

ENVIROPLANS!



Rivers (Episode #102)

Strand: Aquatic

Teachers Page

Common Core

Language Arts & Literacy in History/
Social Studies, Science and Technical Subjects

RI.K.1, RI.1.1, RI.2.1, RI.K.2, RI.1.2,
RI.1.2, RI.2.2, RI.K.4, RI.1.4, W.K.2

National Science Standards

Unifying Concepts and Processes

- Evidence, models, and explanation
Science in personal and social perspectives
- Changes in Environments
Content Standard B: Properties of objects and materials



Episode Content Connection

This episode explores the wonders and importance of the rivers that surround us. Rivers are the life line for many communities and animals that depend on them for food and water. However, because rivers flow from an elevated spot and eventually flow to the ocean or seas, rivers become a conduit for pollution. . This is called **non-point source pollution** or sometimes called runoff. This pollution does not come from one source but many sources. Sources like the streets and farms that are all around us.

You see, if you dropped a piece of paper on the street, the next time it rained it could find its way into a storm drain. It would then flow through many pipes underground until it ended up in a river or a stream. Most rivers and streams are connected to the ocean by way of other rivers. Even if you live hundreds of miles from the ocean the pollution from the streets can find its way to the ocean. A piece of paper would be easy to clean up but what about liquid chemicals that are on the streets? Oils, gasoline, fertilizers, and bug sprays are washed into our streets during rains by a process called runoff. These chemicals end up in the storm drains and then into the oceans.





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So as you can see rivers play a very important part in the overall water environment on earth. This episode explores the fascinating world of rivers and the fish that live in them and the importance of keeping them clean. Rae Rae's visit to a fish hatchery in New Hampshire is a fascinating way for young viewers to see first hand how fish are raised from eggs and into adult fish and then placed in rivers to populate them.

After watching an episode have the student(s) reflect on the following questions:

- What are some of the animals that depend on the river to live?
- What are some of the water sources that feed the river with water?
- What are 2 things that you learned from the “Rae Rae Adventure” to the Nashua National Fish Hatchery?
- Name two of the fish that the Nashua National Fish Hatchery raise to stock the rivers with fish?
- Can you name 3 of the life stages of the Atlantic Salmon?

“Rae Rae Adventure” (location)

Nashua National Fish Hatchery

There is nothing fishy about this tale when Rae Rae joins our new friend Aubrey at the Nashua National Fish Hatchery in Nashua, NH. Aubrey and Rae Rae show the viewers at home how the fish hatchery collects and hatches hundreds of thousands of Atlantic salmon and Shad each year for re population of the rivers in both New Hampshire and Massachusetts. This episode showcases the different stages of fish production, from the gathering of eggs, to the release of full size fish, the different facilities, and methods used. It is no fish tale just good environmental fun!





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“Enviro-Songs”

“Fish live in the Rivers”

“River Run”

“Enviro Do-And Show”

River Window Art

In this Do-And-Show project, kids will learn how to create, enjoy, and display a lasting memory of their trip to a river bank.

“Critter Connection”

In this episode the nice people at the Central Florida Zoo introduce their friend Randy a *North American Timber Rattlesnake* to the kids at home.

Terms to Preview

River: A river is a natural water way usually fresh water that begins at a higher elevation and flows toward the ocean.

Silt: Silt is the fine sand that is carried in the current or the moving water of a river and deposited as a sediment.

River Delta: A large area that is formed at the mouth of the river. This area is made up of the sediment that has been carried to the mouth of the river as it enters the oceans. Two of the world most famous rivers deltas are the ones formed by the Nile River and the Mississippi River.

Flood Plain: A flood plain is a flat area that is adjacent or next to the banks of a river that becomes flooded annually. This yearly flooding deposits great nutrients from the river creating very fertile soil. This soil is planted and harvested during the non-flooding period of the river.





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Erosion: Erosion is the slow removal of rock and soil by rivers as it flows and rubs away against its banks. One of the most famous and graphic examples of erosion is the Grand Canyon which carved the canyon.

River Barge: A barge is a flat-bottomed boat that is used to transport large freight loads on rivers. Some barges but not all barges have motors and have to be pushed by other boats such as tug-boats.

Dam: A dam is a structure that is designed to hold back water. Some dams are built as a means to control flooding and some are built as part of a hydro-electric power plant.

Hydro-Electric Power: A hydro-electric power plant is a power plant that produces electricity from the use of water power. Water is first held back by a dam then directed through pen-stocks (large pipes) which direct water to the turbines which turn the generators. Hydro-electric power is one of the cleanest forms of energy.

Fish Ladder: A fish ladder is a stair like structure that allows fish such as salmon and others to swim to the other side of a dam. This is very important because many fish like salmon return to their birthplace to give birth to their young.

Renewable Energy Source: A renewable energy source is energy that comes from nature and is replenished by nature: Some examples of renewable energy sources are: Wind, Water, Geo-Thermal, and Solar.

Fun Facts

- There are more than a quarter million (250,000) rivers in the United States!
- The largest river in America is the Mississippi River.
- There are more than 3 million miles of rivers in the United States!
- The longest river is the Missouri River which flows for more than 2000 miles.





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- 40% of the rivers in the United States are too polluted to either fish or swim in!
- More than 600,000 miles of river are held behind dams.
- There are more than 50,000 dams in the United States.
- Water covers nearly $\frac{3}{4}$ of the earth's surface
- Most of the earth's surface water is salty or frozen!
- The United States consumes water at twice the rate of other industrialized countries.
- The average person needs 2 quarts (64 ounces) each day.

