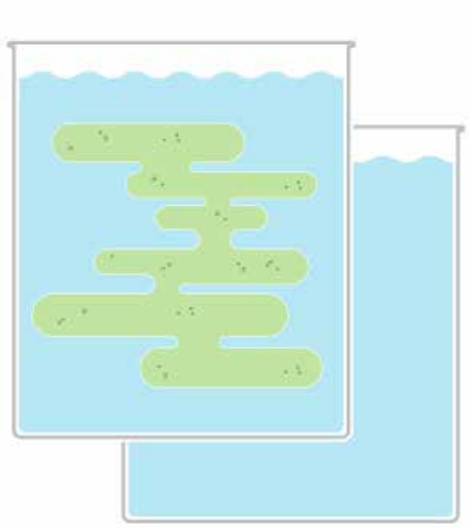
### SCIENCE EXPERIMENTS FOR KIDS

# TOO MANY NUTRIENTS



**Farmers, foresters, homeowners, and business people can pollute water by improperly using chemical fertilizers.**

For example, in urban areas, homeowners often apply more than the recommended amounts of fertilizer to lawns, gardens, and flowers. Farmers applying too much manure or fertilizer at the wrong time can cause similar problems. For instance, it is not good to apply fertilizer during the rainy season. After heavy rains, fertilizer can wash into rivers and lakes and supply the aquatic plants with too many nutrients. As a result, algae can multiply faster and cause algae blooms. Algae blooms can reduce the supply of oxygen in the water because oxygen is required for algae respiration and growth. This can deplete the supply of dissolved oxygen in the water.

## OBJECTIVES

- Observe algae growth caused by excess fertilizer use.
- Discuss how using too much fertilizer can be detrimental to aquatic life.

## MATERIALS

- Two 5 gallon aquariums or similar containers
- Surface water to fill aquariums
- Index cards
- Permanent ink pen
- Tape
- Plant fertilizer
- Measuring spoons

## INSTRUCTIONS

1. As the class watches, select volunteers to help you fill two fish aquariums with 5 gallons of pond or stream water.
2. Label one aquarium “A” and one “B” on an index card taped to each one (see illustration).
3. Place 6 tablespoons of plant fertilizer in aquarium “A” as you explain that you are adding nutrients in the form of fertilizer in the water.
4. Aquarium “B” gets one half teaspoon of fertilizer.
5. Place aquariums near a window for light. If sunlight is unavailable use a grow light or sun lamp. Note: Do not place them in a cold place.

## TOPICS FOR DISCUSSION

- Have your child record their observations on a daily basis for a week.
- What changes? What remains the same?

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