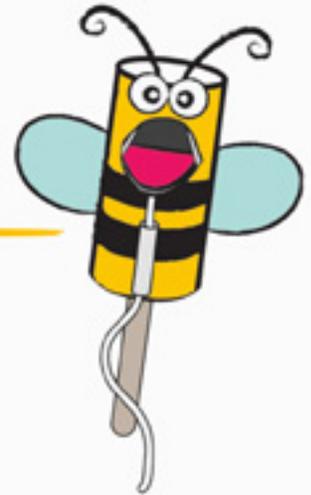


**SEE HOW TO BEAUTIFY**  
your community with  
wildflowers and other plants  
at [WholeKidsFoundation.org/  
GiveBeesAChance](http://WholeKidsFoundation.org/GiveBeesAChance).

# GET CRAFTY WITH



Build these playful puppets, then put on your very own pollinator puppet show for family and friends. Be sure to share with us on social! #GiveBeesAChance



## BUILD A POLLINATOR PUPPET

Level: Hard

### WHAT YOU'LL NEED:



Ask a grown-up if you need help using scissors.

**1** Cut out a mouth shape near the top of your tube. Save the piece you cut!  
Tip: If you flatten the tube first it will be easier to cut.

**2** Cut a small piece of straw. Set it aside to use later.

**3** Trace mouth piece onto cardboard. Cut out and glue both pieces together.

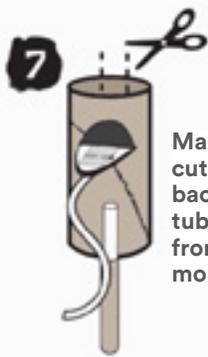
**4** Staple one end of the string to the mouth pieces.

**5** Glue one end of the popsicle stick to the **INSIDE** Front of the tube.  
Glue the straw piece to the **OUTSIDE FRONT** of the tube at bottom.

**6** Turn over mouth piece so string is on the bottom. Tape the mouth piece to the tube.

### LOVE THIS PROJECT?

There are dozens more upcycle crafts at [WholeKidsFoundation.org/kids-club](http://WholeKidsFoundation.org/kids-club).



7 Make 2 small cuts in the back of the tube across from the mouth.



8 Put one end of rubberband loop in the small cuts. Pull the other end out of the mouth and loop it over the bottom of the mouth piece.  
Pull the rubber band tight, so mouth stays closed.

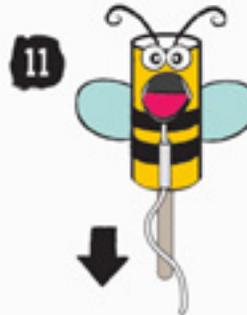


9 Draw eyes, wings and antennae on paper or cardboard and cut them out.

You can also cut out pieces to cover the inside and outside of mouth piece.



10 **DECORATE your BEE!**  
Use paints or markers to add some color to your puppet. Glue or tape on wings, eyes, antennae and mouth covers.



11 Put the end of string through the straw. When you pull down on the string your puppet's mouth will open!



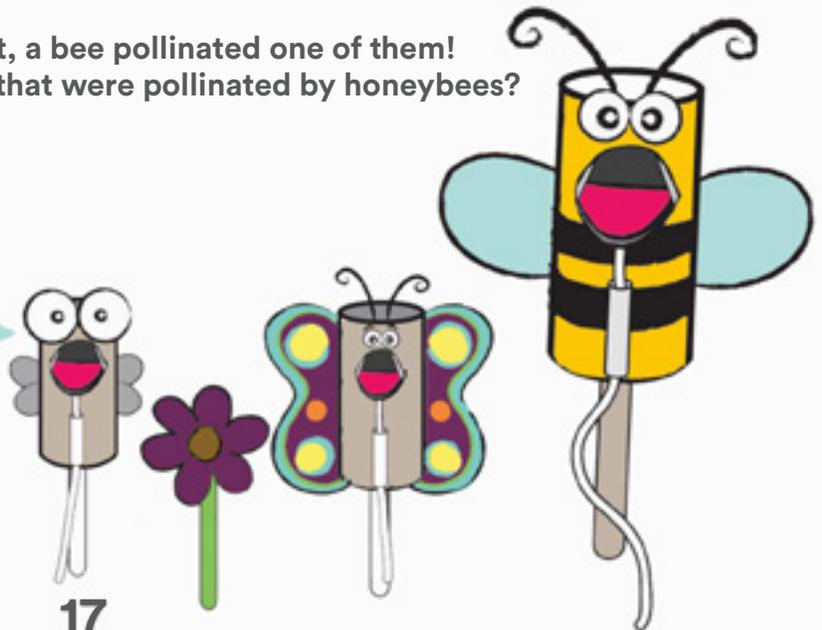
### PUPPET SHOWTIME!

