



## Lesson Plan: **Challenge System**

How can we motivate you to challenge themselves scientifically?

### Alignment with STEM Framework

Inventor  Tinkerer  Investigator  Conservationist   
Altruist  Designer 

### Overview

This is an opportunity for youth to use what they learn in the Bridges curriculum and continue their scientific pursuits at home. This is an optional chance for youth to really work independently toward fostering their understanding of science, and specifically stormwater runoff at their own home or neighborhood.

### Practice Goals

- Asking questions and defining problems
- Developing and using models
- Engaging in argument from evidence
- Obtaining, evaluating, and communicating evidence

### Content Goals

- What ways can you show and further your understanding of what you have been learning?
- How can you challenge yourself scientifically?

# Purpose

The purpose of this lesson is for youth to extend and/or demonstrate what they are learning through the Bridges. These challenges, while independent activities, are extensions of activities experienced during the Bridges curricula. While this is not a mandatory lesson, the Challenges are a means for students to engage in self-directed learning in their own time.

## Teacher Background Information

Teachers should become familiar with the challenges and think about how youth might use them. Review the handout describing the challenge opportunities.



## Affinity Goals



I can act like an **Altruist** by helping out scientists who are conducting field studies by aiding in sample and data collection and analysis.



I can act like a **Designer** by working toward the “artist” or “web master” challenge, making digital or physical art that represents what I have learned about stormwater runoff.



I can act like a **Tinkerer** by working at the “maker” challenge, designing and building something to show what I have learned about stormwater runoff.



I can act like an **Investigator** by working toward the “inquirer” or “scholar” challenge, extending my learning about stormwater runoff on my own and presenting what I learn to my community.



I can act like a **Conservationist** by researching pollutants in local bodies of water and surrounding habits.



I can act like an **Inventor** by analyzing data received from chemical indicator tests and creating new theories or ideas about how to manage pollutants.

## Materials

- Challenge Opportunities Handout

## Time Needed

**45 Minutes**

## Instructional Sequence

*This is an optional and independent lesson. See handout for a basic description of each challenge.*

### Youth will:

- Present work done on challenge at BRIDGES meetings when completed.

