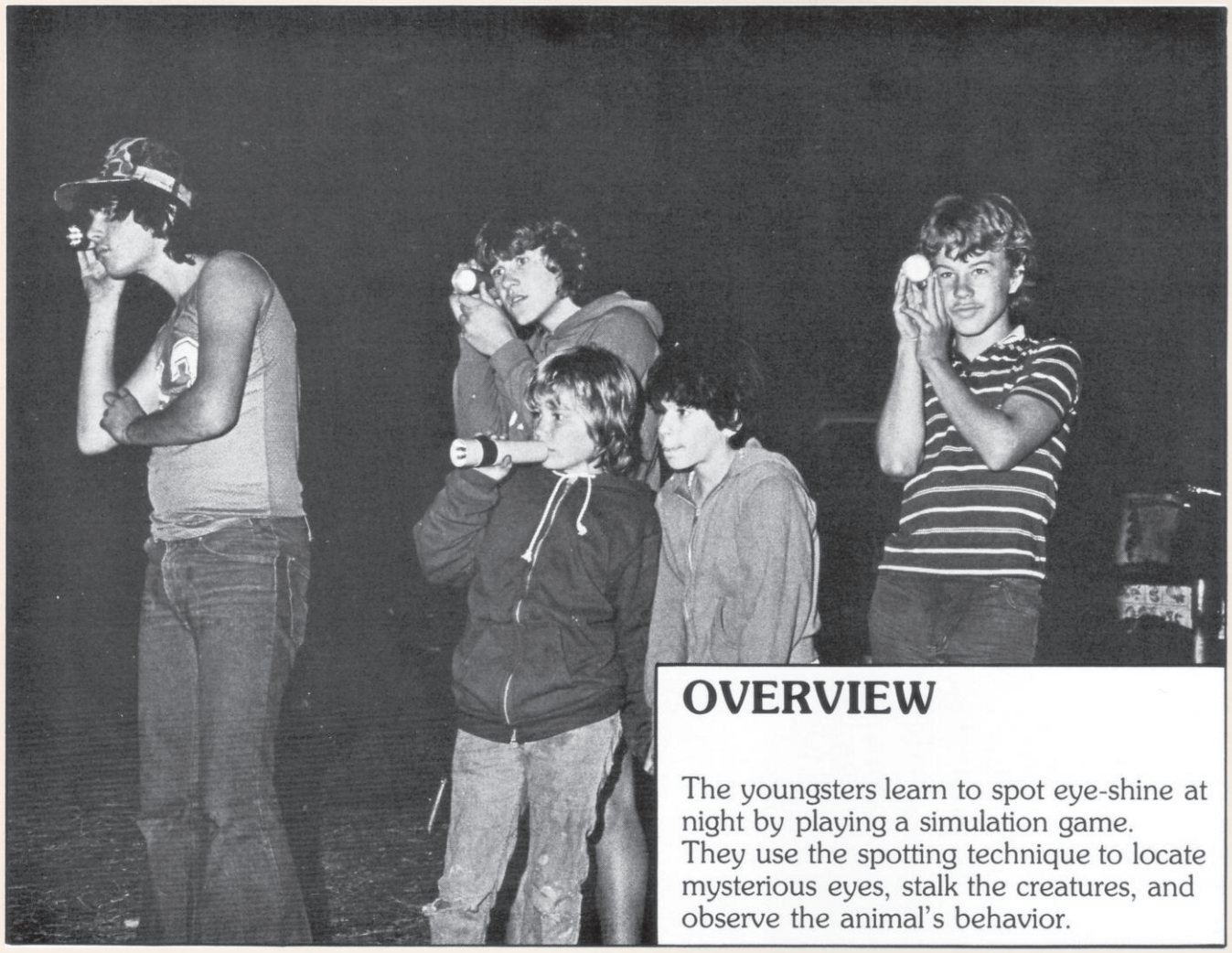
# NIGHT EYES



## OVERVIEW

The youngsters learn to spot eye-shine at night by playing a simulation game. They use the spotting technique to locate mysterious eyes, stalk the creatures, and observe the animal's behavior.

## BACKGROUND

Many nocturnal (active at night) creatures have eyes that reflect light, e.g. spiders, frogs, crayfish, toads, mice, opossums, raccoons, moths, and owls. The color of the reflected light varies from animal to animal. The wolf spider's eyes reflect brilliant, tiny specks of white or greenish-white light; the bull frog's eyes appear a bright, opalescent green. Certain moths' eyes shine orange at night. Most mammals and night-active birds also have eyes that reflect light: orange, yellow, or white, depending on the species.

You may observe eye-shine at night by holding a flashlight against the side of your head at eye level, and sweeping the beam slowly over the grass, bushes, and trees at various distances. Look closely for sharp points of light that might be reflected from animals' eyes. Eye-shine may be discernable across amazingly long distances. When you see small specks of green, white, or orange light, keep your flashlight beam on the source as you approach them for a better look. Watch carefully. Larger animals will run or hide as you approach. However, you can often get a good look at spiders, moths, and some birds.

BIO KEY

Night Investigation
Animal Search
Bio-Technique

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With practice, observers can learn to tentatively identify many night animals on the basis of the color, size, and position of light spots that the animals' eyes reflect from a flashlight beam.

