

Honey Bee Facts



Common Name: Honey bee or honeybee

Scientific Name: *Apis mellifera*

Type: Invertebrates

Class: Insecta

Order: Hymenoptera **Family:**

Apidae

Diet: Herbivores

Group Name: Colony or swarm

Average Lifespan of a Queen in the Wild: Up to 5 years

Honey bees are social insects known for their colonies run by castes and sexes. They are distinguished in producing and storing honey in hives for over 100 million years.

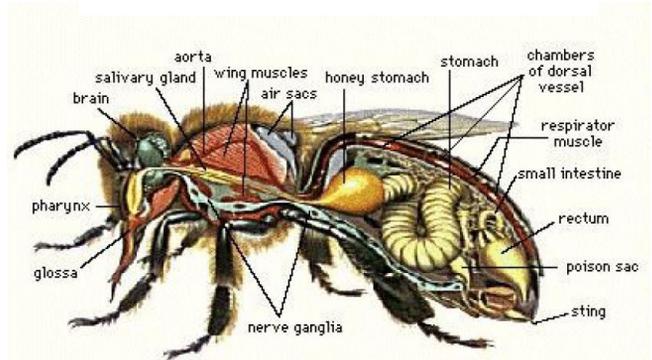
Habitat and Anatomy

- ★ There are seven species of honey bee divided into 44 subspecies. Since they are widely domesticated to produce honey, honey bees can be found around the world in various habitats. In terms of climate, they are very adaptive except in frigid temperatures all year round.

Honey Bee Facts

- ★ Despite their adaptive skills in surviving domesticated and natural environments, honey bees thrive in orchards, gardens, woodlands and other places abundant with flowers.
- ★ Scientists believe that through time bees evolved from their wasp-like ancestors.
- ★ Like their cousins, wasps and ants, honey bees have membranous wings. They are also covered with a hard outer shell called an exoskeleton.
- ★ Honey bees have three main body parts: the head, thorax and abdomen. Attached to their head is a pair of antennae, which detect airborne currents and scents.
- ★ They have three pairs of legs for walking: a pair closest to the head (forelegs), middle legs, which are located in between the forelegs and hind legs, and hind legs equipped with a set of tools for worker honey bees.
- ★ For flying, honey bees have two pairs of wings, the forewings and hind wings.

Anatomy of a Honey Bee

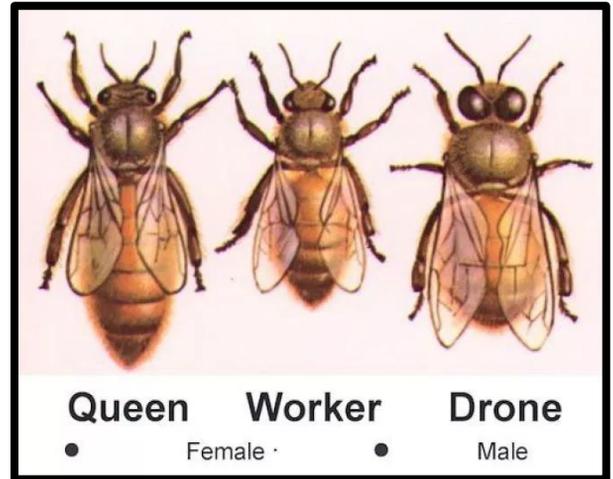


- ★ Located at the midsection of its body is the thorax where the legs and wings are attached.
- ★ The stinger is found on the hind part of the bee. Moreover, honey bees have a hairy tongue called a glossa that nectar sticks to and they pull into their mouth. The proboscis is the straw-like mouthpart used to drink fluids.
- ★ They are able to detect scents through their mouths, antennae and the tips of their legs or tarsi. All these parts have sensilla, or very small hair-like organs, equipped with receptor nerve cells.
- ★ Their antenna have a total of 170 odor receptors.

