Science 8 Water Systems on Earth Unit

Big Idea: **We can’t live without water**

Outcome:

WS8.1 Analyze the impact of natural and human-induced changes to the characteristics and distribution of water in local, regional, and national ecosystems.

Understandings:

* The world distribution of water includes; watersheds, lakes, rivers, ground water, wetlands etc.
* First Nations and Métis perceive water as an essential element of life and transportation.
* Water cycles over time and there are personal, societal, economic and environmental consequences of altering the water cycle.
* The need to preserve water systems can often be challenging because of human perception of needs and desires. Economy and environment are sometimes at cross purposes.
* Reflecting on your scientific process is part of growth in skills, sharing of work and overall success.

Essential questions:

1. What is the world distribution of water?
2. What is the significance of water to First Nations and Métis people?
3. How do water systems interact?
4. What are some personal, societal, economic and environmental consequences of natural changes and human practices and technologies that pose threats to water in Saskatchewan?
5. How do wants and desires sometimes run counter to preserving water systems?
6. How do we improve our individual and group work skills?

Students need to know: (essential questions they are related to are in brackets)

* The world distribution of water. Eg. Lakes, watersheds, rivers, streams, river systems, wetlands, ground water, saline lakes, riparian areas(1)
* Physical characteristics of surface water features. (1)
* The significance of water to First Nations and Métis people (to their life, transportation, water quality, fishing, Treaties). (2)
* Interactions of water systems. (3)
* Consequences of natural and human made changes to water in Saskatchewan (ex. Vegetation removal, water and sewage treatment plants, timber harvesting, fertilizer use, irrigation, ground cover, land alterations, mining, introduction of invasive species, shoreline erosion, water levels, flooding, drainage, damming). (4)
* How to represent understanding.

And be able to: (essential questions they are related to are in brackets)

 - Construct visual representations of the world distribution of water. (1)

 - Compare physical characteristics of surface water features. (1)

 - Examine the significance of water to First nations and Métis people. (2)

 - Construct a written, visual or dramatic representation of the water cycle. (3)

 - Identify (research) consequences of natural and human made changes to water. (4)

 -Research controversy between people’s needs and desires and preservation of groundwater

 Systems and how science can add to this debate.

 -Evaluate individual and group processes.