**CHALLENGE: INVESTIGATE MYSTERIOUS GLOWING EYES IN THE NIGHT.**

## MATERIALS

**For the Night-Eyes Simulation:**

**For each youngster:**
1 flashlight* with fresh batteries*

**For the group:**
1 15-cm length of reflective tape*
1 white crayon* or piece of chalk*
black construction paper*
1 pair of scissors*
1 hole punch (optional)
1 6- to 8-meter piece of flagging or rope*
1 data board* and marking pen*
carpet tacks or other dark-headed tacks*
masking tape*

**For the Mystery-Eyes Hunt:**

**For each youngster:**
1 flashlight* with fresh batteries*

**For each team of two:**
1 tablet* or small data board*
1 pencil or other marker

* Available from Delta Education.

## PREPARATION

**Group Size**. This activity is suitable for small groups. If you have more than twelve youngsters, form two equal groups, each with its own leader and site.

**Time**. Allow twenty minutes for the Night-Eyes Simulation and thirty to forty-five minutes for the Mystery-Eyes Hunt. Schedule the activity to begin at least one hour after sunset on a warm night when many insects or other small animals are about.

**Site**. The best site for the Mystery-Eyes Hunt is an open field or large clearing that borders on a forest or pond. Select a smaller area (or one corner of the larger site) in which to set up the Night-Eyes Simulation. Avoid lighted areas and areas that could be dangerous after dark (e.g. areas with obstacles or steep grades).

**Practicing the Mystery-Eyes Technique**. Before leading the activity, practice the Mystery-Eyes technique so you can demonstrate it to the kids.

**Setting Up the Night-Eyes Simulation**

1. Choose a code word (or words) that contains about twelve letters. "Wolf Spider" is a possible choice (this animal is a common source of eye-shine in fields).

2. Write a sentence containing the code word on the data board, but leave numbered blanks in place of the code-word's letters.
3. Cut "eyes" from the reflective tape. Make them about one-half centimeter in diameter. You can use a standard hole punch for this purpose. Cut one pair of eyes for each letter in your code word.
4. Cut 5-cm × 7-cm rectangles from black construction paper. Again, cut one rectangle for each letter in the code word. On one side of each rectangle stick a pair of "eyes." On the back of each card write the solution to one letter of the code word. Use a white crayon or white chalk. (In our example, 1 = W, 2 = O, 3 = L, etc.)
5. Make a rope or flagging circle 2 to 2.5 meters in diameter in the middle of the site. The kids will stand in the circle to find the night-eyes.
6. Set the paper rectangles all around the circle *at least* five meters from its perimeter. Place the rectangles in a variety of locations: far in the distance, in the grass, on bushes, and on trees. Use tacks where necessary. Make sure that all the "eyes" are visible from the circle when a flashlight held at eye level shines on them.


## ACTION

### PART ONE: THE NIGHT-EYES SIMULATION

**1**. Stand with the youngsters in a circle. Show them the data board with the mysterious numbers in place of letters and challenge them to break the code. Tell them that they are being watched at this very moment by some "critters" that can help them break the code.

**2**. Give each of the youngsters a flashlight, and suggest that they work in pairs. Show them how to hold the flashlight against the side of their head next to their eyes to look for the eye-shine of those "critters" watching them. Challenge each team to *stay within the circle* and count the number of animals watching them (in other words, the number of eyes they can locate).

**3**. Allow some time for them to spot the eye-shine and practice the technique. Then challenge each team to focus on one pair of eyes and *walk* out to locate the "critter" and bring it back. Caution each team to keep one of the flashlights trained on the ground before them as they walk.

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**4**. When a team returns to the circle with a night-eyes card, show them how to use it to break the code. Have them write the letter from the back of the card in the appropriate blank on the data board. The team may then retrieve another card. The group continues spotting and collecting "eyes" until they find all the letters.


### PART TWO: MYSTERY-EYES HUNT

**1**. Inform the kids that many creatures that are active after dark have eyes that reflect light. Tell the youngsters that now they are going to use the Night-Eyes technique to look for spots of white, green, and orange light that could be reflected from the eyes of animals.

**2**. Give each team of two a tablet or small data board and a pencil. Read the column headings on the illustrated chart to the youngsters (color of reflected light, location of animal, name or description of animal). Ask the youngsters to copy the headings and use them to keep a record of the eyes they spot. Suggest that they will have better results if they are quiet and scan the area thoroughly.

**3**. At first, work with the whole group. Find one or two spots of light and have the kids fill in the data on their charts. Encourage the youngsters to guess the identity of the creature whose eyes they spot before carefully approaching for a better look.

**4**. Now let the teams work independently. Keep them within easy calling distance so they can share discoveries.

**5**. Save a few minutes at the end of the session to share observations and discoveries.

## DARK SECRETS

**1**. What animals did you find most often?

**2**. What was the most unusual or exciting discovery your team made during the Mystery-Eyes Hunt?

**3**. Animals that are active at night are called ***nocturnal*** animals. Did you come across any animals that did not appear to be really nocturnal? What were they doing? Did they have reflecting eyes?

**4**. What other lights in the night (besides eye-shine) did you find? (Fireflies, glow worms or other grubs, certain fungi, snail trails, tiny animals on pond water, and bits of litter are all possibilities.)

## BRANCHING OUT

**1**. Did the youngsters spot eye-shine from animals that fled before they could identify them? These are often mammals. Let the youngsters devise and try out a plan to get a better look at the mystery creature on other nights. (A flashlight covered in red cellophane is one way to get a better look, because most nocturnal animals do not see red light.)

**2**. Try the Mystery-Eyes Hunt at several different habitats and compare the number and kinds of creatures observed.