Hypothesis and Variables Worksheet Two

Name:        Date:     Hour:

Directions: Read the information about each experiment and identify the independent and dependent variables. Then write a good hypothesis for the experiment.

Experiment 1:

Robert measured fifty grams of soil on a balance and placed the soil in a small cup. He repeated this process until he had ten cups of soil. Then he planted one bean seed in each of the cups. Robert was careful to push all of the seeds two centimeters deep and cover them smoothly with the soil. All of the cups were placed in the same windowsill and received the same amount of sunlight. He gave five of the bean seeds five milliliters of water a day. He gave the other five bean seeds two milliliters of water a day. Every other day Robert measured the bean plants to see how tall they grew. After he measured twenty times he compiled his data and made a line graph to show the seed growth over time.

Independent Variable: ____________________________

Dependent Variable: ____________________________

Your Hypothesis: _______________________________________________________________________

Experiment 2:

Jamal is a sprinter on the track team and often runs the 100 meter dash. In the past he noticed many of his competitors had shaved their legs in preparation for large track meets. Jamal asked them about it, and they said that shaving their legs made them run faster. Since he wants to drop time Jamal creates a miniature experiment to see if shaving legs actually helps sprinters drop time. One day at practice he runs the 100 meter dash ten times. He records his times and finds the average. Later in the week, he shaves his legs and runs the 100 meter dash another ten times. Again he records his times and averages them. He compares the averages to see if shaving makes a difference in his speed.

Independent Variable: ____________________________

Dependent Variable: ____________________________

Your Hypothesis: _______________________________________________________________________

Experiment 3:

Maria collected a tape measure, cardstock, and printer paper. She went to the hallway outside her science classroom to conduct her experiment. First she folded an airplane out of cardstock. She noticed the airplane was very sturdy because it was made of cardstock, which is heavier than printer paper. She then used the printer paper to fold a second airplane. The two airplanes were the same size and design. Standing in the same place for each throw, Maria threw the cardstock airplane ten times and used the tape measure to find the distance the airplane flew after every throw. She repeated the throws and measurements with the airplane made of printer paper. Maria recorded her data in her lab book and graphed the results so she could compare the distances of the airplane flights.

Independent Variable: ____________________________________________________________________________

Dependent Variable: ____________________________________________________________________________

Your Hypothesis: ______________________________________________________________________________

Experiment 4:

Louisa loves to create her own brownie recipes. In the past week, she developed two new recipes. To see which recipe is best she decides to test whether her classmates enjoy brownies with the consistency of cake (Brownie A) or if they prefer brownies that are thicker like fudge (Brownie B). She bakes both varieties of brownies and cuts them into even portions the night before school. The next day she brings them to school and has her science classmates try one piece of each brownie. Then she has her classmates vote for their favorite. She counts the votes to determine which brownie type is preferred by more people.

Independent Variable: __________________________________________________________________________

Dependent Variable: ____________________________________________________________________________

Your Hypothesis: ______________________________________________________________________________
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Experiment 1:

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Independent Variable: the amount of water the plants receive each day (5mL or 2mL)

Dependent Variable: the height of the plants

Your Hypothesis: Possible Answer: If Robert waters his bean plants two millimeters per day, then they will grow taller.

Experiment 2:

Jamal is a sprinter on the track team and often runs the 100 meter dash. In the past he noticed many of his competitors had shaved their legs in preparation for large track meets. Jamal asked them about it, and they said that shaving their legs made them run faster. Since he wants to drop time Jamal creates a miniature experiment to see if shaving legs actually helps sprinters drop time. One day at practice he runs the 100 meter dash ten times. He records his times and finds the average. Later in the week, he shaves his legs and runs the 100 meter dash another ten times. Again he records his times and averages them. He compares the averages to see if shaving makes a difference in his speed.

Independent Variable: having hairy legs or shaved legs

Dependent Variable: time it takes to run the 100 meter dash

Your Hypothesis: Possible Answer: If Jamal shaves his legs before the 100 meter dash, then his time will remain the same.
**Experiment 3:**

Maria collected a tape measure, cardstock, and printer paper. She went to the hallway outside her science classroom to conduct her experiment. First she folded an airplane out of cardstock. She noticed the airplane was very sturdy because it was made of cardstock, which is heavier than printer paper. She then used the printer paper to fold a second airplane. The two airplanes were the same size and design. Standing in the same place for each throw, Maria threw the cardstock airplane ten times and used the tape measure to find the distance the airplane flew after every throw. She repeated the throws and measurements with the airplane made of printer paper. Maria recorded her data in her lab book and graphed the results so she could compare the distances of the airplane flights.

**Independent Variable:** the material the airplane is made of (cardstock or printer paper)

**Dependent Variable:** the distance the airplane flies

**Your Hypothesis:** Possible Answer: If an airplane is made of cardstock, then it will fly a greater distance than a paper airplane made of printer paper.

**Experiment 4:**

Louisa loves to create her own brownie recipes. In the past week, she developed two new recipes. To see which recipe is best she decides to test whether her classmates enjoy brownies with the consistency of cake (Brownie A) or if they prefer brownies that are thicker like fudge (Brownie B). She bakes both varieties of brownies and cuts them into even portions the night before school. The next day she brings them to school and has her science classmates try one piece of each brownie. Then she has her classmates vote for their favorite. She counts the votes to determine which brownie type is preferred by more people.

**Independent Variable:** brownie recipe A or B

**Dependent Variable:** how many students prefer each brownie as determined by number of votes

**Your Hypothesis:** Possible Answer: If Louisa’s classmates eat Brownie A, then more students will prefer it over Brownie B.
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