

Unit 5

A Shared Resource – Our Mississippi River

Unit 5: A Shared Resource – Our Mississippi River is a culmination of everything students have learned in the previous four units. In this unit, students synthesize the knowledge and skills learned to problem-solve a variety of solutions for managing and conserving the Upper Mississippi River while allowing for a variety of uses, from navigation to recreation. This unit requires several higher-level skills, including communication, problem solving, and compromise.



**5.0 Introduction to A Shared Resource -
Our Mississippi River: Pre- and Post-Assessments**

Prepare students for learning about what it means to share the Upper Mississippi River through pre- and post-assessments, key concepts and vocabulary, and an investigation of major uses and concerns about the river.

**5.1 Sharing Our River: One River, Many Uses -
Playing it Safe on the Mississippi**

Students explore in more depth how different people use the river and teach younger grades about water safety.

**5.2 Managing Our River for Everyone:
Competing Views and Values**

After working in groups to brainstorm how communities should rebuild after a devastating flood, students research, interview, and debate the issues from four key points of view.

**5.3 Caring for Our River:
Protecting Our Precious Resource**

The final lesson encourages environmental stewardship by asking students to take an active part in caring for the river by engaging in a service project or designing a service learning opportunity of their own.

Introduction to A Shared Resource – Our Mississippi River



Unit 5 goal

Explore what it means to safely share the Upper Mississippi River

Lesson objectives

- Define shared resource
- Investigate Mississippi River issues and concerns
- Discuss how we share this resource and the students' responsibilities in protecting it

Educational standards

- Life Science
- Science in Personal and Social Perspectives

What you'll need

- Internet access

How long it will take

- *Activity 1*: 15 min.
- *Discussion*: 1 hour
- *Activity 2*: 1 hour plus student research time

What's next?

Sharing and playing safely on the Mississippi River

Introduction

In this introduction to *Unit 5: A Shared Resource – Our Mississippi River*, students explore the larger issues involved in sharing a natural resource for diverse interests and uses. They will research primary sources, such as public meeting minutes and reports, to familiarize themselves with the river-related issues and decisions facing their communities. The knowledge gained from this research provides them with the context they need to discuss, collaborate, and compromise with different points of view. It also helps prepare them for the role-playing exercises in the following lessons.



STANDARDS CORRELATION

Unit 5 is the capstone for all the units. In this set of lessons students will demonstrate what they learned in previous lessons by teaching others and debating river-related issues. Multiple standards touched upon in this unit include Science, Language Arts, Fine Arts and Social Studies. In this lesson, Science in Personal and Social Perspectives and Language Arts standards are the focus. Students will investigate river-related issues and concerns so they can begin to formulate their perspective on how to manage and share the river.





15 MINUTES

What you'll need

- Activity worksheet (pages 284–285)

Pre- and Post-Assessment

Do This

1. Copy and distribute the Pre- and Post-Assessment activity worksheet on the following pages.
2. Allow 15 minutes for students to complete the assessment.
3. Save the pre-assessments to compare with a post-assessment given after students complete all the lessons in this unit using this same activity worksheet.
4. Calculate each student's percent increase in knowledge.

Answer Key


Answers to the essay questions will vary. Information needed to complete the questions can be found in the previous units.

“The life in us is like the water in the river. It may rise this year higher than man has ever known it, and flood the parched uplands; even this may be the eventful year, which will drown out all our muskrats. It was not always dry land where we dwell. I see far inland the banks where the stream anciently washed, before science began to record its freshets.”

– Henry David Thoreau (1817-1862), *Walden*, 1854

Need to Know

- **Shared resource:** An entity shared by many. At school, you share the playground with other students. The playground is a shared resource.
- The Upper Mississippi River is a shared resource. It supports diverse, interconnected uses:
 - Extensive navigation system (made up of 1,200 miles of nine-foot channel and 29 lock and dam sites).
 - Diverse ecosystem (2.7 million acres of habitat supporting hundreds of fish and wildlife species)
 - Floodplain agriculture
 - Recreation and tourism



3. What historical event do you think had the biggest impact on the river?
Explain why you think so.

4. What do you think can be done to reduce flood damage along the
Mississippi River?

5. Choose an occupation, business developer or environmentalist,
and describe the future you see for the Mississippi River.

Background

The Mississippi River plays a large and complex role in the economy of the Upper Midwest states, both in rural and urban areas. Some economic uses, such as manufacturing, urban development, and tourism, benefit from a healthy river as well as attract people and jobs.

The Upper Mississippi River is losing its ecological vitality as parts of the fragile ecosystem disappear. The river's environment needs to be adequately monitored by observing indicator species and preventing habitat reduction, which could also pose risks to human health. Much of the harm done to the Upper Mississippi over the last 150 years can be traced to human activities. An early example appears in Unit 4 with the major forests harvested to supply wood for steamboats. Modern hazards include pollution from toxic chemicals, nutrients, and pathogens.

Progress has been made to improve the environment but many parts of the river system remain in need of help. The cumulative effects of these problems may further impact human use and enjoyment of the river.

Discussion (1 hour)

Begin the discussion by talking about sharing. We learn about sharing at an early age. However, we don't always share nicely because we think what we want is more important than what others want or need. Sometimes we need to put our own wants aside and help others.

Then have students watch the short (less than 2 minutes) video called The Great Rivers Partnership, available on www.youtube.com. Search keywords **Explore the Mississippi River by Nature Conservancy**.

Talk about why we must share the river in a way that meets the needs of all who depend on it in a sustainable way so that this vital resource will support people and wildlife for generations to come.

Review key concepts from Units 2 and 4 and discuss transportation, commerce, agriculture, recreation, and conservation:

- Who uses the river? How do they use the river?
 - Humans use it for work, agriculture, transportation, and play.
 - Plants and animals live there and use it for migration.
- Discuss how we share this resource and the students' responsibilities in protecting it.

Review previous lessons and activities:

- Car washing and drinking water
 - Units 1 and 2
- Wetlands and migration – Unit 2
- Locks and Dams – Unit 4
- Human Actions on the Mississippi
 - Units 1 through 4

Activity 2



Grades

5-6

Individual activity

1 HOUR

Plus student research time

What you'll need

- Access to the Internet



Make this activity more dynamic by asking students to attend a city hall or other public meeting.

Investigating the Mississippi River Issues and Concerns

Students explore primary and secondary sources to discover a broad range of opinions on a river-related topic and summarize the key concerns.

Do This

1. Ask students to research a river-related issue in their community and choose one that has the broadest range of opinions about the nature of the problem and its possible causes and solutions.
 - Look for notes or videos from public and city council meetings and public involvement reports from government agencies, such as the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers.
 - The list of government agencies and regional groups on page 288 are potential sources for this activity.
2. Ask students to summarize the variety of opinions they find and add their own to the end of their summary.

