

What Is It?

In this experiment, give your Mystery Matter something to eat and drink. Then, use your list of characteristics of life to decide whether you think it is an organism.

Procedure

- 1 Use the hand lens to take a close look at the Mystery Matter. Record your observations.
- 2 On a separate sheet of paper, make a chart like the one on this page titled "Experimental Results." Leave enough room in each category to record your observations for each bottle.
- 3 Number each of your four bottles and assemble the test setups as follows:
 - place the funnel in the mouth of Bottle 1
 - add the amount of mystery matter listed in the chart below
 - add the amount of sugar listed in the chart below

Bottle	Mystery Matter	Sugar	Hot Water
1 (control)	1/4 tsp.	none	1/2 cup
2	1/4 tsp.	1/4 tsp.	1/2 cup
3	1/4 tsp.	1/2 tsp.	1/2 cup
4	1/4 tsp.	1 tsp.	1/2 cup

- 4 Repeat the above procedure using Bottles 2–4.
- 5 Use the measuring cup to pour the amount of hot water listed into each bottle and gently agitate each bottle to mix everything together.
- 6 Dip a glucose strip into Bottle 1. Record the results. Repeat with Bottles 2–4.
- 7 Squeeze all the air out of a balloon and slip it over the mouth of one of the bottles. Do the same with the remaining three bottles.



- 8 Gently agitate the contents of each bottle to mix the materials. Make sure none of the materials remains clumped at the bottom of the bottles.
- 9 Record the appearance of the bottles. Predict what will happen in each bottle after one hour and after 24 hours.
- 10 After 30 minutes, gently agitate the contents of the bottles. Record your observations of the balloons and the contents. Repeat after an hour.
- 11 After 24 hours, record your observations of the balloons and the contents.
- 12 Remove the balloons. Test the bottles with glucose strips and record your results.
- 13 Provide an explanation for any changes you see. Using what you know about the characteristics of life, what can you conclude about the Mystery Matter?

Experimental Results

Time	Turbidity	Froth	Balloon Inflation	Glucose Presence
Initially				
30 min.				
60 min.				
24 hrs.				