**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Hour:\_\_\_\_\_\_\_\_**

**Independent versus Dependent Variable Worksheet.**

An **independent variable** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

A **dependent variable** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Put a circle around the Independent variable and underline the Dependent variable.**

1. The hungrier a cat gets, the louder he meows.

2. As the room gets darker, the harder it is to see colors.

3. Is the growth of a plant affected by acid rain?

4. Does surface area of a sponge affect the speed of evaporation?

5. Does the weight of a car affect it’s gas mileage?

6. Does one brand of nail polish dry faster than another?

7. Is the number of puppies affected by the age of the mother?

8. Is memory retention affected by the noise level of a room?

9. Does a person’s age affect his/her reaction time?

10. A rabbits fur grows longer as weather gets colder.

In the following examples identify the independent and dependent variables and then also list several potential confounding variables that the experimenters would have to consider.

**Sample Hypotheses**

**11. If** skin cancer is related to ultraviolet light, **then** people with a high exposure to UV light will have a higher frequency of skin cancer. What will you do to test this proposal? What will you vary or change? What will you measure?

Independent variable –

Dependent variable -

**12. If** leaf color change is related to temperature, **then** exposing plants to low temperatures will result in changes in leaf color.

Independent variable –

Dependent variable -

**13. If** the speed of plant germination is related to the hardness of the hull of its seed, **then** softening the seed with water or a weakly acidic solution prior to planting will hasten germination. Blah, Blah, Blah…

Independent variable –

Dependent variable –

**14. If** photosynthesis is related to light energy, **then** the portions of a leaf shaded from light will test negative for starch, since starch is a product of photosynthesis.

Independent variable –

Dependent variable \_\_

**15. If** animal metabolism is related to temperature, **then** increasing resting room temperature will increase animal metabolism (as measured by carbon dioxide gas production which is one of the waste products of animal metabolism).

Independent variable –

Dependent variable -

**16. If** root growth is related to gravity, **then** roots will always turn toward the earth regardless of a seed's orientation.

Independent variable –

Dependent variable -

**17. If** hatching of brine shrimp is related to salinity (or temperature), **then** the greater the salt concentration, the higher the hatching rate.

Independent variable –

Dependent variable -

**18. If** the thickness of annual growth rings in trees is related to annual rainfall, **then** examining wood samples will reveal correlations in the growth rings to the historical records for rainfall in its environment.

Independent variable –

Dependent variable -

**19. If** poking a skunk will always result in the emission of noxious and toxic fumes.

Independent variable –

Dependent variable –

**Fill in the blank with a possible dependent variable:**

20. Does the weight of a bike affect \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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21. Does the temperature of water affect \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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22. What are the effects of motor oil on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

23. Does the amount of sleep you get affect \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

24. What are the effects of heat on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_