

Overview

There are millions of litres of water wasted each day in schools across North America. Think about how much water is wasted when you take a drink from a water fountain, flush a toilet, or wash your hands. A recent statistic suggests that almost 95% of the water that enters a home is wasted (Retrieved January 2016, http://www.huffingtonpost.com/2008/07/30/10-facts-about-wasted-wat_n_115642.html). We know, “783 million people worldwide do not have access to clean water. 6 to 8 million people die annually from the consequences of disasters and water-related diseases,” (Retrieved May 2016, United Nations, 2016, <http://www.unwater.org/>). Clean water is related to health and wellness, and water usage directly impacts water quality and quantity.

Design Rationale

Canada has 1/5 of the world’s fresh water. We need to become leaders in the conservation and stewardship of this vital resource the world shares. We have a responsibility to examine every opportunity to conserve and reuse water. Many of us have no idea how much water we consume and waste in our everyday activities. Online tools like the Water Footprint Calculator can help (Retrieved January 2016, <http://www.gracelinks.org/1408/water-footprint-calculator>).

Problem Scenario

Your team has been selected to develop a working prototype of a water conservation solution for your school. Your prototype might include ways to capture and filter existing water in your school. The purpose of the prototype should be to minimize the amount of water that is wasted in and around your school. It must satisfy the following concerns:

- Must address the need for sanitation, if necessary (potable vs non-potable water)
- Must be safe (someone cannot fall into it)
- Should be protected from extreme temperatures and the environment
- Should include a distribution component
- Should include water collection/reuse from a variety of sources (rain, water fountains, etc.)
- Should limit or reduce evaporation

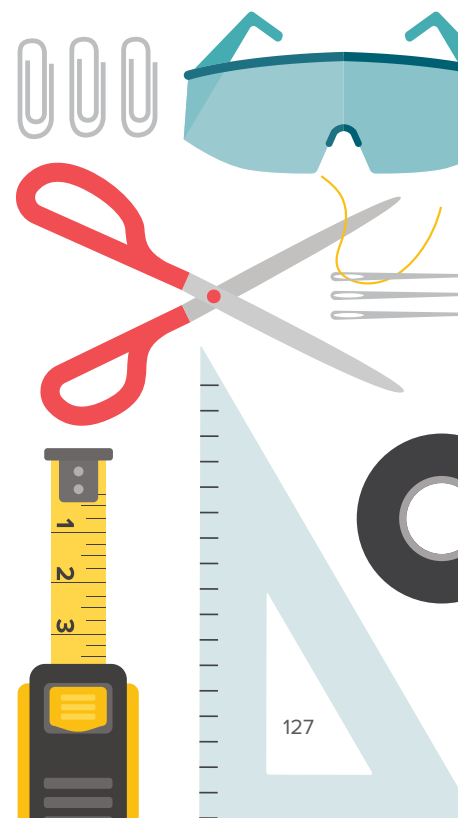


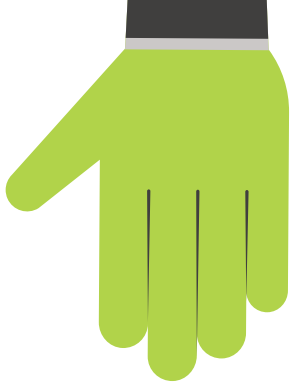
Suggested Grade Level

- Upper elementary through to secondary school
- Possibly primary grades with adult assistance

Suggested Subject Area

- Citizenship—including school culture/community
- ADST
- Science
- Social Studies





Success Determinants

Success will be determined by:

- Functionality
- Low maintenance—easily sustainable and maintainable
- Must fit in to existing structures without being an eye sore
- Prototype is aligned with design
- Should address problems and concerns from the problem scenario
- Simplicity of design

Parameters

- You may use the tools located in the shared tool area.
- You must complete a display panel, which includes your design thinking sketch, your prototype, your design notes, and your reflections on the activity.
- You must consider how to make your prototype colourful, intriguing and ergonomic.
- You must use some of all the items in the participant group kit in some way.

