













## Other Plant Pests

### Snails and Slugs

Snails and slugs are not considered insects. They are molluscs, similar to clams and oysters. They eat odd-shaped holes in the lower leaves of plants. Snails and slugs also leave a slimy trail wherever they go. They like dark, damp conditions and usually feed at night. Slugs don't have a shell and are vulnerable to dehydration, whereas snails have a shell that protects them from drying out. If you see snails or slugs on plants, pick them off and destroy them.

### Small Animals

Small animals can cause a lot of damage to plant materials. Skunks will dig up lawns as they look for grubs to eat. Squirrels will dig up flower bulbs looking for food. Rabbits and mice can kill some trees and plants by eating their bark. Moles can cause damage by burrowing in lawns and gardens. Animal urine can also cause burn problems in trees, plants and lawns. Recognizing the signs of animal and insect damage is important when you are working as a grounds maintenance worker. You will not always be expected to know what caused the damage, but you will be expected to report the damage to your supervisor. The more pests you can recognize, the better you will be able to do your job.





### Learning Activity – What’s the Problem?

1. Read the following scenarios and make a guess as to what caused the problem.
  - a. John was sent to deadhead the flowerbeds at the Queen Plaza site on Monday. When he arrived, he noticed many of the lower leaves of the plants had irregular holes in them. When he looked closer, he noticed a slimy trail on some of the leaves. What should he report to his supervisor?

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- b. Anna was pruning the rose bushes at the Bell estate when she noticed some of the leaves were covered in yellow flecks and were starting to curl. What should she report to her supervisor?

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- c. Sahid was pruning some shrubs along the city bike path when he noticed that the tops of the shrubs were beginning to discolour. When he looked closer, he saw signs of circular exit holes. What should he report to his supervisor?

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- d. Ipeelee was asked to cut the grass in the southeast section of the memorial gardens at the Rest-A-While cemetery. When he arrived, the lawn was full of holes. Tufts of grass were ripped up everywhere. What should he report to his supervisor?

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2. Match the following plant pests to the description of plant damage. Draw a line to the correct match. Some may have more than one answer.

- |    |                                  |              |
|----|----------------------------------|--------------|
| a. | tunnels in plant leaves          | beetles      |
| b. | curling leaves                   | mice         |
| c. | missing tree bark                | slugs        |
| d. | odd-shaped holes on lower leaves | aphids       |
| e. | chewed leaves and yellow spots   | caterpillars |
| f. | burn areas on plants             | rabbits      |

3. Go to the website listed below and play the Pest Paparazzi game. On a separate sheet, list the ten pests that you found.

<http://www.bbc.co.uk/gardening/htbg/module6>





## Learning Activity – Evidence

Go outside and collect some evidence of pest activity on plants in your area. Present what you find to your group or your practitioner.

Remember to examine leaves, stems, roots, grass and tree bark for pest activity. Write two paragraphs discussing your findings. Take some photos with a camera or cell phone to add to your findings.

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## Plant Diseases

Plants, like humans, can get sick from many types of diseases. Like humans, plants also show symptoms of diseases. Plant diseases can be caused by living organisms and non-living environmental stresses. Let's look at some of the diseases caused by living organisms first.

### Fungi

Fungi are the most common of all the plant diseases. They are primitive organisms that act like parasites. Unlike most plants, fungi can't make their own food so they must invade other plants to survive. You can usually see fungi on plants. Most fungi grow in the dark. Mushrooms are an example of fungi.

Fungi spread quickly by sending out flying spores. These spores are transported to other healthy plants by wind, rain, insects, animals, and human activities. Fungi infections are difficult to control.





## Learning Activity – Dutch Elm Disease

Go online and find the answers to the following questions about Dutch elm disease.

1. What is Dutch elm disease?

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2. How is the disease spread from one tree to the next?

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3. What are the symptoms of Dutch elm disease?

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4. What can be done to stop the spread of Dutch elm disease?

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### Bacteria

Bacteria are single-celled organisms that can only be seen under a microscope. Some of the plant diseases caused by bacteria are blights, galls, and rots. Bacteria enter plants the same way they do in humans, through cuts or openings. Bacteria spread very quickly in plant materials. An infected part will ooze milky pus which contains thousands of bacteria.

### Viruses

Viruses are tiny particles of infective agents that cannot even be seen by regular microscopes. They can cause serious damage to plant materials and need a living organism to reproduce. They are spread by sucking insects and by human activities such as pruning. Some symptoms of plants that are infected with viruses include yellowing, ring spots, deformities and stunted growth in plants. Some viruses only attack a certain type of plant. Viruses are controlled by the use of chemicals.

