



Bacteria Miner

STEM Sims

Lesson 1: Copper Reactions

Copper is a metal that is used in many materials, including pennies and wires. Copper is also a reactive metal that can change colors when oxidized. What solutions can oxidize copper?

Doing the Science

1. Start the Bacteria Miner Simulation by clicking on the “Sim” tab.
2. Click on the “Metal Test” button.
3. Click and drag a small copper nugget above the 0.5 m ferric oxide (Fe_2O_3) beaker.
4. Click and drag a large copper nugget above the water (H_2O) beaker.
5. Click on the “Run” button.
6. Record the color of the solution and the copper nugget in Table 1 below.
7. Repeat steps 5-6 for each of the 7 days.
8. Click on the “Reset” button.
9. Repeat steps 3-4 except with a large copper nugget above the 0.5 m ferric oxide beaker (Fe_2O_3) and a small copper nugget above the water beaker (H_2O).
10. Repeat steps 5-7 and record in Table 2 below.

Table 1.

Day	Small Copper Nugget: 0.5 m Fe_2O_3	Large Copper Nugget : H_2O
1		
2		
3		
4		
5		
6		
7		

Table 2.

Day	Large Copper Nugget : 0.5 m Fe_2O_3	Small Copper Nugget: H_2O
1		
2		
3		
4		
5		
6		
7		

Do You Understand?

1. What happened to the ferric oxide beaker and the water beaker by the 7th day?

2. Did the size of the copper nugget affect the color of the solution?