Option

Instead of asking students to do their own research, provide them with the following primary sources:

1. Public involvement report from U.S. Fish & Wildlife Service.
 - Go to www.fws.gov and search keywords **Upper Mississippi River National Wildlife and Fish Refuge Comprehensive Conservation Plan**.
 - Download and print "**Chapter 2: Consultation and Coordination with the Public and Others**" from **Upper Mississippi River National Wildlife and Fish Refuge's Comprehensive Conservation Plan**.
2. Public meeting minutes from the U.S. Army Corps of Engineers.
 - Download and print "**St. Louis-Navigation Study Public Meeting Minutes from March 13, 2002.**"
 - U.S. Army Corps of Engineers (Corps) public meeting minutes.
 - Go to <http://www2.mvr.usace.army.mil/UMRS/NESP> and click on Projects. Choose **Meeting Minutes**.
 - Navigate to **St. Louis-Navigation Study Public Meeting Minutes** from March 13, 2002. Download and print.
3. Video of a St. Paul, Minnesota, City Council meeting.
 - Go to www.stpaul.gov. Choose **City Council**, then **Meetings: Videos, Agendas, and Meetings**.
 - Search for **Mississippi River**.

Fast Facts

A variety of government agencies (state, regional, or federal) and non-governmental organizations (NGOs) are involved in making decisions about the Mississippi River.

- ◆ Federal Agencies
 - EPA (Environmental Protection Agency) and Research Program (LTMRP)
 - U.S. Dept. of Agriculture's Natural Resources Conservation Services (NRCS)
 - U.S. Army Corps of Engineers

- ◆ Regional Groups
 - United States Geological Survey's Long Term Monitoring and Research Program (LTMRP)
 - Upper Mississippi River Conservation Committee (UMRCC)
 - Upper Mississippi River Basin Association (UMRBA)
 - Ohio River Valley Water Sanitation Commission (ORSANCO)
 - Upper Mississippi River Basin Task Force
 - Lower Mississippi River Conservation Committee (LMRCC)
- ◆ State Agencies
 - State Water Quality Agencies

Source: *The Mississippi River in the Upper Midwest: Its Economy, Ecology, and Management*, from the McKnight Foundation, *Traveling Upstream: Improving Water Quality of the Mississippi River*, prepared for the McKnight Foundation (www.mcknight.org)

Extension Suggestions



~ Career launch

Invite a local **city council member**, **farmer**, **towboat operator**, or **fisherman** to speak to the class. Ask students to research the field and prepare questions in advance. See *A1: Career Launch* on page 312 for career information and professional associations.

~ Express yourself!

- Ask students to write a poem, draw a picture, or paint a painting of how they are connected to the Upper Mississippi River.
- Have students write letters to their city council or other local government official to share their concerns about how the Upper Mississippi River is managed for multiple uses.

~ Get out!

Arrange field trips to see different users of the Mississippi in action, such as riding on a barge, visiting a farmer's field, or helping U.S. Fish & Wildlife with environmental research and restoration projects.

Welcome to Our Mississippi

File Edit View Favorites Tools Help



<http://www.OurMississippi.org>

~ Learn more online

Learn about the **Navigation and Ecosystem Sustainability Program (NESP)** website. Go to www2.mvr.usace.army.mil/UMRS/NESP/

Learn about **Great Rivers Partnerships** from the **Nature Conservancy**. Go to www.nature.org and search keywords **Explore Mississippi River**

Learn more about **U.S. Army Corps of Engineers Civil Works**. Go to www.corpsresults.us/environment/default.htm

Sharing Our River:

One River, Many Uses - Playing it Safe on the Mississippi

Introduction

In this lesson, students explore how different people use the river in more depth, with an emphasis on safety. Students research water safety and prepare an activity to teach younger grades about water safety.

Background

The U.S. Army Corps of Engineers and the U.S. Coast Guard are the federal agencies most concerned with water safety. The Corps is the leading provider of water-based recreation on all federally managed public lands in the United States. Because most of that recreation occurs in and around water, the Corps is dedicated to water safety.

In past lessons, students have learned about the river's ecosystem, its history, and its navigation challenges. They learned that the river has become a mainstay for wildlife and people either through occupation or recreation. This lesson focuses on how we can safely share the river and its resources, which relates to Science in Personal and Social Perspectives. Students will incorporate Language Arts and Fine Arts standards as they prepare to teach younger students about water safety.

STANDARDS CORRELATION



~ Unit 5 goal reminder

Explore what it means to safely share our river

~ Lesson goal

Learn how to share the river safely

~ Lesson objectives

- Research the different types of water safety
- Identify key elements of water safety
- Teach younger kids in your school about water safety

~ Educational Standards

- Science in Personal and Social Perspectives
- Fine Arts
- Language Arts

~ What you'll need

- Access to the Internet
- Poster material
- Life jackets
- Safety cones
- Colored paper
- 8.5x11 white paper
- Markers and/or crayons
- Glue
- Tape

~ How long it will take

- *Discussion:* 30 min.
- *Activity 1:* Several hours to several days
- *Activity 2:* 30 min.

~ What's next?

Problem-solving solutions to manage the Mississippi River for a variety of uses and needs

“I've never pulled a dead body out of the Mississippi River that was wearing a life jacket.”

– John Martin, U.S. Coast Guard

Fast Facts

- ◆ Drowning is the 2nd leading cause of accidental injury or death for children ages 1-14.
- ◆ A child can drown in just 20 seconds, an adult in 60 seconds.
- ◆ Laws and regulations
 - Federal law requires all children under 13 to wear life jackets while on recreational boats, unless the state laws vary.
 - Recreational boats must carry one properly sized, U.S. Coast Guard-approved lifejacket (accessible and in good condition) for each person on board.
 - Life jackets should be tested for wear and buoyancy at least once each year. Waterlogged, faded, or leaky jackets should be discarded.
 - A snug-fitting flotation coat or deck-suit style life jacket can help you survive in cold water.

Life Jacket

Lifejackets come in different types that provide various levels of protection.

Type I: Off shore Life Jacket

Type II: Near Shore Buoyant Vest

Type III: Flotation Aid

Discussion (30 minutes)

Can you have fun on the water? The best way to ensure a day of fun on the water is to make sure everyone is wearing a life jacket so they can return home safely. Too often people overestimate their swimming abilities on open waters so it is important to swim with a buddy, take swimming lessons and learn to swim well. Wearing a life jacket is always the best way to play it safe. Boaters should take a boater's education course and always be aware of weather and water conditions before they venture out for a day of fun on the water.

