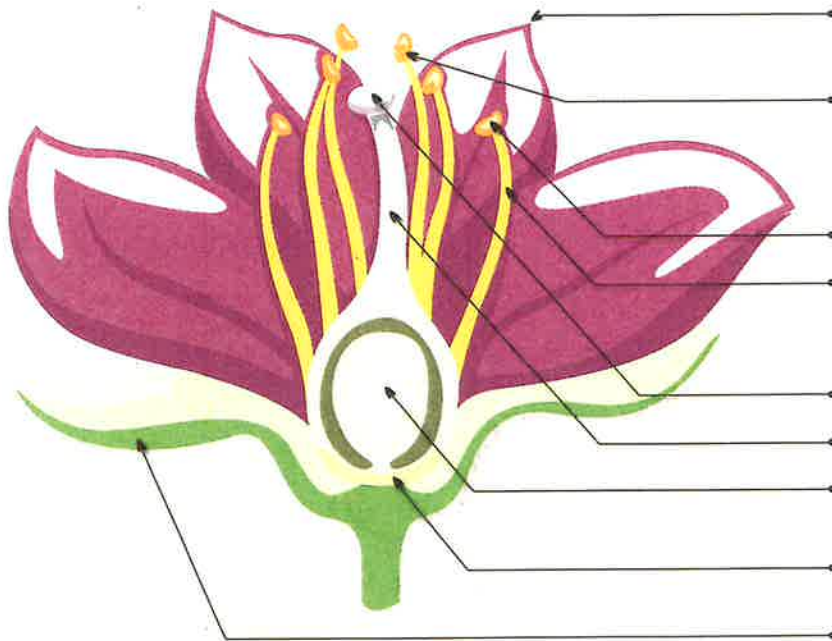


THE HONEY FILES:

WHAT IS POLLINATION?

POLLINATION

is a very important part of the life cycle of plants. Bees move pollen between flowering plants, which means the plants can make seeds that can grow new baby plants.



PETALS the colorful, thin structures that surround the sexual parts of the flower; they attract pollinators and also protect the pistil and stamen.

POLLEN GRAINS the powdery particles that contain the male sex cell (gametes); also a nutritious, protein-rich food for bees.

STAMEN:

ANTHER a bright sac that makes and holds pollen grains.

FILAMENT a stalk that supports the anther.

PISTIL:

STIGMA sticky surface where the pollen lands and germinates.

STYLE the narrow region of the pistil between the stigma and the ovary.

OVARY the base of the female portion of the flower containing the ovules, which become seeds.

NECTARY secretory gland at the base of a flower that produces nectar.

SEPALS commonly green leaf-like structures that protect the bud prior to opening.

WHAT FLOWER IS YOUR HONEY FROM?

Without flowers, there would be no honey! Bees collect nectar from different flowers and make it into the sweet honey we all love. The color and flavor of honey is different, depending on the plants the honey bees visit.



ALFALFA
Honey made in Canada and the United States from the purple blossoms. It's light in color with a mild flavor and aroma.



BLUEBERRY
Honey made from the tiny white flowers of the blueberry bush in New England and Michigan. It's light amber in color with a full flavor.



BUCKWHEAT
A dark and full-bodied honey made in Minnesota, New York, Ohio, Pennsylvania, Wisconsin and even eastern Canada.



CLOVER
The most commonly made honey in the United States. Clover honey varies in color from water white to light, depending on the location and type of clover.



ORANGE BLOSSOM
Honey from lots of citrus flowers made in Florida, Southern California and parts of Texas. It's light in color, mild in flavor with a fresh scent and light citrus taste.



AVOCADO
Honey gathered from California avocado blossoms. Avocado honey is dark in color, with a rich, buttery taste.



WILDFLOWER
Honey made from lots of different flower sources.

ACTIVITY:

A TASTE TOUR OF HONEY

There are more than 300 unique types of honey in the United States. And each one has a different taste. With the help of an adult, taste a spoonful of the honey you have at home. Can you describe the look and taste?

Circle all the words below that apply and then find them in the word scramble.



