

PLANTS AROUND A BUILDING

**BIO
KEY**

Observation
Comparison
Analysis

OVERVIEW

The youngsters discover how the environment around a building affects the growth of plants.



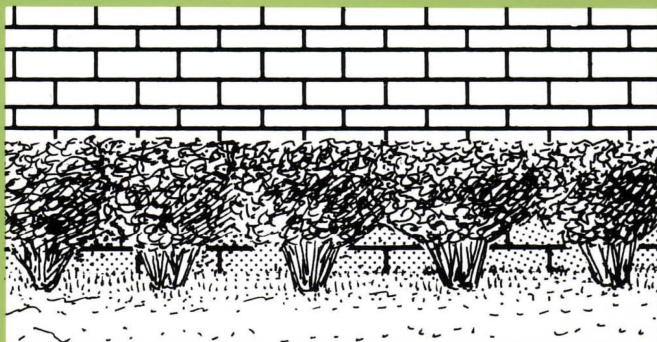
BACKGROUND



Plants are affected by the environment. The environment is everything that surrounds an organism: physical conditions such as temperature, moisture, light, and wind; the presence of other plants and animals; and non-living objects such as rocks, metal, and plastic. All of these factors that make up an environment and affect the growth of plants and animals are called **environmental factors**.

Plants around buildings are often put there by humans. We do this to make the buildings look better, to provide shade and protection, to prevent soil erosion, and for other such reasons. The location of plants in relation to the building can determine how well the plants grow. Rain from roof gutters can flood plants. A building can protect plants from the wind, or the building might create destructive wind patterns that damage the plants. Buildings can prevent light from reaching plants, and surrounding sidewalks can create so much foot traffic that plant branches are broken. If there are no sidewalks, people walking by can compact the soil, thus preventing the plants from growing. These are just a few of the environmental factors affecting plants around a building.

CHALLENGE: DISCOVER HOW THE ENVIRONMENT AROUND A BUILDING AFFECTS THE GROWTH OF PLANTS.



MATERIALS



For each team of three or four:

- 1 outline map of a building and the area around the building†
- 1 set of Action Cards

For the group:

- 1 set of crayons
- 1 large outline map†
- 1 sheet of Action Cards

† See the "Preparation" section.



PREPARATION



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

Time. Allow thirty to forty minutes for this activity.

Site. Select a building with many plants around or near it.

Materials

1. For each team of three or four participants, make one outline map of the building and the land around it, including significant nearby structures. This map should be about 30 cm x 22 cm.
2. Prepare one large outline map about 100 cm x 60 cm in size so the entire group can easily see and work on it.
3. Make one set of Action Cards for each team. If you want, include some cards of your own that reflect features of the particular building you have chosen.



ACTION



1. Read the challenge to the youngsters.
2. Divide the group into teams of three or four, and give a small outline map to each team. Help everyone understand the orientation of the map to the building.
3. Give a set of Action Cards to each team, and tell them to find as many examples of the situations described on the Action Cards as they can. The teams should mark the locations on their outline maps.
4. We have listed the Action Cards here for your convenience. *Don't read them to the youngsters!*

- Where are the biggest (largest or tallest) plants? Mark their positions on your map with a "B."
- Where are the smallest or shortest plants? Mark their positions on your map with an "S." Why do you suppose these plants are short?
- Where are there lots of plants? Mark their positions on your map with an "L." Why do you suppose there are so many plants in this spot?
- Do weeds or moss grow well in one place and not in another? On your map, mark the place where they grow with a "W" or an "M." Why do you think the weeds or moss grow well here?

