Stream Ecology Pre and Post Test Questions:

1. Fertilizers containing nutrients to promote plant growth are commonly applied to farm crops and to gardens and yards. When these fertilizers reach aquatic environments, they:
	1. Frequently cause microorganisms in the water to grow because many of these microorganisms use the same nutrients for photosynthesis as do crops
	2. Mostly do not affect microorganisms in the water because aquatic microorganisms require different nutrients than crops
	3. Mostly do not affect microorganisms in the water because the nitrogen and phosphorus in fertilizers is not biologically available to aquatic microorganisms
2. Larger (macroscopic) invertebrates living in streams, like larval mayflies and stoneflies:
	1. Are generally only affected by fertilizers applied to the land if their adult life stage is terrestrial (like mayflies and stoneflies)
	2. Are frequently affected by fertilizers applied to land because fertilizers provide nutrients to the microorganisms that photosynthesize in streams
	3. Are frequently affected by fertilizers applied to land because the invertebrates can directly use these inorganic nutrients for growth
3. If you were to predict the level of nutrients in a local stream, it would be most useful to know:
	1. extent of fertilizer use directly around the stream
	2. extent of fertilizer use upstream and also directly around the stream
	3. extent of fertilizer use upstream
4. If you wanted to do research that relates stream conditions to fertilizer application, briefly describe an approach you might take in gathering data.

Possible Answers:

* Students are likely to describe experiments or field collection
* Ideally in post-test the students will mention finding public data resources to address problems at a larger scale