- DARK**
- FRUITY**
- MILD**
- CITRUSY**
- FLORAL**
- SPICY**
- NUTTY**
- STICKY**
- GOLDEN**
- SWEET**
- THICK**
- LIGHT**

SWEET FACT:

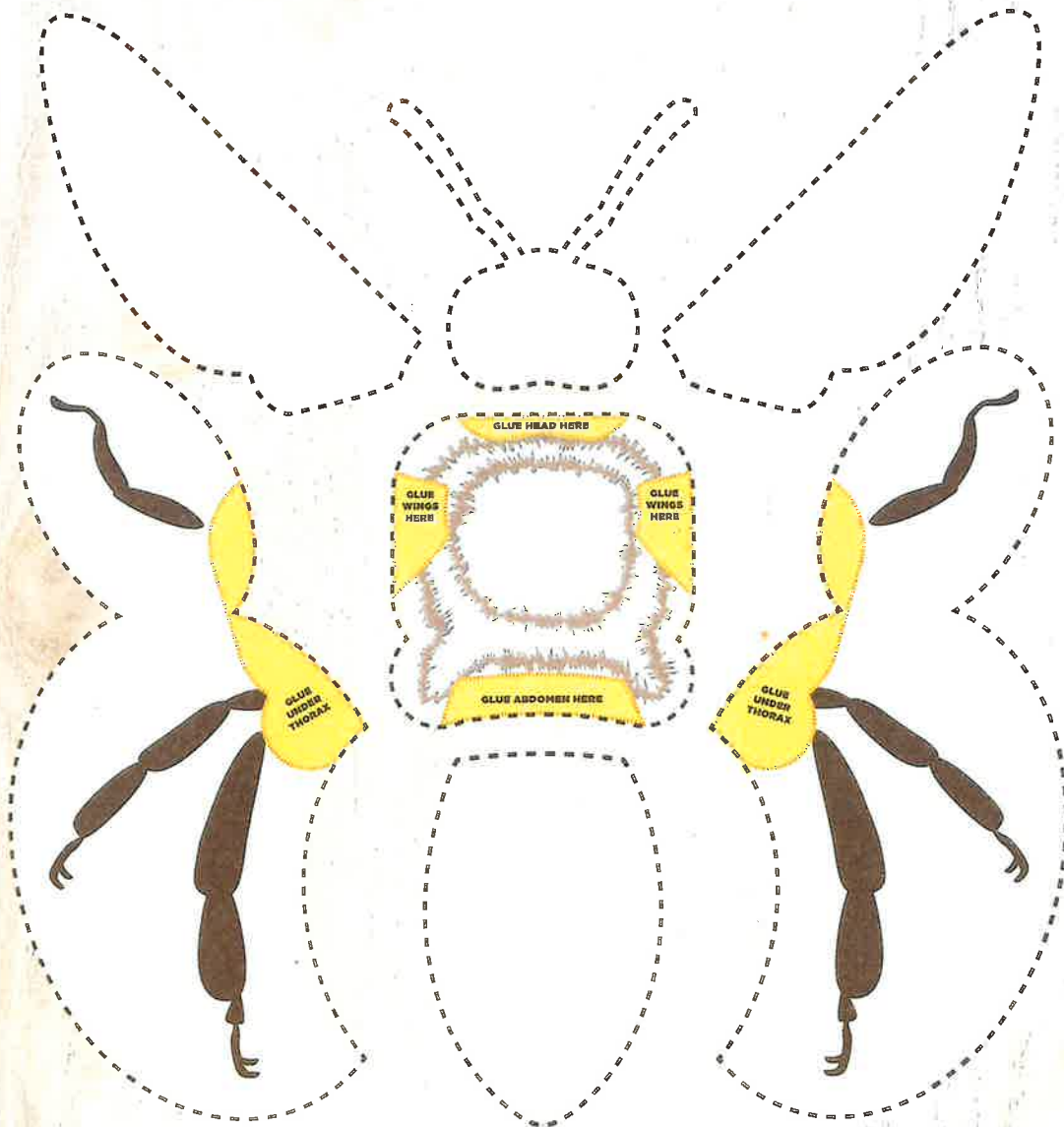
HONEY BEES MAKE HONEY IN EVERY STATE, BUT THE KIND THEY MAKE ALL DEPENDS ON THE FLOWERS AROUND THEM. WHAT KIND OF HONEY IS MADE NEAR YOUR HOME?



