

PRACTICE OF SCIENCE STUDY GUIDE

1. Study the following vocabulary terms:

- Analyze
- Confirmation
- Data
- Evidence
- Hypothesis
- Prediction
- Repetition
- Replication
- Variable

2. What kind of question does an effective research question ask (“How does...”)?

3. What two things characterize a controlled experiment?

4. How can you identify the independent variable (*test variable*) in an experiment (*what does the researcher do to it*)?

How can you identify the dependent variable (*outcome variable*) in an experiment (*what does the researcher do to it*)?

How can you identify controlled variables (*constants*) in an experiment (*what does the researcher do to them*)?

5. Why is it important to control all variables except for the independent variable?

6. How do scientists use predictions?

7. How are a hypothesis and a prediction related (*think about your “If → Then” statement*)?

8. What is the difference between “data” and “evidence” (*how does data become evidence*)?

9. What are some ways to analyze data?

10. What is the purpose of repetition and replication in science?

11. Identify the three parts of a scientific argument and briefly describe each one.

12. Why shouldn't we use words such as “prove”, “proof”, or “proven” in science?

What phrase(s) should we use instead of these words?