Scientific Statements Exercise ("Your Turn")

- Scientific statements are made of sentences.
- They deal with the natural world.
- They are subject to evidence, meaning that..
  - They can be confirmed or disproved, and..
  - Neither outcome may assumed to be final.
- They have several levels of credibility, none of which is absolute:
  - A **hypothesis** explains a series of observations, or a single one. It must be consistent with the general body of science, and must actually explain the observations. Often several hypotheses compete, meaning most are wrong. Often all are wrong.
  - A **theory** unifies many observations, sometimes not obviously related to each other. It must be self-consistent. Even if it opposes previous theory, it must be consistent with observations. To say that a well-established theory is "only a theory" is akin to asserting that democracy is "only an idea." Of course, theories, (and ideas) do fail. The longest-lived theory in history was an astronomical one, and was wrong. (Earth-centered universe)
  - A **law** of science must be practically bullet-proof. However, even laws must sometimes be upgraded. (e.g. In the sun's core, neither mass nor energy is "conserved." Einstein has shown that these are both aspects of the same thing.

Write a scientific **hypothesis** that you consider at present to be true. __________________________________________

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Mention a **theory** that is (or was) scientific, that you consider false, and why. _____________________________

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Write a statement that you believe to be true, but which can’t be tested by scientific evidence. (a true, but unscientific, statement).

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Write a statement which is accepted by somebody you know about, which is unscientific (inconsistent with science in general, or untestable), which you think is false, and why.

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