

**NATURAL SCIENCES\_ SENIOR PHASE\_ MWAZVITA CHIKOPO\_ 26-08-2022**

**TO:** Teachers & Learners.

**TOPIC:** Investigations and Experiments

**MESSAGE OBJECTIVE(S):**

*Distinguishing between an experiment and other forms of scientific investigation.*


## EXPERIMENT VS. INVESTIGATION


### What's the Difference?


#### EXPERIMENT

- involves testing dependent and independent variables
- establishes a cause and effect relationship
- classic scientific method

**EXAMPLE**  
Testing plant growth in different types of soil

  
Sample A


  
Sample B


  
Sample C


#### INVESTIGATION

- clear questions drive the investigation
- not a complete scientific method
- a hypothesis is not necessary

**EXAMPLE**  
How tall can a flower grow in a month?

  
Day 7

  
Day 15

  
Day 30

**INVESTIGATION:** A method of answering a question by observations, including modelling, researching and collecting data. It does not involve testing a hypothesis by changing one variable while keeping the other factors constant.

**EXPERIMENT:** A controlled method of answer a question by forming a hypothesis, running fair tests controlling only one variable at a time. Follows the scientific process.

**Variables:** Anything that could be changed in an experiment that could affect the results. Examples include independent and dependent variables.

**Control:** A variable that is not being tested, which is used for comparison.

**Constant:** A variable that is not changed. For example, if the experiment is performed in a lab, the lab's temperature should be constant throughout the experiment.

**Observation:** using one of more of your senses to gather information. Also includes using tools to help your senses (like a microscope).

**LINKS TO THE NECT WEBSITE**

- **NECT LINK TO PLANNERS & TRACKERS FOR RECOVERY:**

Please visit:

<https://nect.org.za/materials>

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