

Plant a Tree

#FLOODED
Grades 3 - 12
Activity



Main Objectives

Learners will explore how planting trees helps combat flooding and will learn to plant trees in school or community gardens. They will also understand the importance of protecting existing trees and identify areas on school grounds where new trees can be planted to manage runoff and reduce flooding.

Learning Outcomes

By the end of this activity learners will:

- Learn about importance of planting trees to combat flooding
- Follow a detailed guide on how to plant trees on school grounds or at home/community gardens
- Learn about the importance of protecting existing trees and promote their function to their peers and guardians
- Identify areas in their school grounds where they can plant new trees to pump water, reduce flooding and runoff

Length of Activity: 1.5 - 2 hours

Step 1: Intro to the importance of tree planting

Step 2+3+4: Find an area and plant some trees!

Step 5+6: Estimate the impact of the trees planted

Materials Required

- Internet-enabled device
- Assessment Rubric
- Flood:ED Backgrounder
- Seedlings
- Shovel
- Planting bags (optional – for carrying seedlings comfortably)
- Boots
- Rain jacket (optional)
- Gardening gloves
- Watering can or water hose if accessible

Activity

Step 1: Learn About Planting Trees and Its Importance

Planting trees can divert rainwater as it is a natural mechanism for increasing the absorption of excessive rainwater, thereby reducing the changes of flash floods.

Begin by watching this video on how to plant a tree:

 <https://www.youtube.com/watch?v=0VVeeWT3AAc>

Step 2: Explore Area for Planting Trees

Search the school or community for a good location to plant trees. Break up into groups to explore, research, discuss and decide the answers to these questions below:

1. How is this area used by learners? Is it appropriate for a tree?
2. How will trees help with flooding and drought?
3. What size area do the tree(s) need to have to be healthy?
4. What is the solar exposure (hours per day)?
5. What are the best plants to use in your local area?
6. What is the soil like? Is it permeable and fertile? – here is a resource for reference to check the quality of your soil:

 <https://www.treehugger.com/easiest-way-tell-if-you-have-healthy-soil-4858063>

Step 3: Presenting the Plan

Now that you have narrowed down the location of where you want to plant trees, it is time to do some research to see what local nurseries have the trees in stock you are looking for. Create a budget based on your findings and present your plan to those who need to be involved in the approval process. Make sure you include where the funds would come from or come up with a cool way to fundraise!

Step 4: Preparing Area and Planting!

Begin by reviewing the following resource to help you get prepared for planting trees:

 <https://treecanada.ca/resources/tree-planting-guide>

Now that you have an overview, it's time to get to work!

1. Create islands of green which will be the areas you have chosen for groupings or groves of trees and shrubs.
2. Make sure you don't block access routes for maintenance vehicles.
3. Be sure to locate trees at least 7 meters from buildings.
4. Have volunteers work to plant and maintain trees until capacity is reached
5. Where possible use native species of trees that tolerate local conditions.

Remember to watch this video on tree planting:



On your identified planting day make sure you have all the health and safety measures in place and get to work! Make sure to take photos during the process and share it with us along with your Challenge submission!

Step 5: Estimating Impact of Trees Planted

Once you have determined the number of trees you can plant on your school, continue to estimate how much rainwater can be diverted with the help of these trees planted!

Find the resource below to complete this analysis:



- **Notes on how to use this tool:** define the tree you are planning to plant and check the amount under "Storm Water Runoff Avoided".

An additional benefit of planting trees is absorption of CO₂ from the atmosphere, thereby helping reduce the effects of climate change. Find out how much CO₂ is offset by the trees you have planted using the tools listed below:

- CO₂ absorbed by one tree, here are a few resources:



- Calculate the total amount of CO₂ absorbed:

CO₂ absorbed by one tree x number of trees planted

Step 6: Permissions and Safety

When planning to plant trees, be sure to include all the school and community stakeholders – principal, caretaker, learners, educators, guardians, neighbours, and facilities staff – in envisioning new opportunities for tree planting on the school grounds. Get buy-ins for the project and to establish a culture of stewardship to care for the trees – watering, weeding, and mulching.

Need Extra Support?

There are several ways that you can gather extra support or find free options for your project:

- Approach your maintenance or facilities staff for tools and resources they already have. Not only will they have lots of great advice they may have the materials and tools that you will need.
- Approach your guardians, faculty, and community for donations of plants, soil, compost, or materials.
- Contact local business for donations of materials that you will need.
- Contact other local organizations or groups like conservation authorities, environmental groups, and your municipality for support.
- Hold a native plant sale with plant donations from the community or an outdoor BBQ to raise funds for your efforts.
- Create a fun workday and recruit guardians for help installing and supporting the effort.





Additional Resources

Tree People Eco Club (US)

<https://www.treepeople.org/student-support-eco-clubs/>

Watershed Basics is a resource for teaching learners how the planning, design, land use and stewardship of our school grounds impact the flow and quality of water through our local watersheds.

<https://www.neefusa.org/water/lesson-1-watershed-basics>

A resource on how to plant a tree in Canada

<https://treecanada.ca/resources/tree-planting-guide/>

USEPA - Stormwater to Street Trees: Engineering Urban Forests for Stormwater Management

<https://www.epa.gov/sites/default/files/2015-11/documents/stormwater2streettrees.pdf>

Center For Forest Study - CEF (French)

Brings together the scientific expertise of 75 researchers from 11 Quebec universities. These researchers work in the fields of biology, ecology and forest management. The CEF is the only group in Quebec whose central mission is advanced training and research on the forest.

<http://www.cef-cfr.ca/>

Center For Forest Study - CEF (French)

CEF website describes in easy to understand way what a tree is and how it works.

<http://www.aucoeurdelarbre.ca/en/the-living-tree/hydric-condition-adaptation.php>

The amazing physics of water in trees. An excellent science video (7 min) that describes how trees act as “water pump” at the end of the article.

<http://www.science4all.org/article/the-amazing-physics-of-water-in-trees/>

Ten Things to Buy for Tree Planting

<https://blog.tentree.com/ten-things-to-buy-for-tree-planting/>

