Biology

Laboratory # 2

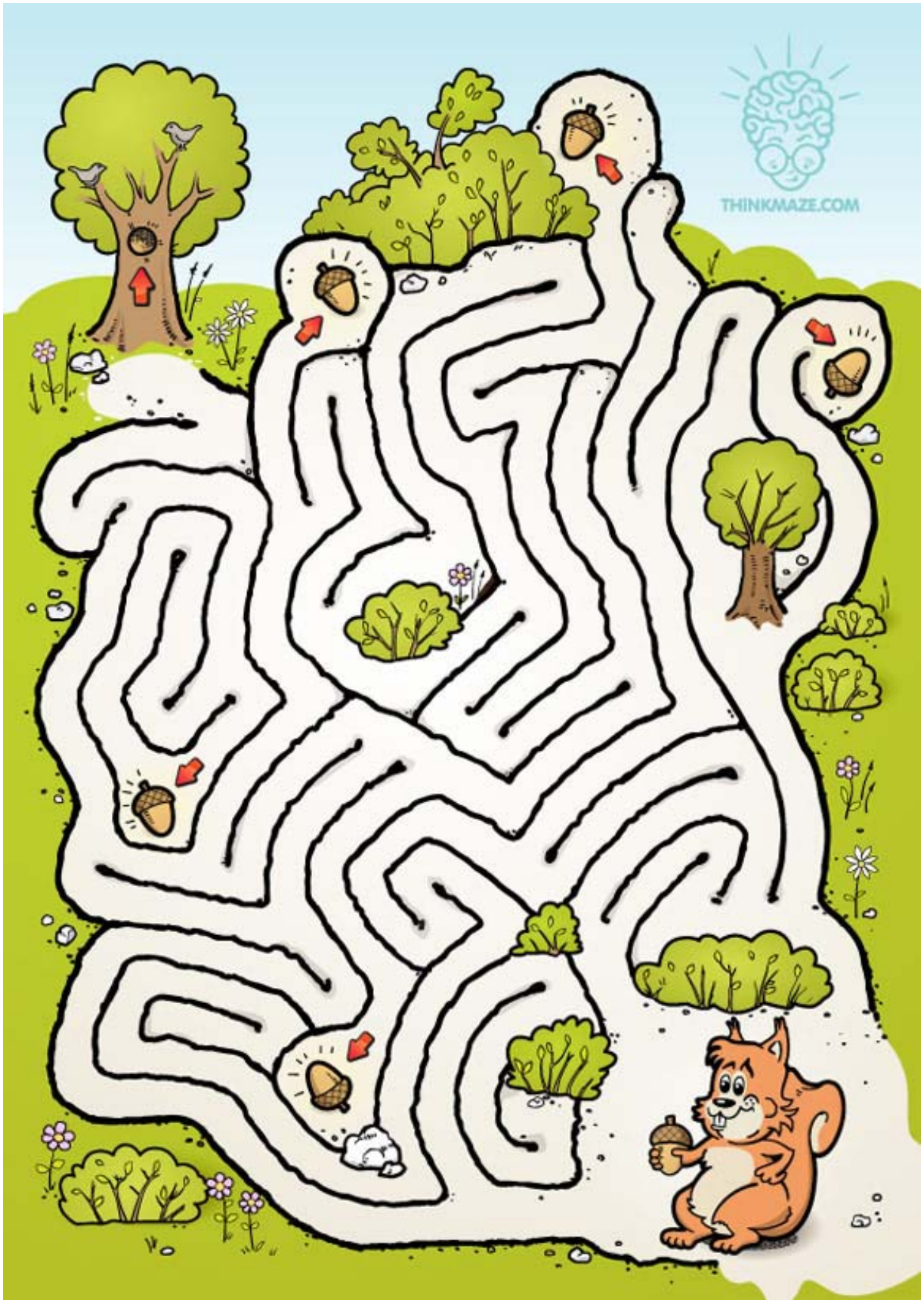
Name:_____ Date:_____

Manipulate Variables

How does a biologist establish experimental conditions? In a controlled experiment, a biologist develops an experimental procedure designed to investigate a question or problem. By manipulating variables and observing results, a biologist learns about relationships among factors in the experiment.

