



Harvester Ants

Objective:

Students will be able to demonstrate knowledge of the life cycle, anatomy and habitat of Harvester Ants.

Performance Objectives:

Grade 1: SS Strand 4 –Concept 1: PO 1; PO 2; PO 3
NGSS 1-LS1.B; LS1.D

Grade 2: SS Strand 4 – Concept 1: PO1: PO2: PO3
Concept 2: PO1.
NGSS 2-LS4.D
CCSS 1.W. 2; 1.W. 3; 1.W. 5; 1.W. 8

Background Information:

Have you ever watched ants in your yard? Did you know that there are many different kinds of ants? Ants can be found in most parts of the world, and they can be different colors and even different sizes. Ants have been around for over a million years, and some scientists call ants the most successful species on earth. Some types of ants build homes in small mounds of dirt; other types of ants use small sticks to help make their dirt mounds even stronger, while other ants build their homes in large mounds above the ground. Ants that live underground dig tunnels through the dirt. These tunnels can be as deep as 15 feet and can include many different chambers and pathways to allow the air to circulate. Some of the tunnel pathways lead to places for food storage while other tunnels lead to nesting areas for the young and resting places for the worker ants.

Grades: 1 - 2

Key Vocabulary:

- Harvest
- Colony
- Exoskeleton
- Larva
- Pupa

Materials:

Print: Ant Farm
Print: I Think I Know
Colored Pencils (opt.)

Related Literature:

Two Bad Ants
Chris Van Allsburg
One Hundred Hungry Ants
Elinor J. Pinczes
The 512 Ants on Sullivan Street
Carol Losi

The ants at **Butterfly Wonderland** are called Harvester Ants. Their name comes from the fact that they “**harvest**” seeds and other food items which they store for later use. You will be able to see that the Harvester Ants construct a series of tunnels for their **colony**. Harvester Ants live in the western part of the country, and like other ants, they like to live in groups called colonies. Ants are very social insects. Being social and living in a colony means that the ants live together, work together and raise their young together. Most colonies of ants have one queen ant that grows up, sheds her wings, mates and spends her life laying the eggs to build her colony. The queen ant has many helpers to care for the colony, they are called worker ants. Each colony can have as many as 20,000 worker ants. The queen ant stays at the bottom of the nest while the workers move all around the tunnels doing their job to keep the colony safe and supplied with food.

Ants are insects that have three body parts. They have a head, trunk and abdomen. Ants also have a set of antennae and a hard **exoskeleton**. An exoskeleton is a skeleton on the outside of the ant’s body. Humans have a skeleton on the inside of the body and it is covered with muscles, tissue and skin.

The head of the ant has jaws that pinch and eyes that are made up of several lenses that allow the ant to see very well. The antennae, on the ant’s head, are a special organ that helps the ant smell, touch and taste. Ants communicate with each other by using their antennae. They touch each other or send messages by leaving a scent trail for other ants to follow.

An ant has six legs that connect to the trunk. Each leg has a claw at the end that helps the ant climb and carry things. Ants are resourceful and able to dig very well with the use of their legs and claws. Ants are nest builders, fierce warriors and determined gatherers of food.

The life of an ant takes place in four stages: egg, **larva**, **pupa** and adult. The eggs begin to develop and hatch into larva. The larva grows and sheds its skin several times. After reaching a certain size, the larva then becomes a pupa inside a small cocoon. The pupa begins the journey of change into its adult body. In about 6 to 10 weeks, a new adult ant emerges to take its place in the colony. Some queen ants can live over 15 years and workers live up to 7 years.

Sources: Texas A&M AgriLife Extension; University of Arizona Center for Insect Science Education; Wikipedia

Procedure:

1. Read one of the books from the suggested list or any other book about ants.
2. State the learning objective related to Harvester Ants.
3. Ask open-ended questions about ants to check for prior knowledge. Use the sheet, I Think I Know/I Learned. Have students fill in the “I Think I Know” side. (After hearing the background information, have students fill in the “I Learned” side.)
4. Present the background information to the students. Review vocabulary.
5. Discuss the characteristics of ants, their anatomy, life cycle, food and habitat.
6. Students complete the “I Learned” side of the sheet. Compare what they have written.

Pre-Visit Activity:

Reading about Ants

I Think I Know – I Learned Sheet

Discussion on the topic

Reflection:

1. After visiting **Butterfly Wonderland**, students can compare the notes on their “I Think I Know/I Learned” sheet with their observation of the Harvester Ants.
2. Students can then draw their own ant farm using the printout and directions. Drawings should reflect the students’ understanding of ant colonies and their habitat.
3. The quiz is a check for general understanding.
4. Students are to label the parts of the ant to demonstrate their understanding.

