

PROGRAM 13

Working Together

◆ GET READY TO WATCH

Discuss activities in which teamwork is essential. Why does working as a team make these times more successful or effective than working as an individual?

Ask students, "What is a community?" Invite them to describe different types of communities.

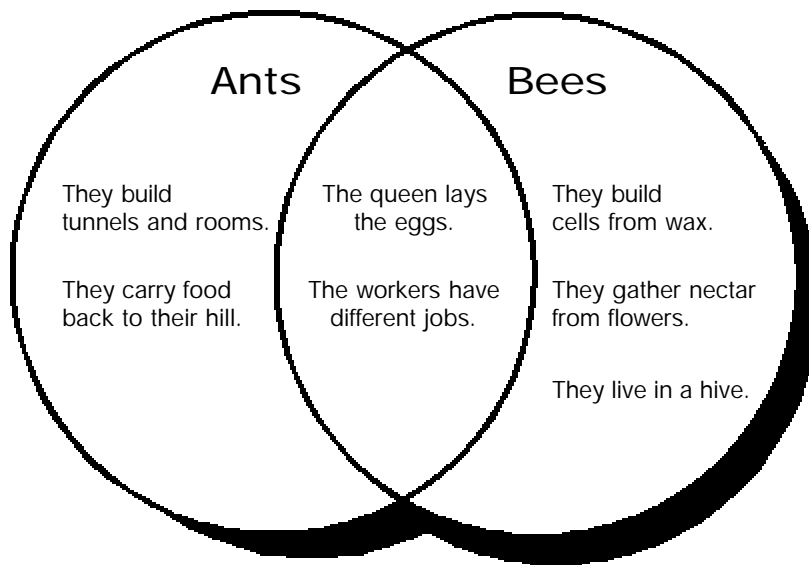
◆ TALK ABOUT

Ants, bees, and termites are considered "social" insects. Discuss the meaning of social insect. Compare and contrast a community of people with a community of insects.

◆ CURRICULUM INTEGRATION ACTIVITIES

Science

Review what students have learned about ants and bees by making a Venn diagram comparing the two insects. Brainstorm the items for the diagram.



Tie science and art together by having students make a cut-away mural of an ant colony. They will need to use information they have learned about ant activities, such as creating passageways and rooms, housing the queen in a large room where she lays her eggs, making the egg nursery and the rooms in which the larvae are fed and kept, including a storeroom for food, etc. Have them place ants both inside and outside the anthill, showing the many places ants work.

◆ Program Description

Celia visits her friend Bud who is frantically trying to help customers at four different food-cart stands all by himself. As she tries to find some help for him, both she and Bud learn the importance of working together to accomplish a big project. Bud recruits help from his friends to work at the food carts and, by working together, they serve all the customers quickly and easily. Crinkleroot shows that insects, like people, work together to accomplish things. Termites, ants, and bees use the concept of working together to build and sustain their colonies. Young scientists demonstrate how to set up an ant farm in a jar and how to make beeswax candles.





◆ Crinkleroot's Corner

Bees sting only if they have to—usually to protect their hive.

Honeybees have barbs (a kind of hook) on the end of their stingers. When a honeybee stings, the stinger is pulled out of the bee's body and stays in the victim's skin. This causes the bee to die shortly. The bees that lose their stingers when they sting are the worker bees. A queen bee can sting more than once.



Language Arts

As a class, make a photographic essay that shows class members working together. Keep a camera handy for photos of different events and activities in which cooperation is an important part. After the pictures are developed, mount them on sheets of paper and have students write captions for the pictures. Bind the pictures into a class book and give it a title, such as "This Class Works Together!"

Be a bee! Divide the class into three groups. In each group, have students cooperatively decide who among them will be designated as worker bees, drones, and the queen. (They will need to consider what they know about bees; i.e., there is only one queen and there are more workers than drones.) Have each group write a puppet play script describing life in their hive. Writing in first person narrative, workers, drones, and bees can tell about the different functions they perform. Encourage students to be creative. Allow the groups to perform their plays using handmade bee puppets (see "Art" below).