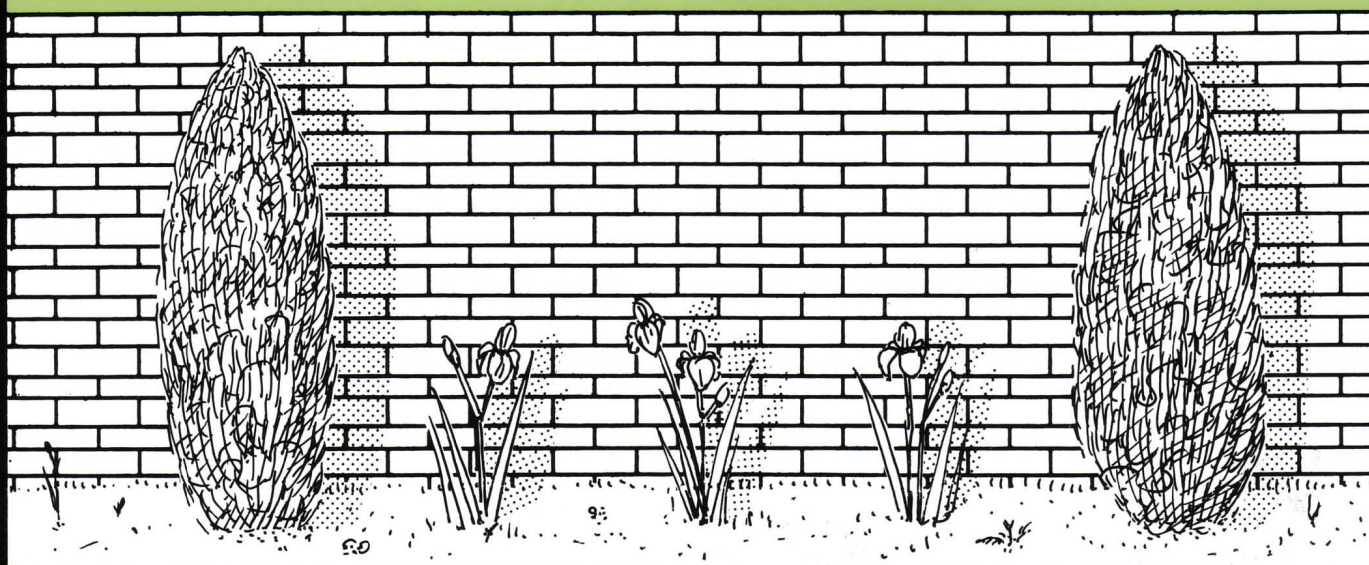
- Where do plants not grow or seem to grow poorly? Mark those spots on your map with a "P." What do you think may be causing this?
- Which plants are helped or damaged by humans? (Hint: Look for broken branches or places that are watered regularly.) On your map, mark those plants with a "Help" or "Hurt."

5. After fifteen or twenty minutes, have the teams transfer their data to the large outline map.

BUILDING IDEAS



Referring to the large outline map, discuss what might be responsible for the growth patterns recorded. (If the youngsters need help, mention a couple of the environmental factors noted in the "Background" section.) Use the children's suggestions as examples of **environmental factors**, and explain that these factors make up the environment, which affects plants. Environmental factors include physical conditions, the presence of plants and animals, and non-living objects. Discuss a few of these factors and how each may be affecting the plants at different parts of the building. If possible, compare the same kinds of plants at different locations.



BRANCHING OUT



1. Reinforce the concept of **environmental factors**. Encourage each team to select a factor such as temperature, moisture, or light. Ask the teams to work their way around the building and look for evidence of how the factors vary from place to place. (For example, a team looking at soil composition can see how far into the soil they can push a stick. A team looking at moisture can dig a small hole to see how deep the moisture is.) Encourage the kids to determine why the factors vary.

Challenge the participants to relate the results to the large outline map of plant growth in the area. (A more quantitative measurement of environmental factors is available in the *Terrestrial Hi-Lo Hunt* activity in the Schoolyard Module.)

2. Have the participants hunt for evidence of differences in plant growth on the north, south, east, and west sides of a building. Ask them to record those differences on an outline map with the directions clearly marked. Can the youngsters relate the differences to environmental factors caused by the building's orientation? What about the effect of gardening or the lack of it?

