GOULD LAKE OUTDOOR CENTRE
Limestone District School Board

2857 Rutledge Rd. Sydenham, ON K0H 2T0
outed@limestone.on.ca
613.376.1433
www.gouldlake.ca
@gouldlake_LDSB

# Power of Water Activity

**Recommendations: For students of any Grade (Pre-K to 8) Difficulty is increased by use of water cycle vocabulary, discussion of the properties of water, discussion of human impact on waterways and expectations of building ability. Adult supervision is recommended.**

**Purpose**: Explore the science curriculum with a review of the water cycle. Use critical thinking and experimentation to manipulate the flow of water in a stream. Experience the ecology of a water shed, making connections between human and natural made structures that impact one another in terms of water use.

**Materials**:

- Spoon or cup for digging in the mud
- A bucket for collecting some water
- Rubber boots recommended
- An area where some spring run-off is flowing

**How it works**:

*Context:* The water cycle represents the continuous movement of water within the Earth and atmosphere.

An experiential way to break it down is to have students join you in boiling a pot of water.

- As the water gets hot some evaporates off the surface turning into *water vapour*. *(evaporates off oceans, lakes etc.)*
- Put a lid on the boiling pot. When you lift the lid there will be *water droplets* on it from where the *water vapour* gathered and cooled. This is called condensation. *(clouds are formed when water droplets combine with dust or other particles in the air)*
- Put the lid back over the pot and watch as the water droplets on the lid **fall**. This happens when the *water droplets* condense and become too heavy. This is called precipitation *(rain, snow, or hail)*
- When the *water droplets* fall back into the pot, this is called collection. *(when precipitation falls and lands it is then absorbed into the ground or flows into water sources like lakes and streams where the cycle starts again)*

**Step 1:** Start off with exposure to or review of the water cycle. If preferred, you can watch educational YouTube shows such as this video about the water cycle.

**Step 2:** With this knowledge in mind it is time to venture outside in rubber boots to find a place where spring rain or melting snow has *collected* to form a small flowing stream. The remainder of the lesson/activity focuses on water in this liquid state.

**Step 3:** Once a space has been found, you can prompt the student to brainstorm some different ways that water is used currently or in the past in both the human-made and natural world. Then allow the student to choose one of the roles described below.

*Notes:

- With multiple students, roles can be assigned or pulled from a hat and then they can switch and do the activity again.
- A single child can also play one role and then move on to the next/have multiple set ups along the stream.
- If the student isn't playing the roles out exactly that is okay! Coming up with their own roles and tasks shows great creativity and they will still learn about water. Maybe they will create a whole landscape with geographical features such as hills, valleys, a small town made of twigs, etc.

# Roles

**Beavers:** https://www.youtube.com/watch?v=yJjaQExOPPY and https://www.youtube.com/watch?v=VuMRDZbrdXc

Task: Build a dam to stop the flow of water

Rules:

- you can only use natural materials *(sticks, rocks, mud, etc.)*
- you can only carry one twig OR one pebble OR one spoonful of dirt at a time *(you are a little beaver, not a big human)*
- If you make a successful dam, try to then build a lodge to live in

**Natural Disaster *(flood, tsunami, typhoon, etc)*:** https://www.youtube.com/watch?v=udRNUBHbE0o

Task: Collect as much water as you can

Rules:

- you can only use the spoon you brought to transfer water from the stream to your bucket
- this is a good role to experience how water is evaporated *(brought up out of the stream by the spoon)*, and then collected elsewhere.
- At the end when you are done making structures, completing tasks of the different roles, and playing – you can take the full bucket and force all of that water as hard as you can down the river or directly over one of the structures. Floods, monsoons, tsunamis, etc., cause a lot of damage in the world... will your beaver dam be able to withstand it?

**Loggers in the early 1900s:** https://www.youtube.com/watch?v=FJDD9VCSfpY

Task: Increase the flow of water to allow a stick to pass through without getting caught on anything

Rules:

- can use the spoon and natural materials
- cannot go above or below the area you own *(marked off by an adult)*
- cannot physically touch the log to help it pass through

**Irrigation *(Farmer)*:** https://www.youtube.com/watch?v=pAUqodcXyWQ (roman aqueducts)

Task: Divert the flow of water toward your crops

Rules:

- can use human-made and natural materials
- must water the "crops" *(area marked by an adult or make it yourself by pushing some sticks in the ground near the stream)* evenly - crops will die if they are washed out or arid *(without water)*.

**Conclusion:**

To further learning, discuss the different ways the use of water by one person/animal might impact the other uses of water. For example –if the farmer diverts all the water to their crops then the others struggle. If the beaver dams up the river, those above might get flooded and those below will run dry.

**Additional Activities:**

Later at home the student can take some time to recreate the stream they played in by drawing it or reconstructing it with toys and materials in their room. They can include all the different structures they created and roles they explored. Challenge them to identify where the different steps of the water cycle would occur. See if they can create other versions of the scene to reflect how the landscape would be impacted by different natural disasters.