



Community Science

Pollinators

Lesson 8: Tree Life Stages Game

Duration: 45 minutes **Location:** Outdoor

Overview

In this lesson students will be introduced to the life stages of trees, why trees and forests are valued, threats to tree species and how citizen science can help save trees.

Learning objectives

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

- Cite the various life stages of a tree;
- Understand and identify reasons trees and forests are valued for humans and the environment;
- Identify threats to trees and forests;
- Cite 3 ways individuals can help protect tree species.

Curriculum links

Grade: 6

Subject and Unit: Trees and Forests

- Identify reasons why trees and forests are valued. Students meeting this expectation should be aware that forests serve as habitat for a variety of living things and are important to human needs for recreation, for raw materials and for a life-supporting environment;
- Identify human actions that enhance or threaten the existence of forests.

Equipment required



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- An equal number of bean bags for the number of teams.
E.g., 30 students will be split into 10 teams. You will need 10 bean bags.

Additional information

Participants should have an understanding of citizen science, its importance and the project iNaturalist.

Lesson plan

Time	Activity	Equipment Needed
10 minutes	<p>Game Prep</p> <p>Bring your group to an open and safe playing field (e.g., soccer field or gymnasium). Separate the class into groups of four, if there isn't enough, a teacher or volunteer can be added to a team. Have groups name themselves after a specific species of tree. After, allow each group to share what species they are.</p> <p>Have one member from each group raise their hand. Identify these members as the first life stage of trees, seeds! Ask these seeds to come and create a circle in the middle of the playing field. Ensure that there is at least 1 m between the participants (they cannot touch fingers when extending their arms).</p> <p>Have one of the three remaining members in each group raise their hand. Identify these members as the next life stage of trees, sprout. Have these sprouts stand behind the seed member of their species group, facing toward the circle.</p>	



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	<p>Identify the third member of each group as the third life stage of trees, saplings. Allow them to join their team members line.</p> <p>Identify the last member of each group as the final life stage of trees, mature tree! Allow them to join their team members line.</p> <p>At this time, members of each species group should be standing one behind the other facing toward the inside of the circle with seed being first, sprout second, sapling third, and mature tree last.</p> <p><i>Alternatively, you can create teams of 3. Each members of the team will represent shorter version of the tree life cycle: seed, sapling, and mature adult.</i></p>	
15 minutes	<p>Game Play</p> <p>Place 1 fewer bean bags than groups in the centre of the circle (e.g., if there are 10 groups, you only need 9 bean bags). Tell participants that each of these bean bags represents a citizen scientist.</p> <p>Explain that tree populations around the world are declining. Identify that many of the species they have chosen as their group tree are included in this population decline. Identify that citizen scientists are one way to help protect our important tree species, because data provided by citizen scientists informs government policy which can protect trees and forests that provide habitats to other wildlife.</p>	<ul style="list-style-type: none">• Bean bags



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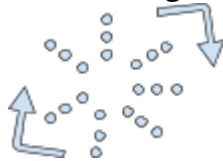
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Tell students that the goal of this game is to try and get a citizen scientist every round. However, every round there will be one fewer citizen scientist than group – so they will have to work hard to ensure they get one!

If a group does not have a citizen scientist at the end of the round they, unfortunately have gone extinct because there were no citizens collecting data to notify scientists that their species was at risk. So, nothing was done to save them!

Each round will contain the following steps.

- The instructor will either yell, 'seed', 'sprout', 'sapling' or 'tree'.
- That member of the group will run clockwise on the outside of the circle until they reach their group again.



- When the running member reaches their group, the remaining members of the group will open their legs wide OR create an arch with their bodies/arms for their group member to pass through, crawling between their legs OR running through their arch. *Pick one of the options depending on what best fits the needs of your group.*
- The member will then attempt to grab one of the citizen scientist bean bags in the middle of the circle. If they do grab a bean bag, they will run back to their spot in their group line and have all group members sit down.
- If the member is unable to collect a citizen scientist, their group is eliminated and will sit down for the next rounds.



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10 minutes	<p>Game Play Continued</p> <p>Play one round. At the end of the round identify one threat to tree species and forests (<i>deforestation due to farm development/residential development/commercial development, climate change impacts such as forest fires/drought/tornadoes, pesticides, etc.</i>). Feel free to have participants give you an example of a threat to forest survival as a way to make more of a brainstorming activity.</p> <p>When you identify the threat for that round, take one citizen scientist away. Play another round.</p> <p>Repeat this process until there is a winner (one group left standing).</p>	<ul style="list-style-type: none">• Bean bags
10 minutes	<p>Game Conclusion</p> <p>Explain that citizen scientists are an incredibly important part of protecting tree species and forests both locally and globally. Because many of these threats you identified are not just happening where you live but also around the world. This is a common environmental problem not just in Canada but in all other countries around the world. By practicing citizen science and logging tree species into citizen science projects, like iNaturalist, we are all making a positive change for our environment.</p> <p>Have groups give you examples of how they/our communities can help tree species or forests (<i>plant trees, protect nature by creating parks, participate in citizen science, signing petitions against deforestation, reduce our greenhouse gas emissions/carbon footprint, etc.</i>)</p>	



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Every time a group gives you an example of actions they/their community can take to help trees or forests, that group can re-enter the game and stand up. Repeat this process until all groups are standing again. Then, put an equal amount of bean bags to groups in the middle (e.g., 10 bean bags for 10 groups). Play 1+ more round(s) to conclude the game on a positive note, explaining to participants that when we take positive actions we make positive changes in the environment – like saving tree species!	
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Extension

1. Play this game as is, but shift the focus to teach about the value of trees and forests. Change the bean bags in the centre of the playing field from being citizen scientists to being reasons why trees and forests are valued. Some examples are: provide oxygen, provide habitat for pollinators (and other wildlife), recreation for humans, raw materials (wood, paper, pulp), medicine, nutrient cycles, carbon cycle, and the water cycle. The groups will compete for these varying resources trees provide us. However, because of many human impacts (which you will mention as you remove bean bags), these resources are becoming more scarce. Which means, more competition amongst and within these groups, eventually leading to problems for humans and the environment. Continue the game to it's conclusion, just shifting the focus from citizen science to habitat loss.

This will meet the science unit, Trees and Forests curriculum point,

- a. Identify reasons why trees and forests are valued. Students meeting this expectation should be aware that forests serve as habitat for a variety of living things and are important to human needs for recreation, for raw materials and for a life-supporting environment



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