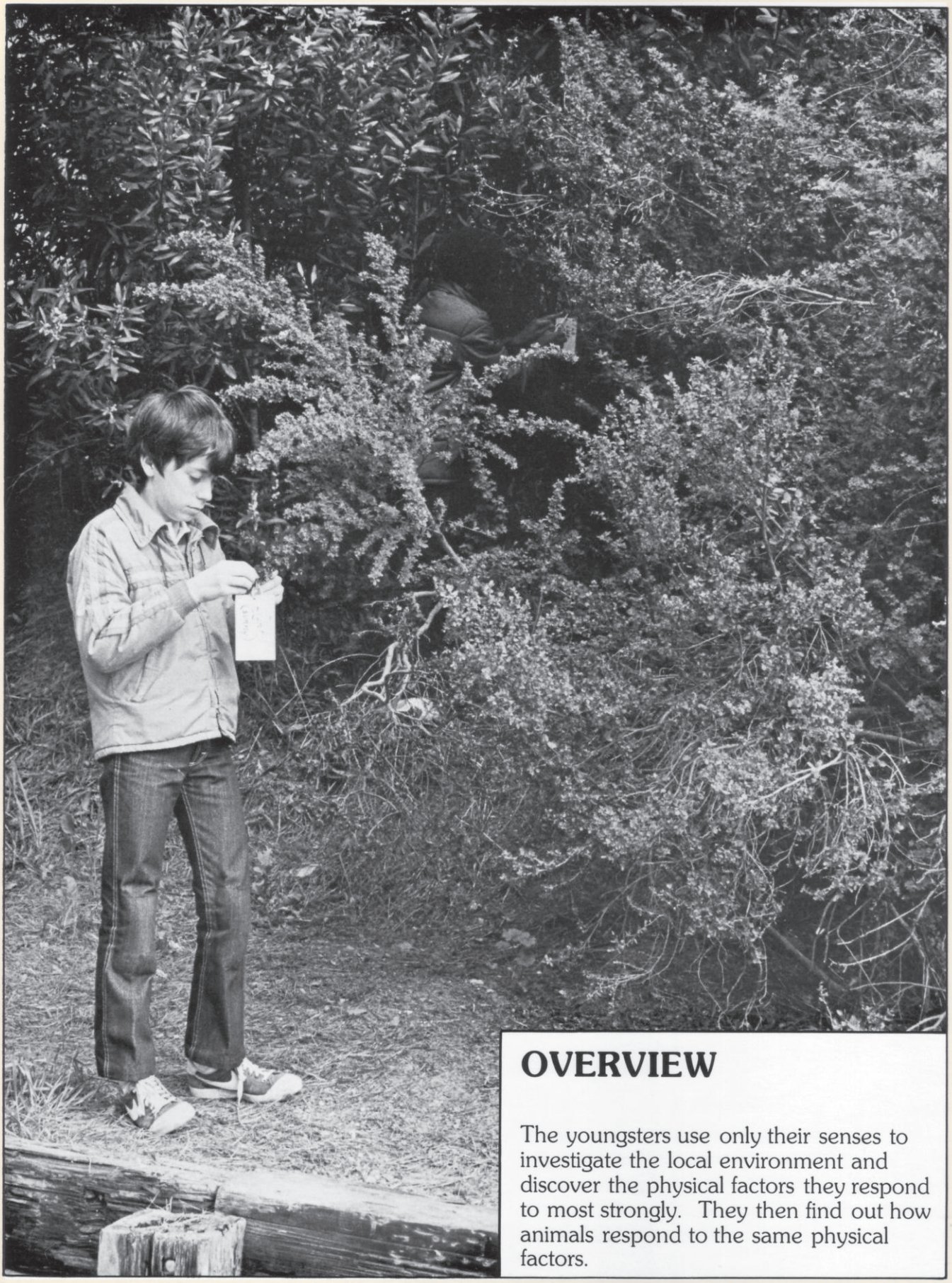
SENSORY HI-LO HUNT

BIO KEY

Physical Environment
Sensory Awareness
Animal Investigation



OVERVIEW

The youngsters use only their senses to investigate the local environment and discover the physical factors they respond to most strongly. They then find out how animals respond to the same physical factors.

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BACKGROUND

The environment can be divided into two parts: the living and the non-living. Although the living environment has a significant effect on an organism, this activity concentrates on the non-living or *physical* environment. At any moment we can define the physical environment surrounding us in terms of several *physical factors*. There is so much light, so much moisture in the air and soil, so much heat, so much wind, and so much slope to the land. The sum of all physical factors makes up the ***physical environment*** for organisms.

Man employs numerous devices to measure these physical factors: thermometers, barometers, light meters, wind vanes, and so on. Man is the only animal that uses instruments to improve the accuracy of his senses. Other animals use only their senses.

