

ANT SCOUTS

Background

When ants leave their nest to forage for food, they generally follow a searching pattern. Using the angle of the sun's rays to track where the nest is, they meander around seeking something tasty. When one of the scouts finds some food, she (the workers are all female) grabs it and carries it back to the nest in as straight a line as possible. There the ants share all their food.

During her return to the nest, she dabs a trail of **pheromone**. (A pheromone [fair-oh-moan] is a chemical used for communication between members of the same species. *Example:* Dogs, like many male mammals, mark their territories with urine. This chemical is a signal to other male dogs to stay away.)When another foraging ant finds that pheromone trail, she follows it first to the food and then back to the nest. Each ant passing along the trail adds more pheromone to the path and makes the signal stronger.

The ants also dab along the ground with their antennae to "smell" the pheromone and keep on track. You can test this if you ever see an "ant parade." Wait for a moment when no ant is nearby on the trail and make a small smudge with your finger across the path. What would you expect the next ant to hit that spot to do?

This activity allows the students to forage like ants, find some food and make a trail back to the nest. The other ants then follow this path, get food and take it back to the nest.

Materials

- A ball of string, the thicker the better
- Blindfolds¹ for each participant
- A radio, tape player or record player with your favorite music
- A large space - the classroom is okay if the chairs and desks are moved to the sides
- Food - a bowl (plastic!) of pumpkin seeds or something your kids can eat (*careful, some youngsters are allergic to peanuts*). You can also use marbles or some other tokens.

Procedure

Explain that ants do not use their eyes to find their way around. Ask them how they think the ants "see" the world. They should know about the *antennae*, or "feelers," but perhaps not about tasting with their face and feeling vibrations with their feet.

An area is cleared that is large enough and safe for foraging with blindfolds¹ on. If you try this game outside, you might want to take turns and have some children "guard" the borders of the play area. Show the class the bowl of "food" that the ants will be foraging for. At the bowl of food, tie the end of a ball of thick yarn to something about waist-high (if you put it on a chair, you can tie the yarn to the chair top - it should *not* be lower than waist high! We don't need blindfolded children tripping over yarn!).

¹ Each child should have his or her own blindfold. Contagious eye diseases can be spread by sharing blindfolds. Some teachers purchase a "class set" of cheap socks and have the students write their names on, or decorate their blindfolds.

Have everyone gather at a place designated the *nest*. Tell the scouts that they are ants going out foraging for food. They will be blindfolded so they should move slowly. Bumping into things slowly doesn't hurt as much as slamming them fast! Also, *ants don't talk!* Play some quiet music at the nest so when a scout finds the food, he or she can find the way back to the nest. Explain that when they get to the bowl of food first, there is a ball of yarn that they should take home with them. There should be a place of equal height to tie the yarn to at the nest. Tell them that one end is tied up so the string will stay about waist-high and that if they run across that string, another scout has already found the food and their job is to follow the trail to the food, then back to the nest.

Each ant takes one piece of food back to the nest. Once everyone gets back home, discuss the experience. What was their most important sense since they could not use their eyes? What is an ant's most important sense? Ask them if they think they would go faster after a little practice. Play more rounds, perhaps timing them to see if the time gets shorter. Do ants get faster at foraging after some practice? It is likely that once a nest is established, the foraging happens in a region around the nest. Ants that visit the same place more than once probably are able to learn major landmarks and recognize easily when something is out of place or there is something extra (like food). Certain wasp species (closely related to ants) memorize the landscape around their in-ground nests. They have a hard time finding it again if major landmarks are removed while they're out hunting.

Extensions

Take the class out to the playground or lot and have them search for foraging ants. Take some fresh orange rinds, banana peels, or sliced apples and place them near the nest. How long does it take the first ant to find it? (If it takes too long, move it to a different spot, perhaps closer.) How long does it take the second ant? Or third? Are they helping each other find the food faster?

Have the students map the area and draw an ant's foraging pattern. Does it change when she finds food?

You can find ant hills everywhere during the warm months. Once you start looking, you won't believe how many there are! Count the ants entering and leaving an ant colony. This is probably a two-person job. One should count while the other writes it down, then they should switch roles. Which ants are carrying something in their mouths? Does this change at different times of day?

Chris Van Allsburg's picture book, **Two Bad Ants** goes great with this activity. It is about two ants who decide to stay at the source of the food and "go it alone." They have quite an exciting kitchen adventure and get into all sorts of trouble.