

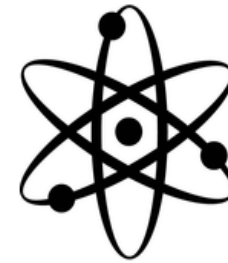
Observation vs Inference

The Process of Science

- ❑ Science begins with OBSERVATIONS
- ❑ It is about exploring, making observations using your senses, and attempting to make sense of those observations



- ❑ A hypothesis is a possible explanation for a natural event or a series of observations.
- ❑ hypotheses must be testable.
- ❑ observations can either confirm or refute (prove wrong) hypothesis
- ❑ Must be Falsifiable
 - ❑ This means we must be able to create an experiment that could prove it wrong!



KEEP
CALM
AND
TEST YOUR
HYPOTHESIS

It is bad science to ask someone to
PROVE A NEGATIVE.

For example:

Prove that ghosts don't exist.

Prove that cell phones don't cause
cancer.

Prove that there are no aliens.

Prove that telepathy doesn't exist.



*The burden of proof lies on the claimant. If you
make a claim, then you must be the one to provide
evidence for that claim. (It is not on other people to
show it to be false.)*

- ❑ Inference - a logical interpretation based on prior knowledge
 - ❑ Not real science!!



- ❑ Anecdotes are singular observations, stories people tell, or things someone might have heard.
- ❑ It is NOT real science!



Observation vs. Inference

Senses	Observation	Inference
Vision		
Hearing		
Smell		
Taste		
Touch		

Examples: (DO NOT USE MY EXAMPLE)

Sense: **Observation:** **Inference:**

Vision Wet pavement Raining or maybe someone washed the car