

TENNESSEE AQUARIUM

Lesson Plan Title: Water Explorers: From Lakes, to Streams, to Rivers

Edited by: Tennessee Aquarium Education Staff **Last Edit:** Nov 2024

Subject:

Science – Earth's Systems

Grade Level:

2nd – 3rd

Objective(s):

- Students will be able to identify similarities and differences between river and streams.
- Students will be able to explain that the kind of water will affect what animals live there.

Standards:**2.ESS2: Earth's Systems**

3) Compare simple maps of different land areas to observe the shapes and kinds of land (rock, soil, sand) and water (river, stream, lake, pond).

Aquarium Exhibit Use:

Ridges to Rivers Gallery: 3rd floor of River Journey- stream exhibit (long) and pop-up river exhibit (tall) (exhibits shown below)



Materials Needed

Pre-aquarium activity:

- PowerPoint Presentation

Aquarium Activity:

- Clipboard
- Paper
- Pencil

Post-aquarium assessment:

- Venn-Diagram

Background Information

Lakes, rivers, and streams are all bodies of water, but they have distinct characteristics that make them different. Lakes are large bodies of water surrounded by land, and their water doesn't flow. It may move due to wind.

Rivers are long, moving bodies of water that flow across the land, usually starting in higher areas like mountains and traveling to lakes, oceans, or other rivers. They usually have a slower flow than streams.

Streams are similar to rivers but are smaller, shallower, and narrower; they often feed into other streams, rivers, and even lakes. Streams can sometimes dry up in hot weather, but rivers are usually larger and flow year-round. While lakes stay in one place, rivers and streams are always moving, with water flowing from one point to another.

These differences can help students understand how water travels and collects in nature.

On maps, land is shown as shades of green, brown, or tan while water is shown as different shades of blue and different thickness lines.

Animals have different adaptations or traits that make them ideal for certain bodies of water. For example, fish with slender long bodies are adapted for faster flowing water. Different species of fish have specific habitat needs that cannot be found in all freshwater habitats. Not only do water depth and flow affect what species can live in that habitat, but temperature, nutrients, salinity, and pH do as well.

Program Planning

Introduction	Duration
<ul style="list-style-type: none"> • Ask students to think of a time where they have visited different types of water (ex: swimming in the lake, oceans, small rivers, big rivers) • Share that different types of animals live in those different types of waters. • Briefly explain the lesson's objectives to the students. 	5 Minutes

Pre-aquarium Activity	Duration
<ul style="list-style-type: none"> • Begin powerpoint presentation to discuss the differences between streams, rivers, and lakes and how they are depicted on maps 	~10 Minutes
Aquarium Activity	Duration
<ul style="list-style-type: none"> • The below activity can be done verbally or give groups of 3-4 a clipboard, paper, and pencil and ask them to compare and contrast the pop-up exhibit vs. the main ridges to rivers exhibit. • Emphasize the following: <ul style="list-style-type: none"> ○ Water depth ○ Water flow ○ Fish behavior (swimming around a lot or sitting still) ○ Presence and size of rocks ○ Presence of plants ○ Presence and size of fish 	~10 Minutes
Post-aquarium Assessment	Duration
<ul style="list-style-type: none"> • Formative Assessment: Venn Diagrams <ul style="list-style-type: none"> ○ Create a venn diagram on the board for a class discussion. ○ Label one side 'River' and one 'Stream' ○ List the similarities and differences that were pointed out at the aquarium in the appropriate space. Below are example answers <ul style="list-style-type: none"> ▪ Stream: <ul style="list-style-type: none"> ▪ Shallow water ▪ Fast flowing ▪ A lot of fish movement ▪ Smaller, long bodied fish ▪ River: <ul style="list-style-type: none"> ▪ Deeper water ▪ Slower flow ▪ Calmer fish ▪ Bigger fish ▪ Both: <ul style="list-style-type: none"> ▪ Rocks ▪ Water ▪ Fish 	15 Minutes

Closure/Reflection

- Summarize key points.
- Relate the lesson to future learning or real-life applications.
- Allow students to ask questions and provide feedback.

Extensions:

- Students complete venn-diagram in groups from memory.
- Students design their own stream or river with correlating characteristics.
- Visit Delta exhibit at The Tennessee Aquarium to explore wetlands.