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| **Life & Environmental Science 11**  **Science Processes** | **Name:**  **Block:**  **Date:** |

To answer questions 1-4, closely observe the garden pictured below.

1. What observations can you make about the flowers on the east end of the garden?

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1. What observations can you make about the flowers on the northwest side of the garden?

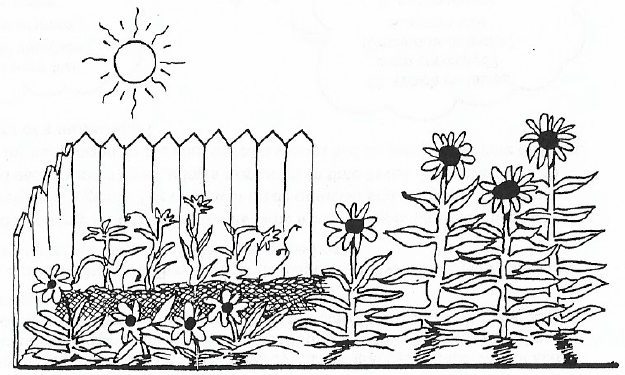
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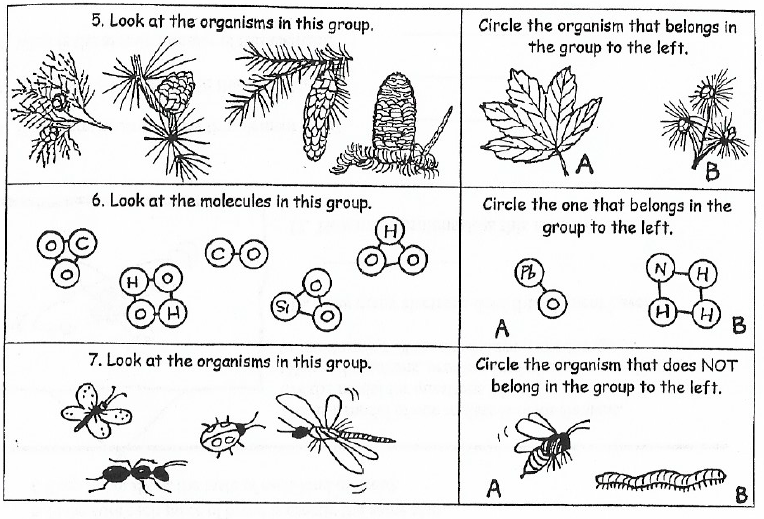
1. What observations can you make about the flowers on the southwest side of the garden?

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1. State a hypothesis that could explain the differences you observe.

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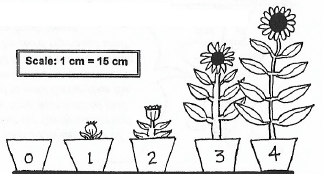


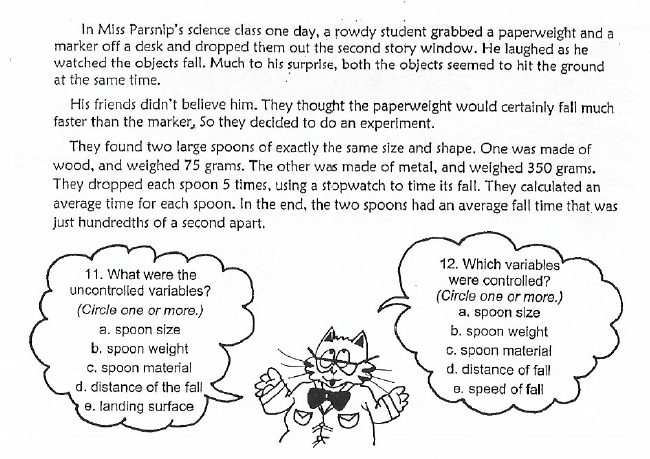
Use the plant diagram below to answer questions 8-10. Use a centimeter ruler for your measurements.

8. The plant grew about 30 centimeters between week \_\_\_\_\_\_\_ and week \_\_\_\_\_\_\_ .

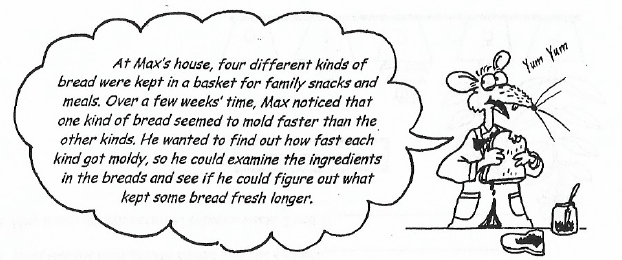
9. What was the total growth shown over the 4 weeks? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. How much growth occurred between weeks 2 and 4? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

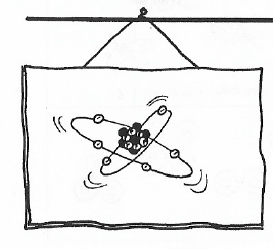




1. How would you interpret the results of the experiment?
2. If the students also timed the fall of a heavy plastic spoon (of exactly the same size and shape) weighing 200 grams, what results do you predict that they would find?