Ant Farm Directions:

Complete the Ant Farm by drawing a series of tunnels that include the following:

- Entry and Exit Tunnels
- Food Storage Chambers
- Nesting Areas for Eggs
- Resting Areas for Workers
- Queen's Chamber

Name the ant farm and give an estimation of the number of ants in your ant farm. Be sure to consider the space available in the ant farm, and list the type of food your ants will eat.

Writing Assignment:

Look at the picture of the ant, on a separate sheet of paper, write a story describing the typical day in the life of the ant.

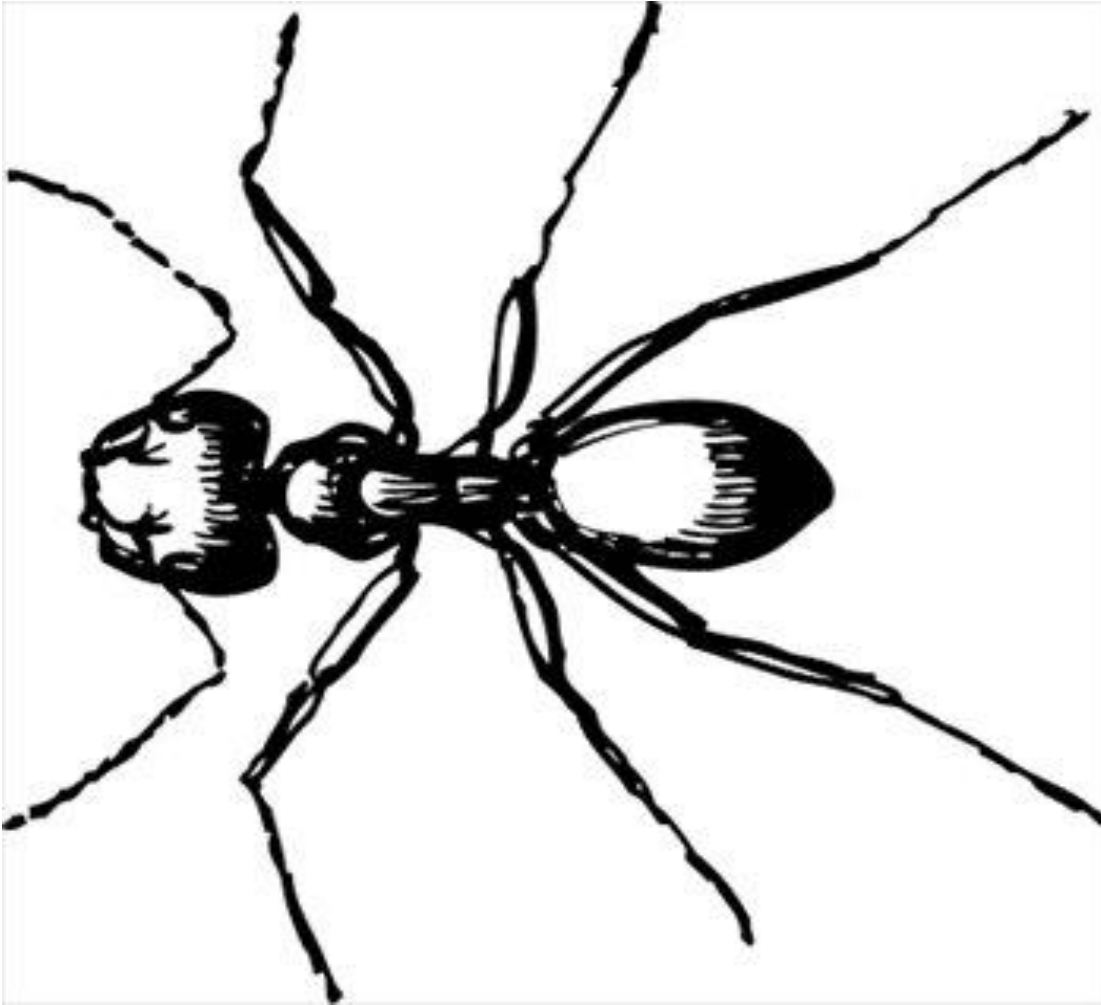
Ant Quiz

1. Where are ants found? _____
2. What types of ants are found in a colony? _____
3. Describe how ants begin a new colony. _____

4. How did Harvester Ants get their name? _____
5. What do Harvester Ants eat? _____
6. How do ants communicate with each other? _____
7. What are the 3 main parts of the ant's body? _____

8. How do ants carry their food? _____
9. What does the term "colony" mean? _____
10. What are the 4 stages in the life cycle of the ant? _____

Label the parts of the Ant



1. Head
2. Trunk
3. Antennae
4. Abdomen
5. Legs

ANT FARM



Draw your ant farm with tunnels for ants to get in and out and move all around.

