



# Reality Check (Learning Experience #3) Lesson Plan



## Summary

After the teams have designed and tested potential solutions to address the decrease in trout in Smith Creek, students will compare their ideas to those of scientists from James Madison University, state and federal conservation bureaus, and citizen groups (i.e. Trout Unlimited, Chesapeake Bay Foundation). *Reality Check* (Learning Experience #3) is designed to serve as the capstone to this scenario and provide students opportunities to understand the correlation between the quality of local water supplies and the overall health of the Chesapeake Bay watershed.

## Objectives

The students will:

- work productively as a part of a project team.
- keep accurate, complete records in a journal.
- compare the ideas of their class to the ideas of a group of scientists
- apply new knowledge to an existing problem in their town or region
- relate local water quality concerns to Chesapeake Bay water quality concerns

## Materials for Stream Restoration (LE#3)

- One packet per group containing one copy each of the following materials:
  - SCTHRP Participants (Student Sheet #1)
  - SCTHRP Progress (Student Sheet #2)
  - Neighborhood Action (Student Sheet #3)
  - Reality Check Student Procedures
- Notebooks or small binders or folders to be used as journals, one (1) for each student

**Target Student Grade Level:** 8-12





## Subject Areas

Environmental science, biology, social studies, language arts

## Timeline

Teacher preparation: 30 minutes

Learning Experience: 60 minutes

## Setting

Classroom lab or school grounds

## Skills

Observe details about habitat and human activities while on a virtual field trip; compare restoration plans of students and professionals; identify stakeholders; apply new knowledge to develop potential solutions for local problems

## Vocabulary

Habitat degradation; habitat restoration; watershed

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## Essential Questions

- How could a rural county restore and maintain a reproducing population of brook trout in a local stream?
- What is the connection between clean water in aquatic habitats and animal and plant life in an area?





## Procedure

### Advance Preparation Required

Make copies of the student sheets listed. Provide chart paper and markers or access to technology that will allow students to present their ideas and results to their classmates. Show the video “Smith Creek, VA Restoration Update” to the class (note: you may want to show the video twice). Provide student access to the 2012 Smith Creek Restoration report online (note: you may choose to print copies of the report for each team, but this will use lots of paper). Invite a local official who is responsible for water quality to speak to your class.

1. Introduce this learning experience by showing students the video about the Smith Creek, VA Restoration Project that was produced by a student at William and Mary College for a class project. Inform students that the leader of the team is Dr. Mark Hudy, the national expert on aquatic biology for the United States Forest Service and a professor at James Madison University in Virginia. The people working in the stream with him are his graduate students. Your students should be ready to complete *SCTHRP Participants* (Student Sheet #1) as they watch; students may want/ need to see the film a second time to notice the details.
2. Ask each team to compare their group’s restoration plans to those of Dr. Hudy’s team. Students should answer question #1 *SCTHRP Progress* (Student Sheet #2).
3. After the students have finished reading the 2012 Report on the Smith Creek Restoration Project, they will complete the remaining questions on *SCTHRP Progress* (Student Sheet #2).
4. Ask each team to imagine that they could have a conversation with one of the scientists in the film. What question(s) would they have for the scientists?
5. Finally, students will apply what they have learned about Smith Creek to a water quality problem in their own town or region. Students will learn about current conditions, design a restoration plan, and complete *Neighborhood Action* (Student Sheet #3).