Honey Bee Facts

Honey Bee Membership and Gender Roles

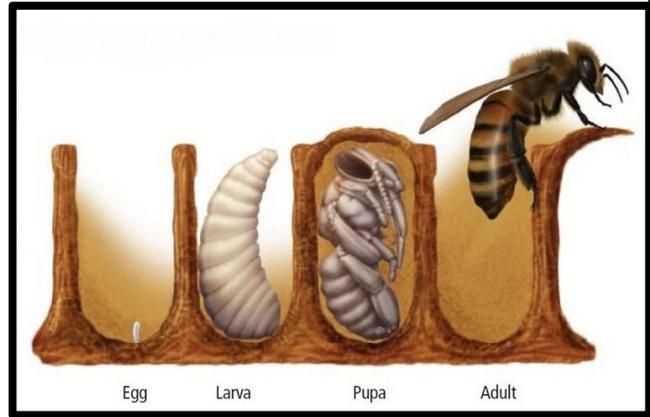
- ★ Members of the colony are categorized into three classes: workers, drones and a queen.
- ★ Workers are female honey bees which are not sexually developed. They perform a lot of social functions like building, protecting and cleaning the hive, foraging for nectar from flowers and managing the circulation of air inside the hive by beating their wings. A single colony can have 50,000-60,000 workers. They are the smallest bees in the hive and live only four to five months long.
- ★ Drones are male honey bees with the sole purpose of mating with the queen. During spring and summer, drones also populate the hive but when winter comes they are kicked out. They can live up to 4 months. Unlike the workers, drones do not have stings and are incapable of collecting pollen.



- ★ A queen honey bee runs the whole hive. She is the largest honey bee and is only capable of laying eggs. During mating season, the queen stores millions of sperm cells from about 18 drones. Ten days after mating, she starts to lay up to 3,000 eggs a day. Aside from securing the next generation of honey bees in her hive, the queen also releases chemicals which guides other bees. She can live from 3 to 5 years. In case the queen dies, workers will choose a larvae to be reared as the new queen. The chosen female larvae has an exclusive diet called royal jelly to develop her into a fertile queen.

Honey Bee Facts

- ★ All members of the hive undergo metamorphosis, which means they pass through the stages of being an egg, larvae, and pupae, before becoming an adult.
- ★ Honey bee workers can fly over 6 kilometers to collect food without getting lost. They perform a waggle dance to inform other bees on the exact location of the food source. If the food source is located less than 30 meters away from the hive, a scout bee does a round dance to inform other workers. An industrious worker can visit up to 2,000 flowers a day.
- ★ The nectar from flowers goes into an area of a worker's body called the honey stomach. While inside her body, the nectar is converted into honey through the mixing of proteins and enzymes released by honey stomach. When she is full, the bee will return to the hive to regurgitate its content into the cells of the honeycomb.



- ★ In times of danger, honey bee workers use their stingers and die afterward. This happens because their sting is connected to entrails in their abdomen, which get pulled out. Honey bees are the only bees to die after stinging. Only the queen honey bee is capable of multiple stings.

Honey Bees as Nature's Sweet Insects

- ★ Honey bees are important pollinators in the environment and in farming. They transfer pollen between male and female parts of plants, allowing it to grow seeds and fruit.

Honey Bee Facts

- ★ Since ancient times, Egyptians and Greeks have practiced beekeeping for delicious honey.
- ★ Honey is a natural sweetener, tastier than table sugar. Most people prefer to use honey in food, beverages and cosmetics.
- ★ The study of bees, including honey bees, is called melittology.
- ★ Over the past two decades, colonies of bees have been disappearing at alarming rates in many parts of the world. This phenomenon is called colony collapse disorder, wherein bees abandoned their hives. Scientists still don't fully understand why this happens.
- ★ Bees are also threatened by pesticides used in the garden and for farming. Varroa mites can also invade a hive.
- ★ European honey bees are generally calmer and more docile than Africanized honey bees, which are more defensive but create more money.
- ★ Each subspecies of honey bee creates a unique honey, and honey colour and taste varies according to the kinds of nectar honey bees collect.
- ★ In order to avoid endangering honey bees, beekeepers encourage overproduction of honey within the hive so that there's enough food for the hive to sustain itself while also providing honey for people.
- ★ Honey has been used for centuries in medicine as it has natural antimicrobial properties. Pure honey doesn't spoil.