Begin by reviewing what students have learned about the many uses of the Mississippi River and its floodplain in previous units, including transportation, commerce, agriculture, recreation, and conservation. Discuss the importance of working and playing on the river safely.

Since animals can't read or understand the rules for boats and people, we need to be extra careful when around them on the water. When on or near the water, whether swimming or boating, we need to steer clear of animal and bird habitats, especially breeding areas.

Invite someone from the U.S. Army Corps of Engineers or U.S. Coast Guard to speak to the class. Ask students to prepare questions beforehand based on what they learned through online research. Let students know that they will be teaching younger children about what they learned.





Grades

5-6

Small group
(3 students) activity

4 HOURS

Several hours or several days, depending on classroom time devoted to research. This activity could be assigned as homework.

What you'll need

- Access to the Internet
- Poster material
- Markers and/or crayons

Create a Water Safety Poster

Ask students to research water safety with the intention of teaching younger school children how to be safe in the water.

Do This

1. Assign each group a water safety topic to research. Help them narrow the topic to a specific research question or statement. For example, life jacket safety can be broken down into:
 - Why you should wear a life jacket
 - How to choose a life jacket
 - How your life jacket should fit
 - When to wear life jackets, and what rules apply on rivers and lakes
2. Once students have narrowed their safety topic, direct them to printed and online sources, such as the U.S. Army Corps of Engineers' National Water Safety Program and the U.S. Coast Guard Boating Safety Resource Center websites.
3. Ask students to create a water safety poster for younger school children.

Welcome to Our Mississippi _ □ X

File Edit View Favorites Tools Help

~ Learn more online

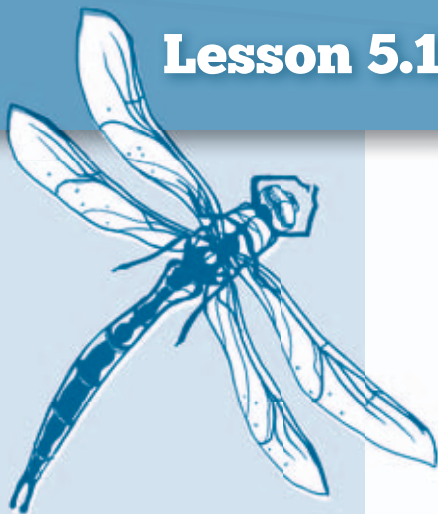
Learn about water safety for kids at www.kidshealth.org and www.safekids.org. Search keywords **Water Safety**

U.S. Army Corps of Engineers' National Water Safety Program
watersafety.usace.army.mil

Meet Bobber, the Water Safety Dog!
www.bobber.info

U.S. Coast Guard's Boating Safety Resources Center
www.uscgboating.org/

View the online Boating Safety Study Guide (how to read signs for watercraft and know which watercraft has the right of way) www.boatus.com. Search keywords **Rules of the Road**



Navigating the Rules of the Water "Road"

Grades

5-6

Class or small
group activity

30 MINUTES

What you'll need

- Life jackets (asks students to bring their own)
- Safety cones
- Colored paper
- 8.5x11 white paper
- Markers and/or crayons
- Glue
- Tape

Teacher
Tip

If students don't have life jackets, use stickers or make string signs that say "life jacket."

Students turn the schoolyard into a waterway and practice navigating marked channels safely. Older students help guide younger students through the course, helping them understand the rules of the waterway "road."

Do This

Based on what students learned from their research on boating safety, have them set up a watercourse in the schoolyard.

1. Invite someone from the U.S. Army Corps of Engineers or the U.S. Coast Guard to talk to the class about Navigational Aids and the Rules of the Road.
2. Prepare students for the discussion by talking about the similarities and differences between roads and waterways.
 - Explain that busy waterways have "lanes of travel" similar to the Interstate highway system.
 - Instead of meaning stop and go, red and green on waterways tell you which side you should be on depending on the direction you are traveling. When heading upstream (i.e., from the mouth of the river to the head of navigation), the red buoys are on the starboard (right) side of the channel and the green ones are on the port (left) side of the channel.
3. Give each student a life jacket to wear during the activity. Have students write and sign a safety pledge promising to wear their life jacket at all times when they are on the river.
4. Make 10 buoys, five red and five green, by wrapping playground cones with red and green construction paper.

- Have students make paper boats and label them based on different types of watercraft to give to the younger children.
- Ask the older students to guide the younger ones through the buoys using the Rules of the Road.

Here's a sample watercourse

Make it as simple or as complicated as you wish depending on how many safety cones you have.

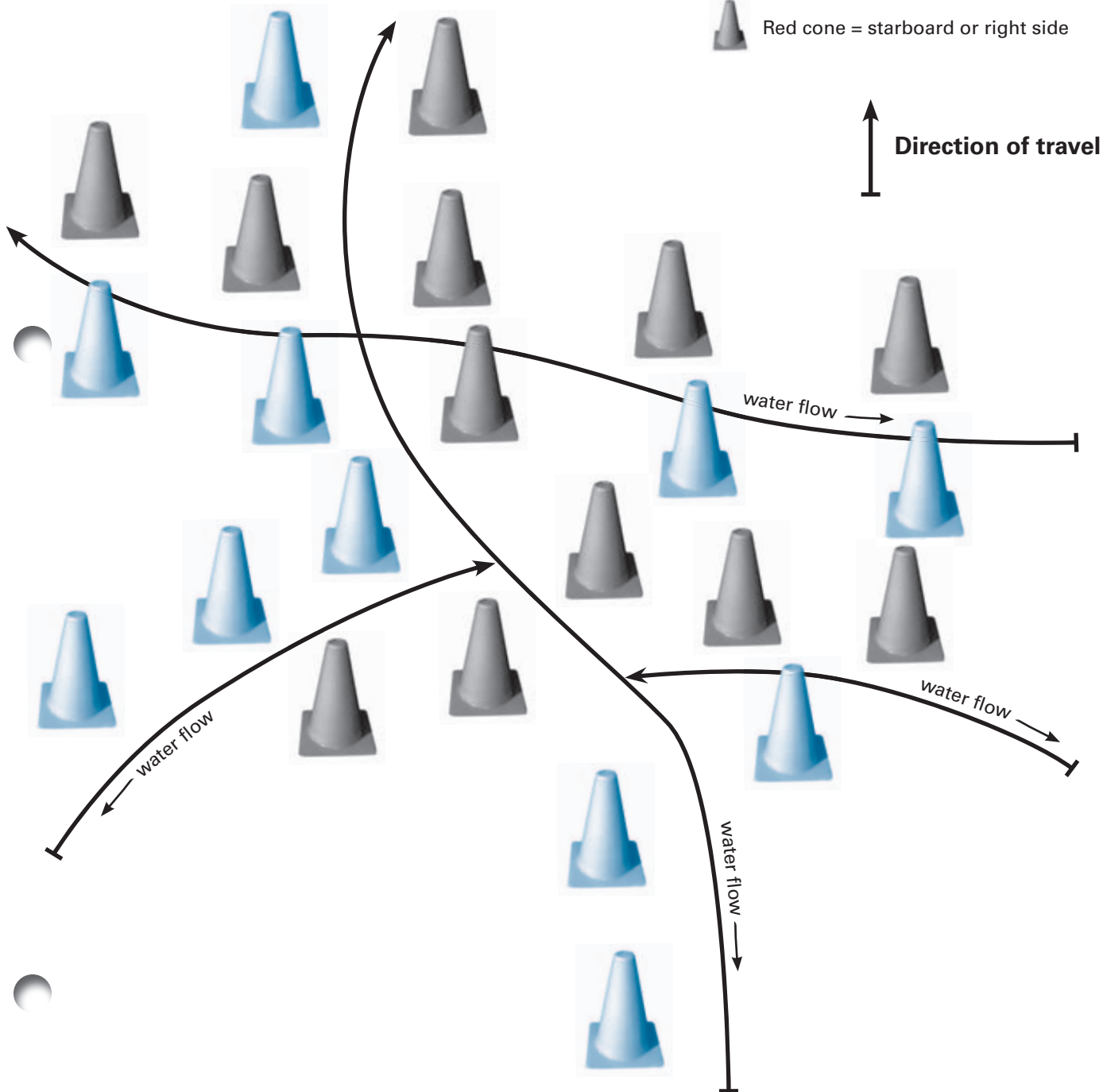
When heading upstream:



