



What is Science?



Science is an **organized** way of **attempting to understand the natural world**, both structurally and operationally.

- a *way of knowing*
- a *process* of study of natural world
- involves observing, proposing explanations, and testing explanations
- is *evidence-based*



The Three Whales...

- Hypothesis:

possible explanation of an experience or observation.

- Theory:

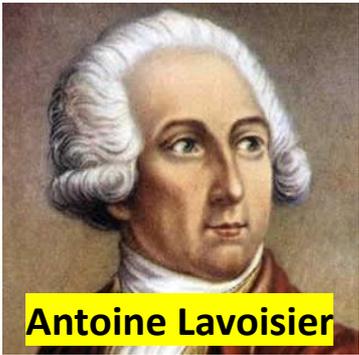
the *best possible* scientific explanation of an experience or observation in nature.

- Scientific Law:

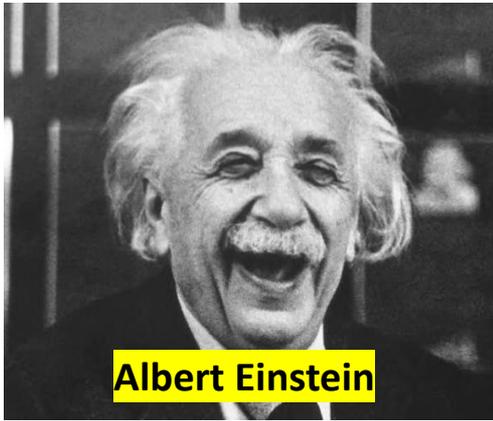
always true, can not be circumvented or broken.



...in the Ocean of Evidence!



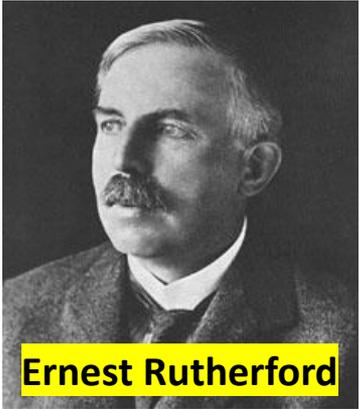
Antoine Lavoisier



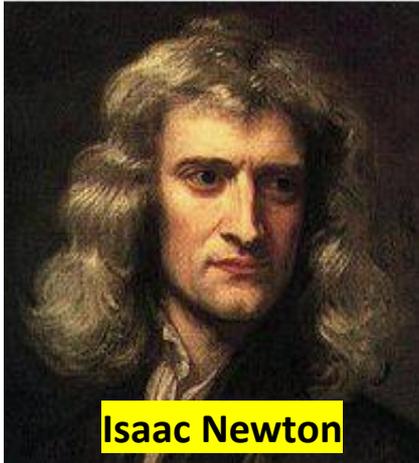
Albert Einstein



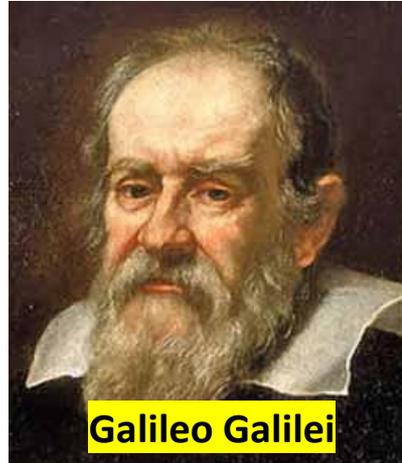
Benjamin Franklin



Ernest Rutherford



Isaac Newton



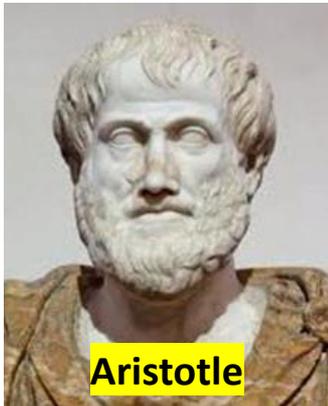
Galileo Galilei



Pierre and Marie Curie



Stephen Hawking



Aristotle

Your picture here?