Math

Focus on measurement skills by cooking with honey. Use the following recipe (or one of your own favorites). In addition to measurement, stress the need to follow directions when cooking and the importance of time and temperature.

Honey Gingerbread Cookies

Ingredients:

½ cup sugar	3 cups sifted flour
2 tsp. baking soda	1 tsp. salt
2 tsp. ginger	2 tsp. cinnamon
½ tsp. nutmeg	½ tsp. cloves
½ cup honey	1 cup butter, cut into small pieces

Directions: Sift the sugar, flour, baking soda, salt, ginger, cinnamon, cloves, and nutmeg together into a mixing bowl. Work the pieces of butter into the dry ingredients with your fingers until it is thoroughly mixed in. Add the honey and stir until blended. Refrigerate the dough for an hour. Roll out the dough to a thickness of about 1/8 inch on a floured board. Cut in desired shapes. Bake for 12-15 minutes in a 350° oven. Yield: about 2-1/2 dozen.

Examine the pattern of a honeycomb. Have students work with a set of circle shapes all the same size. Instruct them to place one circle at the center and see how many additional circles will fit around the circumference, touching the edge of the center circle. (Six circles should fit around the center circle.) Have them trace around these shapes as they have them placed. Using a set of hexagonal pattern blocks, have students place one in the center and see how many additional hexagons will fit around the outside edge. (Also six.) Trace this arrangement, as well. (Discuss the fact that this is the pattern of a honeycomb.) Challenge the students to use any additional tools they need (rulers, other shapes, etc.) and explore how they might draw the hexagonal arrangement on the circle arrangement. (They may not trace the pattern blocks on the circles.)

Social Studies

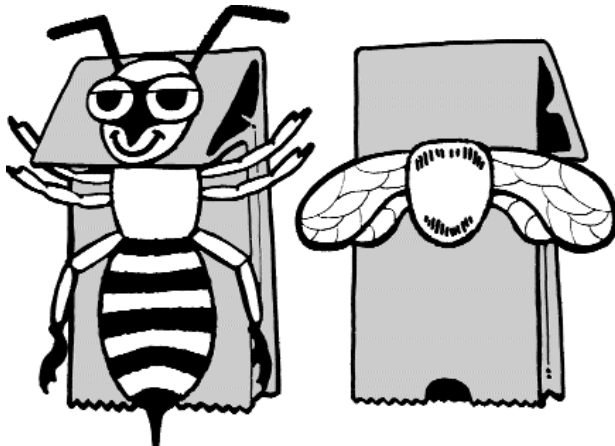
Identify some products that list beeswax as one of their ingredients, and bring them into the classroom for a display.

These products might include: candles, lipstick, crayons, shoe polish, sealing wax, floor polish, and wax for skis. Students might also find pictures of other items, such as statues made of wax.

Brainstorm a list of workers in a community who are vital for keeping daily life running smoothly. Have students choose one of these occupations to learn more about. As a class, think of two or three questions they have about the jobs these workers do. The students might use books, conduct interviews, or use e-mail to find the answers to their questions. Provide an opportunity for students to share what they learned. Encourage them to be creative. They might make a poster, do a puppet show, write and illustrate a book, or do a TV or radio show and portray a person in that occupation.

Art

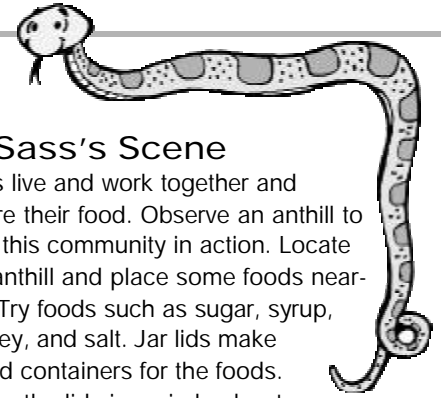
Have students make bee puppets. Materials needed are: a paper lunch bag, yellow and black construction paper, and black pipe cleaners. To make each puppet, glue the pipe cleaner antennae into place on the "flap" of the bag as shown in the drawing below. Then glue the head, made from yellow construction paper, on top. The body is yellow with black stripes. Legs are black construction paper. Glue the legs on first, then the body on top. Glue wings cut from yellow paper on the back of the bag, as shown in the drawing. Facial features may be added with crayons. Eyes should be very large.



