Waterloo Wellington Children's Groundwater Festival

Water Worksheet

Date:
School:
Name:

Water Crisis

Water quality and quantity is highly impacted by human activity.

Quantity Impact: Changes in the landscape and vegetation impact the water balance. We are seeing extended periods of drought and desertification in some areas, while in others flooding is an increasing problem.

Quality Impact: When human activity affects water by introducing foreign chemicals that make it harmful for living organisms. These chemicals can come from sources like garbage, run off, mining, agriculture, farming. The impact can be on surface water (like rivers and lakes), or groundwater (water stored under the ground in aquifers).

Exercise 1
Using the examples provided during the presentation, look at the objects you gathered and identify which ones are considered hazardous and can present a risk to our water:

Batteries (contain lithium, cobalt, cadmium, lead, zinc, manganese, nickel, silver)
Cellphones and other electronics (contain arsenic, lead, mercury, gold, copper, platinum)
Cleaning supplies (contain bleach, ammonia, naphthalene, formaldehyde, ethylene glycol, surfactants, solvents, etc.)
Paint and solvents
Fluorescent lightbulbs (contain mercury)

Exercise 2
Case Arsenic and Fluoride in the groundwater in Mexico
"Concentrations of arsenic and fluoride above Mexican drinking water standards have been detected in aquifers of various areas of Mexico."

1.Is this example a natural occurring pollutant or a pollutant that entered the water due to human activity?

Natural Human activity

2. If the pollutant was generated through human activity, could you circle the possible source?

Mining Agriculture Electronics

2. Pick the possible prevention measures or solutions that could have been taken to either prevent or reduce the impact on our water resources.

Water Crisis

-Develop new and affordable technology to remove arsenic from the water
-Find alternative water sources for the population, like rainwater harvesting
-Increase the capacity of water treatment plant
-Prevent people from drinking water
-Encourage the use of rain-barrels

Case 2 Heavy Metals Contaminating Indian Rivers
"Samples from 65% of tested sites exceed safe limits."

1.Is this example a natural occurring pollutant or a pollutant that entered the water due to human activity?

Natural Human activity

2. If the pollutant was generated through human activity, could you circle the possible source?

Automobile production Agriculture Electronics' disposal

2. Pick the possible prevention measures or solutions that could have been taken to either prevent or reduce the impact on our water resources.

-Improve health and safety legislation for hazardous materials use and storage
-Educate the population about chemicals, proper use, and disposal
-Monitor human activities more closely to
-Dump all industrial waste in the ocean to prevent rivers' pollution
- Use adequate domestic and industrial water treatment

Case 3 Pollutants in Groundwater
"50K liters of uranium-contaminated water leak into ground at Cameco's Key Lake Mill"

1.Is this example a natural occurring pollutant or a pollutant that entered the water due to human activity?

Natural Human activity

2. If the pollutant was generated through human activity, could you circle the possible source?

Automobile production Energy production Electronics' disposal

2. Pick the possible prevention measures or solutions that could have been taken to either prevent or reduce the impact on our water resources.

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Water Worksheet

Water Crisis

-Improve health and safety legislation for hazardous materials storage
-Dump all nuclear waste in the ocean
-Monitor close by wells to prevent health risks to residents
-Encourage and support alternative energy sources like solar and wind
-Use adequate water treatment to remediate the radioactive contaminated water

What can you do to be a water hero!

- Reduce, reuse and recycle
- Learn more about pollutants and hazardous materials
- Identify and safely dispose any hazardous materials like batteries, electronics, medicines, paint and other chemicals
- Don't pour hazardous materials down the drain
- Only flush pee, pooh and toilet paper

Thank you for protecting our water!