

EARTH AND SPACE SCIENCE (ESS)

Scientific Method and Experimentation

- **Earth and Space Science** - is the study of Earth, the processes and phenomena that affect the Earth, and Earth's place in the Universe!

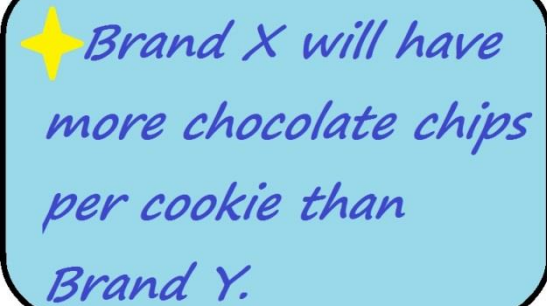
SCIENTIFIC METHOD

An organized set of
investigation
procedures
used by scientists



SCIENTIFIC METHOD PROCEDURES

Hypothesis –
educated guess or
testable prediction



*★ Brand X will have
more chocolate chips
per cookie than
Brand Y.*

SCIENTIFIC METHOD PROCEDURES

Experiment –
organized
procedure for
testing hypothesis



SCIENTIFIC METHOD PROCEDURES

Control –
standard for
comparison



SCIENTIFIC METHOD PROCEDURES

Constant – factor
that doesn't change
or vary in
experiment



SCIENTIFIC METHOD PROCEDURES

Independent variable – factor that is adjusted, manipulated, or changed by the experimenter (x-axis on a graph)

Dependent variable – factor whose value depends on the independent variable, it is usually what is measured or being tested in the experiment (y-axis on a graph)

SCIENTIFIC LAW VS. SCIENTIFIC THEORY



Predicts the results of
certain initial conditions

Ex. Law of Gravity



Tries to provide the best
possible explanation to as the
why natural phenomena
occur

Ex. Black Hole Theory