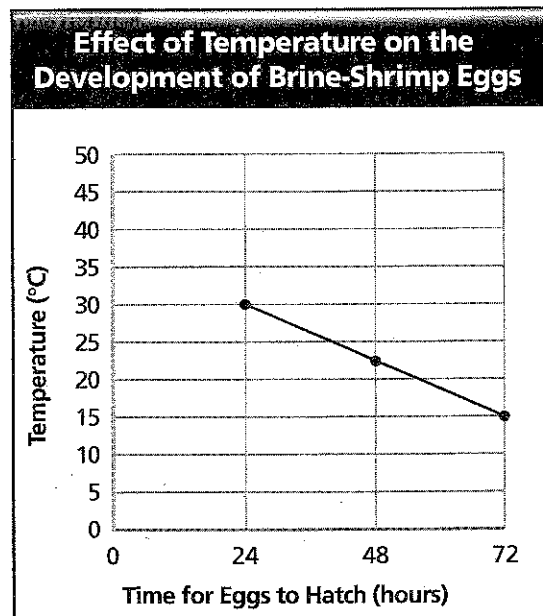


Introduction to Life Science • Enrich

Scientific Inquiry and Brine-Shrimp Eggs

Scientific inquiry involves different processes, such as posing questions, developing hypotheses, performing experiments, and interpreting data. A scientist was studying brine shrimp, which are tiny animals that live in salt water. The scientist wondered whether the temperature of the water affects the time it takes for brine-shrimp eggs to hatch. The scientist performed an experiment to find the effect of temperature on brine-shrimp eggs. In the experiment, one group of eggs was in water that had a temperature of 30°C. A second group of eggs was in water that had a temperature of 22°C, and a third group was in water at 15°C. The graph below shows the data that the scientist collected.

Study the graph, and then answer the following questions on a separate sheet of paper.



1. What question did the scientist pose?
2. What was the manipulated variable in the experiment that the scientist performed?
3. What was the responding variable in the experiment?
4. How long did the brine-shrimp eggs take to hatch at 30°C? How long did the eggs take to hatch at 15°C?
5. What do the data show about the effect of temperature on the time brine-shrimp eggs take to hatch?
6. Suppose that, before the experiment, the scientist proposed the following hypothesis: Temperature has no effect on the time brine-shrimp eggs take to hatch. Do the data support this hypothesis? Explain why or why not.
7. Predict how long brine-shrimp eggs would take to hatch in water that had a temperature of 20°C.