

WILD at Schools: Bees at Home

Wildlife and Heritage Service

This free, 45-60 minute program is for grades K, 1 & 3 and is designed for a classroom or outdoor space. Optional outdoor activity includes investigation of flowers and pollinators (if weather and season permits).

Learning Objectives

As a result of this program, students will be able to:

- Describe the anatomy of adult bees.
- Understand the different stages of a bee life cycle.
- Explain the habitat and survival needs of bees.
- Describe some of the diversity of bees, including sweat, mason, bumble and honey bees.
- Optional: investigate local flowers and associated pollinators.

Concepts to be covered:

K focus (NGSS): Bee habitat requirements.

1st grade focus (NGSS): Bee life cycle and adaptations.

3rd grade focus (NGSS): Bees can form groups to help survival.

Curriculum Standards and Science & Engineering Practices Addressed

Grade	Standard	Detail	Program Feature
K	K-LS1-1	Use observations to describe patterns of what animals need to survive.	Students explore the habitat needs of bees.
	K-ESS2-2	Construct an argument supported by evidence for how animals can change the environment to meet their needs.	Students learn how bees dig nests or construct them from other materials.
	K-ESS3-1	Use a model to represent relationships in the natural world.	Students build a model of a bee nest and learn how plants produce food for bees.
1st	1-LS1-2	Determine patterns in behavior of parents and offspring that help offspring survive.	Students learn how bees provide for their young and build safe homes.
	1-LS1.A	Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and take in food.	Students explore bee adaptations that help them find flowers and collect pollen.
3rd	3-LS1-1	Develop models to describe that organisms have unique and diverse life cycles.	Students produce a model of bee nest and life cycle.
	3-LS2-1	Construct an argument that some animals form groups that help members survive.	Students compare social and solitary bees as alternative survival strategies.
Engineering and Science Practices		Use a model that represents a concrete event. Conduct simple investigation to describe relationships in the natural world to answer scientific questions.	Students build a model of a mason bee nest Optional: students explore an area to investigate which plants bees visit.

Program Summary

1. Introduction to bees and their anatomy as insects including their special adaptations to carry pollen.
2. Students work in teams looking at insect specimens to determine if they are bees. Grade 3 students compare which of the bees live in groups and the advantages and disadvantages.
3. Students build a model of a mason bee nest and explore the bee life cycle.
4. Students determine the habitat requirements of bees and if the schoolyard provides them.
5. Students suggest ways we can improve habitat for bees.
6. *Optional*: explore schoolyard to look for flowers and investigate which plants bees visit.

Key Program Vocabulary

Abdomen: the posterior (hind) body segment of an insect.

Antenna: a sensory appendage of the head.

Egg: the first stage in the bee life cycle.

Exoskeleton: hard, outer covering of insects.

Habitat: the natural home of a living organism consisting of four elements: food, water, shelter and space.

Larva: the second worm-like stage of the bee life cycle.

Metamorphosis: structural changes that occur through developmental stages. Complete metamorphosis has four stages: egg, larva, pupa and adult.

Nectar: sugary fluid secreted by plants to encourage pollination.

Pollen: microscopic grains discharged from the male part of a flower that can fertilize the female ovule.

Pollination: the transfer of pollen between plants of the same species.

Pupa: the third non-feeding stage in the bee life cycle.

Social: refers to bees that live in a colony and share in the task of raising young.

Solitary: refers to bees in which a female builds her own nest and feeds her own young.

Thorax: the middle body section of an insect where wings and legs are attached.



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