

The inside buzz



WHOLE
KIDS
FOUNDATION

Perfect for
sharing with
your pals!

Discover the world of honey bees — and learn
why they're vital to our food and future!
Games, activities, facts and fun for kids ages 5 - 11.

sweet!
A world of honey
bee fun awaits.



BZZT — HEY YOU, HOLDING THIS BOOKLET!

These pages are full of great stuff,
but there's a whole world of honey bee
fun at wholekidsfoundation.org/bees.

See you there!

Look for QR codes throughout the
book to find more info online. Scan
the code with your smartphone
camera and go!



DID YOU KNOW?

Honey bees
have 5 eyes,
4 wings, and
2 stomachs.

Honey bees have
been producing
honey for at least
150 million years.

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



Welcome to the wonderful world of honey bees!

Did you know that honey bees are responsible for 1 in every 3 bites of food we eat? They're the busiest pollinators on the planet!

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

It's getting harder to survive as a honey bee because of pesticide use, loss of habitat, and loss of food sources, but you can help.

Explore this guide for fun ways to support these food-system superheroes — and invite your whole hive to join you!

– Your friends at Whole Kids Foundation

UN-BEE-LIEVABLY COOL HISTORY



Thanks to honey bees, 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, honey bees offer a bounty of other goods. Check out all the surprising uses for the things busy honey bees create.

WAX

To make a pound of beeswax, honey bees 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.

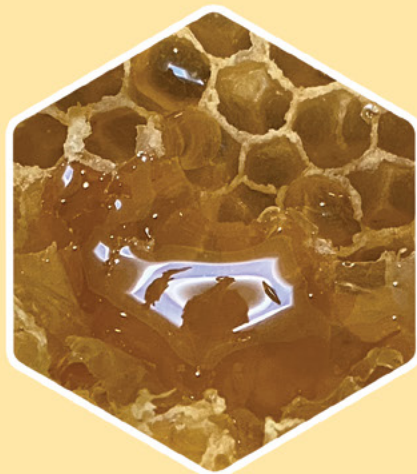


POLLEN

Honey bees 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

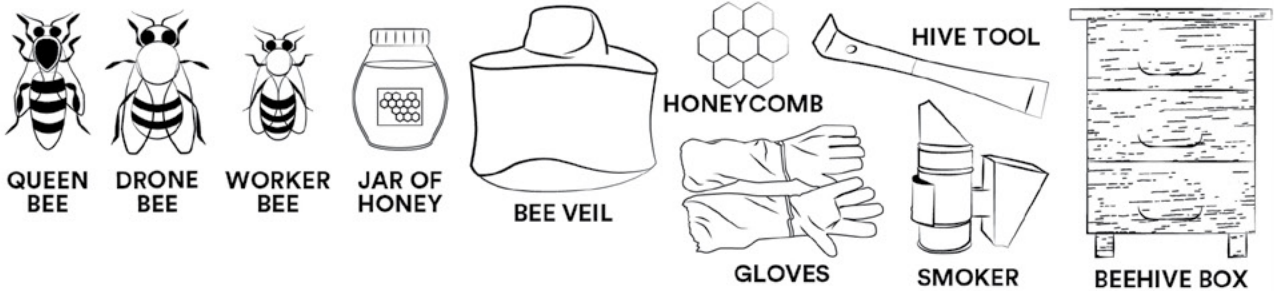
Sometimes known as “bee glue,” propolis is used to seal up cracks in the hive, or defend against other insects by creating a sticky barrier. No wonder this word literally means “protect the city” in ancient Greek. Propolis was used to care for wounds in ancient civilizations, and sometimes even for chewing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



HONEY*

The sweet stuff! Bees have to gather 8 ounces of nectar to make 1 ounce of honey. To gather that nectar, they visit 50 to 100 flowers during each flight from the hive, and can make 10 flights a day! Honey is actually bee food, used to power and sustain their hives — humans are just lucky they make enough to share.

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



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

Bonus: Color this page when you're done!

GO BEE-HIND THE SCENES WITH A REAL BEEKEEPER!

See the video at wholekidsfoundation.org/beekeeper.



FESTOONING

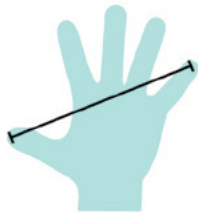


Teamwork makes the dream work. Bees do this cool thing called “festooning” where they link up their bodies to measure the spaces where they’re building honeycomb.

You can *bee* your own measuring tool, too! Grab a ruler or tape measure to get started — or use anything you’ve got around the house, like a pencil or paperclips linked together.



