

OVERVIEW

The youngsters try to match a “mystery community” by shaking animals out of different trees and shrubs.

Shake It! may be conducted in the usual way or as a hiking activity. Choose the format that suits your plans, and get shakin’!



BACKGROUND



A **community** is a group of plants and animals that live together in an area. Some communities, such as the community of organisms in the Gulf of Mexico, are huge. Other communities, such as those found on a pine tree, oak tree, or in a hedge, are composed of fewer organisms and occupy much less space.

Whatever the size and makeup of a community, certain factors are universal. All communities contain plants that make

food to support the community. Some of the animals in the community eat the plants. Many communities also contain predatory animals that eat other animals. In addition, most communities contain fungi and microorganisms that decompose the community’s dead organisms and waste products. The decomposers return minerals and nutrients to the environment where they can be reused by plants and animals.

MATERIALS



For each youngster:

- 1 3" × 5" index card*
- 1 Shake-It Container (See the "Shake-It Container" Equipment Card.)
- 1 hand lens* or bug box*

For the group:

- 1 "Shake-It Container" Equipment Card*
- 1 roll of masking tape*
- a few extra plastic bags*
- 1 large View Chamber for every eight kids (See the equipment card.)

* Available from Delta Education.

PREPARATION



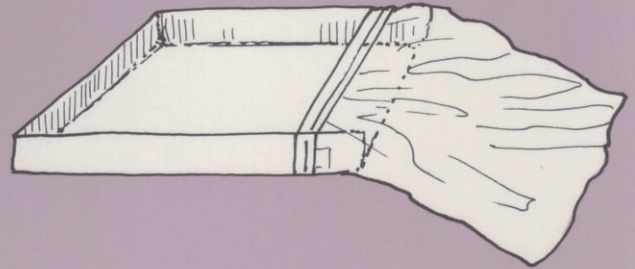
Group Size. This activity is suitable for any size group.

Time. Plan on thirty to forty minutes for this activity. The time for the hiking format is flexible—from ten minutes up to an hour. Choose a time period that fits your group's hiking plans. *Shake It!* works best on a warm day in the late spring, summer, or early fall, when insects are abundant.

Site. Select a site with a variety of trees and shrubs with low foliage that the youngsters can easily reach and shake. Hardwood forests, stream and pond edges, and brushy areas are all excellent sites. Use a Shake-It Container to check potential activity sites for lots of insects and other animals living on different kinds of plants. Directions on how to use a Shake-It Container are on the equipment card. The site should contain a different *kind* of plant for each team of two youngsters.

Materials

1. Shake-It Containers. Make one Shake-It Container for each participant. If you plan to have your group make their own Shake-It Containers, plan a separate session for construction.



2. If you plan to use the usual activity format, make a View Chamber for every eight youngsters in your group. The View Chamber is not required for the hike format. (See the "Shake-It Container" Equipment Card.)

3. In addition, shortly before meeting with your group, go to the activity site and shake a few plants to familiarize yourself with the animals living on each kind of plant. Select a plant with a nice variety of critters, and shake them into a plastic bag. This sample will be the "mystery community." *Keep leaves out of this bag because they will spoil the mystery for the kids.* In a separate bag, place a leaf from the mystery-community plant as well as leaves from enough other plants for each team of two youngsters to select a different leaf.

FORMAT FOR STATIONARY ACTIVITY

CHALLENGE: FIND A COMMUNITY THAT MATCHES THE MYSTERY COMMUNITY BY SHAKING DOWN TREES AND SHRUBS.



ACTION

1. Show the group the bag containing the animals from the mystery community, and tell the youngsters that these animals make their home in one of the trees or bushes in the area.

2. Define **community** as a group of plants and animals living together in an area. Tell the group that for the purpose of this activity, the animals living on one plant make up a community.

3. Ask the group to inspect the animals from the mystery community. Let them use the magnifiers to get a close look at the animals. Tell them that the critters *all came from the same plant*.

4. Introduce the Shake-It Container as a tool for sampling communities of small animals in plant foliage. Demonstrate its use and give one to each youngster. Give each youngster an index card, and show how to use it to scrape clinging critters into the Shake-It Container bag.

5. Show the group the leaf samples, and explain that the mystery animals came from a plant represented by one of the leaves. Ask the kids to form buddy teams and then to select one of the leaf samples. Challenge the teams to shake down plants that have the same kind of leaves as their sample leaf. Each team may have to shake several of its kind of plant to gather a good sample of animals.

6. When the teams have shaken down their plants, call them back. Have the teams compare their animals with the mystery-community animals. Ask the youngsters if one sample matches the mystery community exactly. Is there a close match? Are other samples similar?

7. Tell the kids that they will now use View Chambers to investigate community dynamics. Have each team go back to its plant and collect one branch sample 10 to 15 centimeters long. Instruct the youngsters to place these branches in the



chamber, spaced equal distances apart. Have the teams dump their animals into the chamber by removing the bag from their Shake-It Containers and shaking the contents into the View Chamber. (See the illustration.)

8. The kids should look for these interactions in the chamber:

- Do animals return to the kind of plant they were shaken from?
- Do some animals seek protected places? Are the animals camouflaged?
- Do the spiders spin webs? Do any animals capture other animals and eat them?
- Do any of the animals eat any of the plant samples?

COMMUNITY ACTION QUESTIONS

1. Which plant seemed to host the most animals? How many different kinds of animals were found in that community?
2. Describe some of the animal interactions you observed in your community bag or in the View Chamber. How do you think these interactions help to keep the community going?

