

Water

EC: G2L - Module 2

Lesson 1: What is engineering?

Make a list of 10 words that you think of when you hear the word engineering.

Make another list of 10 words that you think of when you think about water.

Lesson 1 Vocabulary

Engineer

A person who designs a new technology to solve a problem

Technology

A thing or process that solves a problem using scientific knowledge

Lesson 2: Who is an environmental engineer?

What is the scientific method?

Is it helpful to use the scientific method to explore science topics? Why/why not?

Do you think there are other methods for studying different topics?

Lesson 2 Vocabulary

Engineering Design Process

The six steps engineers use to develop new technologies to solve problems

Environmental Engineer

A person who designs technology to solve environmental problems

Sustainability

Using natural resources respectfully so that we can meet all of our needs and future generations can meet their needs

Lesson 3: Where is our water?

How do we use water? Make a list of all of the ways you use water.

Lesson 3 Vocabulary

Water Cycle

The model that explains the circulation of water through the environment. The cycle is powered by gravity and the sun.

Groundwater

Water held underground in the soil or in pores in rock

Lesson 4: Where is water in the city?

Where does the water go

.....when you rinse a plate in the sink?

.....when it rains?

.....when you wash a car?

.....when you water the lawn?

Lesson 4: Where is water in the city?

Storm water

Water introduced to a new environment (watershed) through precipitation

Wastewater

Water contaminated with pollution, usually due to humans

Water Treatment

Removing pollution from water so that it is ready for humans to drink or so it is safe to return to the environment

Lesson 5: Field Experience

Jones Island Wastewater Treatment Facility

Lesson 6: What are the effects of water pollution?



You wouldn't bathe in this...

then why should marine life?

Marine life not only live in the ocean, they breathe it too. Most of the waste we produce on land eventually reaches the oceans, either through deliberate dumping or from run-off through drains and rivers. It's very important that we address the issues that affect the ocean. We must stop these problems because if we don't, we may become the executioners of our marine life.



What do you think the purpose of this poster is?

Who do you think the audience is? Why?

Do you think this is effective? Why/Why not?

Lesson 6 Vocabulary

Point Source Pollution

A single source of pollution

Non-Point Source Pollution

Pollution that is caused by rainfall or snowmelt moving over and through the ground

Gyre

A spiraling area of water due to ocean currents

Lesson 7: How can we protect our waters?

If you had a piece of land that you could develop in any way that you wanted, what would you build on your land?
Make a list.

Lesson 7 Vocabulary

Conservation

Making choices to use less of a resource

Lesson 8: Field Experience

Energy Exchange or Rockwell or UWM School of Freshwater Sciences

Lessons 9, 10, and 11: Design Challenge Vocabulary

Water Filter

An engineered device to remove contamination from water passed through it

Engineering Design Process

The six steps that engineers use to design a new technology. The steps are: Ask, Imagine, Plan, Create, Improve, and Share.

Lesson 12: Film - Tapped

What is one habit that you are going to change? Why is it important to reduce your environmental impact?

What was your favorite thing you learned about in this EC: G2L unit? Why?