

How Scientists Do Science Worksheet

Part 1

Problem

Does temperature affect the development rate of sponge creatures?

Hypothesis

Observations

- 1.
- 2.
- 3.

Water Temperature	Time to develop (s)
30 °C	
45 °C	

Conclusion

Was the hypothesis supported by the results of the experiment? Explain.

Part 2

Problem

Does pH affect the development rate of sponge creatures?

Hypothesis

Observations

- 1.
- 2.
- 3.

Water Temperature	pH	Time to develop (s)
Acidic		
Basic		

Conclusion

Was the hypothesis supported by the results of the experiment? Explain. Why do you believe the creature developed the way it did in the different environments?

Post-Lab Questions — Parts 1 and 2

1. Did the 30 °C water or the 45 °C water produce the fastest development time for the sponge creatures?
2. What is the relationship between temperature and the rate at which the sponge creature develops?
3. Based on the results from the effect of temperature on the sponge creature's development rate, predict how boiling water would affect the development of the sponge creature? Ice water?
4. Did a pH of 4 or a pH of 10 produce the fastest development time for the sponge creatures?
5. What was the relationship between pH and the rate at which the sponge creature develops?
6. Besides temperature and pH, what other factors might affect the rate of development for the sponge creatures?
7. Design an experiment to test one of the other factors listed above.