Procedure

1. Read and complete the lab safety form.
2. Create a data table with the columns labeled *Control, Independent Variable, Constants, Hypothesis,* and *Dependent Variable.*
3. Obtain a **printed maze.** Seated at your desk, have a classmate time how long it takes you to complete the maze. Record this time on the chart. This is the control in the experiment.
4. Choose a way to alter experimental conditions while completing the same maze. Record this as the independent variable.
5. In the column labeled *Constants*, list factors that will stay the same each time the experiment is performed.
6. Form a hypothesis about how the independent variable will affect the time it takes to complete the maze.
7. After your teacher approves your plan, carry out the experiment. Record the time required to complete the maze as the dependent variable.
8. Repeat Steps 3–7 as time allows.
9. Graph the data. Use the graph to analyze the relationship between the independent and dependent variables.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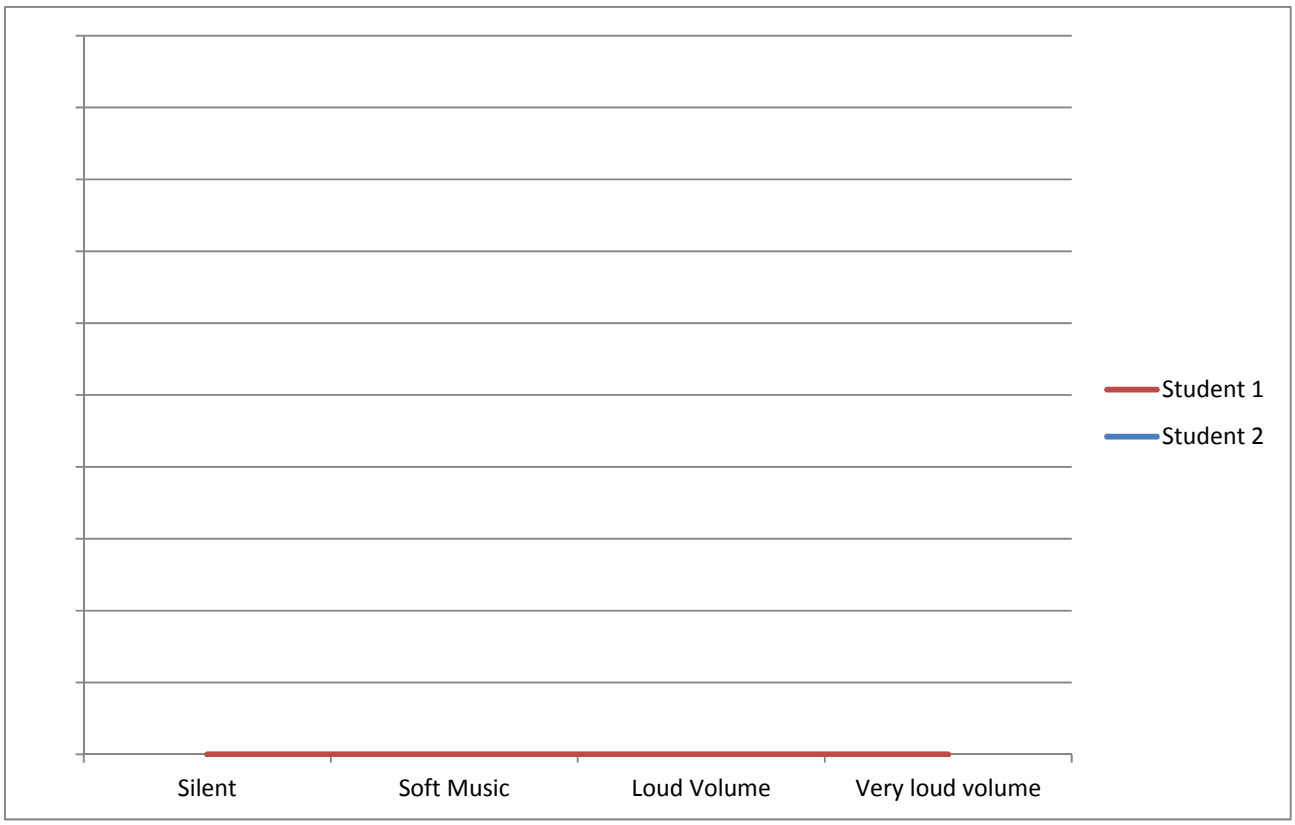

CONSTANTS	INDEPENDENT VARIABLE	CONTROLLED VARIABLES	DEPENDENT VARIABLE	HYPOTHESIS

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