The Nature of Science (NOS)

1) Science is strictly limited to the Natural World.
(Natural World = is what we can OBSERVE, directly or indirectly).

- The supernatural world CANNOT be tested, observed or disproved! so it cannot be studied by science.

2) Science seeks to understand and explain the natural world.
(How does our world work?)

- Does this by producing EVIDENCE FOR & AGAINST explanations.
- "Belief" implies values (right vs. wrong) → not used in science.

3) Science is a body of KNOWLEDGE (understanding how the world works), NOT a collection of Facts.

- It can produce explanations that are probable, but not 100% certain or fixed.
  AVOID: "Facts", "Proof", "Proves".
  USE: "Evidence to support an Explanation"
- New evidence can cause replacement of old ideas.
  (science is modifiable)
  (The world and its "rules" does not change, but our understanding can change as we learn new things!!)
- Ideas that become WIDELY ACCEPTED (lots of strong EVIDENCE) → may be called a THEORY.
  (Theories in science are a Big Deal!, not just a hunch or a guess)

4) Science seeks to Disprove or Challenge existing explanations → this is good! Helps identify the things we DON'T KNOW!

- This is done with TESTING, repeated.
- "Proof", "Facts" → implies 100% certainty, and we can't ever be 100%.
  (There is no answer book to tell us if we are right!!)

5) Science follows RULES:

careful observations, measurable, testing must be repeatable.

All work must be PEER REVIEWED!! → Very important!