Nature of Science

Objectives: 1. Explain the characteristics of science. 2. Compare something that this scientific with something that is pseudoscientific. 3. Describe the importance of the metric system and SI.

We demolish arguments and every pretension that sets itself up against the knowledge of God, and we take captive every thought to make it obedient to Christ. 2 Cor. 10:5

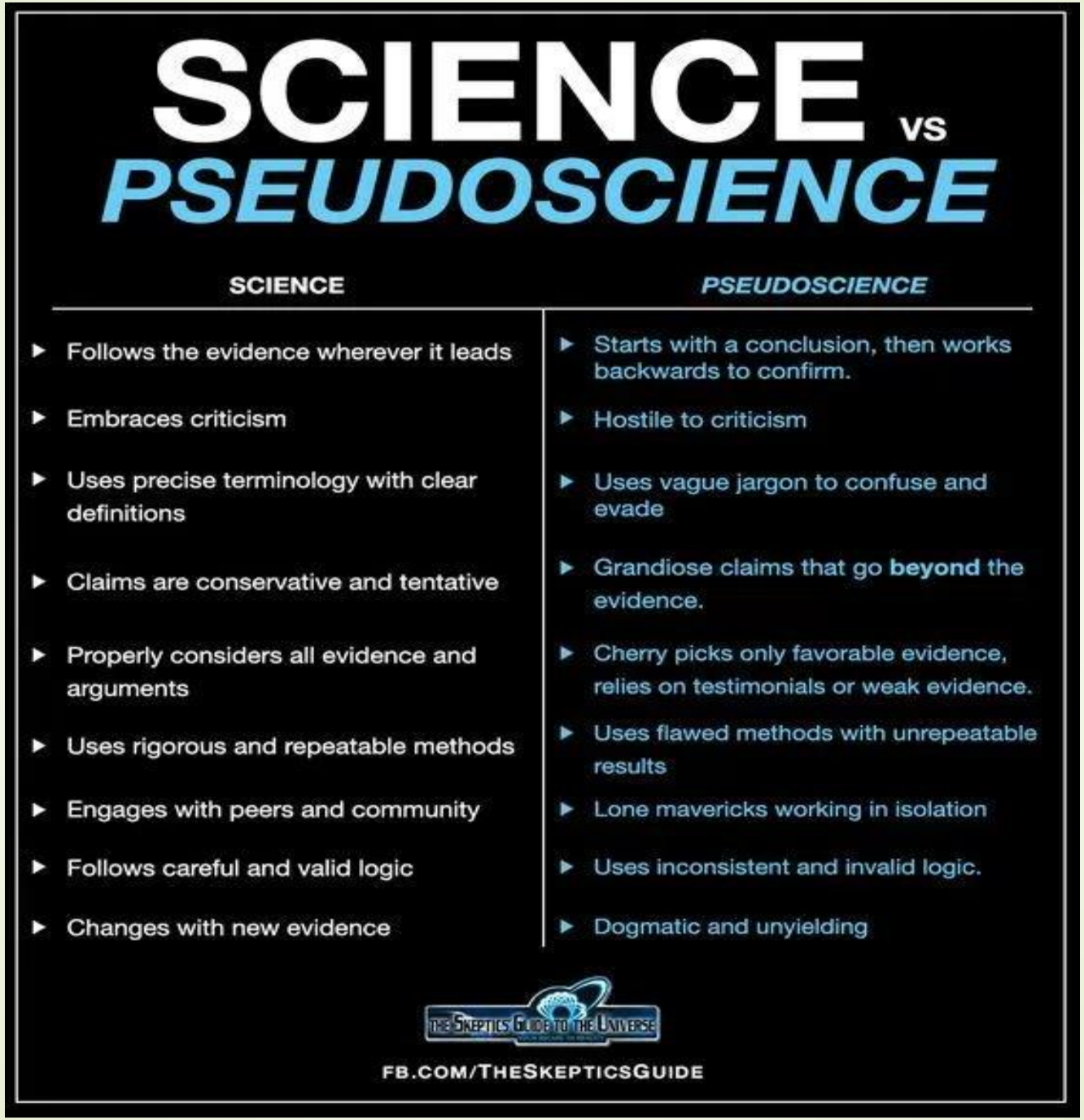
Definition of science:

- Science is a **process** based on **inquiry** that seek to **develop explanations**.

  Scientific inquiry is **creative**, but is also rooted in **unbiased observations and experimentation**

Example of pseudoscience:

Astrology, alchemy, feng shui


SCIENCE VS PSEUDOSCIENCE
SCIENCE
Follows the evidence wherever it leads
Embraces criticism
Uses precise terminology with clear definitions
Claims are conservative and tentative
Properly considers all evidence and arguments
Uses rigorous and repeatable methods
Engages with peers and community
Follows careful and valid logic
Changes with new evidence
PSEUDOSCIENCE
Starts with a conclusion, then works backwards to confirm.
Hostile to criticism
Uses vague jargon to confuse and evade
Grandiose claims that go beyond the evidence.
Cherry picks only favorable evidence, relies on testimonials or weak evidence.
Uses flawed methods with unrepeatable results
Lone mavericks working in isolation
Uses inconsistent and invalid logic.
Dogmatic and unyielding
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- **Key points about science:**

- **1.** Scientific explanations combine what is already known with consistent evidence gathered from many observations and experiments.

Theory: an explanation of a natural phenomenon supported by many observations and experiments over time

2. Scientific knowledge is guided by research that results in reevaluation of what is known.

- New findings result in more questions which leads to more research

3. Science challenges accepted theories.

- Disagreements are welcomed as a way to spur on additional investigations and as a means to substantiate claims

4. Science questions their results
   - If observations or data are not consistent with what is expected, it will often lead to further investigations, or repeating a trial

5. Science tests claims
   - Standard experimental procedures are used in research
   - Claims are based on large amounts of data and observation

6. Science undergoes peer review

- Before it is made public, new research undergoes a peer review process to evaluate the research and to determine whether the material and methods are sound

7. Science uses consistent measurements

- Scientists can repeat the work of others because consistent measurements have been completed
- Scientists use the metric system (units with divisions that are powers of ten)
- International system of Units (SI)
  - You will need to use meter (length), gram (mass), liter (volume), and second (time)

Can Christians practice the methods or process of science?
Can scientists be Christians?

- God has created and designed us to be intelligent image-bearers who can think rationally and reason.
- We do not have to remove God from our study of science, but our study of the natural world and the principles behind it can actually teach us more about Him and His character.