Community Science

Urban Wildlife

Lesson 9: Human Impact Mapping

Duration: 1 hour **Location:** Indoors/outdoors

Overview

In this lesson students will read an article explaining the important role urban areas play in the future of global biodiversity. Then, explore their schoolyard/community ecosystem and identify local human impacts. Finally, students brainstorm green solutions and create a 'future community' map that represents what neighbourhoods of the future will look like.

Learning objectives

By the end of the session, students will be able to:

- Identify negative human impacts on the local ecosystem;
- Identify green solutions currently being used to mitigate these impacts; and
- Understand the role cities play in preserving global biodiversity.

Curriculum links

Grade: 7

Science, Interactions and Ecosystems

- Analyse personal and public decisions that involve consideration of environmental impacts, and identify needs for scientific knowledge that can inform those decisions.
- Identify intended and unintended consequences of human activities within local and global environments.

Equipment required

- ☐ Whiteboard (or equivalent)
- ☐ Whiteboard markers (or equivalent)
- ☐ Laptop or printed article
- ☐ Nature journals or blank paper
- ☐ Writing utensils
- ☐ Colouring pencils

Additional information

In this lesson student will need a basic understanding of climate change, biodiversity and citizen science.

Lesson 9: Human Impact Mapping

Lesson plan

Time	Activity	Equipment needed
10 mins	Have students read the following article about the role cities play in saving global biodiversity. Urban Refuge: How Cities Can Help Solve the Biodiversity Crisis Janet Marinelli If not all students have a computer, please print out the PDF copy.	• Laptops OR printed articles
10 mins	Have the group discussion the 5 top points they took away from the article, write these on the board. Ideally, points should look similar to those below. • Traditionally, cities were seen and built without biological diversity in mind. • Some species are beginning to move back into urban areas and even thriving in their urban ecosystems. • Cities are now starting to adopt more 'green infrastructure' which is increasing their importance to local plant and animal species. (Green infrastructure examples: community gardens, green roofs, parks, storm ponds, etc.) • The healthier nature is in cities, the better human relationships are with nature and the more people will be inclined to protect the natural world. • Increasing nature in cities will help to protect/preserve global biodiversity, which is declining due to the impacts of climate change. Identify how citizen science is an important tool for conservationists, scientists and city planners. Citizen scientists that submit data from urban areas to projects such as, iNaturalist	• Whiteboard (or equivalent) • Whiteboard markers (or equivalent)

	and eBird, help to inform government policy (laws and regulations), government planning (building, redevelopment and reclamation), and give scientists a better idea of the role cities can play in the fight against climate change.	
15 minutes	Provide students with a blank sheet of paper or their nature journals and writing utensils. Brainstorm examples of human impacts within cities. Encourage out of the box examples, pesticides, increased temperatures, climate change, flooding, snow ploughing, salt from the roads, fertilizers, etc. Guide students on a walk around their schoolyard/community and have them map the different human impacts (direct and indirect) they see or feel.	• Nature journals or blank paper • Writing utensils
10 minutes	Discuss findings as a group and create a class list of community/schoolyard human impacts. Brainstorm as a class, or in small groups alternatives/solutions for the issues on the board. These can be things they can do (plant more flower), things they can stop doing (littering or driving slower), and things that the city/school/community association can do (increase park spaces, school gardens, bike lanes, green roofs, etc.) Highlight citizen science as a new tool to better understand, educate, and solve many urban biodiversity issues.	• Whiteboard (or equivalent) • Whiteboard markers (or equivalent)
15 minutes	Based on everything they have just learned about: • the important role cities play in the future health of global ecosystems, • the negative ecological human impacts cities currently are having, and • the green infrastructure/lifestyle changes of the future, Have students create a new map of their schoolyard/community. This map will be a representation of what they picture the future of communities/schoolyards will look like.	• Blank paper • Colouring material • Writing utensils

CPAWS
CANADIAN PARKS AND WILDERNESS SOCIETY

green calgary
Greening Life Together

Encourage students to think beyond the technology of today and go as wild and innovative as they want!

In the face of changing climates and decreasing global diversity, communities and governments are attempting to change the landscape of our urban environments. Encourage students to incorporate and label the green infrastructure solutions you discussed as a group. As well, in a section on the side of their map, jot down notes about lifestyle changes that are needed (less litter, no pesticide use, more walking, etc.).