ACTIVITY:

BUILD A BEE

Color the bee below, then with the help of an adult, use scissors to cut out the different bee parts. Use a glue stick to glue the bee parts together according to the yellow guides on the bee.



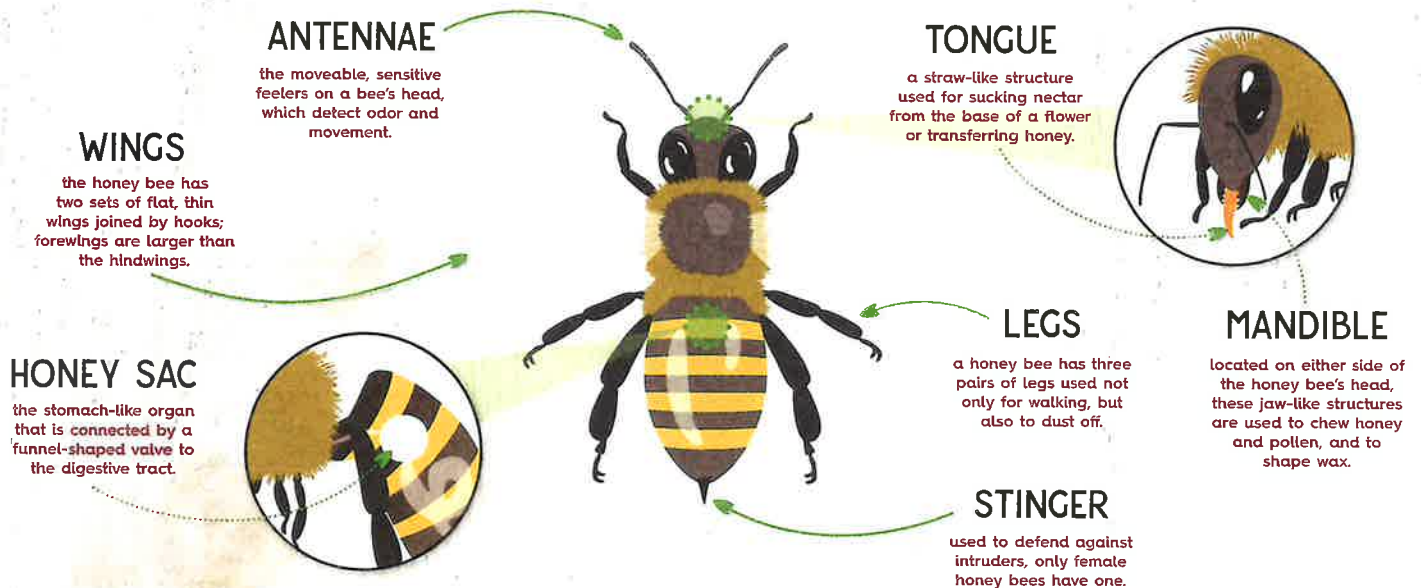
SWEET FACT:

WHEN A HONEY BEE STINGS A PERSON OR OTHER ANIMAL, THE HONEY BEE WILL DIE. THAT'S BECAUSE THE STINGER HAS BARBS THAT PREVENT THE BEE FROM PULLING IT OUT OF THE PERSON OR ANIMAL IT HAS STUNG. WHEN SHE FLIES AWAY, SHE WILL DIE BECAUSE LEAVING THE STINGER BEHIND DAMAGES HER BODY.

THE HONEY FILES: BIOLOGY

Honey bees are specially built to make delicious honey. Each part of the bee plays an important role in helping the honey bee collect nectar and create natural honey.

THE ANATOMY OF A BEE

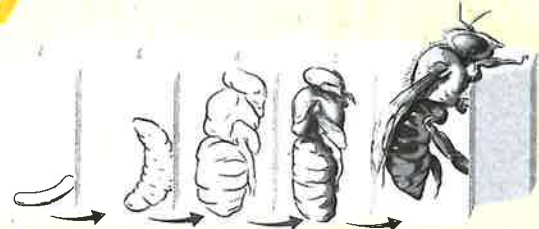


A BEE'S LIFE

Like many insects, honey bees go through four stages of development: egg, larva, pupa and adult. The bee changes dramatically in each stage.