Green cone = port or left side



Red cone = starboard or right side



Lesson 5.1

Teacher Tip

U.S. Army Corps of Engineers has a Safe Passage DVD and Water Safety K-6 Curriculum available. Go to watersafety.usace.army.mil and click on Safe Passage.

To help someone in trouble and keep yourself safe, learn these few simple safety rules:

Reach

To help someone in the water, reach first with a fishing pole, towel, boat oar, but don't get in the water yourself.

Throw

Scan your area for items such as an empty milk jug, cooler, or ring buoys that can be thrown to someone in the water.

Row

It's not safe to go near a swimmer with the boat motor running. Use the oars to bring the boat close enough to reach or throw.

Don't Go

Without expert training and experience in lifesaving techniques, you could put yourself in danger along with the person you are trying to help.

Extension Suggestions



~ Career launch

Invite a local U.S. Coast Guard member or lock master to speak to the class. Ask students to research the field and prepare questions in advance. See A1: Career Launch on page 312 for career information and professional associations.

~ Get out!

- Take a lock tour at the National Great Rivers Museum in Alton, Illinois.
- Arrange a kayak or water boat field trip with a certified guide.
- Take a field trip to your local U.S. Coast Guard or U.S. Army Corps of Engineers office to learn about safe swimming and boating skills.

~ Express yourself!

- Ask students to create a water safety plan for their friends and families.
- Make your own safety flags.

Welcome to Our Mississippi

File Edit View Favorites Tools Help



<http://www.OurMississippi.org>

~ Learn more online

Learn about water safety from the U.S. Army Corps of Engineers. Go to www.sas.usace.army.mil/wtrsafty.htm

Learn about boating safety from the U.S. Coast Guard. Go to www.uscgboating.org.

Learn more about water safety from the National Recreation and Park Association. Go to www.nrpa.org and search keywords **water safety month**

~ Virtual Fun

Play the U.S. Army Corps of Engineers Ranger Buck's Lock Game. Go to www.bobber.info.



Managing Our River for Everyone:

Competing Views and Values

Introduction

In this lesson students actively engage in the many issues and decisions that communities in the flood plain of the Upper Mississippi must deal with on a regular basis. After working in groups to brainstorm how communities should rebuild after a devastating flood, they have the context they need to research, interview, and debate the issues from four key points of view.

Background

We depend on the Upper Mississippi River and its large floodplain—more than 2.5 million acres—for many things essential to our health and happiness. It is vital that future generations learn how to restore and maintain this living river.

STANDARDS CORRELATION

Students continue to conduct research and analyze data to formulate their arguments for the debating activity, which relates to Language Arts standard. Having learned about the importance of commerce of the river, students must think critically about how to balance business development with caring for the river's environment, which correlates to Science in Personal and Social Perspectives standard.

~ Unit 5 goal reminder

Explore what it means to safely share our river

~ Lesson goal

Debate ideas for how to sustainably manage the river for multiple uses

~ Lesson objectives

- Identify issues facing communities
- Understand different points of view
- Brainstorm ideas
- Problem-solve solutions

~ Educational standards

- Life Science
- Science in Personal and Social Perspectives
- Social Science
- Fine Arts
- Language Arts

~ What you'll need

- Blackboard or flipchart for capturing ideas
- Markers
- Pen and paper
- Access to the Internet
- Guest speakers

~ How long it will take

- *Discussion*: 30 min.
- *Activity 1*: 45 min.
- *Activity 2*: 2 hrs.

~ What's next!

What is YOUR part in protecting the river?



What do the river and its floodplain do for us?

- **Human habitat:** More than 30 million people live in the Mississippi River basin. Nearly 80% of the population lives in urban areas such as Minneapolis-St. Paul, Minnesota; St. Louis, Missouri; Chicago, Illinois; the Quad Cities, Illinois and Iowa; Des Moines, Iowa; La Crosse, Wisconsin; and Peoria, Illinois.
- **Water supply:** About half of the residents in the Mississippi River Watershed rely on the Upper Mississippi River and its tributaries for their water.
- **Food supply:** Over 60% of the basin is cropland or pasture. Major cash crops include corn and soybeans.
- **Transportation and commerce:** About 850 miles of the Upper Mississippi River, extending from Minneapolis-St. Paul to the Ohio River, are commercially navigable.
- **Flood control and water quality:** Wetlands along the river help absorb flood water and filter pollutants.
- **Recreation:** The river generates over \$6.6 billion dollars in revenue annually from people who hunt, fish, boat, or sightsee. Recreation and tourism employ 143,000 people.

- **Inspiration:** More than 1,300 river miles of diverse natural, rural, and urban open space are available for human exploration, education, spiritual renewal, and aesthetic enjoyment.

Discussion (30 minutes)

Begin the class discussion with the end goal: We must manage the river in a way that meets the needs of all who depend on it, in a sustainable way, to ensure that this vital resource will support people and wildlife for generations to come.

Ask students to imagine what they would do if they could build their communities from scratch. Where would they live? How would they get their basic needs met? Brainstorm ideas as a class for a few minutes before breaking students into groups for Activity 1. Once they have planned their ideal communities, they will be ready for the debate in Activity 2.

