Science 9 Scientific Method I	Name: Date: Block:
	rough a structure of questioning and experimenting. It is not, our understanding of the world begins to change.
The Scientific Method	
The steps to the scientific method are as follows:	
What is a <b>hypothesis</b> ?	
A hypothesis is an	about how things work. It makes a
about an	and attempts to answer a question.
E.g.:	
What is a <b>conclusion</b> ?	

A conclusion is a summary of the \_\_\_\_\_\_. It will either \_\_\_\_\_ or

\_\_\_\_\_the \_\_\_\_\_\_.

Types of Data		
Qualitative:		
Qualitative data is used to describe	·	
E.g.:		
Quantitative:		
Quantitative data is used to describe the	(the)	of something.
E.g.:		
Types of Variables		
E.g.: Two brands of paper towels are compared placed into two beakers. One paper towel from a paper towel from another brand, Good-at-Clean removed from the two beakers, it was discovere contained 5 mL of water.	the brand, Cleans-a-Lot, is placed into Beating, is placed into Beaker 2. When the paper	aker 1 while one per towels are
Independent:		
An independent variable is	by the expe	erimenter.
E.g.:		
Dependent:		
A dependent variable changes with	to the	
E.g.:		
Controlled:		
A controlled variable	within the	
	inci wants to	
E.g.:		

## Practice:

1. Rebecca notices that some of the plants in her garden are growing very quickly, whereas the same plants in other parts of her garden are not. After doing some research, she discovers that the plant that she has in her garden need a certain amount of sunlight everyday to grow well. She decides to conduct an experiment. She grew five of the same plants and exposed them to sunlight for a specified period of time. After 6 weeks, she measures out the height of her plants. Here are her results:

Plant #	Amount of time exposed to light	Final height
1	20 min	3.0 cm
2	40 min	6.0 cm
3	60 min	14.0 cm
4	80 min	11.0 cm
5	100 min	9.0 cm

Based off of Rebecca's experiment and results, answer the following questions:

- a. What was the independent variable?
- b. What was the dependent variable?
- c. List 3 controlled variables in Rebecca's experiment.

- d. Write a hypothesis that would fit into Rebecca's experimental setup.
- e. Write a proposed conclusion Rebecca could make for her experiment.

2.	What can be concluded if a study discovered that those who drank 8 cups of water a day tended to be more awake during the day? Explain your answer.
3.	Chelsey wants to know why sea water freezes at a lower temperature than fresh water. She goes to the library and conducts some research about the properties and composition of fresh water and sea water. She goes back home and takes out a notebook and writes "If sea water has salt in it, then it will freeze at a lower temperature than regular fresh water." Chelsey then goes to her lab and does the following:  a. Fills 2 beakers with water.  b. Dissolves 20g of salt into one beaker.  c. Places both beakers into the freezer at -1.5°C for 2.0 hours.  Chelsey takes out both the beakers at the same time and notes that the beaker containing salt water is a liquid and the beaker that has no salt in it has frozen.  a. Which statement would be the hypothesis?
	b. What conclusion could Chelsey make based on her observations?
	c. What is the independent variable in this experiment?
	d. What is the dependent variable in this experiment?
	e. What are 2 controls in this experiment?