

Grade 6 - Nature of Science Terms:

- Scientific inquiry refers to the diverse ways in which scientists ask questions, study the natural world and propose explanations or answers based on evidence gathered.
- Scientists use skills such as observing, inferring, predicting, classifying, and making models to study the world.
- **Scientific investigation** usually begins with an observation. Scientists then ask questions about the observation and collect data to answer their question.
- **Scientific Method** is a process that scientists use to answer testable questions. Scientists complete experiments and use scientific methods to test their hypothesis.
- **A hypothesis** is a statement of what you think will happen in an investigation. **A hypothesis must be testable.**
- The steps of the scientific method/investigation are:
 - 1. Ask Questions
 - 2. Develop a Hypothesis
 - 3. Design an Experiment
 - 4. Collect Data
 - 5. Interpret/Analyze Data
 - 6. Draw a Conclusion
 - 7. Communicate Findings with others

- Variables are factors that can change in an experiment.
- Two types of variables:
 - Manipulated (or independent) variable - a variable that is **changed on purpose** by a scientist to test a hypothesis
 - Responding (or dependent) variable - a variable that **may change in response** to the manipulated variable (where scientist collect data about)
- **Controlled Experiment** is an experiment in which only one variable is manipulated at a time.

- **Controlled Group** the group that doesn't change in the experiment

- **Experimental group** the group that you are testing

- **Scientific theory** is a well-tested explanation for a wide range of observations and experimental results.

- **Scientific law** is a statement that describes what scientists expect to happen every time under a particular set of conditions. **Unlike a theory, a scientific law describes an observed pattern in nature without attempting to explain it.**
- **Communicating** is the sharing of ideas and results with others through written communication and oral communication.
- Scientists communicate with others in two ways by giving speeches at scientific conventions, exchanging ideas/information on the internet or publishing articles/research papers in scientific journals (scientific method).