“The Upper Mississippi River System is the only waterbody in the nation that has been recognized by Congress as a nationally significant ecosystem and a nationally significant commercial navigation system.”

- Water Resources Development Act, 1986. One of a series of acts about water resources enacted by Congress, it established cost-sharing formulas for the construction of harbors, inland waterway transportation, and flood control projects and created hundreds of projects, studies, and plans in almost every state in the nation.



Grades

5-6Class or small
group activity**45** MINUTES**What you'll need**

- Blackboard or flipchart for capturing ideas
- Markers
- Pen and paper

Town Devastated by a Flood - Let's Rebuild!

Do This

Your town has been wiped out by a catastrophic flood! Luckily, everyone made it to safety, but you must now rebuild from scratch.

1. Give the students 15 minutes to write their ideas or possibly make it a homework assignment.
2. Have students share the ideas with the class, capturing them on the board or flipchart.
3. Organize students into groups of four and present the scenario.
4. What services do you need to provide, such as power, water, garbage, sewage, transportation, education, etc.?
5. How will you protect the environment and ensure habitat for wildlife?
6. How will you interact with other communities on the river?
7. How will you sustain all of the above?

Student instructions

Answer the following questions to begin planning your new community:

1. Will you rebuild where you were (on a flood plain) or will you move to another location? Decide where to build your new town and describe why you chose that location.
2. How will you meet your basic needs for food and shelter?
3. What will be the economic base for your new town (business, agriculture, recreation, tourism)?





Grades

5-6

Class or small
group activity

2 HOURS

What you'll need

- Access to the Internet
- Guest speakers

Town Hall Meeting

The Art of Dialogue and Compromise

After listening to and asking questions of experts, students prepare for and engage in a debate about the issues.

Do This

1. Invite local experts representing diverse points of view to help students prepare for a town hall debate. Points of view could include:
 - Agriculture (commercial fishing and farming)
 - Transportation and navigation (barge industry, civil engineer, U.S. Army Corps of Engineers)
 - Commerce and development (Chamber of Commerce, city planner)
 - Conservation and recreation (e.g., U.S. Army Corps of Engineers, U.S. Fish & Wildlife Service, Audubon Society, Sierra Club)
2. Organize students into groups of four and assign each group a point of view.
3. Have students prepare questions for each point of view, focusing on values and ideas for how best to manage the river for multiple uses.
4. Match up student groups for a class debate:
 - Assign a moderator and a time keeper
 - Students' arguments must be no more than 1-2 minutes per question with equal time for each point of view

“Unfortunately, our rivers carry the waste into the bay like veins into a heart.”

– Patrick Noonan, quoted in *Countryside*, Winter 1990

Student Instructions

1. Research different points of view on how to sustainably manage the river for multiple uses.
2. Prepare interview questions for local experts representing diverse points of view:
 - Agriculture (commercial fishing and farming)
 - Transportation and navigation (barge industry, civil engineer, U.S. Army Corps of Engineers)
 - Commerce and development (Chamber of Commerce, city planner)
 - Conservation and recreation (U.S. Army Corps of Engineers, U.S. Fish & Wildlife Service, Audubon Society, Sierra Club)
3. Prepare to debate your assigned point of view.

Fast Facts

The U.S. Army Corps of Engineers is the steward of 12 million acres of public lands and waters at more than 400 lake and river projects in 43 states. Nearly every outdoor recreation activity imaginable is waiting for you at one of the Corps' 2,500 recreation areas.

Recreational Facilities

- 420 lakes in 43 states hosting 33% of all freshwater lake fishing
- 56,000 miles of shoreline
- 90,000 campsites
- 3,500 boat launch ramps
- 200,000 fishing tournaments a year
- 4,300 miles of trails
- 12 million acres hosting 20% of visits on 2% of federal lands

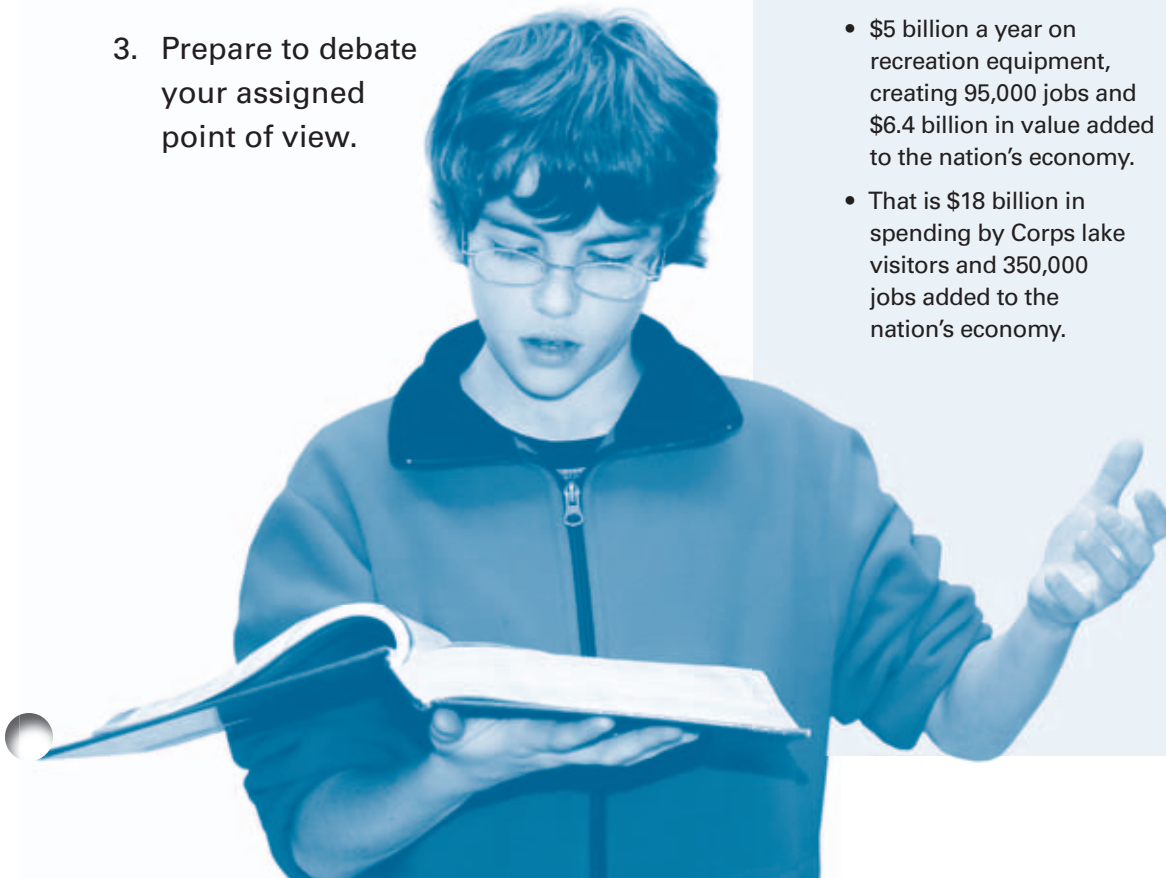
Environmental Benefits

Recreation experiences increase motivation to learn more about the environment; understanding and awareness of environmental issues; and sensitivity to the environment.

