



NATURE OF SCIENCE

EDITABLE student notebook pages - digital links included for students to complete guided notes on Google Drive

Question: What are the steps scientists often use to solve problems?

THE METHOD OF SCIENCE

Science – process that uses observation and investigation to gain knowledge about events in nature

Scientific Method – an organized set of investigation procedures used by scientists

Hypothesis – educated guess or testable prediction

Experiment – organized procedure for testing hypothesis

Control – standard for comparison

Constant – factor that doesn't vary in experiment

Independent variable – factor that is adjusted by the experimenter (x-axis)

Dependent variable – factor whose value depends on the independent variable (y-axis)

Scientific Law vs.

Rule of nature that sums up related observations to describe a pattern in nature

Ex. Law of Gravity



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- **Hypothesis** – educated guess or testable prediction
- **Experiment** – organized procedure for testing hypothesis
- **Control** – standard for comparison
- **Constant** – factor that does not vary in experiment
- **Independent variable** – factor that is adjusted by the experimenter (x-axis)
- **Dependent variable** – factor whose value depends on the independent variable (y-axis)

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Explanation based on experiments – most logical explanation
Ex. Black Hole Theory

Scientific

Science

process that uses observation and investigation to gain knowledge about events in nature



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Scientific Method

An organized set of investigation procedures used by scientists



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SI Prefixes

Symbol	Multiplying Factor
	1,000
	0.1
	0.01
	0.001
	0.000 001
	0.000 000 001



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International System of Units (SI)

Standard system of measurement used worldwide

Quantity Measured	Unit	Symbol
Length	meter	m
Mass	gram	g
Time	second	s
Electric current	ampere	A
Temperature	kelvin	K
Amount of Substance	mole	mol
Intensity of light	candela	cd

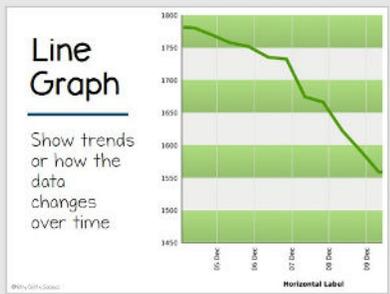
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Graph

A visual display of information or data.



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EDITABLE PowerPoint presentations include high-resolution graphics and feature all topics and vocabulary covered in the notes

Name _____ Date _____

CHAPTER TEST NATURE OF SCIENCE

Multiple Choice

Choose the answer that best completes each statement.

- 1. Process that uses observations and investigations called _____
 - a. experiment
 - b. inferring
 - c. predicting
 - d. science
- 2. A possible explanation for a set of observations called _____
 - a. prediction
 - b. hypothesis
 - c. theory
 - d. law
- 3. A standard for comparison in an experiment called _____
 - a. fact
 - b. variable
 - c. constant
 - d. control
- 4. A rule of nature that sums up many observations called _____
 - a. inquiry
 - b. hypothesis
 - c. theory
 - d. law
- 5. A statement that describes why something happens called _____
 - a. scientific inquiry
 - b. scientific hypothesis
 - c. scientific theory
 - d. scientific law
- 6. The amount of space occupied by an object called _____
 - a. mass
 - b. volume
 - c. length
 - d. density

EDITABLE Chapter test includes multiple choice, fill in the blank, interpreting diagrams, & short Answers questions

Fill-in-the-blank

Complete each statement with the correct vocabulary term.

- 13. In a scientific experiment, the one variable that is purposely changed to test a hypothesis is called the _____ variable.
- 14. A scientific law is based on repeated _____ made over long periods of time.
- 15. The _____ is the base metric unit of liquid volume.
- 16. For ease of understanding, scientists report measurements using the _____ system.
- 17. A _____ is a visual display of information or data.
- 18. In a line graph, the _____ axis is called the y-axis.
- 19. Graphs are a quick way of communicating a lot of _____ in a small space.
- 20. The symbol ρ is used to describe a _____.

Interpreting Diagrams

Use the diagrams to answer each question.

- 21. Make a bar graph of the information shown in Table 1-1, ordering the percentages from low to high.

COUNTY	% STUDENTS WHO WALK A MILE TO SCHOOL
ST. JOHNS	29
SPRING	42
DALLAS	5
LINCOLN	33



Answer key included – Images are blurred for copyright reasons



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