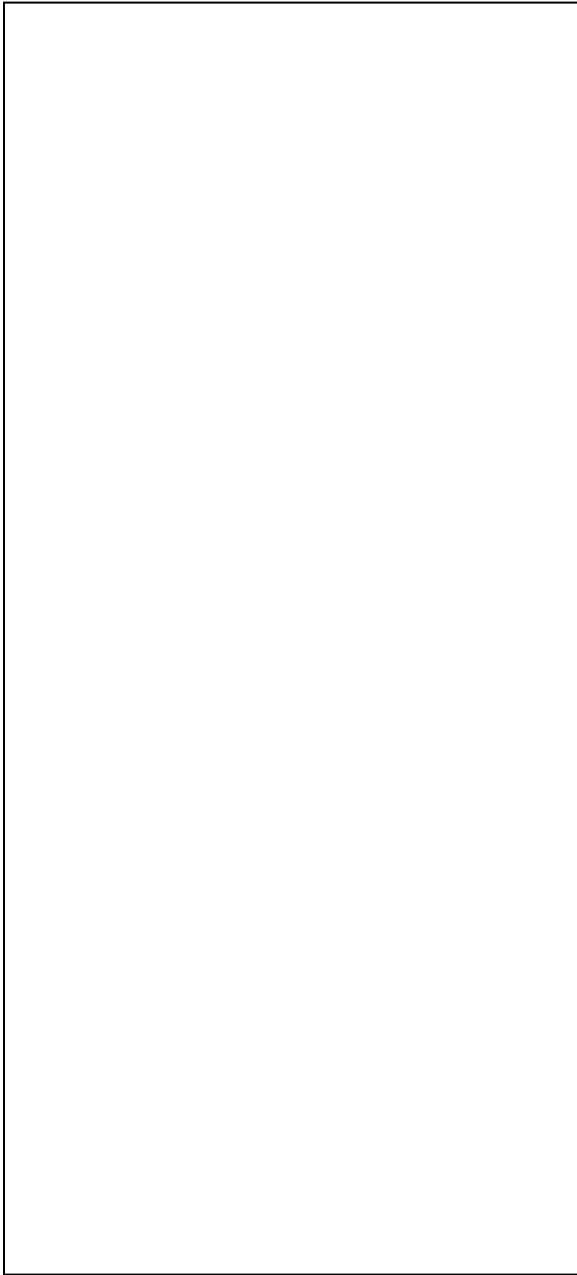
Be sure to include:

- Food storage places
- A nest for the eggs
- Resting areas for workers
- Queen's chamber