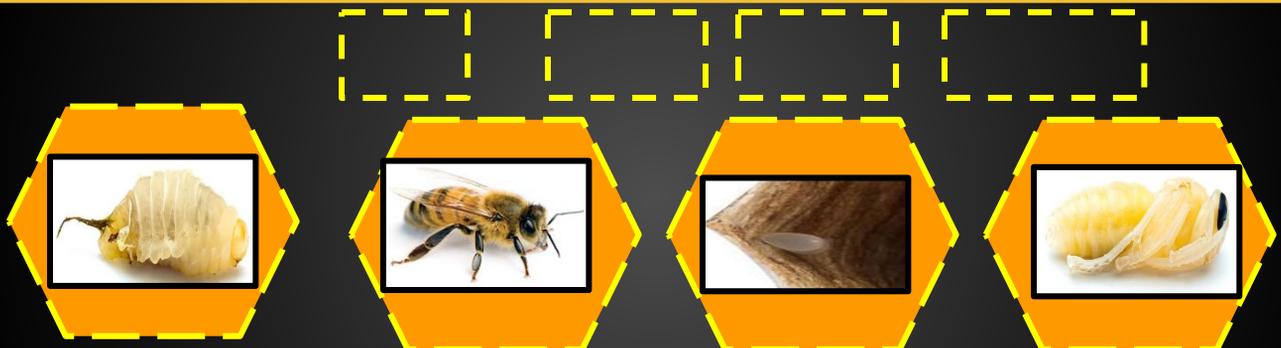
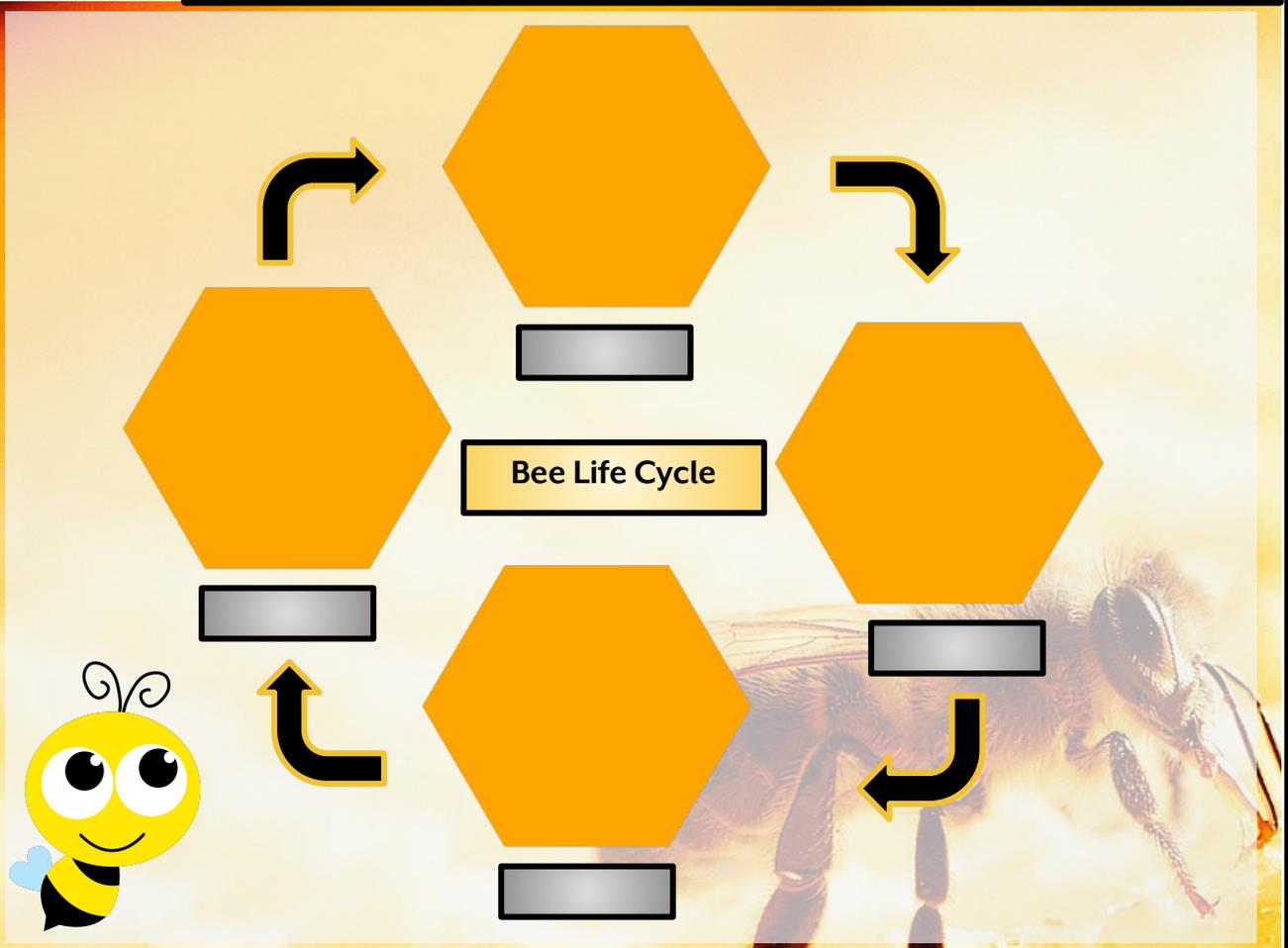
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Bee Life Cycle



Honey bee

They honey bees' life cycle varies according to season. During winter, when food is scarce, drone bees are kicked out of the hive. Label and arrange the bee life cycle diagram.



