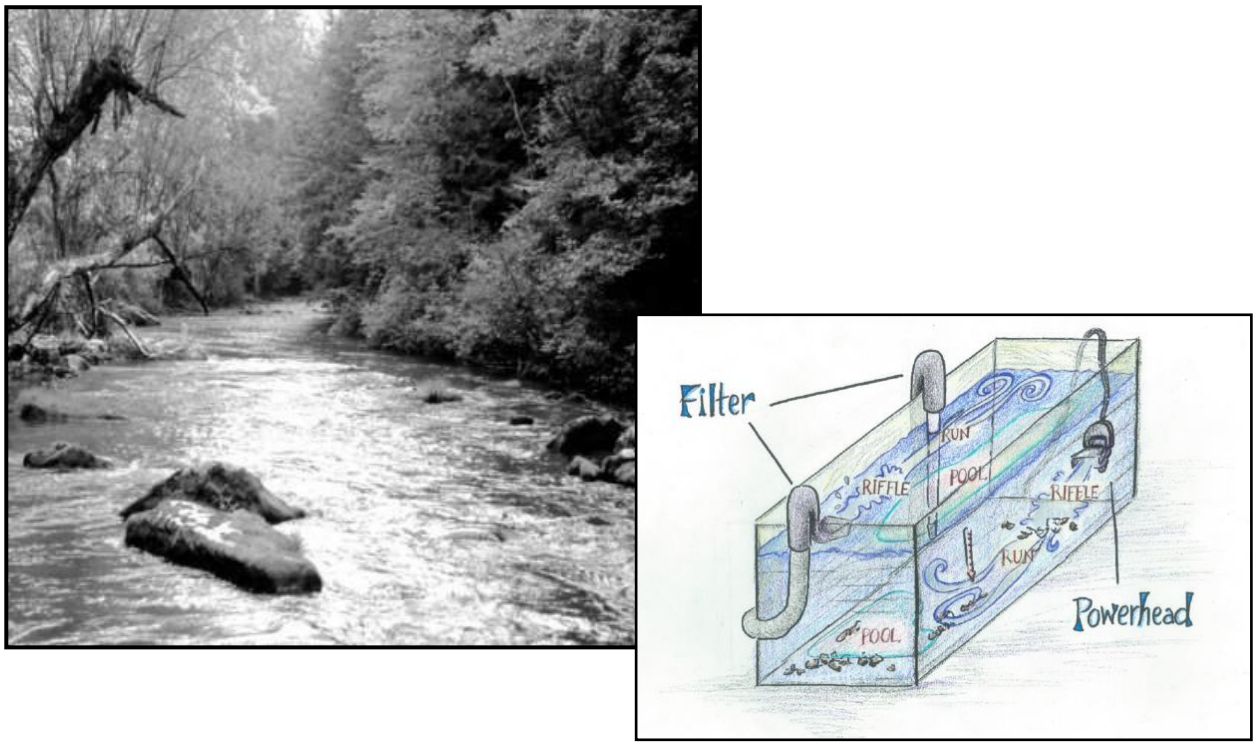
Chapter 5:

"Making the Connection"



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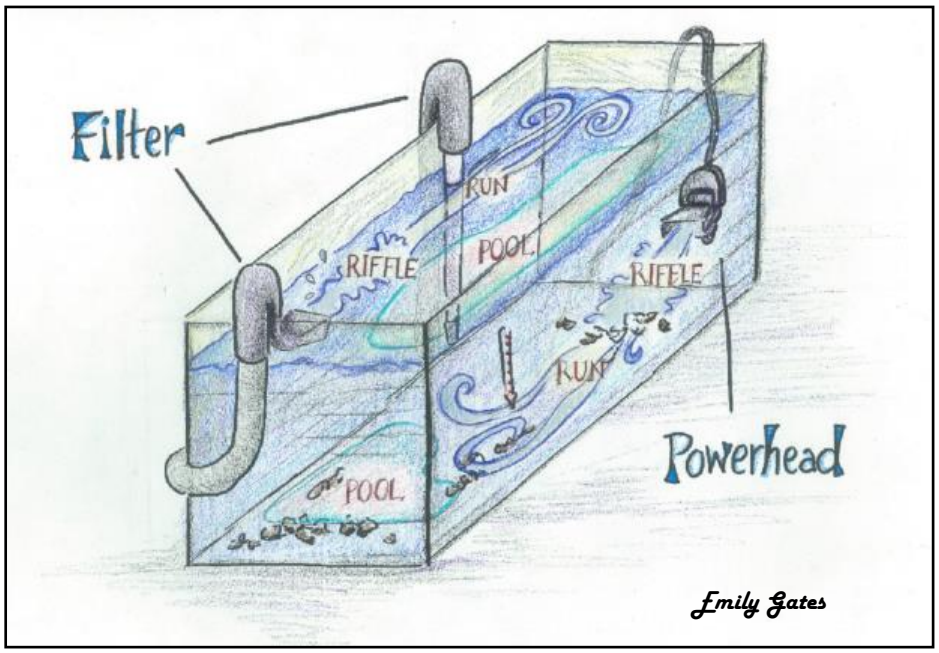
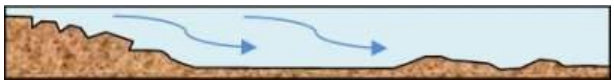
"Making the Connection"