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

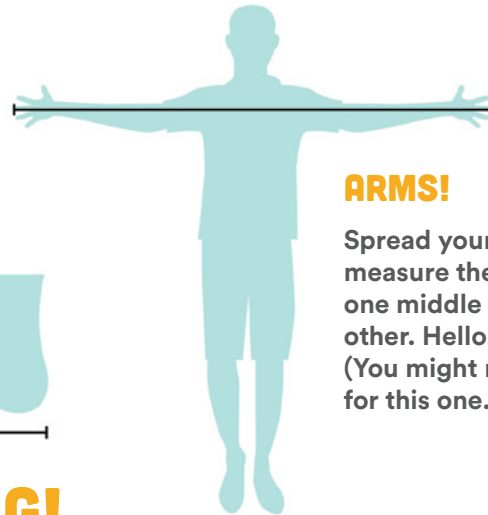


HANDS!

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!

FEET!

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



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.)

GET BUSY MEASURING!

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

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

How long is your bed? (use your arms)

Bonus Fact: The word “festoon” refers to party decorations like ribbons and garland that are linked together — just like festooning bees!

See bees doing their thing at wholekidsfoundation.org/bees-up-close!



MEET THE HONEY BEES AND LEARN WHAT THEY DO!



QUEEN BEES

True hive royalty. Queens are selected when they're still eggs. The egg is fed lots of royal jelly, a nutrient-rich gelatinous substance. Queen bees even get specially built cells in the hive to fit their larger size. There's just one queen per hive, and she can lay up to 2,000 fertilized eggs in a day! Queen bees can live up to 5 years.



DRONES

These are the only male honey bees. There aren't many of them, and they have just one job: to mate with a new queen (in a different hive) so she can lay fertilized eggs, which then develop into baby bees. Drones live about 12 weeks.



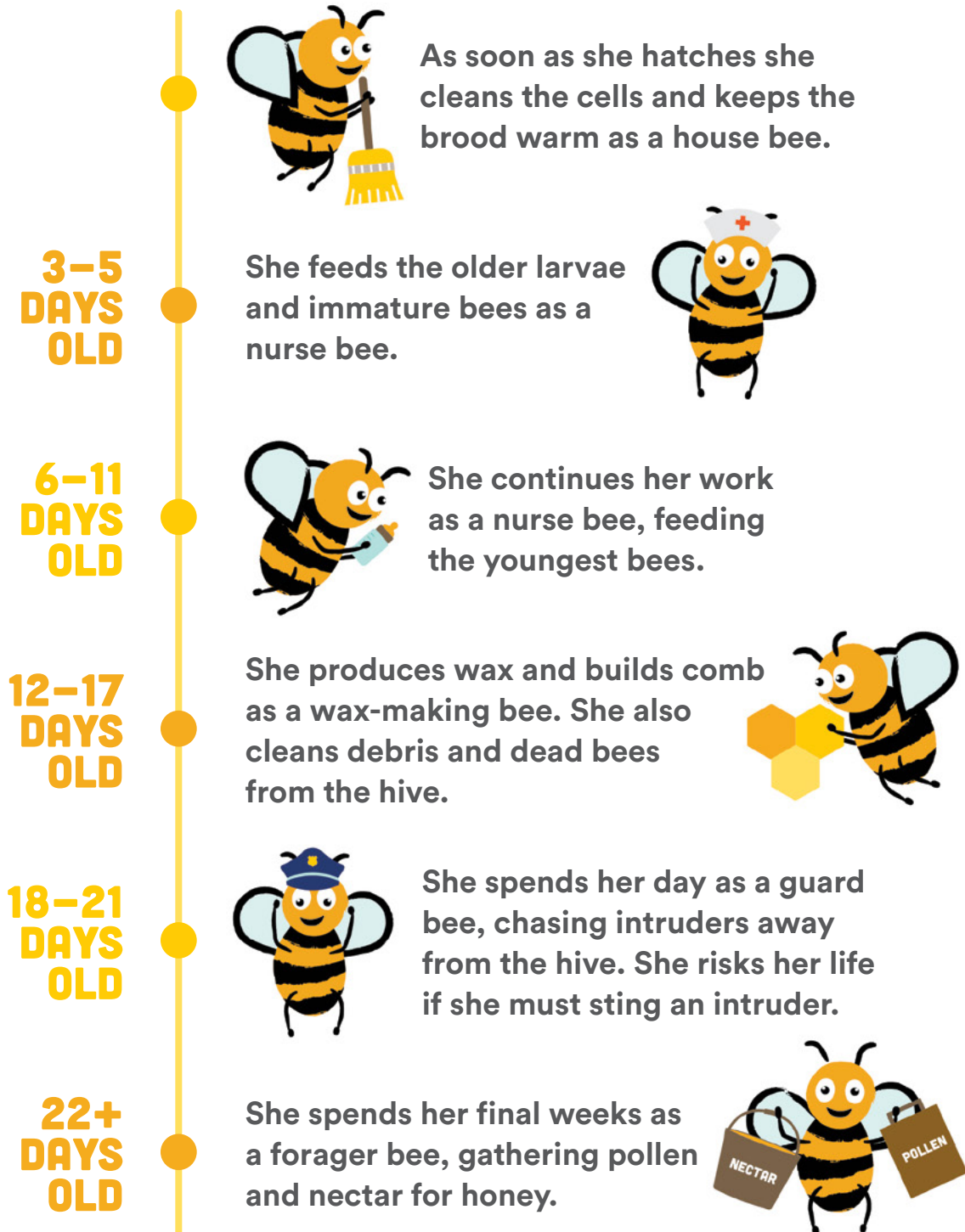
WORKER BEES

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 6 weeks old, and they're busy from the get-go!

