

Name \_\_\_\_\_

## A Guide to Unraveling Mysteries

### Open-Ended Questions Answer Key

1. Answers will vary. Example: "First, I would ask the question, 'Why do certain birds migrate during the winter?' Then, I would gather information about bird migration, form a hypothesis based on my research, conduct experiments or observations to test the hypothesis, analyze the data, and finally, draw conclusions and share my findings with the scientific community."
2. Answers will vary. Example: "The discovery of penicillin by Alexander Fleming is a famous example. Through systematic observation and experimentation, he found that mold could kill bacteria, leading to the development of antibiotics."
3. Forming a testable hypothesis is important because it provides a clear direction for the scientific investigation and allows for the collection of data to either support or refute the hypothesis. For example, a hypothesis like, "Adding fertilizer to plants will make them grow taller," can be tested through experiments.
4. The scientific method can be applied to everyday life when making decisions, solving problems, or exploring the world around us. For instance, when choosing a new diet plan, you can ask questions, research, form hypotheses (e.g., "Eating more vegetables will improve my health"), and test these hypotheses through experiments (changing your diet) while analyzing the results.

