

CHAPTER 5	Investigation 5.D: Oxygen Consumption and Heat Production in Germinating Seeds Answer Key	BLM 5.3.1A
ANSWER KEY		

Part 1

Answer to Analysis Question

1. You should provide some type of summary statement comparing the results from different groups in the class.

Answers to Conclusion Questions

2. You should identify that carbon dioxide production was the indication that cellular respiration was occurring.
3. Sources of error could include carbon dioxide lost to the environment, mass of the seeds used, accuracy of the respirometer apparatus, age and health of the seeds used, human judgment in reading the respirometer.

Part 2

Answers to Analysis Questions

1. You should identify one manipulated variable and at least three controlled (fixed) variables. One of these fixed variables will likely be the type of seed used.
2. Sources of error could include heat lost to the environment, mass of the seeds used, accuracy of the measuring devices used, age of the seeds used, human judgment in reading the measuring devices, and health of the seeds used.

Answers to Conclusion Questions

3. You should state if your results supported your hypothesis or not. Your explanation should be based on a comparison of your data or your classmates' pooled data and the hypothesis you wrote.
4. Net total heat given off by the germinating seeds will increase if the experiment is run for a longer time, but the temperature will not continue to go up indefinitely. Two things will stop the increase in temperature: heat loss to the environment and, if the temperature gets too high, denaturation of metabolic enzymes in the seeds.