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

THE LIFE OF A WORKER BEE:

LOTS OF JOBS TO HELP HER HIVE!





**CAN YOU SPOT THE
QUEEN?**

Find out if you're right and
see more cool hive photos at
[wholekidsfoundation.org/
queen-bee](http://wholekidsfoundation.org/queen-bee).





SPOT THE QUEEN

Queen honey bees 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

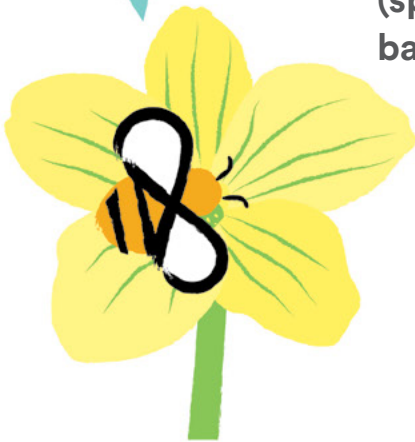
WHAT IS POLLINATION, AND HOW DO HONEY BEES DO IT?



1 Honey bees have millions of tiny hairs on their bodies. Basically, they're like tiny flying teddy bears!



2 A female worker bee flies from flower to flower looking for nectar. When she lands, she gathers pollen, moistens it with her saliva (spit!) and packs it into "pollen baskets" on her hairy hind legs.



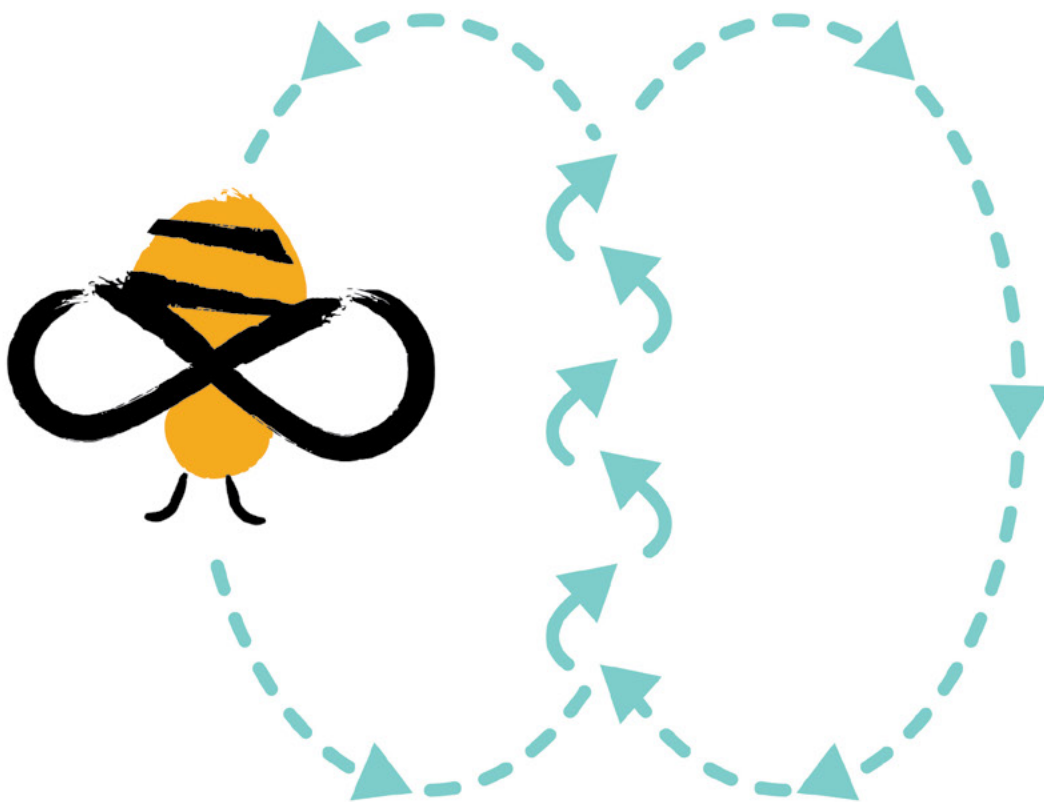
3 As the honey bee visits different flowers, some of the pollen rubs off from one flower to the next.

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

Did you know that bees can communicate through dancing? When a forager bee finds a good nectar source, she'll fly back to the hive and do something called a "waggle dance." This figure-eight style movement tells the location of flower sources around the hive. The bee "waggles" in a certain angle to show the direction of the source, and for different amounts of time to tell the distance. The hive feels the dance moves and learns where to go!



Q: What would bears be without bees?