- 1 A queen bee inserts her abdomen into an empty cell and lays a soft, white, oval egg about the size of a dot over an "L."
- 2 After three days, a wormlike larva hatches from the egg. The larva is fed by worker bees and grows much larger.
- 3 On day ten, the larva stops eating and spins a silk covering called a cocoon around itself. An adult worker bee caps the cell with wax to protect the developing pupa. Inside the cocoon, a pupa develops and begins to look more like an insect than a worm. It grows eyes, legs and wings.

- 4 Finally, an adult bee chews its way out of the cell.



Eggs develop into different types of bees based on what they're fed, on the size of the cell they develop inside and whether or not the egg was fertilized.

THE HONEY FILES:

INSIDE THE HIVE

A BEE'S HOME

Honey bees live in the nests or hives where they store their honey. Each hive has a large group of 30,000 to 60,000 bees that make up the colony.

Honey bees naturally build hives in hollow trees or other sheltered places.

Beekeepers can create wooden hives for honey bees to live in.

Inside are combs, made of wax produced by worker bees. The bees shape the wax with their mouths. Each comb consists of hexagon wax structures called cells. Thousands of cells make up each comb and are used for storing honey and pollen and also as nurseries for developing bees.



ONE HAPPY BEE FAMILY

Making honey is all about teamwork! In a honey bee colony, there are many different bees, each with a special job.



THE QUEEN BEE

There is only one queen
Largest bee in the colony
Mother of all worker bees
Lives two to five years
Only job is to lay eggs



DRONES

Male bees; 3,000 per colony
Big eyes, no stingers
Fly fast
Live about 90 days
Their job is to mate with queens



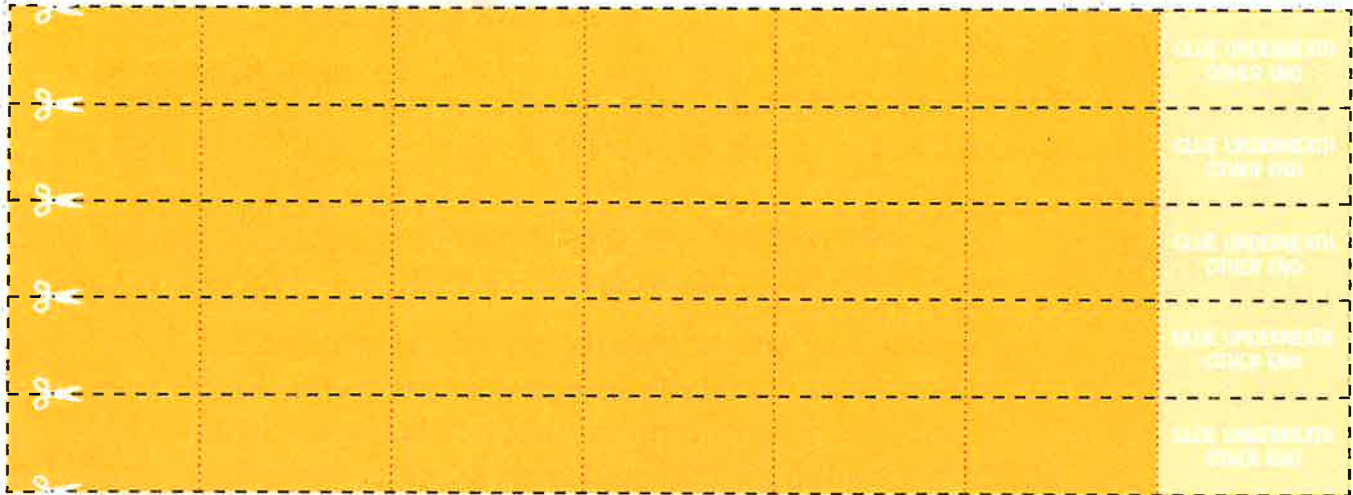
WORKER BEES

Female bees; 60,000 per colony
Live one month in summer
Live six months in winter
Do all the the work except make babies
Collect pollen and nectar, make honey

ACTIVITY:

BE A HIVEMAKER

Cut out the strips below along the brown dashed line then fold along the purple dotted line and glue ends together to form hexagons. Assemble hexagons on top of the honeycomb template below to create your own 3D bee hive.



