**Station #5: Scientific Inquiry Practice**

**DIRECTIONS: ON YOUR OWN SHEET OF PAPER for each scenario below, identify the following:**

* **independent variable (IV) = the variable that is changed on purpose OR what “I” can control as the experimenter and change OR what causes the change in the experiment**
* **dependent variable (DV) = the variable that changes because of the IV OR what is being measured OR data/measurement/observations**
* **constants (C) (AT LEAST 2) = what stays the same on purpose in an experiment**
* **problem (written in the proper form) = the purpose of the experiment (specific, testable, in the form of a question)**
* **hypothesis (written in the proper form) = answers the problem question (If IV, then DV because)**
* **title (written in the proper form; CAPITALIZED) = The Effect of the IV on the DV**

**Scenarios:**

1. **The Effect of the Air Temperature in a Balloon on the Height of the Balloon off of the Ground**

**IV =**

**DV =**

**C = (at least 2)**

**Problem =**

**Hypothesis =**

1. **The Effect of the Amount of Water Received on the Height of a Bean Plant**

**IV =**

**DV =**

**C = (at least 2)**

**Problem =**

**Hypothesis =**

1. **The Effect of the Distance from an Object on the Force Exerted by a Magnet**

**IV =**

**DV =**

**C = (at least 2)**

**Problem =**

**Hypothesis =**

1. **An investigation was performed to see if corn seeds would sprout at different times depending on the temperature of the soil in which they were placed.**

**IV =**

**DV =**

**C = (at least 2)**

**Problem =**

**Hypothesis =**

**Answers to Station #5: Scientific Inquiry Practice**

**DIRECTIONS: Make corrections to the ones that you have completed. Please make sure that you are asking questions if you do not understand why you got things wrong.**

1. **IV = air temperature in balloon**

**DV = height of the balloon off of the ground**

**C = same size and weight of the balloon; same weather conditions; same air heater**

**Problem = What is the effect of the air temperature in the balloon on how high it is off the ground?**

**Hypothesis = If the air temperature in a balloon is increased, then the balloon will be higher off the ground because the hot air is lighter and less dense than the cool air around the balloon, the heated air causes the whole balloon to rise.**

1. **IV = amount of water received**

**DV = height of bean plant**

**C = growing conditions of the bean plant (same amount of light, same soil, same weather conditions, etc.); temperature of the water; type of water**

**Problem = What is the effect of the amount of water on bean plant height?**

**Hypothesis = If there is more water, then the bean plants will grow taller because they have more water to do photosynthesis.**

1. **IV = distance from an object**

**DV = force exerted by a magnet**

**C = same magnet; same object; same device to measure the force**

**Problem = What is the effect of the distance from an object on the force exerted by a magnet?**

**Hypothesis = If there is a small distance between an object and a magnet, then there will be a strong force from the magnet on the object because …**

1. **IV = temperature of the soil**

**DV = amount of time it takes a seed to sprout**

**C = type of seed, type of soil, amount of light, amount of water**

**Problem = Will corn seeds sprout at different times based on the temperature of the soil in which they are placed?**

**Hypothesis = If the soil is warmer, then the corn seeds will sprout faster because…**