

Experimental Questions and Hypotheses

Name: _____

Read these examples of experiments and the experimental question and hypothesis that might go with each one. Fill in the blanks for #2 and #3 and then write the experimental question and hypothesis for the other experiments on the back of this sheet.

Experiment # 1. Scientists want to find out if cattle gain weight faster eating wheat or eating corn. What would the question and hypothesis be for an experiment to find out?

*(The weight of the cattle is the **dependent variable** - the thing that will be measured at the end of each trial in the experiment.*

*The feed is the **independent variable**- the one thing that will be changed to be different between the two groups that are tested.)*

Question: What would happen to the *weight of cattle* if they are fed either *wheat or corn*?

Hypothesis: If one group of cattle is fed wheat and a similar group is fed corn, then the group being fed corn will gain more weight than the group being fed wheat, because corn contains more calories per pound than wheat.

Experiment #2. Engineers want to know if a car carrying more weight will roll faster down a hill than a car without the extra weight.

(The dependent variable is: _____ - the thing that will be measured after each trial.

(The independent variable is: _____ - the thing that the experimenter will change to be different in each trial.

Question: What would happen to _____ if we add extra weight to the car before we roll it down a hill?

Hypothesis: If we add extra weight to a car before rolling it down a hill, then the car will roll faster than it does without the extra weight, because gravity has more effect on heavier weights.

Experiment #3. Farmers want to know which brand of fertilizer makes bean plants grow faster. (Miracle-Gro contains more nitrogen, Suprgro contains more potash.)

Dependent variable: _____ Independent variable: _____

Investigative question:

Hypothesis:

Write the investigative question and hypothesis for the following experiments in the space provided.

Underline the variables in each question and hypothesis.

Begin the question with “What would happen to...”

Start the hypothesis with “If...”

#4. A science student wants to find out which brand of battery can keep a light bulb burning for the longest amount of time: Duracell or Eveready. (Duracell batteries contain more active ingredients than Eveready.)

#5. Someone who washes laundry wants to know which type of detergent gets sheets whiter – Tide or Cheer. (The lists of ingredients show that Tide has more bleach than Cheer.)

#6. A carpenter wants to know what kind of wood would support the most weight: maple or oak. (A chart in a science book shows that oak is ‘denser’ than maple.)