

Mussel Filtration Activity K-12th Grades

Algae Filtration	
<i>Time</i>	~1 Hour
<i>Objectives</i>	<ol style="list-style-type: none"> 1. Determine how long it takes plain pocketbook mussels to filter algae. 2. Understand how mussels help keep our waterways clean. 3. Discover ways students can help sustain mussel populations.
<i>Materials</i>	<ul style="list-style-type: none"> - 5 freshwater mussels - Concentrated algae - Small fish tank or beaker
<i>Introduction</i>	<p>Mussels feed by filtering algae and other small plant matter from the water using their siphons. They pull water in through their incurrent siphon, then shoot it back out from their excurrent siphon once they have held on to the plant matter. However, plant matter and algae aren't the only things that stay inside the mussel. Dirt and other pollutants will also remain, which means the water that comes out from the excurrent siphon will be much cleaner than when the mussel pulled it in. How quickly do you think mussels can filter water?</p>
<i>Procedures</i>	<ul style="list-style-type: none"> ≈ Fill a smaller tank or beaker that has measurements with clear water. Note how much water is in the container (1 gallon, etc.). ≈ Tell the students we will start by putting the mussels into a smaller container to help us measure how quickly the water clears. ≈ Once the mussels are placed into the smaller container, add the concentrated algae until the water has a distinct greenish color. ≈ Have the students start a timer and keep an eye on the container. ≈ As time passes, have students observe at intervals and note if the water has become any clearer. ≈ When the water is completely clear again, have the students note the time.
<i>Wrap up</i>	<ul style="list-style-type: none"> ≈ How long did it take 5 plain pocketbook mussels to clear 1 gallon (or the measurement you chose) of water? ≈ What does this tell us about what mussels can do for our water? ≈ If only 5 mussels can filter water this quickly, what do you think would happen if there were hundreds of mussels? ≈ Even though mussels can filter pollutants, what will happen if there is too much pollution in the water? The mussels are consuming everything that is in the water, and they are sensitive to pollution just like other animals that live there. If we work to make the water as clean as we can, the mussels can help us keep it that way. ≈ What can we do to help make sure there are enough mussel populations in our waterways? (Don't pollute; educate others about what we have learned so they understand the importance of mussels; make sure there are enough plants and trees near the water to help filter pollutants from rain and runoff.)