Save extra tubes and popsicle sticks to make more puppets. Try coming up with your own designs and write a show.

## NOW THAT YOU'VE MADE IT...THINK ABOUT IT!

1. Bees are attracted to their food by smell and color. How do your eyes and nose help you choose tasty foods?
2. For every three bites of food you eat, a bee pollinated one of them! What veggies and fruits do you eat that were pollinated by honeybees?

*Bonus: share your crafts with us on social!  
#GiveBeesAChance*



# SEED FLINGS



Seed Flings are fun to make and extra fun to fling, plus they help create a bee-friendly habitat! Basically, you take your favorite seeds, smush them into soil, wrap them in clay, and then — toss 'em! They also make great gifts.

You can use any kind of seeds, but native flowers and plants are best. Consider whether your seeds need sun or shade, and that will help you figure out where to toss your seed flings.

## INGREDIENTS:



Seeds



Air-Dry Clay  
(there are lots of different colors available)



Potting Soil



Water in a  
Spray Bottle

- 1 Start with the air-dry clay. Spread it out into a pancake  $\frac{1}{2}$ -inch thick or less. Try to keep the thickness consistent throughout. Next, on top of the clay round, add potting soil, a little spray of water, and seeds.



- 2 Next, gently fold one side of the clay across the soil and seeds. Be careful to keep everything inside. Then, fold the other side over the mix.

Gently blend and mix together the clay, soil, seeds, and water until you have it all together in one big ball.



- 3 Break into segments about the width of a quarter. Roll into smooth ball shapes.

Now, your seed flings are ready to launch into your yard, a vacant lot, or anywhere that needs beautifying!



## Tips:

Working with the clay can be really messy! The clay washes off easily with soap and water, so make sure you have some handy.

You don't need perfect measurements for the clay, soil, and seeds — you can eyeball everything! Just make sure you have more clay than soil and seeds.

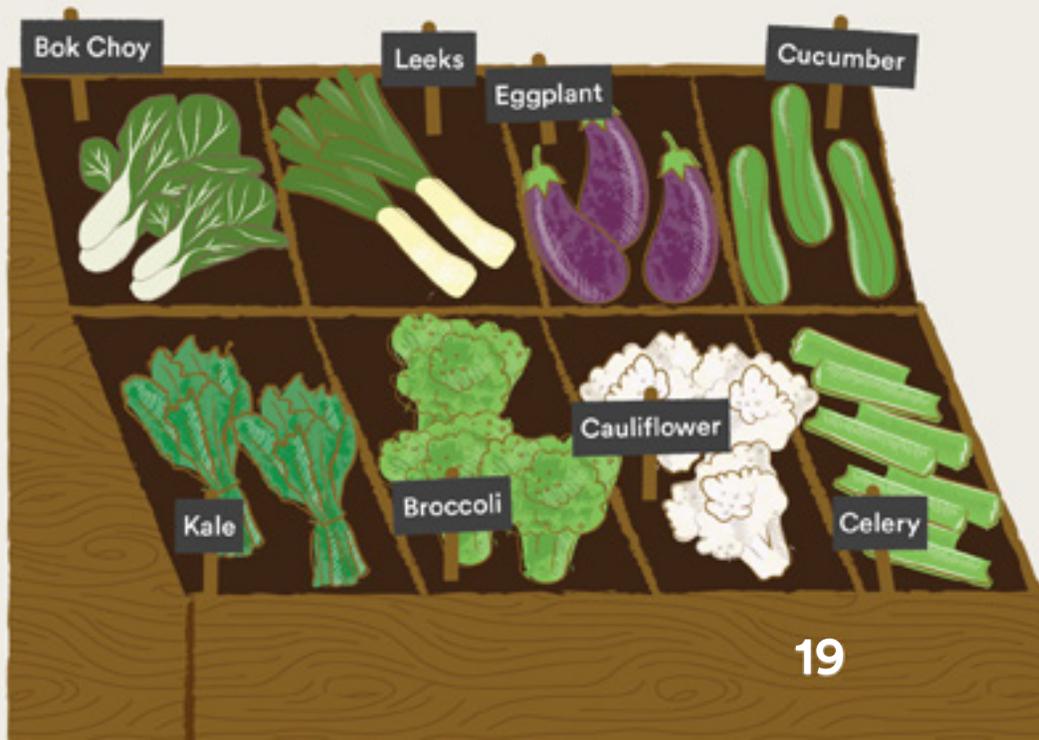
Remember to think about the best time to plant particular seeds in your local climate. Some do best in the spring, some in the fall.



