Mussel Reproduction Activity 5-8th Grade

Mussel Reproduction	
Time	~30 minutes
Objectives	**1. Understand how mussels reproduce.** **2. Realize the difficulties in sustaining mussel populations due to their reproductive habits.**
Materials	- Students (as mussels!) - Confetti or small pieces of paper - Fan
Introduction	Mussels rely on the current of the stream to reproduce. Unlike many animals, mussels reproduce without even meeting one another. The male mussel releases his sperm into the water and, as it floats through the current downstream, hopefully it lands upon a female mussel. The female mussel can distinguish between food, sperm of other mussel species, and the sperm of her own species. Because the sperm is not strong enough to travel upstream, there must be a female mussel downstream to catch the sperm when it is released. Do you think it is easy for the female to collect sperm as it flows through the water? How do you think this makes reproduction more difficult for mussels?
Procedures	≈ Pair up 2 students. One will be the male mussel and one will be the female mussel. ≈ Give the male mussel a handful of confetti and explain that this is the sperm that needs to reach the female mussel. ≈ Turn the fan on high and explain that this represents the current of the stream. The male mussel will need to use this current to distribute his sperm to the female mussel. ≈ Have the female mussel stand about 5 feet "downstream" (or down-wind) of the male mussel. ≈ The male mussel will toss the confetti into the air, representing the mussel releasing his sperm into the water. ≈ The female mussel cannot move or pick confetti off the ground, but she may reach out and try to grab as much confetti as possible. ≈ Turn off the fan and see how many pieces of confetti the female mussel has caught versus how much remains in other places. ≈ (You may also redo this with multiple male and/or female mussels in different locations to see how much easier or difficult it is for them to collect the confetti depending on how the stream is flowing, how many mussels are in the area, and where they are located.)
Wrap up	≈ How many pieces of confetti was the female mussel able to collect? ≈ Was it more successful with more male/female mussels in the stream? ≈ What does this tell us about the ability of mussels to reproduce and be successful? ≈ How does this affect our knowledge of mussel conservation? (We need to protect them so there are more mussels concentrated in the area to aid successful reproduction.)