

Water Quality and Human Impacts

Creating the water samples

Water that travels down a river or stream will change as it travels with the help of living things in the water, mixing action that leads to oxygenation and time.

For the purposes of this activity, (Using the ***Stream Quality Teaching Resource***), samples A and E are the cleanest water with the most diversity. Here are the instructions for creating water samples to use with students. Adjust as necessary to match the specifications on the impact cards.

Materials

Pond water
Sediment
Algae if available
gravel/stones
fertilizer
Mason jars or small aquariums

Procedures

Zone A

1. Add pond water and gravel to cover the bottom of the container about 1 inch deep.
2. Add a 1 gram of sediment
3. Add a small amount of algae (size of a dime or quarter)
4. Stir a bit before sampling to add Dissolved O₂ (try not to disturb sediment)

Zone B

1. Add pond water and gravel to cover the bottom of the container about 1 inch deep.
2. Add a 4-5 grams of sediment
3. Add an amount of algae equivalent to four times what was added to sample A
4. Add 1 t of 12-12-12 fertilizer or similar.
5. Add pH buffer to adjust to pH 9

Zone C

1. Add pond water and gravel to cover the bottom of the container about 1 inch deep.
2. Add 2-3 grams of sediment
3. Add an amount of algae equivalent to two times what was added to sample A
4. Add ½ t of 12-12-12 fertilizer or similar
5. Add pH buffer to adjust to pH 10

Zone D

1. Add pond water and gravel to cover the bottom of the container about 1 inch deep.
2. Add 2 grams of sediment
3. Add a small amount of algae
4. Add ¼ t of 12-12-12 fertilizer or similar
5. Add pH buffer to adjust to pH 8

Zone E – same as sample A

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