

Identifying Variables Worksheet #2 (Page 1)

Name: _____ Date: _____ Block: _____

For each item below, specify the independent and dependent variables, as well as constants.

1. A study was done to find if different tire treads affect the braking distance of a car.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

2. The time it takes to run a mile depends on the person's running speed.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

3. The height of bean plants depends on the amount of water they receive.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

4. The higher the temperature of the air in the oven, the faster a cake will bake.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

5. Lemon trees receiving the most water produced the most lemons.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

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6. An investigation found that more bushels of potatoes were produced when the soil was fertilized more.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

7. Students measured the temperature of the water at different depths in Lake Skywalker and found that the temperature varied.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

8. The amount of pollution produced by cars was measured for cars using gasoline containing different amounts of lead.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

9. Four groups of rats are first massed and then fed identical diets except for the amount of vitamin A they receive. Each group gets a different amount. After 3 weeks on the diet, the rats' masses are measured again to see if there has been a decrease.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

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10. A student wanted to test how the mass of a paper airplane affected the distance it would fly. Paper clips were added before each test flight. As each paper clip was added, the plane was tested to determine how far it would fly.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

11. Two groups of students were tested to compare their speed working math problems. Each group was given the same problems. One group used calculators and the other group computed without calculators.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

12. Students of different ages were given the same puzzle to assemble. The puzzle assembly time was measured.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants _____

Control Group _____

Experimental Group _____

There can be several controlled variables. If an experiment is to be useful, only one variable at a time can be manipulated intentionally. All other variables must be controlled throughout all parts of the experiment. If more than one variable is altered (changed), the results of an experiment cannot be interpreted with any validity.

13. An experiment was performed to determine how the amount of coffee grounds could affect the taste of coffee. The same kind of coffee, the same percolator, the same amount and type of water, the same perking time, and the same electrical sources were used.

Independent Manipulated Variable _____

Dependent Responding Variable _____

Constants (3) _____

Control Group _____

Experimental Group _____