SHAKE IT!

BIO KEY

Animal Investigation
Sampling Technique
Community

3. What was the biggest animal collected? The smallest? Which has the brightest colors? Which is the best camouflaged? The rarest? The most abundant?

4. Did your Shake-It Container do a good job of sampling *all* the critters on the bushes and trees you investigated? What critters were not sampled?

FORMAT FOR A HIKE

CHALLENGE: DISCOVER WHAT KINDS OF ANIMALS LIVE ON PLANTS ALONG A TRAIL.

ACTION



1. While pausing during the hike, introduce the youngsters to the Shake-It game. Tell them that there are many animals living on plants within arm's reach on either side of the trail. Demonstrate the use of the Shake-It Container, and offer it as a tool the youngsters might use to find and observe trailside animals. Distribute hand lenses and index cards (for tapping or nudging clinging critters into the Shake-It bag).

2. When everyone has practiced the technique, offer the youngsters one or more of the following challenges:

- Pick one kind of plant to shake at different places along the trail. Which animals appear time and again on that kind of plant?
- Have each youngster secretly shake down a good sample of critters from a plant. Let each youngster then challenge a friend to discover what kind of plant was home for these animals.
- Show an animal to the group. Challenge the kids to find as many different kinds of plants as possible that harbor that animal. Ask the

youngsters to take a leaf sample from each plant that hosts the animal. Ask if the animal was found on only one kind of plant or if it was common to many kinds of plants. Try another animal.

TRAIL-END QUESTIONS



1. What kinds of animals were most common on the bushes and trees you shook?
2. Were many of the animals camouflaged?
3. Were there any animals that were found on only one kind of plant? Why do you suppose an animal might live on one kind of plant and not on others?
4. Define **community** as a group of plants and animals living together in an area. Which plant seemed to host the richest community (that is, the greatest number of different kinds of animals)?

BRANCHING OUT



1. Shake some plants at night. Are the nighttime communities the same as the daytime communities?
2. Shake some seaweed or freshwater plants washed up on a beach. Put the animals in some water, and observe these aquatic communities.
3. Carefully shake some plants in a vegetable or flower garden to discover what animals might be responsible for plant damage.



Shake It!

SHAKE-IT CONTAINER

Equipment Card



Side One



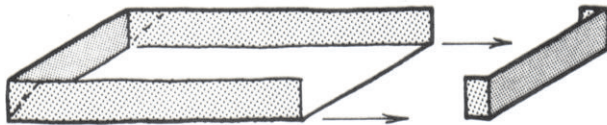
MATERIALS FOR ONE CONTAINER

- 1 small, flat box
- 1 piece of white paper (optional)
- 1 plastic bag*
- tape*

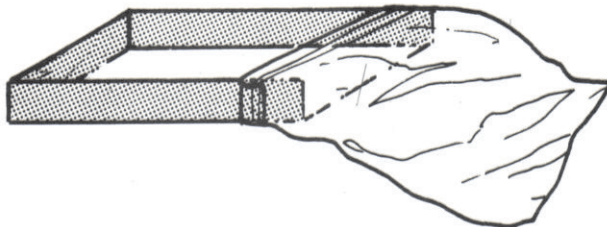
* Available from Delta Education.

CONSTRUCTION

1. Get some small, flat boxes and cut one *end* out. One-ream standard 8.5" × 11" paper boxes are perfect.



2. If the bottom of the box is smooth and light colored, fine. If not, tape some white paper on the bottom.
3. Now put the open end of the box a short distance into a plastic bag. Supermarket produce bags work well.
4. Tape the bag in place on the *bottom* and *sides* of the box. That's it.



TO USE THE SHAKE-IT CONTAINER

1. Simply hold open part of the box under some foliage and shake the *foliage* vigorously.
2. Things that fall into the box can be tipped immediately into the bag. Critters that hold on can be tapped or gently scraped into the bag with a 3" × 5" card.



3. Returning the box to the level position puts a bend in the bag, preventing captured critters from escaping. In this way, you can make many "shakes" and transfer the catches into the bag.
4. To empty the bag, take it off the box and dump the contents. To reuse, retape the bag to the box.

Shake It! VIEW CHAMBER

Equipment Card 

Side Two



MATERIALS FOR ONE CHAMBER

1 box about 30 cm \times 50 cm (and at least 20 cm high)

tape*

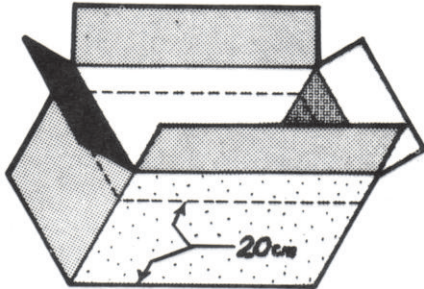
clear plastic wrap*

* Available from Delta Education

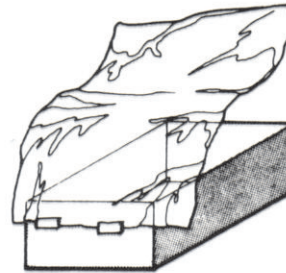
CONSTRUCTION

1. Get a box about 30 cm wide by 50 cm long and at least 20 cm high.

2. Cut the box off at 20 cm.



3. Tape a piece of plastic to one edge of the box.



4. Pull the plastic over the top to hold animals inside.

