Savvas STEM Virtual Fair

Dirty Water: Clean Water

February 3, 2022 at 1:30 ET

register

Thanks for Registering for Dirty Water, Clean Water with Nancy Williams, *our Savvas Professional Learning Director for K-12 Science.*

In this session, we will review Earth's sources of freshwater and impacts within our communities. There is a global need for clean water, even here in the US. We will encourage students to be scientists and engineers as they create water filtration devices that could be used to clean water (not for consumption). After comparing our lab results, we will uncover STEM careers currently working to provide clean water solutions.

Attached is an Elevate Science STEM Quest Lab that teachers and students can use with Nancy during the presentation or as a lab experience anytime in their own classroom.

If you'd like to participate in the lab experiment during the session, here's a list of supplies you will need:

- A plastic bottle (can be a 20 ounce or bigger)
- Scissors
- Lab safety materials
- Coffee filters
- Sand
- Gravel
- Charcoal
- Rubber band
- Clear cup
- Dirty Water (one part dirt, 3 parts water)
- Cotton balls

Think of your community. What sources of pollution might affect your freshwater reservoir sources? _____

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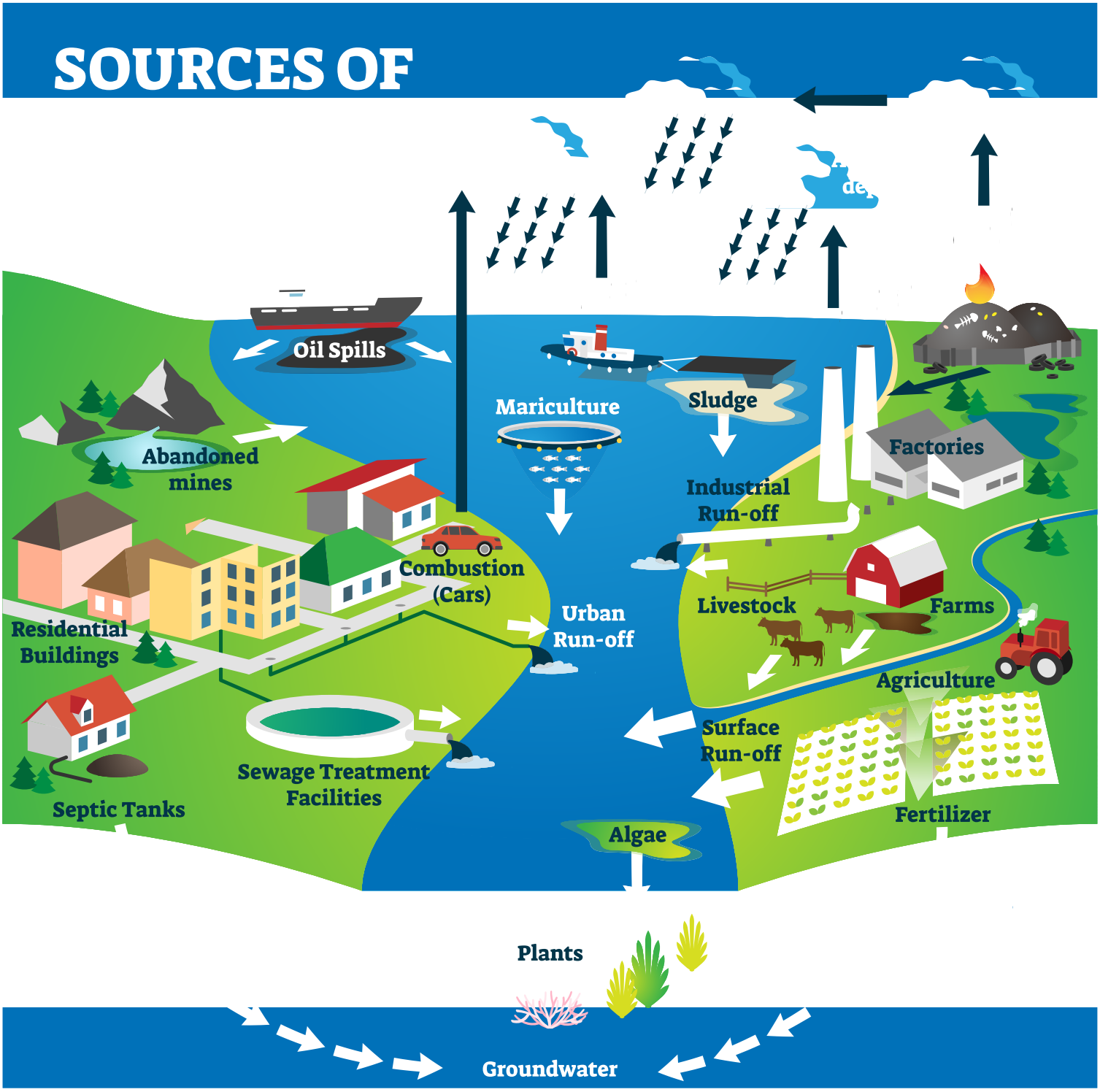

STEM Quest Check-In Lab

How do we filter water?

It's time to figure out a way to filter drinkable water from a freshwater source. Water straight from a lake or stream can have dirt and harmful materials that need to be removed before people drink it. How can you filter the water to make it cleaner?

Materials

- cup to hold filtered water
- cup of nonfiltered water
- white plastic lid or container
- safety goggles

Suggested Materials

- water bottle
- water bottle cap with hole in center
- coffee filter
- cotton balls
- eyedropper
- hand lens
- gauze square
- sand
- charcoal
- scissors

Design Your Model

☐ **1.** List the criteria for your water filter.

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☐ **2.** What materials will you use to filter the water?

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☐ **3.** How will you test the water to see whether your filter is successful?

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☐ **4. SEP Develop a Model** Draw your filter design.

My Design

Wear safety goggles.

Handle scissors carefully.

Do not drink water used in the investigation.

Engineering Practice

Engineers **use models** to analyze a system.

☐ **5.** Develop a procedure, and show it to your teacher before you test your filter design. Record your observations.

Observations

Evaluate Your Model

6. SEP Use Models Did the filter remove most of the particles from the water? How do you know?

7. Explain Is your water safe to drink now? Explain your answer.