Economic benefits

- \$5 billion a year on recreation equipment, creating 95,000 jobs and \$6.4 billion in value added to the nation's economy.
- That is \$18 billion in spending by Corps lake visitors and 350,000 jobs added to the nation's economy.
- \$13 billion a year on trip-related expenses such as gas, food, and lodging within and outside of the local communities surrounding Corps lakes, leading to 250,000 jobs and \$16 billion in value added (includes wages and salaries, payroll benefits, profits, and rents and indirect business taxes) to the nation's economy.

This figure includes \$8 billion spent in local communities, resulting in 100,000 jobs and \$3.9 billion in value added to the local economies.




Mississippi Queen - River of Dreams

*Drifting like a waltz is the river of dreams;
The moon high in the sky loves to touch it with beams.
We all sit by the fire voices singing;
Our paradise, the Mississippi queen.
Captains in the night know our river of dreams;
They guide beautiful sights like the old Delta Queen.
And time cannot erase music ringing;
Our paradise, the Mississippi queen.*

– Janice B. Cassidy

Extension Suggestions

~ Career launch



Invite a local **career planner** to speak to the class. Ask students to research the field and prepare questions in advance. See *A1: Career Launch* on page 312 for career information and professional associations.

~ Get out!

- Attend a local town hall meeting.
- Attend a local land-use hearing.
- Attend a legislative session at your state capitol building.
- What can your neighborhood do? Set up a meeting with your neighbors to discuss how you can protect your part of the river.

~ Express yourself!

- Ask students to write their state representative expressing their ideas or concerns about the Mississippi River.
- Form or join a debate team at your school.

Welcome to Our Mississippi

File Edit View Favorites Tools Help



http://www.OurMississippi.org

~ Learn more online

Visit the American Planning Association: Kids and Community (www.planning.org)
Search keywords: **kids and community**

U.S. Army Corps of Engineers Civil Works environmental program has two major focus areas: protection and restoration, and stewardship. Go to www.corpsresults.us/environment/

Read *Plotting a Future Course on the Mississippi River: Executive Summary* from The McKnight Foundation. Go to www.mcknight.org/environment/env_eval.aspx



Caring for Our River:

Protecting Our Precious Resource

Introduction

The final lesson in this unit encourages environmental stewardship by asking students to take an active part in caring for the river through a service project or designing a service learning opportunity of their own.

STANDARDS CORRELATION

Caring for the river is everyone's responsibility. The Science in Personal and Social Perspectives is the main standard addressed in the activities in this lesson. Students are tasked with environmental stewardship and to "make a difference." They will research and either design or select a service learning project for the class, possibly the school.

~ Unit 5 goal reminder

Explore what it means to safely share our river

~ Lesson goal

Adopt a service project or design a service learning project

~ Lesson objectives

- Research service projects for your class and school
- Do a service project
- Design a science fair project on conservation

~ Educational standards

- Science in Personal and Social Perspectives
- Fine Arts
- Language Arts

~ What you'll need

- A guest speaker

~ How long will it take?

Depending on project selected

~ What's next!

This is it! Go make a difference!



Background

What is the difference between a **service project** and a **service-learning project**? According to the National Youth Leadership Council:

- **Picking up trash on a riverbank is SERVICE.**
- **Studying water samples under a microscope is LEARNING.**
- **When students collect and analyze water samples, document results, and present findings to the community—that’s SERVICE LEARNING.**

Both service projects and service learning projects encourage a sense of environmental stewardship. Service learning engages students personally and requires higher-level skills.

According to Learn and Serve America, service learning is a hands-on approach to education that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities.

“Eight trees will offset the amount of carbon a person releases by simply breathing during an average lifetime.”

— M. Sanjayan, lead scientist, Nature Conservancy

Service learning projects

Successful service learning projects have three distinct phases: **preparation**, **action**, and **reflection**.

Preparation includes:

- Identifying a genuine community need.
- Cultivating student interest in doing something about it.
- Researching opportunities, solutions and available resources.
- Making clear connections to the curriculum.

Action includes:

- Deciding on a project, which includes ensuring that all students have input into the decision and are willing to support and implement the project.
- Partnering with community organizations.
- Planning the project by developing a work plan.
- Doing the project.

Reflection includes:

- Asking the following questions at each phase of the project:
 - “WHAT” questions: “What are we doing, what have we accomplished, what have we learned?”
 - “SO WHAT” questions: “What difference does/did it make, why should we do it, how is it important, how do we feel about it?”

Why not plant a few for yourself?

- “NOWWHAT” questions: “What’s next, where do we go from here, what has this prepared us for?”
- Engaging in reflective activities such as:
 - Doing*
 - Present a Service Fair.
 - Make a video or slide show.
 - Draw a picture.
 - Paint a mural.
 - Create a collage.
 - Make a scrapbook.
 - Perform a skit or play.

Writing

- Write a journal (group or individual).
- Write a news article for a local newspaper or the school newsletter.
- Write thank you notes to all who were involved in the project.
- Write letters to government officials.
- Write a paper about the community need that was addressed through the project.

Sharing

- Present findings to the community.
- Publish a website.
- Speak at community meetings.

Examples of Service Learning

- **Elementary children in Florida** studied the consequences of natural disasters. The class designed a kit for families to use to collect their important papers in case of evacuation with a checklist, tips about rescuing pets, and other advice to make a difficult situation easier, which students distributed to community members.
- **Girl Scouts in West Virginia** investigated the biological complexity and diversity of wetlands. They presented their findings to their Town Council to raise awareness of the issues concerning local wetlands.

