VERY YOUNG (typically pre-K to early elementary school)

Don't Teach Your Trash to Swim

-Students help populate pretend river with aquatic animals & plants

-Trash is added to river to stimulate discussion of pollution, nutrient load, and things we can do to protect the waterways

-Application: we discuss ways to protect water quality

Water Plant Art

-Students color & do plant presses (will see final products in a few days)

-Must bring fresh aquatic plants (grasses, pondweed, algae)

-Application: we discuss the importance of a variety of plant life in aquatic habitats

Are You Me?

-Students match young stages of aquatic animals with adult stages

-Discuss interesting facts about some of the animals (especially macroinvertebrates, with application to water quality)

-Application: we discuss ways to protect/maintain biodiversity in our native habitats

Water Canaries

-Macroinvertebrate presentation, with powerpoint or printed pictures of different macroinvertebrates

-We would bring in prepared or live samples (depending on availability) of macroinvertebrates for students to see

-Application: we discuss ways to protect/maintain biodiversity in our native habitats

Waste Not, Want Not

-Students learn about water conservation

-Pretend to be "water wasters" or "water savers"; students transfer water to empty buckets in these teams, to compare which group used more water

-Students make origami paper cups, if time

-Application: we discuss ways to conserve water

FOR SLIGHTLY OLDER STUDENTS (typically older elementary school)

A River Ran Wild

-Students learn about cause & effect relationships, and the importance of protecting our waterways
-We read "A River Ran Wild" by Lynne Cherry, a true story of a watershed
-Application: we discuss ways to protect water quality

Enviroscape (please note this can be messy)

-Students get to participate in an interactive presentation about a watershed
- We discuss different factors that contribute to pollution, and students get to add "pollutants" (spices) to model, and "make it rain" with spray bottles.
-Application: a discussion of ways to prevent pollution

Invasive Species

- Powerpoint presentation (or printed pictures if no computer available) about what makes a species "invasive", where invasive species come from, and how they negatively impact our community
-We would bring in invasive plant samples for students to observe
-Application: we discuss ways to control invasive species

Macroinvertebrate Mayhem (requires lots of room)

-We lead students in a game in which they pretend to be different aquatic macroinvertebrates (good & bad water quality indicators)
-We present a short, complementary powerpoint presentation about what macroinvertebrates are, and why they are important. We also discuss how this relates to biodiversity.
-Application: we discuss ways to protect/maintain biodiversity in our native habitats

Examining Macroinvertebrates (please note that this can be messy)

-We present a powerpoint presentation about what macroinvertebrates are, and how aquatic macroinvertebrates are used by biologists as indicators of water quality
-Students examine prepared or live samples (depending on availability) of benthic macroinvertebrates
-Application: we discuss ways to protect/maintain biodiversity in our native habitats

Incredible Journey

-Powerpoint presentation (or printed pictures if no computer available) about the importance of fresh water, and the water cycle, including water cycle vocabulary.
-We set up 9 stations representing different stages of Water Cycle (where water goes), each with dice (pictures tailored to each station). Students move about the room based on rolls of dice, and record their journey via colored beads on an arm band.
-We have a follow-up discussion of water movement, to help conceptualize the water cycle as more than a predictable 2D path
-Application: we discuss ways to conserve water

Plant Cell Jeopardy

(note: if this is a new topic, this can be used at the end of the year, as a fun introduction to the Plant Cell).

-Powerpoint presentation on the components of the plant cell, including analogies to remember the functions of the different components

-The presentation is followed by a powerpoint Jeopardy game, with the two halves of the class competing against each other to answer questions about the Plant Cell (open notes, if this is new material for them).

-Application: plants are very intricate, and they are a critical part of our functional ecosystems!

Attack of the Algae!

-Students learn about algae – the good, the bad, and the ugly! We explain how algae can start out as a natural part of our ecosystems, and turn into a menace in the presence of lots of nutrients in our waterways!

-We show a powerpoint presentation (or photos, if a computer is not available), and discuss nutrient cycles, algae biology, and both ecosystem and health problems resulting from too much algae.

-Application: we discuss ways to protect water quality to make sure that algae does not take over our waterways.

FOR OLDER STUDENTS (typically middle/junior high school, high school, college)

Invasive species

-We present a powerpoint presentation about what makes a species "invasive", where invasive species come from, and how they negatively impact our native ecosystems, the economy, & human health

-We would bring in invasive plant samples for students to observe

-Application: we discuss ways to control invasive species

Biodiversity

-We present a powerpoint presentation about what biodiversity is, and why it is biologically and economically important

-We would bring in native plant and/or macroinvertebrate samples for students to observe

-Application: we discuss ways to protect/maintain biodiversity in our native habitats

Bioindicators

-We present a powerpoint presentation about what bioindicators are, how biologists use macroinvertebrates as bioindicators, and what they can tell us about water quality.

-We would bring in live or preserved (depending on availability) macroinvertebrate samples for students to observe

-Application: we discuss ways to protect water quality & the health of our community

Career Opportunities in Water Quality

-We describe what it is like to be a Lake Manager/Environmental Scientist

-We present a powerpoint presentation with fieldwork photos, and bring a few small pieces of equipment used on the job

-Application: we describe what is required to become a Lake Manager/Environmental Scientist