SWEET FACT:

THE HONEYCOMB SHAPE IS PERFECT FOR BEES! IT'S THE STRONGEST SHAPE TO FIT THE MOST HONEY INSIDE WITHOUT WASTING ANY PRECIOUS SPACE OR WAX.

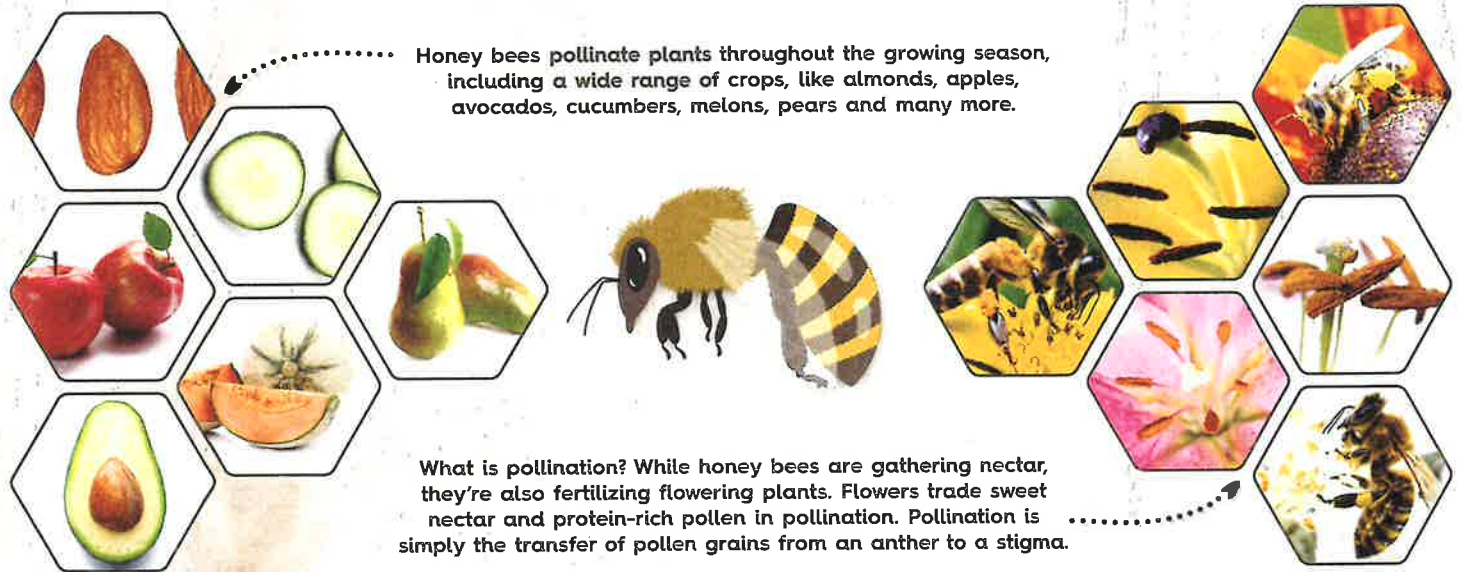


THE HONEY FILES:

WHAT DO BEES DO?

Everyone knows honey bees make honey, but they do so much more!

BEES ARE AN IMPORTANT PART OF OUR ECOSYSTEM



Honey bees pollinate plants throughout the growing season, including a wide range of crops, like almonds, apples, avocados, cucumbers, melons, pears and many more.

What is pollination? While honey bees are gathering nectar, they're also fertilizing flowering plants. Flowers trade sweet nectar and protein-rich pollen in pollination. Pollination is simply the transfer of pollen grains from an anther to a stigma.

WHY DO BEES MAKE HONEY?

Honey bees collect nectar to create honey and store as food because it provides the energy for bees' flight muscles and provides heating for the hive in the winter. Fortunately, honey bees will make more honey than the colony needs, so beekeepers harvest the excess and bottle it for us to enjoy.



ACTIVITY:

LEND A HAND

Honey bees help the plants we see and eat every day grow. But sometimes they need a little help. Want to help honey bees?

Plant bee-friendly flowers and flowering herbs in your garden and yard. Use all-natural products, free from chemicals, in your garden while plants are in bloom.

