



Watershed Education Program (WEP)

Simulating a NH River Ecosystem (warm water fish tank)
Trout in the Classroom (TIC) (cold water fish tank)

Alignment with Next Generation Science Standards
Performance Expectations for **High School**



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NGSS	Performance Expectation	Simulating a NH River/TIC match
HS-PS1-7	Use mathematical representations to support the claim that atoms, and therefore mass, are conserved during a chemical reaction.	Study the nitrogen cycle in the fish tank; ammonia waste converted to nitrites, nitrates, and then nitrogen gas by microbes using reagents such as oxygen, carbonate, etc.
HS-LS1-2	Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.	Study fish systems; circulatory system and how it works, especially in a young trout embryo.
HS-LS1-3	Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.	Study fish respiration rate, gills responding to dissolved gases, swim bladder responding to water pressure, anadromous physiological changes when moving from fresh to salt water or vice versa, fish responding to electro-fishing.
HS-LS2-3	Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.	Compare oxygen levels in the stratified layers in a pond environment to determine the impact of the aerobic and anaerobic areas on fish habitat.
HS-LS2-4	Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem.	Study watershed impacts where carbon cycling involves migrating salmon whose biomass feeds entire forests.
HS-LS3-3	Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.	Examine behavior and appearance of tank, hatchery and wild trout populations.