## Learning Activity – Bacteria and Viruses

Go online and find the following definitions.

1. Plant blight: \_\_\_\_\_
2. Plant gall: \_\_\_\_\_
3. Plant rot: \_\_\_\_\_
4. Now research **one plant virus** and answer the following questions:
  - a. What is the name of the virus? \_\_\_\_\_
  - b. What type of plants does it infect? \_\_\_\_\_
  - c. What are the symptoms of the infected plant? \_\_\_\_\_
  - d. How is the virus transmitted? \_\_\_\_\_
  - e. How is the virus controlled? \_\_\_\_\_



### Symptoms of Plant Diseases

Anyone who works with plant materials should always be on the lookout for signs of plant injury. When a plant is weakened, it is more likely to be attacked by harmful, dangerous diseases. Some of the things to look for are:

- Discolouration – yellowing or browning
- Odd shaped holes
- Parts of the plant (new shoots) dying
- Dead spots on leaves
- Stems or branches with sunken areas
- Abnormal swelling or growths
- Blisters
- Bad odour
- Mildew (soft fuzz that grows on the plant) or a powdery coating
- Mushy decay
- Powdery orange-red spores
- Wilt

### Learning Activity – Plant Problems

Go online and find the definitions and a picture for each of the following plant problems.

- Canker
- Blotch
- Damping-off
- Leaf scorch
- Needlecast
- Blackleg
- Leaf spot
- Wilt

The material and learning activities in the Grounds Maintenance section of the Foundational Skills module of the Prior Learning Toolkit were originally created by Community Literacy of Ontario and the Tri-County Literacy Council (based on Curriculum originally produced by Literacy Link Eastern Ontario). These organizations have given their permission for Landscape Ontario to use this material in this Prior Learning Toolkit.



## Foundational Skills: Grounds Maintenance Answer Key

### Activity – Weeds

1. Weeds grow faster than other plants. They rob other plants and grasses of nutrients and water from the soil and light from the sun.
2. **Annual weeds:** roots have a fibrous system that spreads out just beneath the surface of the soil. Annual weeds seem to pop up suddenly in little clusters around the parent weed. They are surface roots so they are easy to remove.

**Perennial weeds:** roots have a taproot system that can grow deep into the soil. They are tough and well anchored and can stretch up to 20 feet away from the parent plant. If the taproot is cut, new plants will grow from the site. Some perennial weeds have woody stems and are very difficult to remove.

3. What are two things you can do to help control on-site weeds?
  - a. Recognize weeds
  - b. Take action – pull or dig weeds out
4. Soil contains pockets of air that collect water, when these pockets freeze and then thaw out, they heave the soil. When the soil heaves, it loosens and breaks apart, making it easier to pull up the tough perennial weeds.

### Activity – Canadian Weeds

- Answers will vary.



### Activity – What’s the Problem?

1. What caused the problem? Students should be expected to write in simple, clear sentences. Answers should include a statement of the problem and a suggested possible cause.
  - a. Snails/slugs
  - b. Aphids
  - c. Fly larvae/beetle or moth activity
  - d. Grubs
2. Matching plant pests to the description of plant damage
  - a. Beetles
  - b. Aphids
  - c. Mice and rabbits
  - d. Slugs
  - e. Beetles and caterpillars
  - f. Rabbits
3. Answers will vary.

### Activity – Evidence

Answers will vary.

### Activity – Dutch Elm Disease

Answers will vary but should include the following facts:

1. Fungal disease of elm trees
2. Spread by a bark beetle
3. Upper branches begin to wither and turn yellow in the summer months – spreads down the entire tree, the tree loses its leaves and thereby starves the roots.
4. There has not been much success in treating Dutch elm. Once a tree is infected, it likely will die.



### Activity – Bacteria and Viruses

Answers will vary but should include the following facts:

1. Blight
  - Complete dieback of shoots, branches or entire plants
  - Can be caused by bacteria or fungi
  - Contaminated tissues remain attached to healthy plants
2. Gall
  - Abnormal swelling of plant tissue
  - Can be caused by bacteria, fungi and insects
3. Rot
  - Any of several plant diseases, especially a disease of peach, plum, apricot, cherry, and related plants, characterized by wilting and browning of the flowers and leaves and rotting of the fruits
4. Researching one plant virus

Answers will vary.

### Activity – Plant Problems

Answers will vary.

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