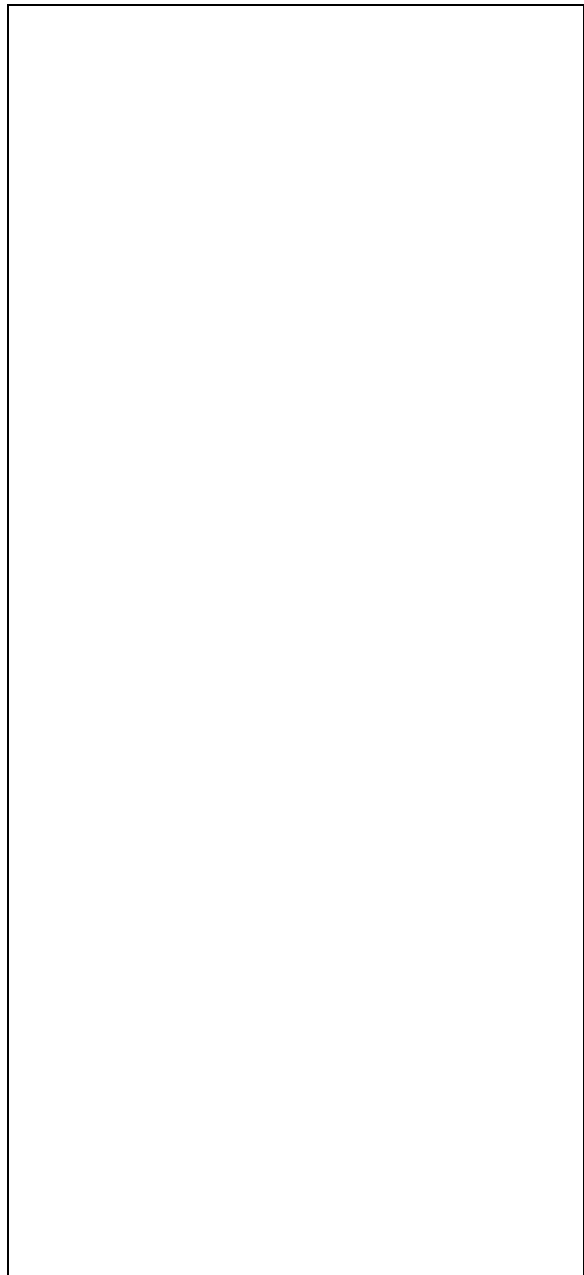
ANTS

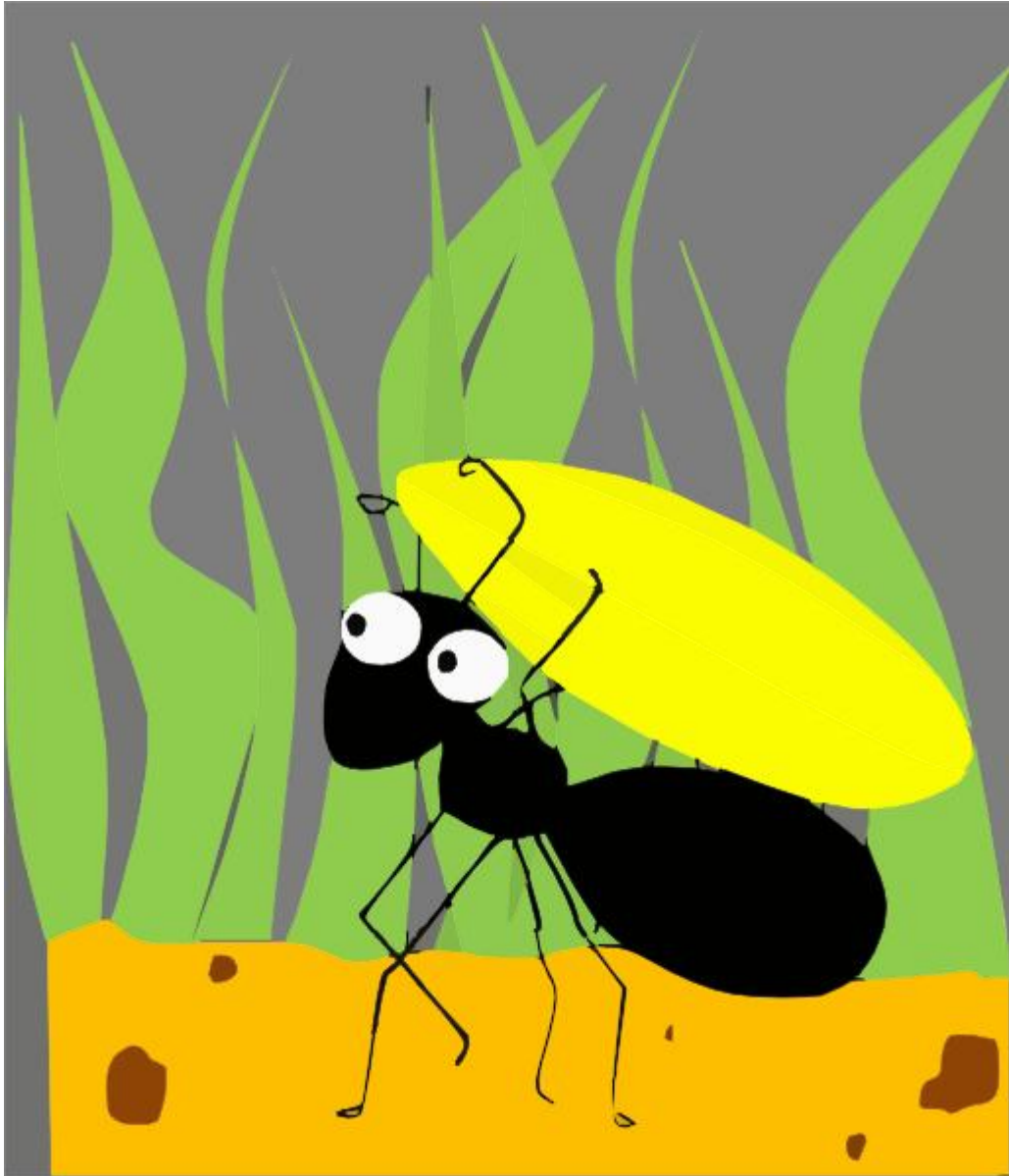
Directions: First, write what you think you know about ANTS. After the lesson, write what you have learned about ANTS.

I THINK I KNOW

A large, empty rectangular box with a thin black border, intended for the student to write what they think they know about ANTS.

I LEARNED

A large, empty rectangular box with a thin black border, intended for the student to write what they have learned about ANTS after the lesson.



Write a story about this ant.