Dmitri Mendeleev



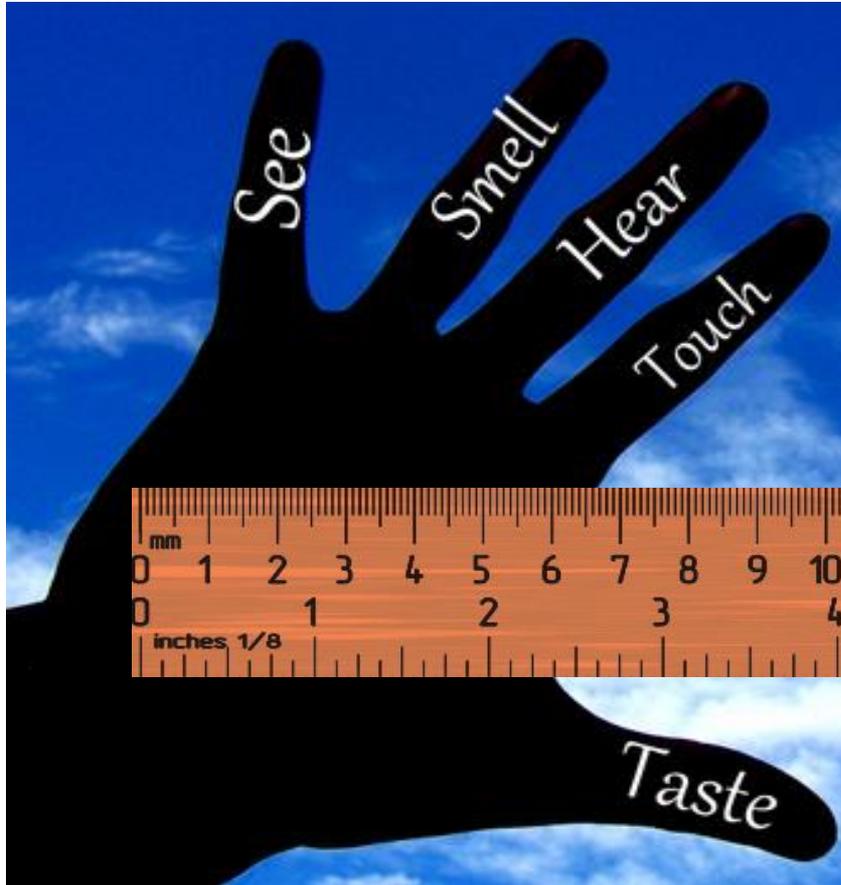
Tim Berners-Lee

Our Topics

atom
matter measurement
observation
light energy
sound
element wave
time
color molecule
radioactivity plasma

Physical Science

Evidence is based on Observation



- Observation is describing an object or event using your five senses (*what you see, hear, smell, taste, touch*) or measurement (*numbers*).
- Modern science employs *sensors* and *detectors* to make observations.
- Information gathered during an observation is called **data** (singular form *datum*).

TONGUE



TOUCH

TASTE

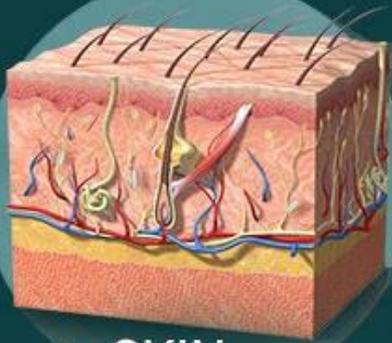
SMELL

SOUND

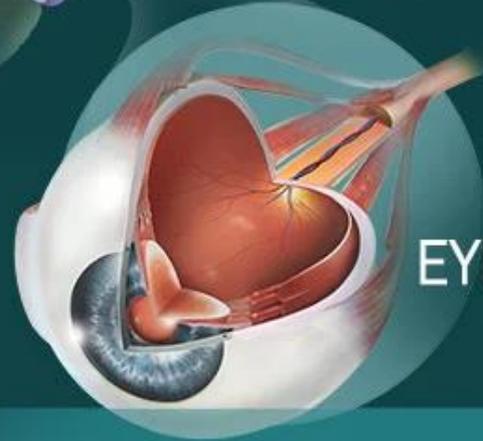
SIGHT



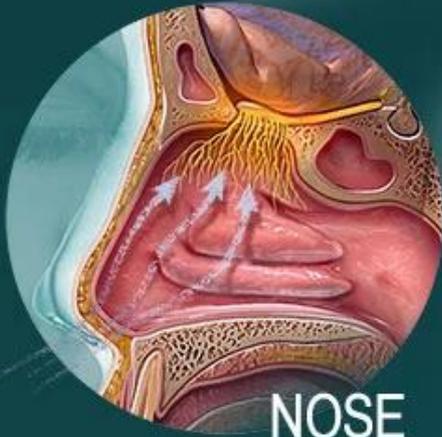
SKIN



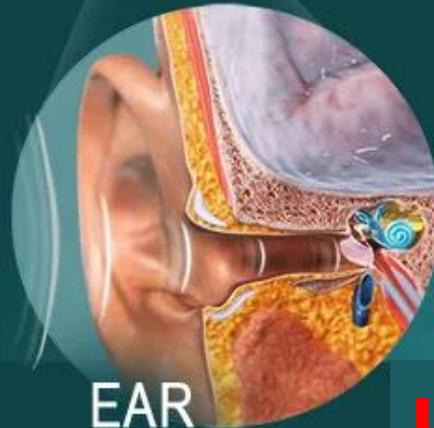
EYE



NOSE



EAR



THE SENSES

How do they work?