

Activity #4 - Hatching Brine Shrimp

Objective:

Students experiment with temperature and salinity to detect favorable environments for hatching brine shrimp eggs.

Materials:

- 6 small clear jars or beakers with covers/lids (for each group of students)
- magnifying glass or low power microscope
- eye droppers
- 30g non-iodized salt, NaCl, or sea salt
- brine shrimp eggs
- refrigerator
- lamp
- 10% salt solution
- ocean water (3.0 - 3.5% salt)
- fresh water
- data sheet

Procedures:

- 1) Mix the 10% salt solution by adding 10g of NaCl, sea salt or non-iodized salt to each 1 liter of fresh water.
- 2) Have groups of students set up their 6 jars as described below. Add about 50 brine shrimp eggs to each jar.

Temperature experiment: (3 jars)

Jar 1 3/4 jar of seawater, add eggs and place in refrigerator

Jar 2 3/4 jar of seawater, add eggs and place at room temperature

Jar 3 3/4 jar of seawater, add eggs and place close to light bulb, but not too close

Salinity experiment: (3 jars)

Jar 4 3/4 jar of fresh water, add eggs and place at room temperature

Jar 5 3/4 jar of seawater, add eggs and place at room temperature

Jar 6 3/4 jar of 10% salt solution, add eggs and place at room temperature

- 3) Make some predictions about which environments will yield the most hatched brine shrimp.
- 4) On your data chart, record the number of hatched brine shrimp each day by carefully observing each jar.

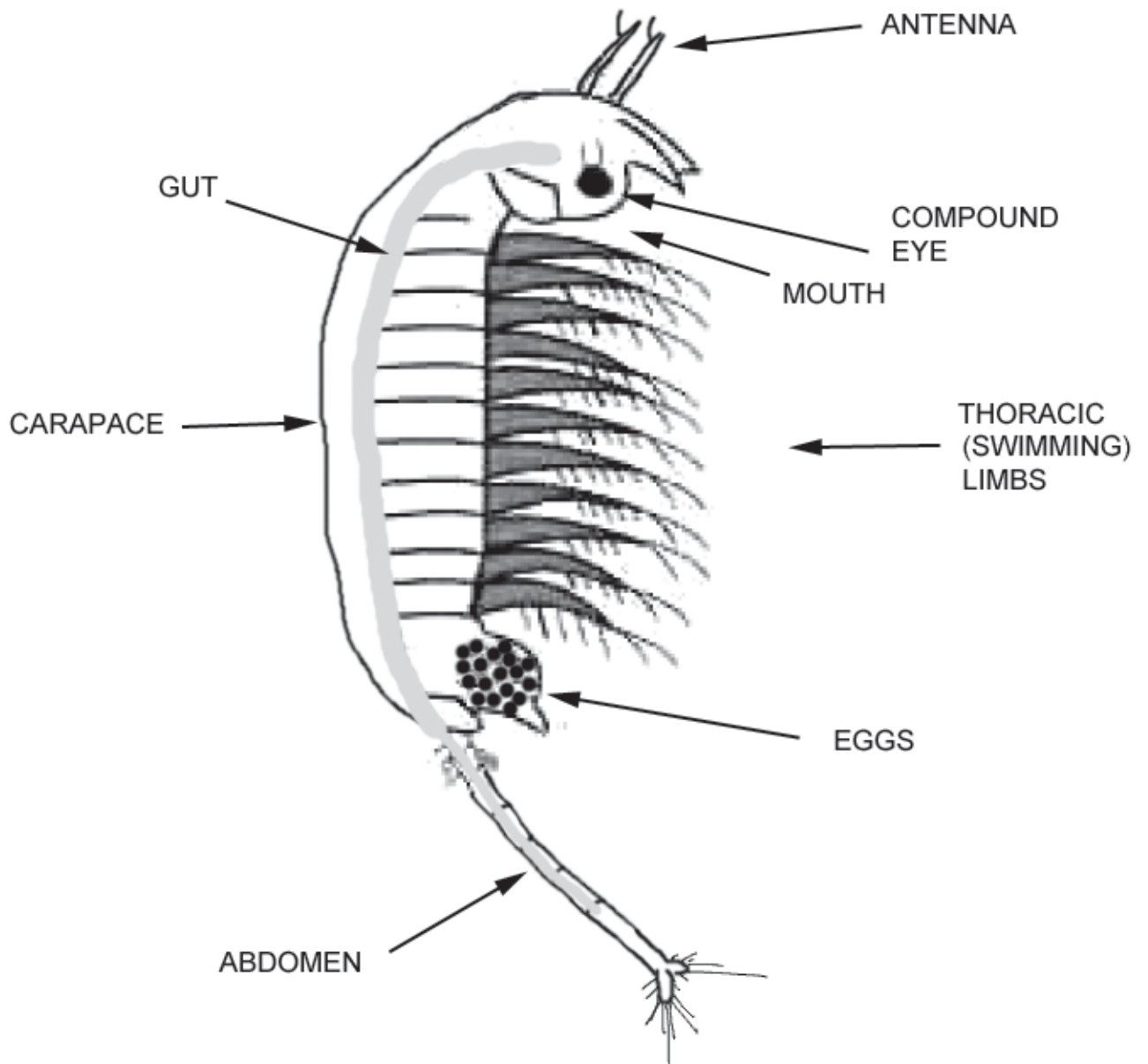
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Discussion:

- A- Did the temperature at which the eggs were kept have an effect on the number that hatched? Why?
- B- Which salinity solution gave the best hatching results? Why?
- C- Does pollution have an effect on the number of hatching eggs? Explain.
- D- Explain another experiment you could perform, using the information you learned the first time, to obtain higher levels of hatching of brine shrimp

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SIMPLIFIED DIAGRAM OF *Artemia*, THE BRINE SHRIMP



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STUDENT DATA CHART

NUMBER HATCHED	TEMPERATURE EXPERIMENT			SALINITY EXPERIMENT		
	JAR NUMBER 1	JAR NUMBER 2	JAR NUMBER 3	JAR NUMBER 4	JAR NUMBER 5	JAR NUMBER 6
DAY 1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						