Welcome to Our Mississippi _ □ X

File Edit View Favorites Tools Help

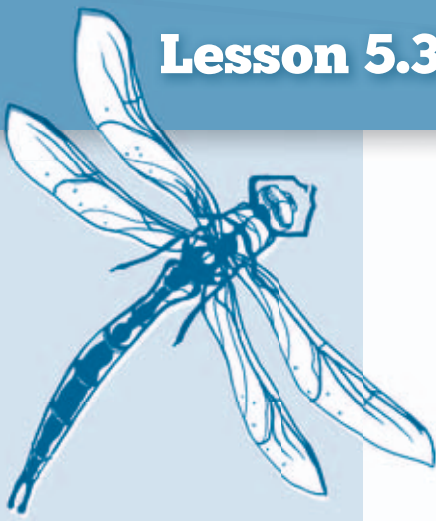


Service learning sources

- **Service Learning Partnership:** www.service-learningpartnership.org
- **Learn and Serve America:** www.learnandserve.gov
- **National Service Learning (Learning House)** www.servicelearning.org

Volunteer organizations:

- Serve.gov
- **Corporation for National and Community Service:** www.nationalservice.gov
- **National Youth Leadership Council:** www.nylc.org



Discussion Activity

Grades

5-6

**Class or small
group activity**

2 HOURS

Broken into 30-minute segments over several days, plus time for student research and guest speaker

What you'll need

- A guest speaker

Do This

Ask students what they can do to help the Mississippi River. Depending on time, resources, and level of interest, ask students to choose from a list of service projects or develop a service learning project of their own.

For both service and service learning projects, brainstorm issues that affect the health of the river that students can get involved with. Have the students start with their homes and schools and expand the discussion to their community, state, and region.

Identify needs and opportunities

During the brainstorming session, ask students to identify needs within the community or opportunities to do something beneficial. Challenge them to think of as many ideas as possible. Encourage them to build on each other's ideas, to be spontaneous, to take risks, to think creatively. Then have them try to identify the causes behind each need, as well as some possible interventions.

Brainstorm solutions

Ask students to generate a list of workable solutions by focusing on what can realistically be done. Have each student share what they like about each proposed idea as well as their questions and concerns.

Identify resources

Before making a final decision on which project to do, have students research the resources available to help or support the project. This could include a grant proposal, a business or organization in the community, or parent volunteers. Invite an individual with expertise in the area of interest in order to provide relevant information before a final decision is made.

Decide on a project

Once the class has a list of possible needs and solutions, break them into groups to research the feasibility of their ideas. Have each group present the results to the class and ask them to vote on which project the class should do.

Ideas for projects:

- School or community recycling project
- School or community composting project
- Schoolyard or community garden
- Water quality monitoring
- Species counts
- River or park cleanups
- Schoolyard or park beautification
- Repairing picnic tables, benches, trails, or playground equipment
- Volunteer to make a difference on public lands:
 - Municipal parks
 - State parks
 - Federal parks



DISCUSSION EXTENSION

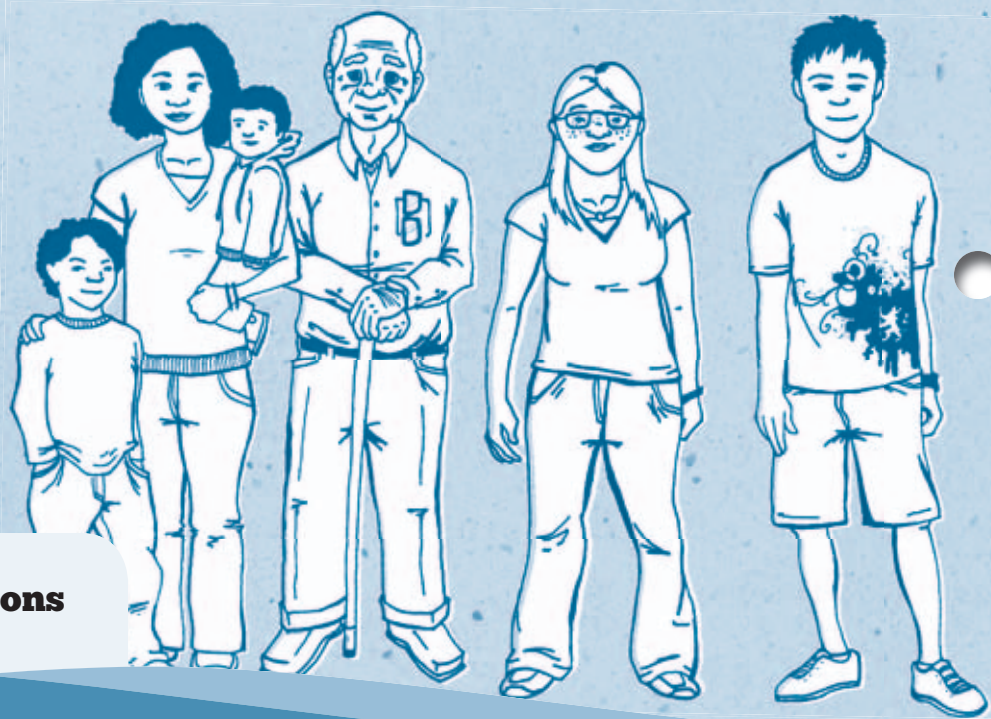
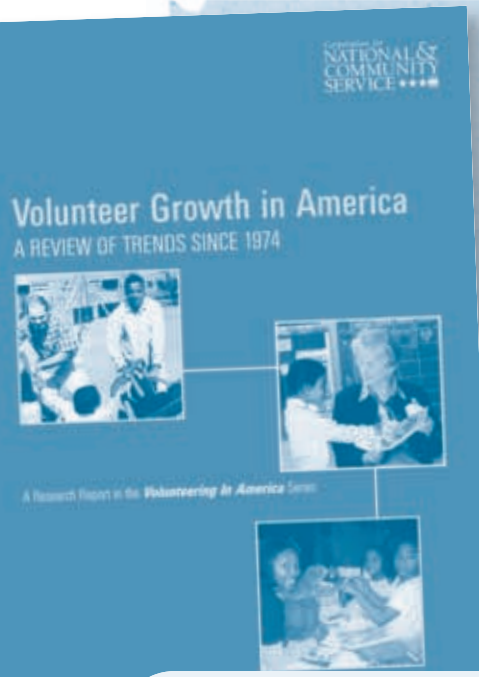
Grades
7-12

Small group activity

To help engage students in the idea of volunteering their time and efforts for a good cause, ask them to read the findings in the excerpt on the next page from "Volunteer Growth in America: A Review of Trends Since 1974," *Volunteering in*

America by the Corporation for National and Community Service.

Ask students to work in groups to discuss the findings and hypothesize about the trends described.



Extension Suggestions



~ **Career launch**
Invite a local **volunteer** to speak to the class. Ask students to research the field and prepare questions in advance. See *A1: Career Launch* on page 312 for career information and professional associations.

~ **Get out!**
Encourage students to volunteer with groups outside of your school.

~ **Express yourself!**
Ask students to write a letter to another student describing their service project or service learning experience.

~ **Grades K-4 extension**



- You are never too young to volunteer! Ask students what they could do to help the river.
- Have students write lyrics to a song that will help them remember the Recycle, Reuse, and Reduce principle.