IDEA STARTERS FOR BEE-FRIENDLY PLANTS:

HERBS any plant with leaves, seeds or flowers used for flavoring, food, medicine or perfume.



LAVENDER



SAGE



THYME

PERENNIALS plants that are expected to live longer than two years.



GERANIUM



CROCUS



SNOWDROPS

ANNUALS plants that complete their life cycle in one year.



SUNFLOWER



POPPY



CALENDULA

Bees are thirsty. Leave a shallow dish of fresh water with marbles or rocks outside for bees to drink. The marbles/rocks give the bees a place to stand while they drink and prevent them from drowning.



SWEET FACT:

WHEN AT THE HIVE, WORKERS BEES ALSO HAVE THE JOB OF:

- HELPING TO KEEP THE HIVE COOL BY FANNING THEIR WINGS
- COLLECTING NECTAR AND PRODUCING WAX COMB
- GUARDING AND CLEANING THE HIVE
- FEEDING THE BABY BEES AND THE QUEEN

THE HONEY FILES:

HONEY

HOW HONEY IS MADE



HONEY IN ALL SHAPES AND SIZES

Honey comes in many forms. But as long as the ingredient label says, "pure honey," it's straight from bee to hive to bottle.



LIQUID

The one we all know and love.



COMB HONEY

Honey still inside the honeycomb.



CUT COMB

Liquid honey with chunks of honeycomb in the jar.



CRYSTALLIZED

Naturally crystallized and safe to eat!

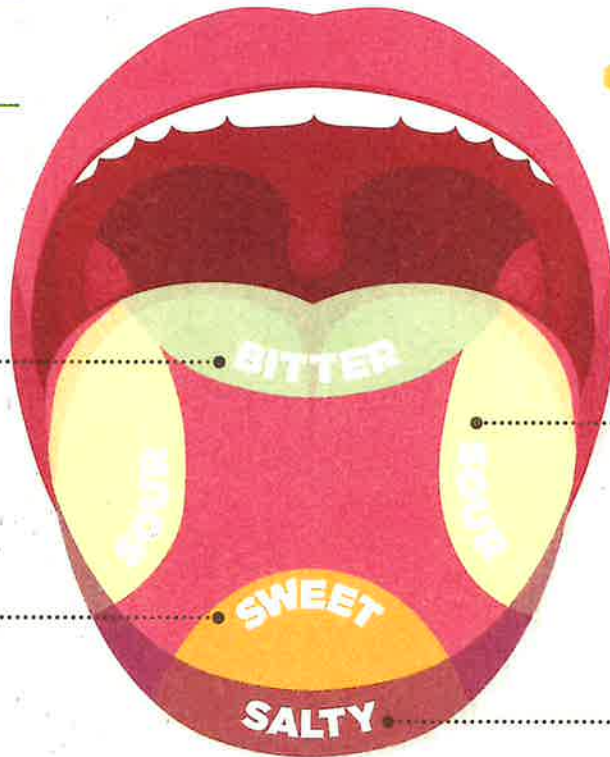


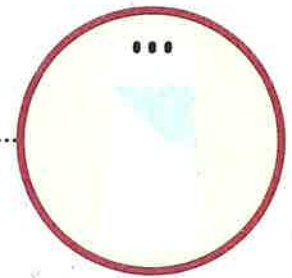
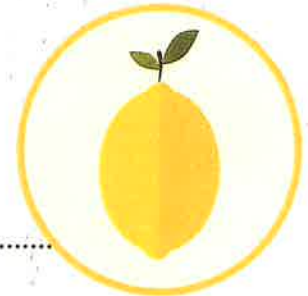
WHIPPED

Made to spread like butter.

ACTIVITY: HOW SWEET IT IS

There are different kinds of tastes in every food you eat. But your tongue can only taste four! With the help of an adult, collect different foods from your kitchen, including honey. Can you identify which part of your tongue you're using to taste? Write down the name of the foods you tried next to the right taste receptor.





SWEET FACT:

THE FIRST STORY OF HONEY IS 8,000 YEARS OLD! AN ANCIENT CAVE PAINTING IN SPAIN SHOWS HONEY HARVESTING. AND IT'S BEEN USED FOR FOOD, MEDICINE AND MORE ALL OVER THE WORLD EVER SINCE!

