

# Watershed and Envirosnacks

Subject: Science

Level: 3-8

**MATERIALS:** Graham Crackers – *Bedrock and permeable soil layers*; Chocolate spreadable cake frosting – *Soil (Adhesive Agent)*; Chocolate kisses – *Mountains (2 or 3 per student)*; Chocolate chips – *Hills (may use various size chips)*; Green sprinkles – *Grasslands*; Green tree nonpareils – *Forests*; Tube of blue icing – *Lakes/Streams and Ground water*; Small marshmallows – *Clouds*; Blue sprinkles – *rain*; Optional: white sprinkles to represent snow and white tube of icing for snow on mountain tops

## OVERVIEW

In this lesson students will learn about watersheds and the water cycle. Students will construct a watershed/water cycle model.

## OBJECTIVES

- Identify natural resources
- Create a model of the water cycle
- Describe watersheds and surrounding environments

## BACKGROUND KNOWLEDGE

A watershed is the area of land that water flows over or under on its way to the lowest point such as a stream, river, lake or ocean. The water in a watershed comes from rain, snow, sleet, ice or irrigation and in a continuous cycle. The water travels over the surface and across farms, fields; forests, suburban lawns; city streets or it seeps into the soil and travels as ground water. Watersheds come in many different shapes and sizes and can be affected by many different activities and events. Everyone lives in a watershed and influences what happens in your watershed, good or bad, by how you treat the natural resources.

## PROCEDURE

1. Begin assembling the envirosnack by breaking the graham cracker in half along the perforation. Squeeze a small amount of blue icing around the outside edges of one half of the cracker. Place the other half of the graham cracker on top. This represents layers of bedrock and permeable soil layers with ground water. As each part of the watershed is created, be sure to discuss that part in relation to the water cycle.
2. Spread the chocolate frosting on the cracker. This is your topsoil (infiltration).
3. Add the chocolate kisses and chips for mountains and hills as desired (surface runoff).
4. Sprinkle with the green sugar crystals for grasslands (erosion control/transpiration).
5. Place the green tree nonpareils to create a forest (erosion control/transpiration).
6. Squeeze the blue icing to form mountain waterfalls, streams, rivers and lakes (surface water/evaporation).
7. Sprinkle with blue sugar crystals to represent the rain. May use white to represent snow (precipitation).
8. Add marshmallows for clouds (condensation).
9. Now enjoy your envirosnack and eat.

*Caution: Always check for food allergies before students eat anything in the classroom.*

## EXPLORATIONS AND EXTENSIONS

Question students about the affects of water on the environment. Include scenarios dealing with drought, flood, and erosion. Discuss methods for erosion prevention.

## LESSON DEVELOPMENT RESOURCES

Virginia Ag in the Classroom Program, Watershed and Envirosnacks activity, [www.agclassroom.org/va](http://www.agclassroom.org/va)

Kansas Foundation for Agriculture in the Classroom, What in the World is a Watershed? Activity, [www.ksagclassroom.org](http://www.ksagclassroom.org)

## GRADE LEVEL EXPECTATIONS

### Third Grade: Science

48. Identify examples of the processes of a water cycle (ESS-E-A3)
60. Explain how renewable and nonrenewable resources can be replenished or depleted (SE-E-A4)

### Fifth Grade: Science

46. Identify and explain the interaction of the processes of the water cycle (ESS-M-C6)
50. Describe the consequences of pollutants found in water, air and soil (SE-M-A3)

### Sixth Grade: Science

46. Identify ways people can reuse, recycle, and reduce the use of resources to improve and protect the quality of life (SE-M-A6)

### Seventh Grade: Science

39. Analyze the consequences of human activities on ecosystems (SE-M-A5)

### Eighth Grade: Science

23. Explain the processes of evaporation, condensation, precipitation, infiltration, transpiration, and sublimation as they relate to the water cycle (ESS-M-A10)
24. Investigate and explain how given factors affect the rate of water movement in the water cycle (ESS-M-A10)
50. Illustrate possible point and non-point source contributions to pollution and natural or human induced pathways of a pollutant in an ecosystem (SE-M-A3)
51. Analyze the consequences of human activities on global Earth systems (Se-M-A4)

## CONTACT INFORMATION

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