CHALLENGE: USING ONLY YOUR SENSES, FIND THE HIGHEST AND LOWEST VALUES (EXTREMES) FOR SEVERAL PHYSICAL FACTORS IN YOUR ACTIVITY SITE.

MATERIALS

For the group:

8 marker flags* (index cards or baggage tags at least 10 cm × 7 cm. See the "Preparation" section.)
4 wide-tip waterproof felt pens, 4 colors*
8 plastic sandwich bags* (optional)

* Available from Delta Education.

PREPARATION

Group Size. This activity works best with small to medium-sized groups. For more than sixteen youngsters, increase the number of flags and have two teams investigate the same environmental factor.

Time. Plan on thirty to forty minutes for this activity. This is a good activity for a hot, cold, windy, rainy, or snowy day rather than a pleasant calm day.

Site. The best site for a sensory hi-lo hunt is one with a diversity of vegetation and physical features.

Materials

1. Baggage tags (at least 10 cm × 7 cm) with wire or string ties make ideal flags for this activity. You may make your own flags by attaching a piece of string or yarn to index cards.

2. Prepare two flags (one "Hi" and one "Lo") for each of four environmental factors. Using a different color waterproof pen for each factor, write one of the following items on each flag:

Hi Moisture (wet)
Lo Moisture (dry)

Hi Temperature (hot)
Lo Temperature (cold)
Hi Wind (windy)
Lo Wind (calm)
Hi Light (sunny)
Lo Light (shady)

3. If you are conducting the activity on a rainy day, put the flags into plastic sandwich bags with the ties extending out of the bag.

ACTION

1. Define limits for your activity area. Tell the youngsters that they are going to investigate their environment. Ask the youngsters to think of their environment as being made up of physical factors such as wind, temperature, light, moisture, and slope. ***Physical factors*** are the non-living parts of the environment that affect living organisms.

2. Hold up the flags. Tell the youngsters that they will go on a "Hi-Lo Hunt" to investigate the physical factors in their area. Explain that each physical factor will have a high value in one place and a low value in another place. For example, there will be a wettest place (high moisture) and a driest place (low moisture) in the activity area. Similarly, there is a windiest spot (high wind) and a calmest spot (low wind). The object of the Hi-Lo Hunt is to find these high and low places. Divide your group into teams of two to four, and assign a physical factor to each team. If you have more than sixteen participants, form additional teams. Then have two teams investigate the same factor. Hand out the appropriate Hi and Lo flags to the teams, and send them into the site to discover and flag the highs and lows.

3. Call the teams together when all the Hi-Lo's have been flagged. Ask the kids which senses they used to discover the Hi and Lo spots. As a group, walk through the study site and find the Hi and Lo factor flags. Ask the teams if they agree with each Hi-Lo choice. Ask the kids what makes an area a Hi or Lo for any one factor. Discuss each factor as you reach that factor's flag.

4. Ask the youngsters to think of a spot in the activity area where they would like to spend some time, the spot that would be most comfortable and where the physical factors are most inviting. Then challenge the kids to find their "spots" in the site.

5. Call the group back and discuss the factors in the environment that affected each kid's "spot" selection. Ask the kids if they would choose the same "spot" on a rainy day or at night. When everyone has had a chance to explain his or her rationale for spot selection, suggest that other animals might be living in the activity site, occupying "spots" of their own. Challenge the youngsters to go back into the site and find animals. (Birds, insects, spiders, isopods,

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salamanders, lizards, etc.) Encourage the kids to identify the physical factors these animals seem to respond to. Look for animals in the open, in and under objects, and in cracks. Circulate among the teams and ask some of the following questions:

- Which physical factors do you think are most important to the animals you found?
- If you move an animal from its "spot," what does the animal do?
- How do animals found in the open sunlight respond to a shadow that falls on them?
- Which animals seem to like the same environment that you like?

MAKING SENSE

1. Environmental Variables. Ask the youngsters if the Hi-Temperature spot will still be the warmest that night and next week at this time. Ask if the Hi-Wind spot will always be the windiest. Will the wind always be from the same direction? Suggest that the physical factors in the environment may vary from minute to minute, from day to day, or from month to month, and are called ***environmental variables***. Point out that the kids have already found a variation in temperature, moisture, wind, and sunlight in the study site.

2. Habitat. Tell the youngsters that a ***habitat*** is the place where an organism lives. Ask the youngsters how they think the animals select their habitats. Why does one plant appear in one habitat and not in another?

3. How do humans cope with hostile environments? Do they change the physical factors or modify their behavior? How do other animals adjust to extremes of environmental variables? (Hibernate, migrate, grow more fur, bathe in water.)

BRANCHING OUT

Have the kids conduct some simple experiments to test their ideas on the variables that evoke the strongest response from animals in your study site. Do the isopods under the log respond to light or moisture? How can you find out? Do ants respond to light or temperature? How can you find out?

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