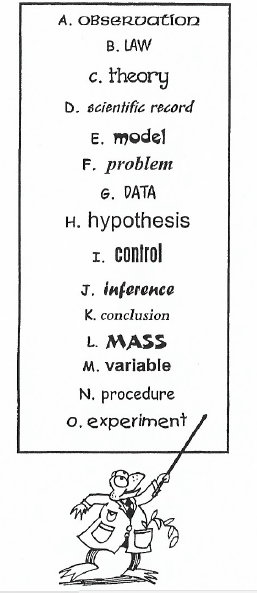
1. When Max designs his experiment, which factors are important for him to include in his plan? *(Circle one or more)*
   1. Start with four kinds of fresh bread, all baked the same day.
   2. Store all kinds of bread in the same kind of container.
   3. Look at the bread everyday and record observations.
   4. Keep all kinds of bread stored at the same temperature.
   5. Make sure each piece of bread is exactly the same size.
   6. Keep notes about the taste of each kind of bread.



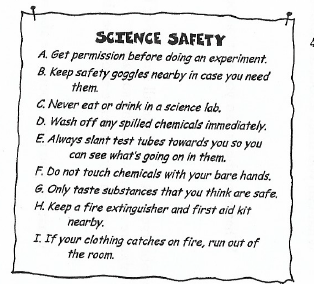
This is a model of one molecule of an element. Use the model for questions 16-20.

*(Note: all neutrons, protons, and electrons are showing in the drawing. None are hidden from the eye.)*

1. How many electrons does this element have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. How many protons does this element have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. How many neutrons does this element have? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. How many electrons are in the second level? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. What is the atomic number of this element? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Match the science terms with their descriptions. Write a letter for each answer.

1. \_\_\_\_\_\_\_ the amount of matter in an object
2. \_\_\_\_\_\_\_ a series of steps used to test a hypothesis under carefully controlled conditions
3. \_\_\_\_\_\_\_ a suggested solution to a problem
4. \_\_\_\_\_\_\_a logical answer to a problem based on observations
5. \_\_\_\_\_\_\_ something that can bring about changes in an experiment
6. \_\_\_\_\_\_\_ an explanation of things or events (based on many observations)
7. \_\_\_\_\_\_\_ an example of what might be seen if something could be observed
8. \_\_\_\_\_\_\_ the way an experiment is carried out
9. \_\_\_\_\_\_\_ a standard for comparison in an experiment
10. \_\_\_\_\_\_\_ the meaning drawn from a conclusion
11. \_\_\_\_\_\_\_ recorded facts or measurements gathered from an experiment
12. \_\_\_\_\_\_\_ the things noticed by your senses
13. \_\_\_\_\_\_\_ a statement that describes the way nature works (based on many observations)
14. Which is an example of a scientific law?
    1. Energy is neither created nor destroyed.
    2. Dinosaurs disappeared from Earth because of a drastic climate change.
    3. The universe began 15 billion years ago in a huge explosion called “The Bing Bang.”
15. Which is an example of a scientific theory?
    1. Ice melts when it is heated.
    2. On Earth, an object that is dropped falls to the ground.
    3. The surface of Earth is made of rigid plates that move.
16. What would cause a scientific law or theory to be dropped?
17. Why is it important for scientists to repeat experiments?
18. Why is it important to have a control in an experiment?
19. Why should a scientist test only one variable at a time?



1. A science student wrote up some rules for his science lab. Read them over. Cross out any that he has written totally or partially wrong.



**Observations, Inference, Hypothesis Worksheet**

1. Three goldfish are raised individually and grow to be a larger size than when raised in a group.
2. What can you observe about the above situation?
3. What can you infer about the above situation?
4. What hypothesis can you state above the above situation?
5. You observe that when a small amount of baking soda is added to a glass of water, gas bubbles form in the mixture and move to the surface.
6. What can you observe about the above situation?
7. What can you infer about the above situation?
8. What hypothesis can you state above the above situation?
9. A survey reveals that people who live within a 5 km radius of a chemical plant have a higher incidence of lung disease than people who live outside that area.
10. What can you observe about the above situation?
11. What can you infer about the above situation?
12. What hypothesis can you state above the above situation?