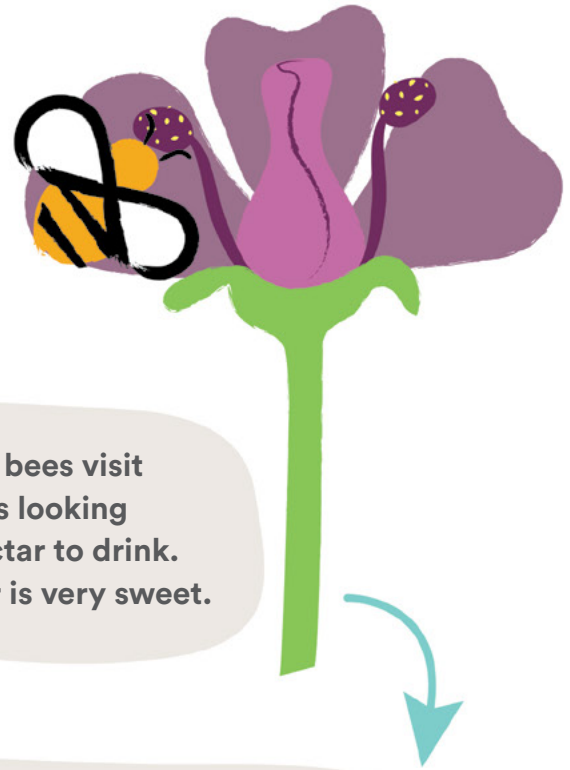
A: Just ears.

NOW IT'S YOUR TURN!

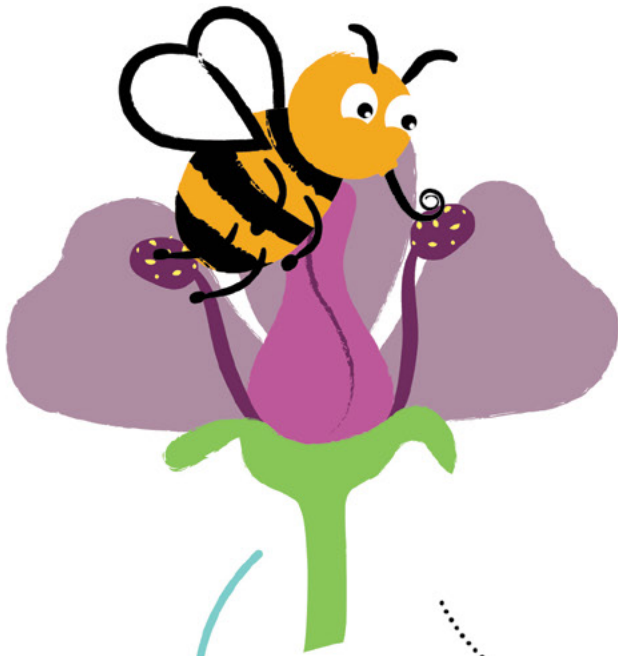
Visit wholekidsfoundation.org/waggle-dance and waggle along to the video. Share with #GiveBeesAChance



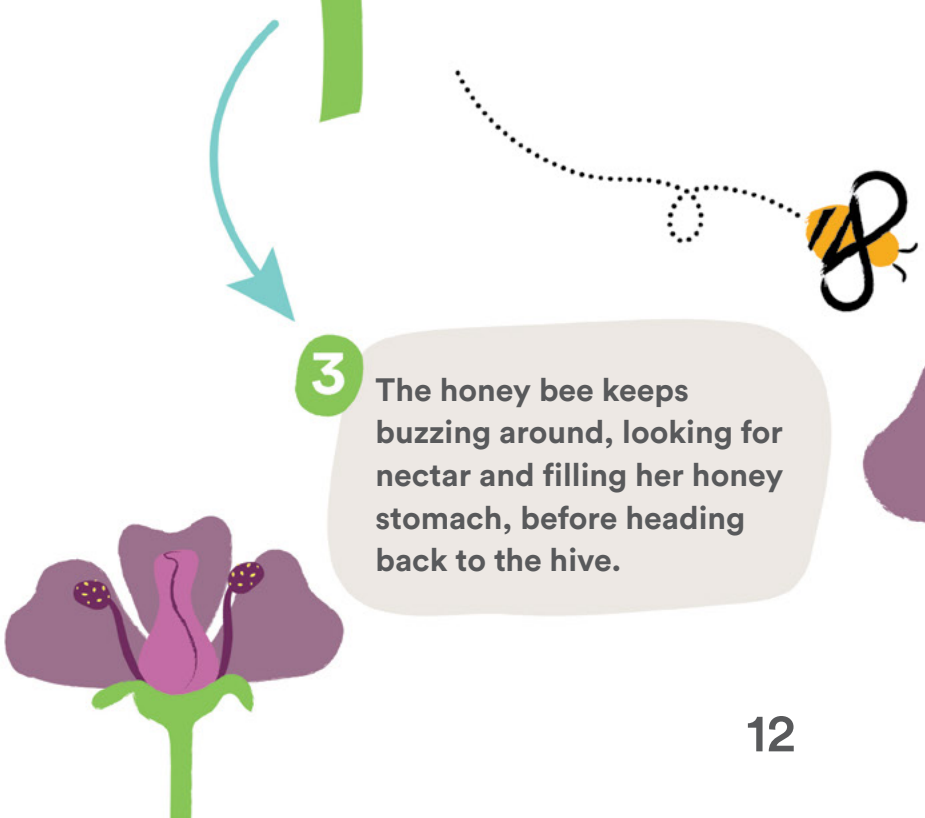
HOW IS HONEY MADE?



