

# **Edible Aquifer**

Everyone loves ice cream, chocolate cookies, and sprinkles! Discover the different layers of the earth as you make your own edible aquifer model. In this delicious activity you will explore how rain and snow flow through the layers of soil, called strata, and then collect below ground as groundwater. Lastly, the area where groundwater collects is called an aquifer. Enjoy your tasty aquifer model!

#### TEKS:

- 2.7B Identify and compare the properties of natural sources of freshwater and saltwater.
- 2.8C Explore the processes in the water cycle, including evaporation, condensation, and precipitation, as connected to weather conditions.
- 3.7C Identify and compare different landforms, including mountains, hills, valleys, and plains.
- 3.7D Explore the characteristics of natural resources that make them useful in products and materials such as clothing and furniture, and how resources may be conserved.
- 4.7A(ss) Examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants.

## **Materials:**

- 1 plastic cup
- Crushed ice
- Sprite
- Blue food coloring
- Vanilla ice cream
- Chocolate cookie crumbs
- Green sprinkles
- Straws

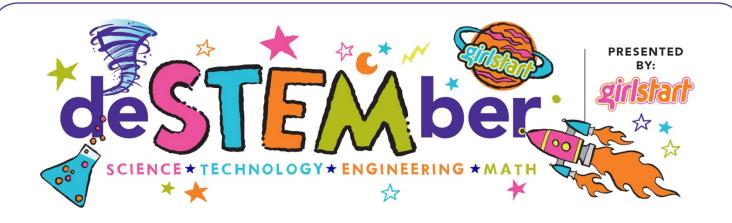
#### How To:

- 1. Layer some crushed ice, sprite, and blue dye at the bottom of the cup.
- 2. Add an ice cream layer.
- 3. Add a layer of crushed ice.
- 4. Add a chocolate cookie crumb layer.
- 5. Add a green sprinkle layer.
- 6. "Drill" a straw through your layers.
- 7. Slowly begin to "pump" the "water" out by sucking on your straw.

lays of STEM FUN!

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### **How Does It Work?**

Each edible layer represents a different layer of the earth. The first layer is the bottom of the cup, which represents the bedrock. Next is the layer of crushed ice, sprite, and blue dye, which is the lower aquifer layer. The ice cream layer represents the confining layer, which is significantly less permeable to water compared to the other layers. This helps protect the aguifer from contaminants and keeps the water clean. The second layer of crushed ice is the upper aquifer layer. The following layer is the cookie crumb layer, which represents the earth's soil, while the green sprinkles represent all of earth's plant life. The straw acts as a well casing and your mouth is the well pump.

# **Career Connection:**

Environmental engineers assist with pollution prevention and control systems in water, air, and land. Environmental engineers help prevent fertilizer runoff, pesticides, and other contaminants from polluting the groundwater. This keeps the aquifer's water safe for human drinking.

#### **Resources:**

- http://www.bearessentialnews.com/archives/2009/biosphere-October2009.php
- http://www.cropinfo.net/OFD/presentations/Wateruse.php
- http://www.deq.idaho.gov/media/570193-iea-classroomproject.pdf



