

# Narrative Performance Task: Ant Colony

## Student Directions

Task:

Your class is studying about insects and ant colonies. You are given two articles about ants and ant colonies.

*Read the sources carefully so you can **write a story** about shrinking to the size of an ant, falling into a hole in the ground, and becoming part of an ant colony. When writing your story, find ways to use information and details from the sources to improve your story about becoming part of an ant colony.*

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## Sources for Performance Task:

### Source #1

This article from *Appleseeds* magazine is about a scientist who studies ants.

#### **An Eye for Ants**

by Gretchen Noyes-Hull

Dr. Edward O. Wilson, scientist and teacher, has spent his life peeking into the nests of ants. He's curious about the job of each ant in the colony. He wants to uncover the secrets of any colonies' success.

As a child, Edward was often alone. . . alone. . . . Wherever he lived, snakes, fish, and insects became his friends. For a time, he even kept a colony of harvester ants in a jar under his bed.

The summer he was 7, Edward hurt his right eye in a fishing accident. As he says: "The attention of my surviving eye turned to the ground." It wasn't long before Edward decided to become an entomologist—a scientist who studies insects.

Ants live almost everywhere—from tropical climates to beyond the Arctic Circle, from dry deserts to shady rain forests, from city sidewalks to wild woodlands, and from deep in the ground to the tops of the tallest trees. They live in colonies. An ant colony can have as many as 20 million members.

There is only one queen ant in a colony. It's the queen's task to lay the eggs. Out of the eggs grow worker ants and sometimes a new queen. Every ant in a colony has a job. The main goal of all the worker ants is to take care of the queen and her offspring. This they do in some amazing ways.

For 50 years, Dr. Wilson has traveled around the world looking for new kinds of ants. Sometimes he brings entire colonies back to his laboratory to observe them more closely. He wants to learn about each ant's job within its colony. He wants to know how each ant's job contributes to the future survival of its species.

Dr. Wilson's discoveries help us understand why many animal species develop social organization. In a social organization, each member of the group has a specific job. Each job is important to the entire species' success.

Whenever possible, Dr. Wilson still returns to the place where he first watched ants. He notes the changes in ant species that have occurred over the past 60 years. And today he still relies on the observations and collections of the specimens that he made when he was a young boy.

### **An Ant Experiment to Try**

Worker ants must build, feed, and guard their colony. To do this, they need to communicate with each other. Like most living things, ants depend on chemical odors (known as pheromones) to send messages, such as, "I found food over here . . . here . . . alert! there's a stranger in here." Over the years, Dr. Wilson has carried out hundreds of experiments to find the meanings of these odor signals. Although he's made important discoveries, many mysteries remain.

You can do an experiment to test the odor signals of ants. Put several drops of sugar water on a piece of paper. Place the paper near some ants. Watch as one ant discovers the food. Other ants will soon follow the first ant's odor trail. Turn the paper sideways. The ants will still follow the scent of the odor trail, although the sugar water is now in a different place.

### **Amazing Ant Facts**

There are almost 10,00010,000 known species of ants and many more remaining to be discovered. At any one time, 10 million billion (that's 10,000,000,000,000,000) ants are alive. (The world's population of humans is only about 6.66.6 billion!)

Most ants are scavengers. They find food outside the nest. But some kinds of ants actually "farm" their food. Some "farming" ants grow fungus on underground leaf farms....

Some ants drop pebbles down other colonies' holes. The pebbles block the other ants and keep them from going after the same food.

Some worker ants act like storage containers. They fill themselves up with food like a balloon. If food becomes scarce, they regurgitate it for the rest of the colony. (Regurgitate is the scientific way to say "throw up.")

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### **Source #2**

This source is about what happens inside an ant colony.