1 Honey bees visit flowers looking for nectar to drink. Nectar is very sweet.

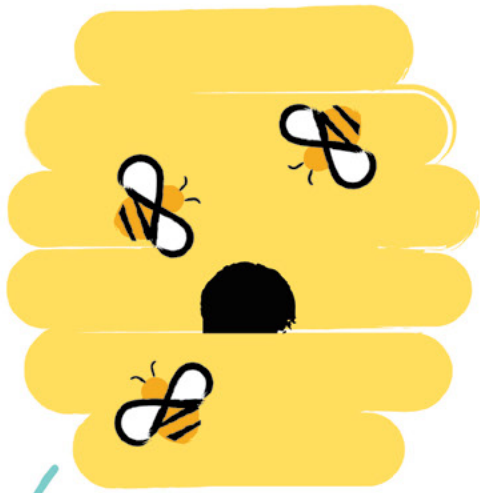


2 When a honey bee finds nectar, she sucks it up using her *proboscis* — a hollow tongue that acts like a straw and looks like a party blower!
The nectar goes inside the bee's *honey stomach* (remember, bees have two stomachs), where enzymes begin to break the nectar down.

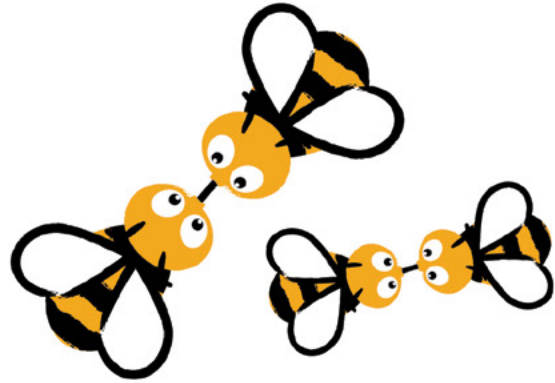


3 The honey bee keeps buzzing around, looking for nectar and filling her honey stomach, before heading back to the hive.





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.



Learn how beekeepers harvest honey and see how it gets from comb to jar at wholekidsfoundation.org/honey.





BEE A HONEY BEE MVP

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



GO WILD

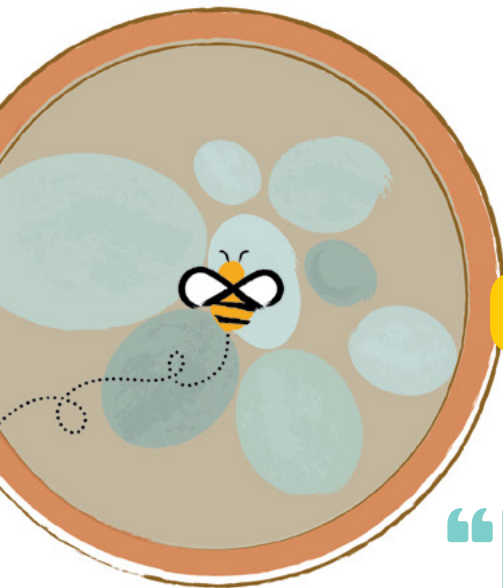


Let part of your lawn grow without mowing. Bees love flowering weeds and grasses.

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.

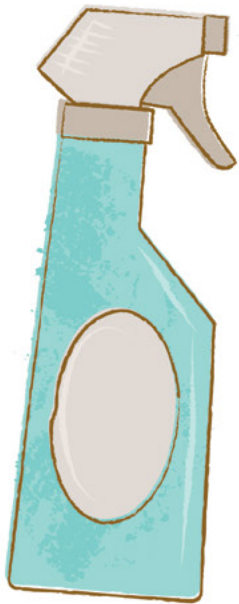


CREATE A BEE "POND"

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 H₂O.

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 TOXIC STUFF.

Some of the products we use on plants and veggies can hurt bees and other pollinators. Try a sprinkling of cayenne pepper around pestered plants. Sometimes, the best method is to just 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.

Honey bees very rarely sting. If a honey bee 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 honey bees. Learn how to recognize these curious creatures, so you'll know they mean no harm. Once you know what a honey bee looks like, help your friends learn, too!