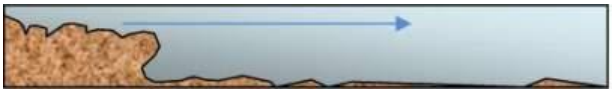


This diagram illustrates how your classroom "cold-water ecosystem" creates flow patterns similar to a natural stream setting for your trout.


Riffle: A segment of stream where the water is shallow, less than 3 feet in depth, fast moving and rocky. The water here is more turbulent and helps add oxygen to the water. Riffles also contain an abundance of food ranging from algae to aquatic insects.




Run: Typically follows a riffle. Runs are a long, smooth flowing, fast segment of water. They are usually deeper than a riffle, ranging from 3 to 6 feet in depth, and have no white water.




Pool: A segment of water that is deep, slow moving and usually dark. Pools provide cover for adult trout both from their prey and predators. During a drought pools are usually the only part of a stream that still has water.

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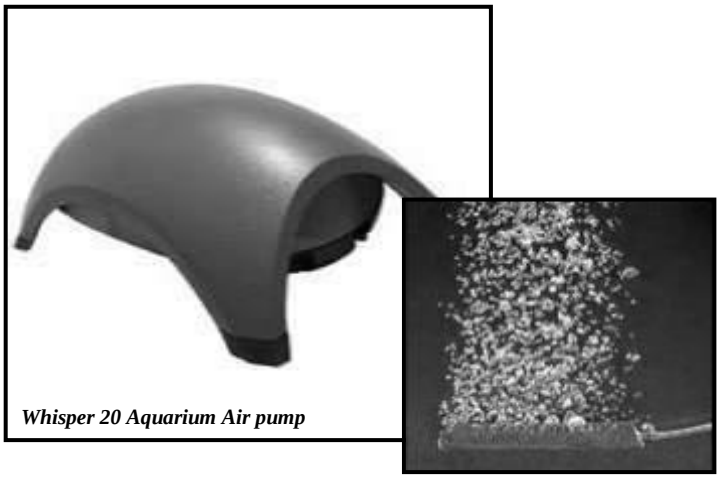
COLD WATER	
Aquarium	*Natural Habitat*
The chiller maintains optimum water temperature for trout.	Shade trees, snowmelt and underground water sources (springs) help keep streams cool.

OXYGENATED WATER	
Aquarium	*Natural Habitat*
The air pump and air stone add oxygen to your water. The power head and the filter output add circulation to your aquarium.	Streams gather oxygen as they tumble over rocks and waterfalls. Aquatic plants also assist in the production of oxygen levels. Cold water also helps hold more oxygen.



Whisper 20 Aquarium Air pump

"Making the Connection"

Continued…

CLEAN WATER	
Aquarium	*Natural Habitat*
The 407 Fluval Canister filter and a thin layer of gravel encourage the growth of microorganisms which turn harmful ammonia into somewhat harmless nitrates. The powerhead encourages good water circulation throughout your aquarium.	Clean water is stored and gradually released by a healthy watershed system. Also, bacteria and scavengers that eat decaying matter clean the water and plants absorb nitrates. Wetlands are some of nature's best filters.

407 Fluval Canister Filter (www.fluvalaquatics.com)

Wetland (PFBC Publication photo)

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SHELTER	
Aquarium	*Natural Habitat*
Create a "redd"/depression in your **freshwater substrate (river jewels).** This will simulate a natural redd and serve as their nursery until they hatch. You may also chose to make your own "hatching" basket using a metal letter box with holes or out of a plastic storage container as seen in this video: http://www.youtube.com/watch?v=QiCBC2MYmi0	The adult female brook trout will create a nest called a "redd" in the gravel to lay her eggs. The eggs are protected from light and have enough cold water, flow and oxygen to begin developing.

Brook trout redd

LIMITED LIGHT FOR EGG DEVELOPMENT	
Aquarium	*Natural Habitat*
The aquarium is positioned away from direct sunlight and enclosed in foam board insulation.	Eggs are protected from sunlight in the nest/redd created by the female brook trout.

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