Caring for the Upper Mississippi River: Volunteering in America

Name _____ Date _____

Read, analyze, and hypothesize

1. Read the excerpt below from *“Volunteer Growth in America: A Review of Trends Since 1974,” Volunteering in America* by the Corporation for National and Community Service.
2. Review and discuss the findings with your group.
3. Form a hypothesis about the volunteer trends described.

Read below

Throughout the history of the United States, Americans have valued an ethic of service. As Alexis deTocqueville wrote over a century and a half ago, this ethic of service “prompts [Americans] to assist one another and inclines them willingly to sacrifice a portion of their time and property to the welfare of the state.”

Today, the ethic remains strong as Americans of all ages donate their time to schools, churches, hospitals, and other local nonprofits in an effort to improve their communities. Every day, people across the country mentor students, beautify neighborhoods, help older Americans to live independently, restore homes after disasters, and much more.

- Volunteering is at a 30-year high.
 - The adult volunteer rate declined by 15% between 1974 and 1989 (23.6% to 20.4%, respectively) but rebounded to a new high today (27%). In fact, the adult volunteering rate increased by more than 32% since 1989.
 - The growth in volunteering has been driven primarily by three age groups: older teenagers (ages 16 to 19); mid-life adults (ages 45 to 64); and older adults (65 years old and over).
 - Volunteering that takes place through an educational or youth service organization had the largest increase between 1989 and today. While 15.1% of all volunteers served through or with an educational or youth service

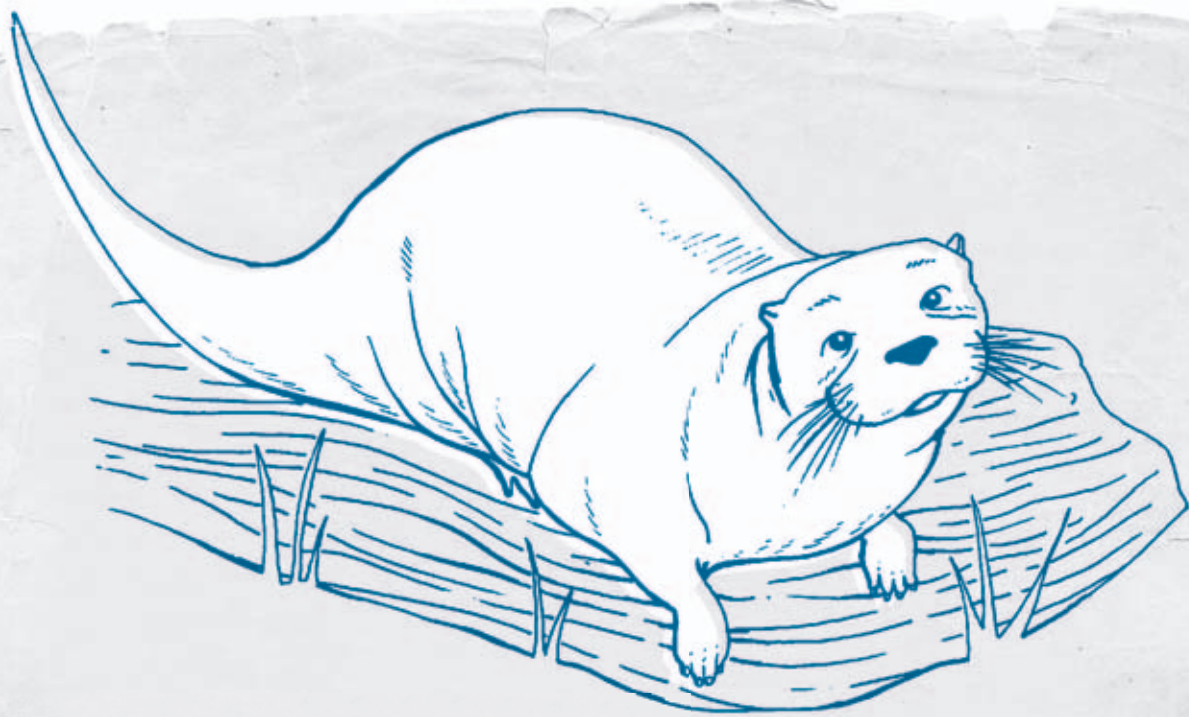
organization in 1989, 24.6% of all volunteers serve through or with an educational organization today, a 63% increase.

- Volunteering among teenagers (ages 16 to 19) has dramatically increased since 1989.
 - While volunteer rates among teenagers declined between 1974 and 1989 (20.9% and 13.4%, respectively), the percentage of teenagers who volunteer more than doubled between 1989 and 2005 (from 13.4% to 28.4%).
 - While the teenage volunteering rate has increased significantly over the last 30 years, teenagers continue to be primarily interested in episodic volunteering (contributing 99 or fewer hours a year). Today, 67.9% of teenagers are episodic volunteers.
 - Teenage volunteers are significantly more likely to serve with educational or youth service organizations today (34.7% in 2005 vs. 26.8% in 1989). In fact, volunteering with religious organizations (30.3% in 2005 vs. 34.4% in 1989) was the most common place that teenagers volunteered in 1989, but it is now the second most popular place for teenager volunteering, behind educational organizations.
 - More teenage volunteers are also serving with social and community service organizations today (12.9% in 2005 vs. 7% in 1989).



1. What volunteering trends does the study describe?

2. What hypotheses (proposed explanations for observable phenomena) can you make based on the information presented?



“ True wisdom consists in not departing from nature and in molding our conduct according to her laws and model. ”

—Seneca (4 B.C.-C.E. 65), *Moral Essays*

“ It were happy if we studied nature more in natural things, and acted according to nature, whose rules are few, plain, and most reasonable. ”

—William Penn (1644-1718), *Some Fruits of Solitude*, 1693

“ Man has been empowered with reason, with the power to create, so that he can add to what he’s been given. But up to now he hasn’t been a creator, only a destroyer. Forests keep disappearing, rivers dry up, wildlife’s become extinct, the climate’s ruined and the land grows poorer and uglier every day. ”

—Anton Chekov (1860-1904), *Uncle Vanya*, 1897

“ Man’s unique reward, however, is that while animals survive by adjusting themselves to their background, man survives by adjusting his background to himself. ”

—Ayn Rand (1895-1982), *For the New Intellectual*, 1961

“ We shall never understand the natural environment until we can see it as a living organism. ”

—Paul Brooks, *The Pursuit of Wilderness*, 1971

“ For many of us, water simply flows from a faucet, and we think little about it beyond this point of contact. We have lost a sense of respect for the wild river, for the complex workings of a wetland, for the intricate web of life that water supports. ”

—Sandra Postel, *Last Oasis: Facing Water Scarcity*, 2003