GRCI Science

Date: _____

Practice with the Scientific Method

A. Read pages 534-535 in the Nelson Science 9 textbook.

B. A lab report is a large part of the Process of Science (Scientific Method). The following statements have been taken from different lab reports. Please name (identify) which step of the Scientific Method to which it belongs:

_____	Measure the temperature every 5 minutes.
_____	The plant is now 6.0 cm tall.
_____	If the road is wet, then it takes longer to stop a car.
_____	It has been shown that food colouring will diffuse faster in hot liquids than in cold liquids.
_____	If the red colour disappears, then the change is chemical.
_____	A red solid is produced.
_____	150 mL beaker.

C. For each problem below, write a hypothesis using an **if-then** statement and identify the three types of **variables**.

1. *Does the distance you stretch an elastic band affect the distance it will fly when released?*

   Hypothesis: _____

   Independent variable (IV): _____ Dependent variable (DV): _____

   Two control variables (CV): _____, _____

2. *Does the amount of watering affect the number of flowers on geranium plants?*

   Hypothesis: _____

   IV: _____ DV: _____

   2 CV: _____, _____

D. For each experiment below, identify the independent variable, the dependent variable and all the controlled variables. Use another piece of paper to write down your answers.

1. A student wanted to test the cleaning power of four different detergents. She poured 5 mL of each into 5 equally greasy dishes, and then wiped them with a sponge and then rinsed with water. Then she looked at the amount of grease that was left on each.

2. Some famous pond ecologists were studying zebra mussels and their effect on ponds around Baden. They found two ponds that were similar in shape, size, and sunlight amount, and then counted the fish in both. Then they added zebra mussels to Pond A, but not to Pond B. One month later, they returned, and again, counted the number of fish in each.

3. Bill and Sue were arguing about the best type of cassette tape on which to tape their favourite rock music. They purchased three different types of cassette tape –Maxell, TDK, and Sony – and taped their favourite song on each of the tapes, and then listened to the tapes.

4. Oscar and Cassandra wondered whether tennis balls bounce differently when wet. They took two brand-new Wilson tennis balls. One they soaked in water, and the other they kept dry. They released both balls from 1 meter off the floor and then measured the height of the first bounce.

E. Alice wants to know whether mold grows better in warm or cool conditions. Describe how she could perform an experiment to answer this question. Then, identify the independent variable, dependent variable, and three controlled variables.