SCIENCE 7
Scientific Inquiry Activity

Directions: Read each statement/question carefully, and choose the best answer from the options provided.

1. All the things in an experiment that must be the same to make it fair are called _____.
   - A. controlled variables or constants
   - B. dependent variables
   - C. independent variables
   - D. controlled experiments

2. A scientist testing the effects of a chemical on apple yield sprays an orchard with the chemical. A second orchard does not receive the chemical. In the fall, the number of apples harvested from each forest is counted.

   In order for the apple tree experiment to be valid scientifically, both orchards must:
   - A. receive the same amount of sunlight
   - B. receive the same amount of water
   - C. have the same species of apple tree
   - D. all of these

3. What is the first step in a scientific investigation?
   - A. Making an observation
   - B. Analyzing data
   - C. Formulating a hypothesis
   - D. Doing research

4. Based on your observations, you suggest that the presence of water could increase the growth of bread mold. This is a(n) _____.
   - A. recommendation
   - B. hypothesis
   - C. experiment
   - D. analysis

5. A scientist who wants to study the effects of fertilizer on plants sets up an experiment. Plant A gets no fertilizer, Plant B gets 5 mg. of fertilizer each day, and Plant C gets 10mg. of fertilizer each day. Which plant is the control group?

    A. Plant A   C. Plant B
    B. Plant C   D. All of them

6. Colby wants to learn more about the feeding habits of ants. What steps should Colby take to best study the feeding patterns of ants?

    A. form a hypothesis, conduct an experiment, record data, make a conclusion
    B. conduct an experiment, form a hypothesis, make a conclusion, record data
    C. form a hypothesis, record data, conduct an experiment, make a conclusion
    D. record data, form a hypothesis, make a conclusion, conduct an experiment

7. Jackson and Mia want to do an experiment to determine how the temperature of water affects how much salt can be dissolved in it.

In what order should they perform the following steps?

Step 1: With a teacher's help, bring the water in one of the beakers to the boiling point.
Step 2: Pour equal amounts of water into two identical beakers.
Step 3: Record how many half-teaspoons of salt are completely dissolved in each beaker.
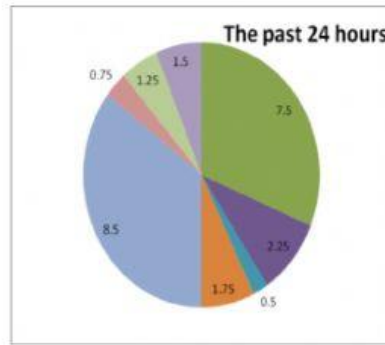Step 4: Gradually put salt into the water of each beaker, a half-teaspoon at a time.

    A. 4 2 1 3
    B. 2 1 4 3
    C. 2 4 1 3
    D. 1 2 4 3

8. A conclusion is based on the _____.
   A. data acquired from the experiment
   B. investigative question
   C. probable causes of the result
   D. controlled group

9. When you decide whether or not the data supports the original hypothesis, you are _____.
   A. asking questions
   B. making observation
   C. forming a hypothesis
   D. drawing conclusions

10. In an experiment, the variable that is being measured is referred to as the _____.
   A. confounding variable   C. dependent variable
   B. controlled variable   D. independent variable

11. A farmer applies different fertilizers to his crops, to see which will make his plants grow the highest. What is the Independent Variable?
   A. Growth of plants   C. Type of fertilizer
   B. Different crops   D. Location

12. A scientist wanted to determine the flower color that bees are most attracted to. She placed different colors of the same type of flower near each other and counted the number of bees that visited each flower color. What is the Dependent Variable?
   A. Type of bees   C. Color of flower
   B. Number of bees   D. Type of flower

13. An experiment that tests only one factor at a time by using a comparison of a control group and an experimental group is?
   A. a dependent variable
   B. a controlled experiment
   C. a theory
   D. an independent variable

Refer to the illustration below for item 14.

The past 24 hours	
Sleeping	7.5
All meals	2.25
getting dressed	0.5
Travel	1.75
Work	8.5
Swimming	0.75
Household chores	1.25
Watching TV	1.5
Total	24

14. Here's how Robin spent the past 24 hours. Looking at the table and pie chart, in what activity did he spend the most time on?

    A. Working   C. Sleeping

    B. Getting dressed   D. Eating

Refer to the table below to answer question 15.

Name	Number of Books Owned
Becca	75
Yanna	90
Marvin	30
Jom	100
Janleif	35

15. If Jom gave 20 books to Marvin, how many books would Marvin have?

    A. 10

    B. 30

    C. 40

    D. 50