

The Process for Doing an Experiment and Using the Scientific Method for 3rd - 5th Grade

(These are the steps to follow and show on your display board)

TESTABLE QUESTION: A questions that can be tested doing an experiment that compares something and is measurable. This could also be used as the **title** of your experiment.

Example: Do plants grow taller with or without fertilizer?

HYPOTHESIS: This is prediction written as an If...Then...Because... statement which offers an educated guess or answer to your question. Your hypothesis may turn out to be wrong, but that is ok, predicted answers are not always correct but can lead to new learning or asking more questions.

Example: **If** I put fertilizer in the soil, **then** plants will grow taller, **because** fertilizer has nutrients like calcium, magnesium, and sulfur that plants need to grow.

VARIABLES: Independent Variable (what you change), Controlled Variable (what you keep constant or the same), Dependent Variable (what you are measuring)

Example: **Independent Variable:** soil with and without fertilizer

Controlled Variable: the same amount of fertilizer, the same kind of plant, the same amount of water

Responding Variable: measuring the height (cm)

MATERIALS: List all your supplies and amounts used

PROCEDURE or METHOD: The steps taken to complete your experiment.

Example: Step 1 - fill 2 pots with the same amount of soil.

Step 2 - add one tablespoon of fertilizer to the soil in one pot

Step 3 - put the same size plant in each pot

And so on....

DATA/RESULTS: The results of your experiment and summary of your data

Example: Show your data and results using charts, graphs, pictures etc. then write a summary of what you discovered.

CONCLUSION: A written explanation of what you learned as a result of your experiment. Was your hypothesis correct? Why or why not? What are some next steps?

Additional Optional Components

BACKGROUND INFORMATION: Cite any resources you used to research information about your experiment such as books, magazines, and internet sites.

NEW QUESTIONS: List any new questions or changes you could apply to your experiment to learn something new?

Example: Will different types of fertilizer affect how plants grow?

