

Watershed Educational Kit Outline

Why do we provide the Program Kit?

This activity kit is designed to familiarize your students with topics presented in the “Watershed Walk” field trip, and to provide a depth of experience and opportunity to apply knowledge after the trip. The activities within this kit will give your students a better understanding of such topics as **watersheds**, **ecosystem connectivity**, **human influences**, and **data collection** using unique artifacts and hands-on exploration. They are designed to build a strong background for the field trip itself, thereby enhancing your students’ outdoor experience.

How does it work?

We provide different activities that will help students build a more comprehensive understanding of relevant concepts. We recommend that these activities are done in the order that they are presented, for a more comprehensive understanding of relevant concepts. These activities can be adjusted to different age or learning groups; you can omit the included worksheets and focus purely on observational activities, and extensional writing prompts help to further understanding and scientific observational skills.

Watershed Kit Contents

1. Supplemental Activity Curriculum Descriptions
2. Materials to support curriculum
3. Visual Aids to support curriculum
4. Artifacts to let students get up close and personal with wetland plants and animals

Teachers will need to provide

1. An egg
2. Vinegar
3. A Jar

List of Activities and Key Concepts Covered

1. **Water the Incredible Journey** - *Water Cycle, watersheds, data collection and connectivity*
Students race to complete their journey in this active game that takes them through the water cycle as a water droplet.
2. **Water Cycle in a Bag** - *water cycle, data collection, human influences*
This multi-day activity explores the water cycle through a classroom model as students observe the process and record their observations.
3. **San Lorenzo River Watershed History** - *watersheds and human influences*
Students use a timeline and maps to identify their watershed at home and school and explore the history of the area from first peoples through modern time.
4. **Water Sources and Sinks** - *data collection, human influences, water use*
Students look at and analyze their own water usage by examining their water

bill(or sample one given) and explore ways to conserve water.

5. Water Quality - It's all connected! - *Water quality indicators*

Students will learn about the 5 different water quality indicators and how they influence each other and biodiversity. Students will understand how ecosystems and watersheds function as interconnected systems.

6. Mock Town Hall Meeting - *water use, human influence, watersheds*

Students act out stakeholders in an urban development and explore how their assumed roles interest affects water health.

7. Conservation Commotion - *human influence and watersheds*

Students play a game to test their knowledge of the sources of pollution and how they can make a positive impact on water quality.

8. The Egg and Acidification - *data collection, connectivity, water quality*

Students get a look at the effects of pH on the environment through application and testing.

9. Just Passing Through - Students investigate how vegetation affects the movement of water over land. They will compare the rates at which water flows down the slopes with and without plant cover and learn conservation principles.

10. Watershed Student Journal - the kit includes one master copy of the Student journal that connects all the activities together and ties in the field trip data collection.

The Educational Kit includes the visual aids and materials (excepted when otherwise noted above) for all activities and suggestions for extension activities and writing prompts which encourage deeper understanding.

See chart below for NGSS connections for each activity.

Activity	5 E	Focus	Next Generation Science Standards			Suggested Compliment Activities	Best before or after field trip?
			Disciplinary Core Ideas	Science & Engineering Practices	Cross-cutting concepts		
Engage - activate prior knowledge and experience, get focused for future learning							
Bill Nye DVD	Engage	Watersheds overview	LS2A	Engaging in argument from evidence		Presents a good introduction to the other activities	Before
Albatross Stomach Contents	Engage	Pollution	ESS3C		Cause and effect	Conservation Commotion	Before
Explore - use senses to make observations, discoveries, and connections that stimulate thinking							
Water- The Incredible Journey	Explore	Water Cycle	LS2B, LS2C	Developing and using models	Systems and system models	Water cycle in a bag	Before
Water Cycle in a Bag	Explore	Water Cycle	LS2B	Planning and carrying out investigations	Patterns, Systems and system models	Water - the incredible journey	Before
San Lorenzo River History	Explore	Local history	LS2C	Obtaining, evaluating, and communicating information	Stability and change	Water Sources and Sinks	Before
The Egg and Acidification	Explore	pH, acidity		Planning and carrying out investigations	Cause and effect	Water Quality - It's all connected	Before
Explain - construct explanations and hypotheses based on observations							
Water Sources and Sinks	Explain	Water use, water quality and quantity	ESS3C, ESS3A	Planning and carrying out investigations, analyzing and interpreting data	Cause and effect	Water Quality - It's All Connected	Before
Water Quality - It's All Connected	Explain	Water quality	LS2C, LS2A, LS4D	Analyzing and interpreting data	Stability and change, patterns	Water Sources and Sinks	Before
Conservation Commotion	Explain	Pollution, Recycling	ESS3C	Asking questions and defining problems	Influence of engineering, technology, and science on society and the natural world, cause and effect	Albatross Stomach Contents	Before or after
Just Passing Through	Explain	Erosion	ESS2A	Developing and building models	systems and System models	Water the incredible Journey	Before or after
Elaborate - take explanations one step further, constructing arguments and coming up with new questions							
Mock Community Forum	Elaborate	Community decision-making	LS2D	Obtaining, evaluating, and communicating information	Influence of engineering, technology, and science on society and the natural world	San Lorenzo River History Conservation Commotion	After