**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[[1]](#footnote-1)***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 v**s** 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

**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 include**s** 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

**Suggested Grade Level**

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

**Suggested Subject Area**

* Citizenship – including school culture / community
* CTF
* CTS
* Science
* Social Studies

1. ***A prototype*** is a model that illustrates the functionality of an idea or design. It may be life sized or scaled to a model that fits in your hand. However, a prototype needs to be a**s** real looking as possible, using the materials available. [↑](#footnote-ref-1)