SEE HOW TO BEAUTIFY

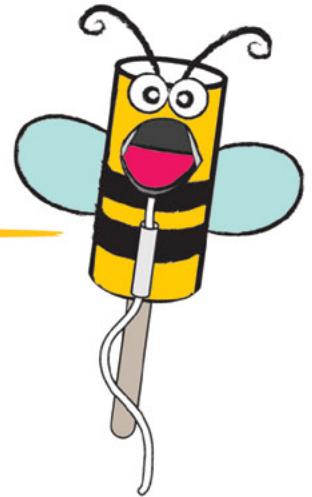
your community with wildflowers and other plants at wholekidsfoundation.org/beautify.



GET CRAFTY WITH



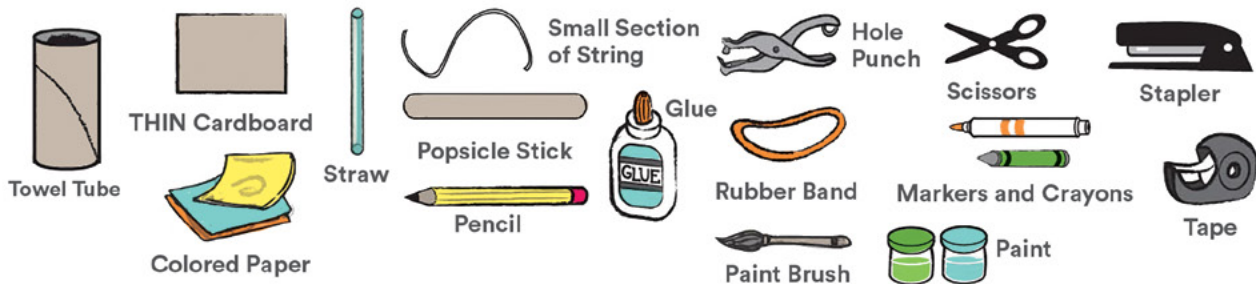
Build these playful puppets, then put on your very own pollinator puppet show for family and friends. Be sure to share with us on social! #GiveBeesAChance



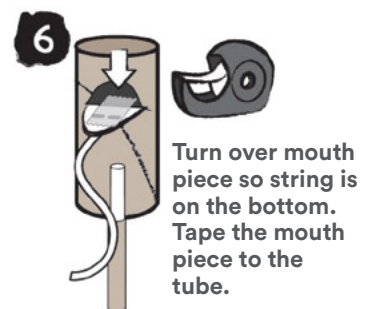
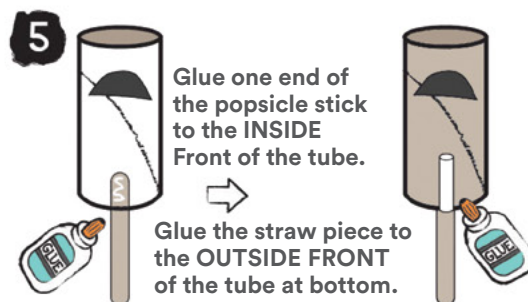
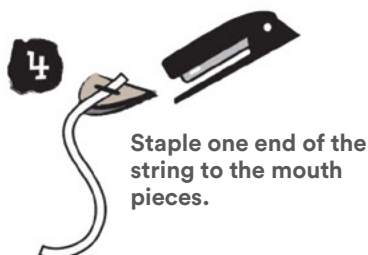
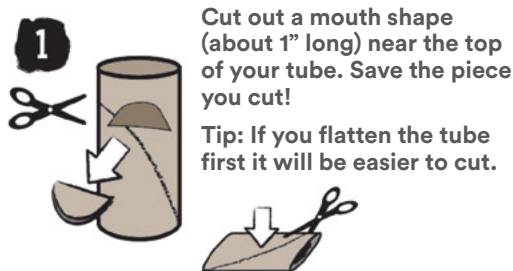
BUILD A POLLINATOR PUPPET

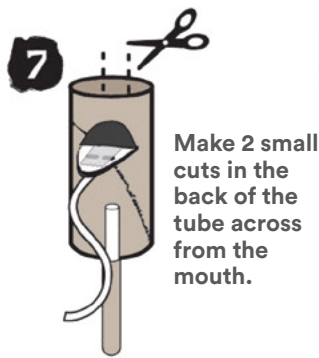
Level: Hard. To simplify this project for younger crafters, skip cutting the mouth and fastening the yarn.

WHAT YOU'LL NEED:



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





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.

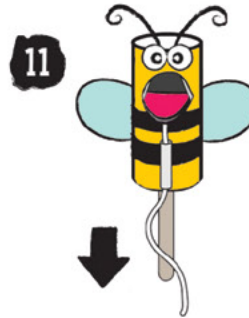


9 Draw eyes, wings and antennae on paper or cardboard and cut them out.

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.

POLLINATOR PUPPET PRO TIPS:

1. Wrapping a piece of tape around the end of the yarn makes it easier to thread through the straw.
2. Try decorating your tube before adding the mouth and straw, so you don't have to work around those areas. Paperclips can help hold things in place while the glue dries — especially helpful if you're making multiple puppets!

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 honey bees?