3. Challenge the group to suggest improvements for growing plants around the building. Obtain permission and make the improvements.

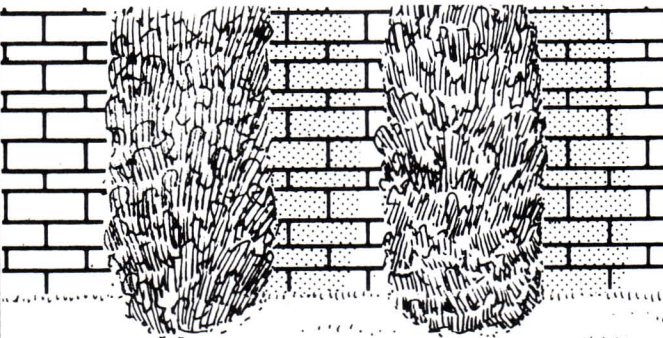


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Plants Around a Building Action Card



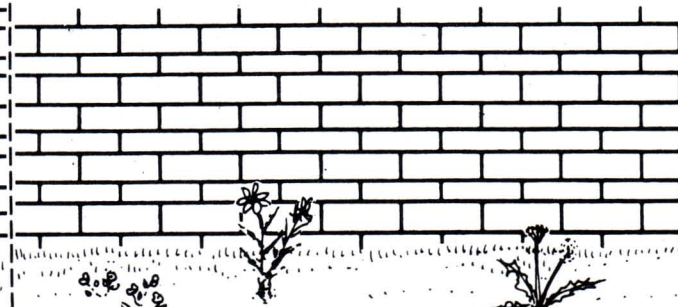
Where are the biggest (largest or tallest) plants? Mark their positions on your map with a "B."



Plants Around a Building Action Card



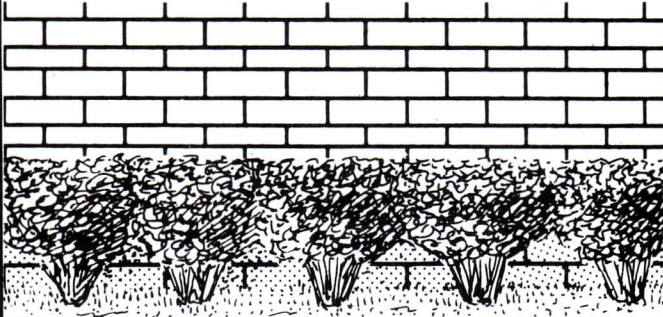
Where are the smallest or shortest plants? Mark their positions on your map with an "S." Why do you suppose these plants are short?



Plants Around a Building Action Card



Where are there lots of plants? Mark their positions on your map with an "L." Why do you suppose there are so many plants in this spot?



Plants Around a Building Action Card



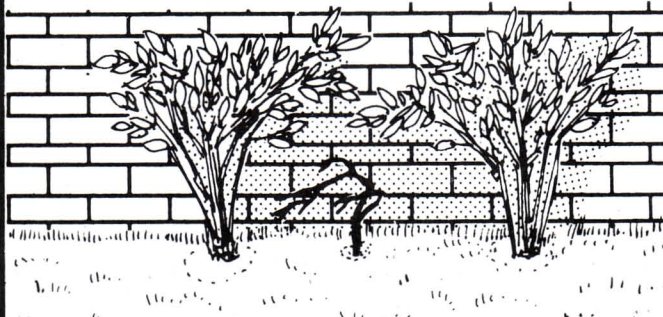
Do weeds or moss grow well in one place and not in another? On your map, mark the place where they grow with a "W" or an "M." Why do you think the weeds or moss grow well here?



Plants Around a Building Action Card



Where do plants not grow or seem to grow poorly? Mark those spots on your map with a "P." What do you think may be causing this?



Plants Around a Building Action Card



Which plants are helped or damaged by humans? (Hint: Look for broken branches or places that are watered regularly.) On your map, mark those plants with a "Help" or "Hurt."