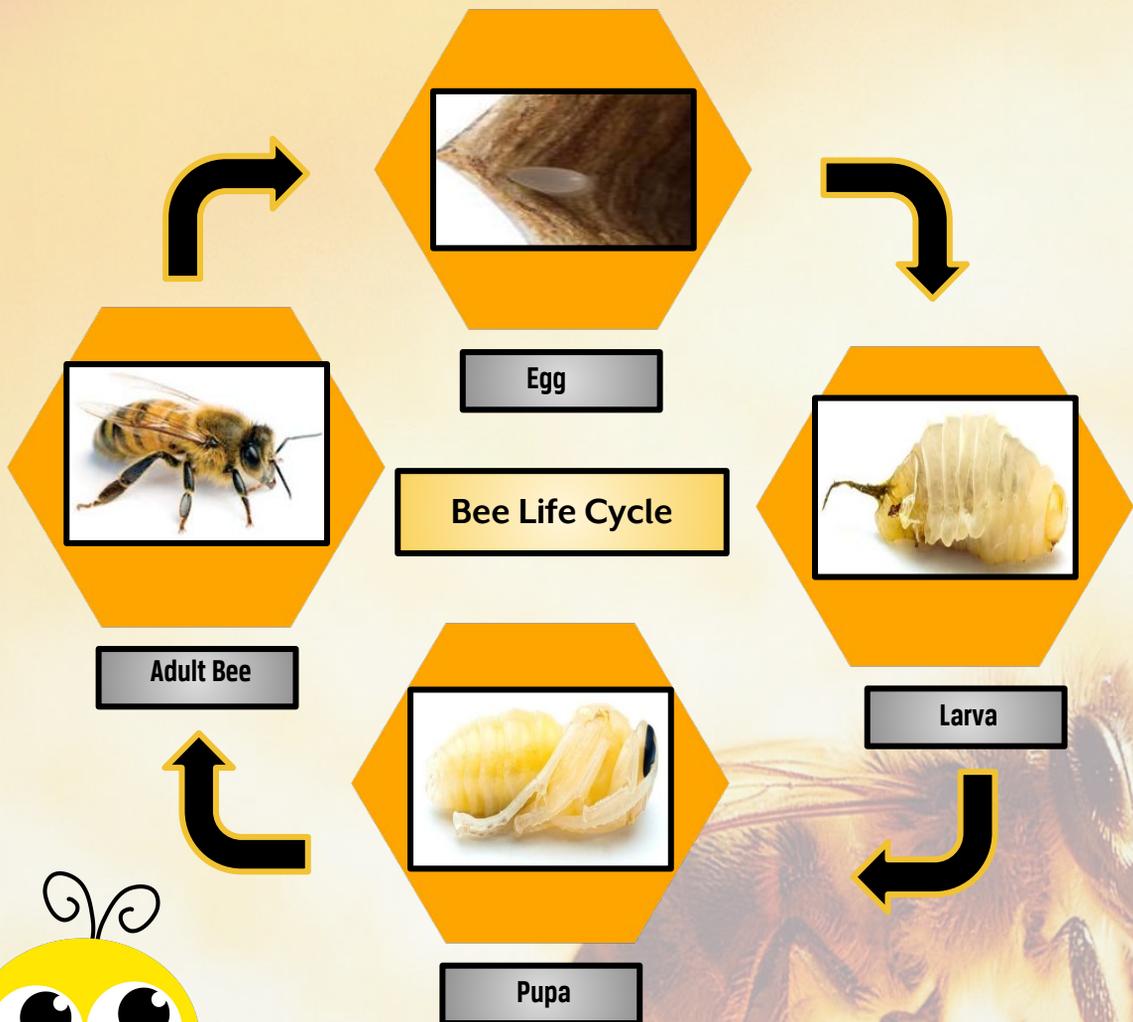
Four hexagonal boxes, each containing a different stage of a bee's life cycle, are arranged horizontally at the bottom of the page. From left to right, the stages are: a pupa, an adult bee, a larva, and a cocoon. Dashed lines above these boxes indicate they are to be placed into the corresponding positions in the life cycle diagram above.

Bee life cycle



Honey bee

Answer Key



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