# ALL OF THESE YUMMY VEGGIES AND FRUITS WOULD DISAPPEAR WITHOUT HONEYBEES!



**WHAT** WOULD **YOU**  
**MISS** THE **MOST**?



Even though some veggies and fruits don't completely rely on honeybee pollination, these plants make more fruit with lots of nutrients when bees do stop by for a visit.



# EAT A RAINBOW

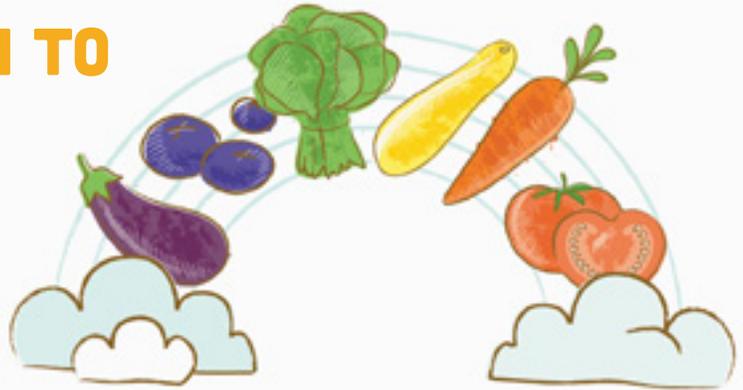
Eating a rainbow of colors helps your body get a complete range of different vitamins and nutrients from a wide variety of vegetables, fruits, legumes, and whole grains.

## WHAT DOES IT MEAN TO EAT A RAINBOW?

Choosing a variety of different-colored whole foods throughout the day and week.

The more naturally occurring colors on your plate at each meal or snack, the better.

Some sweet treats are colorful because they're made with food coloring... but those don't have superpowers that keep your body healthy!



*tip:*

We eat with our eyes first, so creating colorful, visually appealing dishes is another step toward healthy eating!

Find delicious recipes that help you eat a rainbow at [WholeKidsFoundation.org/Recipes](https://WholeKidsFoundation.org/Recipes) and with our Better Bites activities at [WholeKidsFoundation.org/kids-club](https://WholeKidsFoundation.org/kids-club).



# WAIT — WE'RE NOT DONE YET!

Find a hive-full of information, activities,  
videos, crafts, trivia, recipes and more at  
[WholeKidsFoundation.org/GiveBeesAChance](https://WholeKidsFoundation.org/GiveBeesAChance).





## *Bees in School? Yes!*

In partnership with The Bee Cause Project, Whole Kids Foundation provides grants for schools and nonprofit organizations to receive support for educational beehives, so students can observe honeybees up close and learn about the vital role these pollinators play in our food system.

Learn more about The Bee Cause Project and how kids benefit from bee education with our online video. Go to [WholeKidsFoundation.org/GiveBeesAChance](https://WholeKidsFoundation.org/GiveBeesAChance).

### About Us

Whole Kids Foundation is dedicated to helping kids eat better—and enjoy it! We are a nonprofit 501(c)(3) founded by Whole Foods Market and guided by the same values, principles, expertise and standards for quality ingredients, food production methods and nutrition.

### Our Mission

We support schools and inspire families to improve children's nutrition and wellness. Given the right opportunities, kids will get excited about fresh fruits, vegetables, whole grains and other nutritious whole foods.

### Apply for a Grant

In addition to healthy eating initiatives, we provide grants for educational bee hives, school gardens and salad bars. Find out how to enrich your school at [WholeKidsFoundation.org/Programs](https://WholeKidsFoundation.org/Programs).

