CREEPERS AND CLIMBERS

Background

Creeping, climbing, and trailing vines often grow in forests where sunlight is limited. Vines have specialized structures and growth patterns that enable them to compete for sunlight. The modified stems or leaves (tendrils) of some vines coil tightly around objects enabling the plant to complete. Vines with tendrils include the garden pea, vetch and clematis.

Other climbers such as English ivy and poison ivy have roots that sprout along the stem and anchor the plant firmly to tree trunks, walls, and other supporting structures. Many other vines, such as honeysuckle and morning glory, have stems that coil or twine around supporting plants.

In this activity the youngsters locate and examine different kinds of vines. They discover and compare structures that twine, such as tendrils, modified roots, and stems. Action Cards encourage the youngsters to further explore the variety of vine structures and growth patterns found at the site.

Materials

For each team of two:
2 Action Cards
1 pair of scissors

For the group:
1 data board
1 marking pen
Cloth or plastic strips to be used as flagging
2 sheets of Action Cards

Preparation

Selecting a site: Choose a site with a minimum of five kinds of vines. Check densely vegetated areas such as thick forests (particularly in the southern states), stream margins, and parks. If necessary, obtain permission to collect small samples of the vines growing at the site.

Precautions:
Search the site carefully for poison ivy, poison oak, or other dangerous plants. Place flags next to any dangerous plants and caution the youngsters before they go into the area to avoid these plants.

Taking a sample:
As you check over the site, take a sample of a vine to use when you introduce the activity. The sample should be twelve to thirty centimeters long and have several leaves and tendrils, roots, or coiling stems.

ACTION

1. Introduce *Creepers and Climbers* by asking the participants to describe some vines. Show them the sample vine. Point out the long stem, leaves, and the special parts used for support.
2. Show the studentshow to use the scissors to cut a small sample (12 to 30 cm) from the growing tip of a vine branch.
3. Encourage the participants to look carefully before reaching or stepping into thickets or bushes. Point out the poisonous plants you have flagged and caution the youngsters to avoid touching them. Tell them how to recognize other dangerous plants that you may have missed when you looked over the site earlier.
4. Divide the group in to teams of two. Challenge the teams to find as many different vines as they can and to bring back small samples of each kind. Those vines that cannot be cut should be marked with a flag.
5. Distribute flagging and scissors, and let the youngsters begin. If necessary, establish site boundaries.
6. After about fifteen minutes, call the teams together. Ask one member of each team to show the group one of the vines she collected and to describe how it was growing. Ask what structures held the vines to their supports.
7. As each of the three main modifications (tendrils, modified roots, and twining stems) is shown for the first time, introduce the term for that modification and write it on the data board. Ask other participants to show vines they have collected that have the same modification.
8. give each of the team members an Action Card and a piece of flagging. Challenge the students to find and flag the vine described on the card. Circulate among the youngsters as they work to offer help or encouragement. Offer another card to those students who complete their challenges early.
9. When most of the youngsters have completed their challenges, call the group together and ask the participants to read their challenges and show the group their flagged vines. Encourage the youngsters with similar Action Cards to compare results.
10. Have the teams collect all the flagging.

What Do You Think?

1. What do vines have in common with other green plants?
2. How are vines different from other kinds of green plants?
3. Many plants must compete with other plants for sunlight—especially in forests. How do vines compete for sunlight? How do trees compete

More Vinery

1. If the youngsters discovered several twining vines at the site, challenge them to find out if all the vines twine or twist around their supports in the same direction (clockwise or counterclockwise). If the students discover more than one twining direction, have them investigate whether a particular kind of vine (for instance, honeysuckle) always twines in the same direction.
2. Can a twining vine be trained to twine in a new direction? Challenge the teams to reverse the direction of a growing tip of a twining vine by rewinding it around a branch or stick. Some teams may wish to tape the tip into position. Make observations first after several hours, and then after a day or two to see if the vine begins to grow in the new direction.
3. Suggest that the youngsters investigate tendrils to see how they grow. Can their growing direction be changed?

What To Do Next

Snug as a Bug
Tree Tally
Roots and Shoots
Invent a Plant

CREEPERS AND CLIMBERS
Action Card

Vine on Vines

Find a vine climbing on another kind of vine.

OR

Find three or more vine stems twined together to form a living rope.

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Action Card

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Travelers

Find a vine that starts growing on one support plant (a tree, bush, or smaller plant) and travels to one or more other plants.

Which vine is the Champion Traveler at your site?

CREEPERS AND CLIMBERS
Action Card

Trailers

Some vines don't grow by climbing, but instead trail or creep along the ground. Find a vine trailing completely on the ground.

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Action Card

Shady Characters
Some vines may grow so densely that they cut out most sunlight beneath them. Find a place made very dark by vines.

Find evidence that a plant on which a vine is growing has been harmed by the vine. (Hint: Look under the thickest vines to see if you can find green leaves on the supporting plant.)

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Action Card

Fine Vine

Find the vine that has the most attractive or most unusual flowers or fruits.