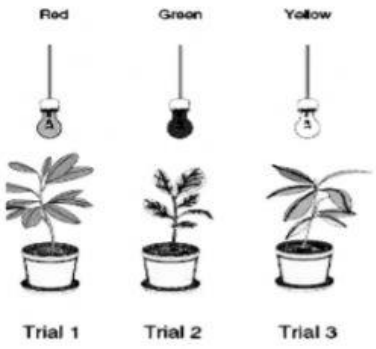
Benchmark 4 Study Guide

1. Elements in the same _____ or _____ have the same number of valence electrons.
2. What would happen to the speed of the motion of the particles in a gas as it is cooled?

   _____
3. Classify each as an Element, Compound, or Mixture.
   a. _____ $C_6H_{12}0_6$
   b. _____ Air
   c. _____ O – Oxygen
   d. _____ Two of more substance NOT chemically combined or in a specific ratio
   e. _____ Pure Water H_2O
   f. _____ Two or more substances combined in a specific ratio
   g. _____ Table Salt NaCl
   h. _____ Two or more substances combined physically
   i. _____ $NaHCO_3$
   j. _____ A substance that cannot be broken down into any other substance.

4. You set up an experiment to test the hypothesis that plants grow faster in Red light. Identify each as: **C-** constant, **CN** – control, **IV** – Independent Variable, **DV**-Dependent Variable.
   a. _____ pot type
   b. _____ the color of light
   c. _____ the amount of water
   d. _____ the height of the plant
   e. _____ the fertilizer.
   f. Look at the picture, what else should be constant?

      _____



5. Use the graph to answer the questions.
   (I-increase, D-Decrease, RTS-Remains the same.)

_____ During phase change temperature
_____ During phase change energy
_____ From a solid to a liquid the space between the particles.
_____ As a liquid changes to a gas the space between the particles.