

Greenspace in Our Communities



Activity Info

Level: junior/intermediate

Subjects: geography, environmental science

Duration: field trip and/or research time, plus one class

Group: small groups or individuals

Setting: outdoors and in classroom

Preparation: base map of community/ study area; coloured pencils or markers



Summary

Students will look at, identify and map different land uses within their own community. They will look at the role and cumulative value of different types of greenspace.



Learning Outcomes

Students will:

- identify and map the different types of land use in their neighbourhood
- estimate the percentages of land set aside for different uses and compare it with their own observations
- discuss options for protecting or increasing urban greenspaces
- look at the urban forest and the roles that trees play in cities, especially with respect to climate change



Background

Despite our vast expanses of land and open space, more Canadians live in cities than in rural areas. In fact, almost 80 per cent of our population live in towns and cities. There are benefits to urban life: more job opportunities, better access to schools, hospitals and recreational facilities, and more conveniences all round. But unless we plan and work carefully, cities can become places of pavement and cement with few greenspaces.

Fortunately, most modern day Canadian towns and cities have land use plans that reflect the need for greenspace and the protection of natural areas within the urban landscape.

A city's greenspace includes the **urban forest:** the sum of trees lining the streets and greenspace corridors, plus those that grow in yards, parks, ravines and woodlots. We have only recently started to recognize the value of the urban forest and its contribution to the health of cities.

Trees provide oxygen, protect soil, filter water, provide food and habitat for wildlife and give humans pleasure, but they also play an important role in dealing with a number of climate change issues. The **How Trees Help the Planet** Activity Sheet on page 25, outlines many related benefits. Most of these factors become even more significant in an urban environment, especially in light of the increased levels of pollution and heat associated with climate change, for example:

- Cities are heat islands. They are usually 5 to 9 C warmer than surrounding areas. Trees help cool cities by shading streets and parking lots, and cooling urban streams and drains for the fish and wildlife that live there.
- Trees tie up the carbon produced by vehicles and various urban energy demands. Carbon dioxide is a greenhouse gas that contributes significantly to global warming. According to Tree Plan Canada, researchers estimate that an urban tree can save five to ten times more overall carbon than a rural tree.
- Pollution is concentrated in cities. Trees tie up many air pollutants and a single tree can absorb as many as 7,000 dust particles per litre of air. In addition to being a climate benefit, this factor can improve the health of urban dwellers who suffer from asthma and other respiratory diseases.
- Trees shelter buildings thereby reducing energy demands for winter heating and summer air-conditioning. This means reduced energy use and lower greenhouse gas emissions.
- Trees are shown to have social benefits in crowded cities. They absorb noise, screen unsightly views, provide privacy and can significantly increase property values. Studies show that hospital patients who can view trees from their window recover more quickly than those who don't, and some police officers believe that trees and landscaping instill community pride and help reduce crime.



1. As a class, discuss the different ways land is used in your neighbourhood. For example, your community may include a built up area of residences including homes, apartments and townhouses, and businesses such as factories, stores, malls, hotels. It will also include areas for vehicles (roads, highways, parking lots). Most communities include some greenspace. Ask your students to decide as a group what they would classify as greenspace.

- Does the land have to be in a natural state?
- Does it have to have trees?
- Is there a size limit?
- What about parks, golf courses, playgrounds, gardens and similar areas?
- Can it provide a home for wildlife or a natural space for people?

2. Set out the geographic area you want the students to study.

For younger students you may wish to include the school and one or two blocks in the immediate vicinity. Older students may wish to look at a larger scale. As a class, estimate how much of your study area is given over to buildings, to vehicles, to greenspace and to other features. You will compare this later with your findings.

3. Ask the students to walk the study area and make a sketch map showing areas occupied by the following:

- **buildings:** homes, schools, stores, factories
- **vehicle-use:** paved roads, highways, parking lots
- **greenspace:** as defined by the students (ask them to include an estimate of per cent or number of trees in this greenspace)
- **other features:** streams, rivers, extensive barren or abandoned land, areas under development

Students should try as much as possible to draw these features to scale and they should record any special observations.

4. Back in the classroom, ask the students to refine their maps and to colour in the three major land uses. Colour the buildings grey, vehicle-use red and greenspace light green, using a darker shade to highlight the per cent of (or individual) trees. They should also mark any other significant features. Make sure they label the map with a scale and create a legend to define any symbols they use.

5. Based on their maps, observations and greenspace criteria from step 1, discuss the following points:

- What portion is greenspace?
- How much of this area includes trees?
- How do people use the greenspaces?
- How are the greenspaces used by wildlife?
- Were there many signs of wildlife in these areas?
- Is there any water, such as a creek, pond or ditch, to provide water for birds and animals?
- Are there areas that could be changed over to greenspace or where the greenspace might be improved by planting trees and shrubs? There may be locations along riverbanks, on abandoned roads or building lots, around parking lots, industries or factories, or in the school yard (see "Greening Your School Grounds" page 29).



FOR OLDER STUDENTS

It has been said that North American cities are not designed for people but for their vehicles. Do students believe this is a valid statement based on this activity and their knowledge of their home town? In light of their mapping exercise, this discussion and what we know about climate change, what plans would they make to improve our cities? Ask the students to develop a series of recommendations to improve their communities.

Studying Land Use

One of the big challenges that urban planners, forest managers and others face is trying to find a way of identifying, classifying and expressing the different types of natural areas and land uses that exist. While researchers and planners can look at a new subdivision development or at an individual woodlot on a micro level, they know that these places do not exist in isolation. Indeed, all land-use needs to be considered as part of a bigger picture.

To do this, many organizations use a system of ecological land classification (ELC), to categorize the very complex relationships that exist in nature. To create these specific definitions or categories, researchers study the soil, water, rocks, trees, plants and local climate conditions of an area. Then they name or classify the category, often choosing a plant community which best describes the site. For example, naming an area "silver maple swamp" means it has a predominance of silver maple trees, as well as a specific set of soils, plants and wildlife known for their water storage properties.

