



Fish Experiment

STEM Sims

Lesson 3: How Does Algae Affect the Respiration Rate of a Fish?

Algae are small plants that live in water. Many times their rapid growth causes problems for fish living in that environment. Can you take a splash into this study and see how alga affects Goldie, the goldfish?

Doing the Science

1. Open the Fish Experiment Sim.
2. Move the “Temperature” lever on the bottom of the fishbowl to the far-left position.
3. Note and record in Table 1 the temperature and dissolved oxygen concentration.
4. Count and record the number of times the gills on the goldfish move in and out for one minute. This is the goldfish’s respiration rate.
5. Click the “Add Algae” button. Repeat steps 4 and 5, making sure to record your data in Table 1.
6. Click the “Reset” button.
7. Slide the “Temperature” lever to the right to about the middle position.
8. Repeat steps 3 - 6.
9. Slide the “Temperature” lever to the far-right position.
10. Repeat steps 3 - 6.

Table 1.

Trial	Before Algae Added			After Algae Added		
	Temp. (°C)	DO (ppm)	Respiration Rate (breaths/min)	Temp. (°C)	DO (ppm)	Respiration Rate (breaths/min)
1						
2						
3						

Do You Understand?

1. How did adding algae affect the water temperature?

2. How did adding algae affect the dissolved oxygen concentration?

3. How did adding algae affect the goldfish’s respiration rate?