Sing this song about working together

(to the tune of "Are You Sleeping"):

Friends together
Solve a problem.
Teamwork helps
On our jobs.
We can work together.
We can help each other.
Teamwork counts.
Be a team.



◆ Sass's Scene

Ants live and work together and share their food. Observe an anthill to see this community in action. Locate an anthill and place some foods nearby. Try foods such as sugar, syrup, honey, and salt. Jar lids make good containers for the foods. Place the lids in a circle about three feet from the anthill, and watch to see what happens. Observe the activity to see how long it takes the ants to find the food, and which foods they seem to like best. Notice how they travel to the food and back to the anthill. Do they take food back with them? How do they carry it? Does it appear that the ants "spread the word" that there is food nearby?



Invite students to use creative movement to show how bees use motion as language. Have students work in small groups. Give each group a flower (silk or plastic) to hide. One member of the group hides the flower and must communicate to the rest of the group where it is by using movements only. The rest of the group then searches for the flower. Discuss this activity in relation to the dances of bees: the “round dance” (in which a bee circles in one direction and then turns around and circles in the other direction) means that flowers are close by; the “tail-wagging” dance (in which a bee does a half-circle in one direction, turns and flies straight while wagging its tail, then does a half-circle in the other direction) lets the other bees know the direction of the flowers and that they are farther away. Have students decide on gestures and body movements they can use to tell where the flower is hidden.

◆ **CRINKLEROOT SAYS,
“DO YOU WANT TO KNOW MORE?”**

Check out your local library or bookstore for these books about insects and working together:

Arnosky, Jim. *I Was Born in a Tree and Raised By Bees*. Putnam, 1988.

Berman, Ruth. *Ants*. Photographs by William Munoz. Lerner, 1996.

Carle, Eric. *The Honeybee and the Robber*. Philomel, 1981.

Cole, Joanna. *The Magic School Bus Inside a Beehive*. Illus. by Bruce Degen. Scholastic, 1996.

Dorros, Arthur. *Ant Cities*. HarperCollins, 1987.

Ernst, Lisa Campbell. *Sam Johnson and the Blue Ribbon Quilt*. Lothrop, Lee & Shepard, 1983.

Gibbons, Gail. *The Honey Makers*. Morrow, 1997.

Hogan, Paula Z. *The Life Cycle of the Honeybee*. Illus. by Geri K. Strigenz. Raintree Publishers, 1979.

McLerran, Alice. *Roxaboxen*. Illus. by Barbara Cooney. Lothrop, Lee & Shepard, 1991.

Micucci, Charles. *The Life and Times of the Honeybee*. Ticknor & Fields, 1995.

Polacco, Patricia. *The Bee Tree*. Philomel, 1993.

Retan, Walter. *Armies of Ants*. Illus. by Jean Cassels. Scholastic, 1994.

Steffoff, Rebecca. *Ant*. Benchmark/Marshall Cavendish, 1998.

Van Allsburg, Chris. *Two Bad Ants*. Houghton Mifflin, 1988.



Additional resources

Bugs. Reading Rainbow video. GPN.

Bugwatch. Internet site:
<http://bugwatch.com/index.html>

A Chair for My Mother. Reading Rainbow video. GPN.

Cole, Joanna. **The Magic School Bus Gets Ants in Its Pants: A Book About Ants.** Illus. by Bruce Degen. Scholastic, 1996.
(includes a plastic ant farm, sand, and coupon to send away for ants)

Gordon's Entomological Home Page.

Internet site:
<http://www.ex.ac.uk/~gjlramel/six.html>

Insect. Eyewitness Natural World video. DK, 1995.

The Life Cycle of the Honeybee. Reading Rainbow video. GPN.

The Magic School Bus Gets Ants in Its Pants.

Television program. PBS.

The Magic School Bus in a Beehive. Television program. PBS.

