



Pool Bacteria

STEM Sims

Lesson 2: Testing Alkalinity

Alkalinity keeps the pH from changing rapidly, which is important because pool water at an incorrect pH can cause eye stinging and itchy skin. The ideal range for alkalinity is between 75 ppm and 120 ppm. If the alkalinity is above 120, the pH still remains stable, but if it is below 75 the pH can change drastically. Can you help the swimmers and test the alkalinity to make sure the pH levels remain stable?

Doing the Science

1. Start the Pool Bacteria Simulation by clicking on the “Sim” tab.
2. Click on the “Run” button.
3. Click on the “pH” and “Alkalinity” checkboxes on the section labeled “Tests.”
4. Click on 0, 6, and 12 under “Time (hours)” to find the pH and alkalinity at that time period. Record them in Table 1 below.
5. Click on the “Reset” button.
6. Repeat steps 2-5 with the number of swimmers designated in Table 1.

Table 1.

Number of Swimmers	0 Hours		6 Hours		12 Hours	
	pH	Alkalinity	pH	Alkalinity	pH	Alkalinity
5						
6						
7						
8						
9						
10						
15						
20						

Do You Understand?

1. Is there a relationship between the increase of the number of swimmers and the water’s alkalinity? Explain.

2. Is there a relationship between the decrease of the alkalinity and time? Explain.

3. Is there a relationship between the amount of alkalinity and the pH? Explain.