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

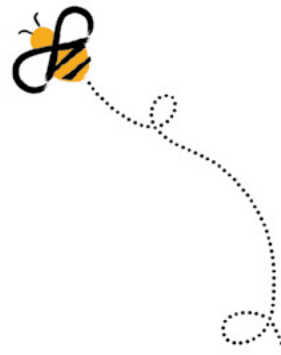


LOVE THIS PROJECT?

There are dozens more upcycle crafts at wholekidsfoundation.org/kids-club.



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, mix 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:

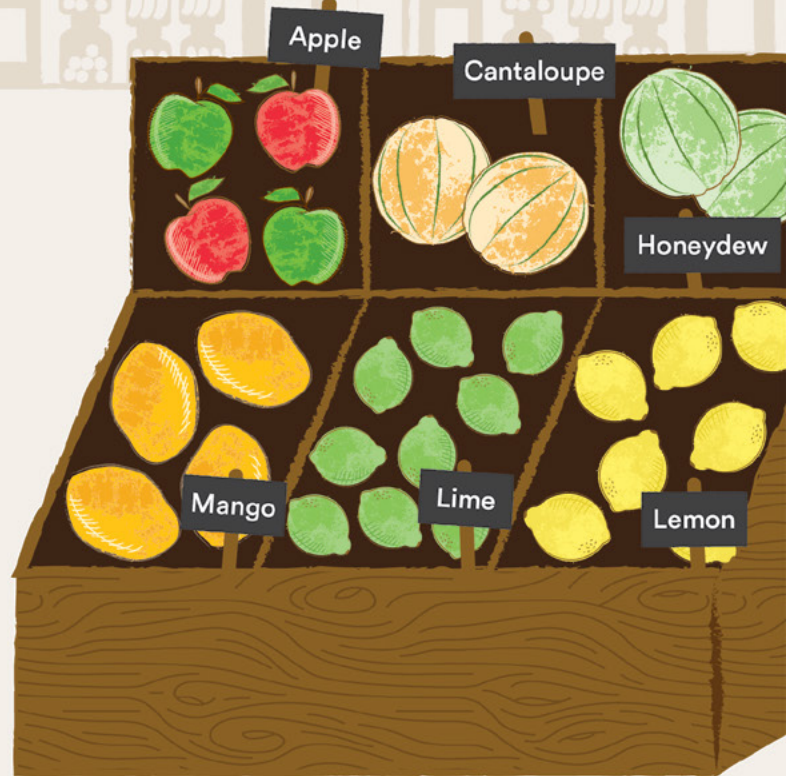
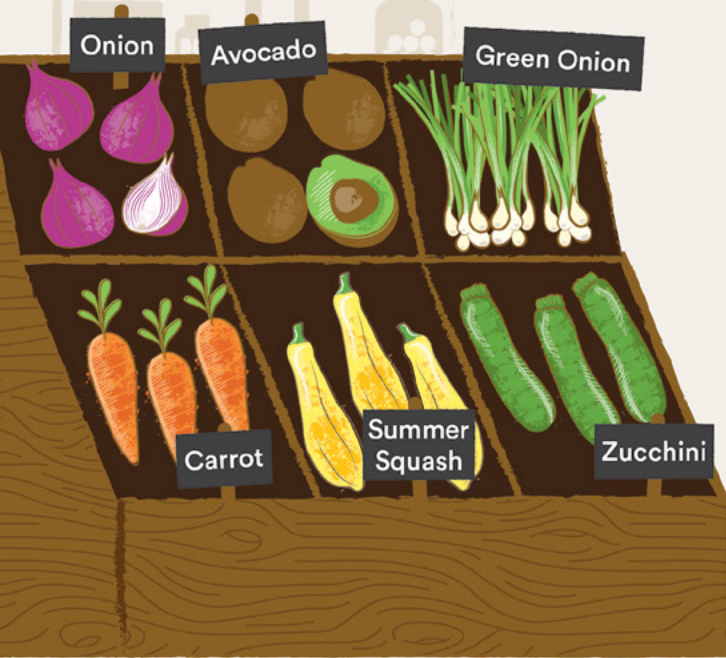
Working with the clay can be really messy! The clay washes off easily with soap and water, so make sure you have some handy.

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.