### **Life in an Ant Colony**

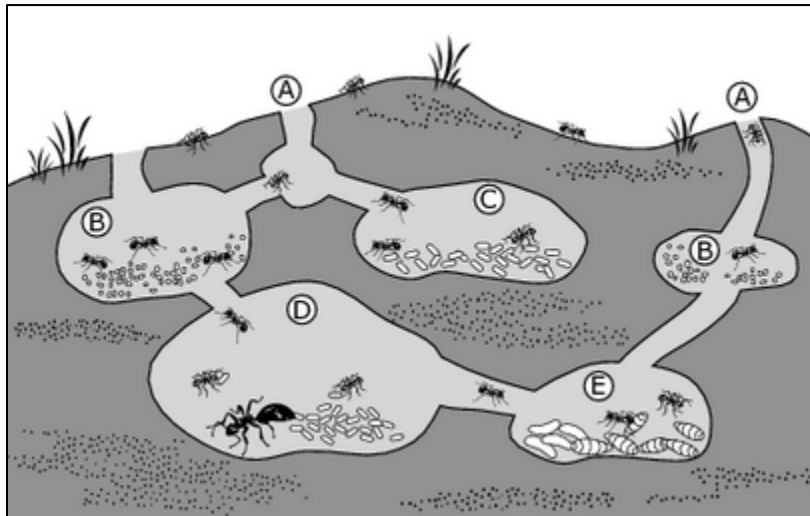
You can find an ant almost anywhere in the world. You will know it is an ant by the six tiny legs, the skinny body in three parts, the bent antennae, and the strong chewing parts. It will be brown, red, yellow, or black.

Ants like to live in the tropics best, but they live on every continent except Antarctica. There are so many ants in the world that if you piled them together, they would weigh about as much as all the people on Earth.

As small as ants are, they are very tough. Many ants bite, and some sting. An ant can carry up to 100 times its own body weight. That is like a child picking up a car! But ants are also strong in another way, and that is in working together in big groups in order to survive. Ant nests are a great example.

Many ants build nests. These ants build nests on the ground, inside logs, under stones, and in trees. They often use wood, leaves, or soil to build nests. Some ant colonies are small enough to nest inside an acorn. Other nests rise above the earth in large mounds. Some colonies extend for a mile or more underground.

Most ant nests have layers of chambers with tunnels to connect them. Most nests also have nurseries where eggs hatch and workers care for young ants.



An ant colony usually has many entrances (A). There are many chambers located underground. Some areas are used to store food (B). One chamber is just for the queen (D). Workers look after unhatched eggs in another chamber (C). One room deep below the surface is used as a nursery for larvae and cocoons (E).

Within the nest there are storerooms for the food that the ants collect. If stored food gets damp during heavy rains, workers bring the wet food up to the surface on the first sunny day. When the food dries out, they return it to the nest.

There are even “stables” within the nest where workers hold and care for other insects. An aphid is a sap-sucking insect that gives off a sugary substance called honeydew. Some ants love honeydew, so they keep a group of aphids to make it for them. This is similar to a farmer having cows that produce milk.

Other ant nests include fungus gardens. Farmer ants grow and take care of this food made from leaves and bits of vegetable matter.

Scout ants go out looking for food. They may wander as far as 700 feet from the nest. If they find food—seeds, grains, or animal matter—they eat it. The food to take home goes into a separate stomach. When the scout ants return to the colony, they regurgitate this food to feed the other ants.

The scouts leave a special chemical called pheromone along the way to the nest. Their nest mates will pick up the scent and follow it back to get more food.

Ants also communicate to protect the colony. When there is danger, the ants release alarm chemicals from their bodies to warn the other ants.

In some ant colonies, a soldier ant sits inside the nest, facing outward. The soldier's head matches the size of the nest entrance. When a worker ant wants to come back inside the nest, it touches the soldier ant's head or antennae to let the soldier know it belongs to the colony.

More than 12,000 species of ants have been classified. There are many differences between them. But they have one important thing in common. Each ant colony thrives on working together for the good of all.

#### Sources Used

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