

UNIT
1LESSON
1.3*Problems and Variables***Vocabulary**

1. Problem. _____
2. Variable. _____
3. Independent Variable. _____
4. Dependent Variable. _____
5. Control. _____
6. Experimental group. _____
7. Hypothesis. _____

Problems

When you write your problem, always try to start it with _____. This makes the question easier to answer and the answer gives you more detail. A problem follows this format:

How does _____ affect _____.

For example, "How does temperature affect how the speed a person runs?"

Hypothesis

When you write your hypothesis, always write it in this format:

If _____, then _____.

In this case, you predict what will happen to the dependent variable. For example, in our problem from above, the dependent variable is "the speed a person runs." You have to predict how that speed will change. Will it increase, decrease, or stay the same? You will test your hypothesis to see if your prediction is correct. For example, "If the temperature is above 30°C, then a person will run slower."

Control vs. Experimental Group

In an experiment, you always have two groups. No matter what, there can only be _____ different between the two groups. That difference is the _____. You can only test _____ independent variable at a time. The group that receives the independent variable is called the _____ group. The group that does not receive the independent variable is called the _____ group. In short: the control group and experimental group look EXACTLY the same. The only difference is the ONE independent variable you use in the experimental group.

Below are several problems. For each problem, write a hypothesis, list the independent and dependent variable, and list the control and experimental group.

Problem: How does smoking affect the risk of lung cancer?

Hypothesis: If _____, then _____

Independent Variable: _____

Dependent Variable: _____

Control Group: _____

Experimental Group: _____

Problem: How does breakfast affect a student's grades in school?

Hypothesis: If _____, then _____

Independent Variable: _____

Dependent Variable: _____

Control Group: _____

Experimental Group: _____