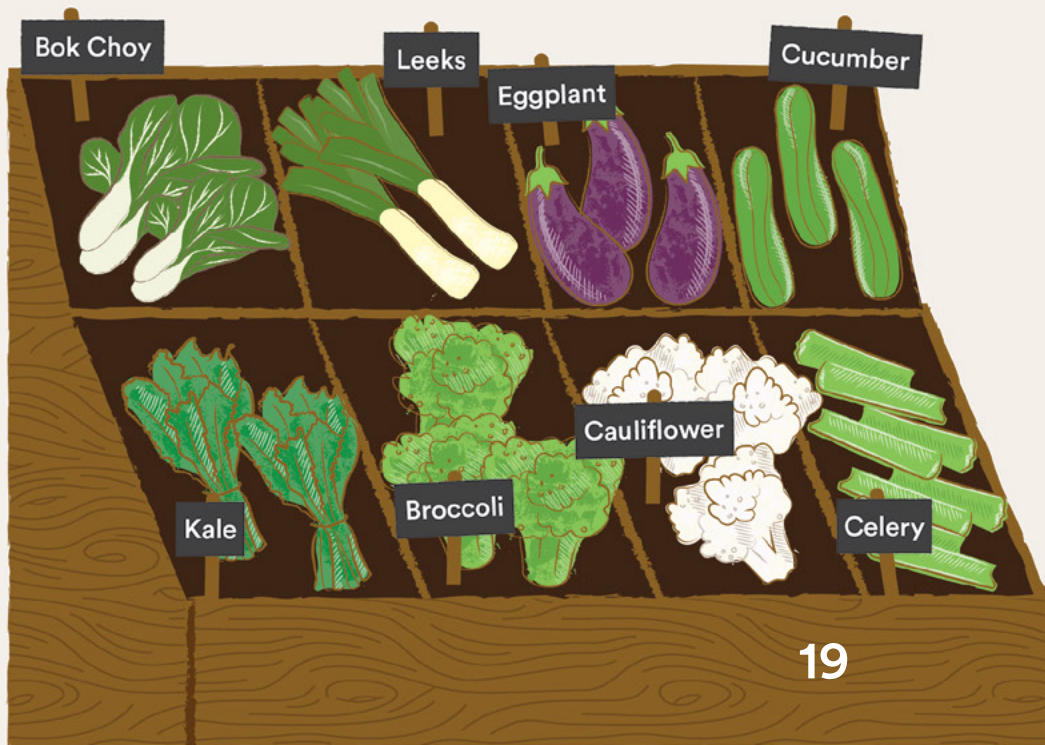
Remember to think about the best time to plant particular seeds in your local climate. Some do best in the spring, some in the fall.



ALL OF THESE YUMMY VEGGIES AND FRUITS WOULD DISAPPEAR WITHOUT HONEY BEES!



WHAT WOULD YOU
MISS THE MOST?



To see photos of what your grocery store would look like in a world without bees, go to wholekidsfoundation.org/produce.

EAT A RAINBOW

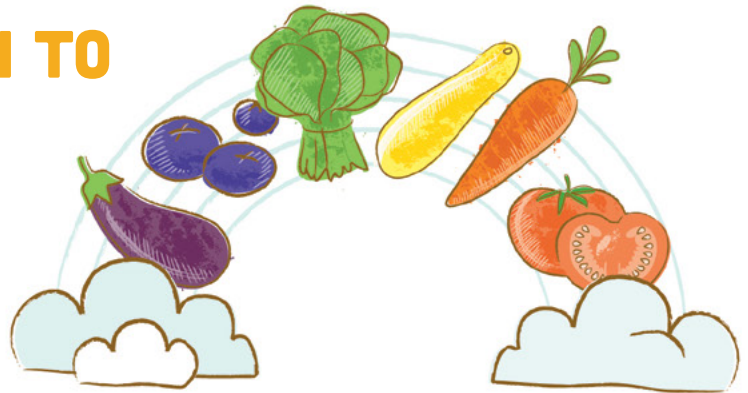
Eating a rainbow of colors helps your body get a complete range of different vitamins and nutrients from a wide variety of vegetables, fruits, legumes, and whole grains.

WHAT DOES IT MEAN TO EAT A RAINBOW?

Choose 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://www.wholekidsfoundation.org/recipes) and with our Better Bites activities at [wholekidsfoundation.org/better-bites](https://www.wholekidsfoundation.org/better-bites).





QUIZZZZ TIME!

Now that you've earned your stripes as a honey bee hero, see if you can answer these 5 questions. (Hint: all the answers are in the booklet, so go back and forage for answers if you need to!)

1. How many queen bees are in a hive?
2. True or false? Honey never goes bad.
3. What are male bees called?
4. When a honey bee finds a nectar source, how does she communicate it to the hive?
5. When bees link their bodies to measure space, it's called _____.

1. One. 2. True. 3. Drones. 4. The waggle dance. 5. Festooning.



HA, HA, HONEY BEES!

Q: What does a bee use to style her hair?

A: Her honey comb, of course.

Q: What do bees chew?

A: Bumble gum!

Q: What do you call a bee that's hard to understand?

A: A mumble-bee.

Q: What do you call a bee who keeps dropping things?

A: A fumble bee.

Q: What type of haircuts do bees prefer?

A: Buzz cuts.





Tips for Teachers and Parents

No matter where you are on your pollinator education journey, we're here to help! We have a wealth of free materials online, including 6 weeks of core-compliant lesson plans, adaptable activities and virtual field trips – no hive needed. Visit wholekidsfoundation.org/bee-program for more.



Bees in Schools? 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 honey bees up close and learn about the vital role these pollinators play in our food system. Visit wholekidsfoundation.org/bees.



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 beehives, school gardens and salad bars. Find out how to enrich your school at wholekidsfoundation.org/programs.

