The Scientific Method

Name:	Date:		_ Core:		
LT: I can describe the steps	of the Scientific Method.				
Step 1:					
The question must be	Testable / Untestable (circle one)				
Testable means that you ca	ın, ,				
	to answer the question.				
	ey to a good research question is that it can nal preferences, then it is not testable.	an be tested. If	f the question is		
Read each research question	on below. If it is testable, circle "YES". If	it cannot be tes	sted, circle "NO".		
1. Does the amount of	fertilizer affect how tall a flower grows?	YES	NO		
2. Are roses prettier flow	wers than tulips?	YES	NO		
3. How can we make cut flowers stay fresher for a longer time?		YES	NO		
4. Can daisies grow in different types of soil?		YES	NO		
5. Do daffodils smell better than carnations?		YES	NO		
Step 2:					
Find information about your	topic and determine your variables.				
A variable is					
There are 3 types of variable	es:				
1. IV or Th		his is the	factor		
	This is the factor that can be		c		
	as a result of changing the				
This is the factor we					
	Ті	hese factors ar	e kept the		
	during an experiment.				

Pr	actice: Determine the IV and DV for each inquiry. Suggest at least 3 constant variables (CV) for each.				
1.	What amount of sunlight makes pea plants grow tallest?				
	IV:				
	DV:				
	CVs:				
2.	Which type of soda has more sugar?				
	IV:				
	DV:				
	CVs:				
3.	Is a ball's bounce affected by the height from which it is bounced?				
	IV:				
	DV:				
	CVs:				
St	tep 3:				
	is a				
	the outcome of an experiment based on				
	•				
Α	hypothesis is usually written in the form:				
Pr	actice: Identify the IV, DV and write a hypothesis for the following questions.				
1	What type of music quiets a crying baby faster: jazz, classical or rock?				
••	IV:				
	DV:				
	Hypothesis:				
	,poooio.				
2.	Is the number of eggs a chicken lays affected by the hours of daylight?				
	IV:				
	DV:				
	Hypothesis:				
3.	Will a rubber band or string hold more weight without breaking?				
	IV:				
	DV:				
	Hypothesis:				

Step 4:		
Write a		
Your procedure should berepeat the steps without your input.	that	could
Step 5:		· · · · · · · · · · · · · · · · · · ·
Use		to make observations.
There are 2 types of observations:		
1	These observations involve	-
2	These observations are	_
Step 6:		
What did you learn?		_ your findings.
List the six steps of the Scientific M	lethod:	
1.		
2.		
3.		
4.		
5.		
6.		
Scientific Method Vocabulary Re	<u>view</u>	

analyze – to examine carefully by looking at all the parts of something data – information, usually in numbers, that describes our observations conclusion – the ending; often a summary of what's said before evidence – something that proves or disproves an idea hypothesis – an "educated" guess or prediction about what will happen interval – the time between events; also a space between items

observation – something that you can see, hear, taste, smell or feel; in an experiment we use observation to collect data

qualitative – observational data that describes something that is not measured, like color or shape (not a number)

quantitative – observational data that is measured, like height, weight, how many more (or less), how long (time); this is a NUMBER

scale – a measure of something by using a series of regular units, such as inches on a ruler or degrees on a thermometer

testable question – an idea that can be tested experimentally

untestable question – an idea that cannot be tested experimentally

variable – something in an experiment that might change

dependent variable – the thing in an experiment that changes (the EFFECT); the thing that the experiment measures

independent variable – the thing in an experiment that makes the dependent variable change (the CAUSE); the thing that the experimenter CHANGES

controlled variable - the thing(s) in an experiment that does not change; also called the CONSTANT