



## curriculum links

### Grade 5:

- Science and Technology  
*Understanding Structures and Mechanisms:*  
*Forces Acting on Structures and Mechanisms*



## overview

In this activity, students will look at an actual, real-life property or situation in Halton Region and brainstorm about how to best enhance, restore or protect the natural environment that exists there. First, the students will pull together what they know about the specific environmental aspects of the property (i.e., its role within the watershed and the community (including both human and non-human populations), and then they will discover how society (and human activities) can impact the health of the environment by the way they chose to “develop” or enhance / restore the property.<sup>1</sup>

## grade 5 expectations

### Understanding Structures and Mechanisms Forces Acting on Structures and Mechanisms Overall Expectations

- ◆ Analyse social and environmental impacts of forces acting on structures and mechanisms;
- ◆ Investigate forces that act on structures and mechanisms;
- ◆ Identify forces that act on and within structures and mechanisms, and describe the effects of these forces on structures and mechanisms.

### Specific Expectations

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# Water for All of Us

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## *Relating Science and Technology to Society and the Environment*

- ◆ Analyse the effects of forces from natural phenomena (rain, wind etc)
- ◆ Evaluate the impact of society and the environment on structures and mechanisms, taking different perspectives into account, and suggest ways in which structures and mechanisms can be modified to best achieve social environmental objectives.

## Understanding Basic Concepts

- ◆ Identify internal forces acting upon structure and describe the effects (i.e. erosion, wind etc)

## Key Terms

**Sustainability:** the concept of meeting the needs of the present without compromising the ability of future generations to meet their needs.

**Stewardship:** the careful and responsible management of something entrusted to one's care <stewardship of our natural resources>.

**Geomorphology:** the branch of geology that examines the formation and structure of the features of the Earth's or another planet's surface.

**Enhancement Opportunities:** chances to improve the local environmental situation (such as by doing management activities in a certain order or at the same time)

**Erosion/sediment control:** preventing rock or soil from being worn away (perhaps by, water, wind or ice – or by increased human traffic)

**Terrestrial Habitat:** the natural conditions and environment in which land animals live

**Infiltration:** the process of percolation (e.g. the gradual soaking of rainwater into the ground (as opposed to running off))

**Floodplain Management:** taking care of low-lying land that may be submerged by floodwaters

**Groundwater:** water within the earth especially that supplies wells and springs

**Water Temperature:** self-explanatory, but important because some organisms can't survive if the water temperature is too high or too low (e.g. fish and aquatic organisms)



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# Water for All of Us



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**Runoff Quantity Control:** prevention of pollution from ground sources (e.g., chemical spills)

**Wetlands/ESAs/ANSIs:** ESA = Environmentally Sensitive Area;  
: ANSI = Area of Natural or Scientific Interest;

**Baseflow Maintenance:** making sure that we don't overly reduce the depth of water in a river or stream (e.g., by diverting water to a new location or by using too much water from one place)

**Erosion/flood Control Works:** dams, ditches, artificially created ponds, etc.

**Woodlots:** stands of trees (i.e., not just trees planted as part of a "landscaping" exercise)

**Fisheries/Aquatic Habitat:** the natural conditions and environment in which aquatic (water based) animals live

**Major/minor System Design:** consideration of the study area as part of a larger plan

**Monitoring:** to watch, keep track of or check, usually for a special purpose

**Water Quality:** the characteristics and presence or absence of contaminants in the water

**Culvert Improvements:** plans to alter drainage or prevent flooding

