

MAKING A SCIENTIFIC CLAIM: ABCD

All Scientific Claims Must Rest on Evidence and Generally Accepted Principles

A

Answer or Assertion.

Did you answer the question posed or make a clear assertion?

B

Basic Principle

Did you cite a law, equation or generally accepted principle?

C

Cite Evidence

What evidence supports your assertion in this particular case?

D

Double Check

Does the evidence you observed, combined with the basic principle you cited support your answer/assertion? How strongly?

**Important: All other things being equal,
the simpler claim is more likely to be true. (Occam's Razor)**

ABCD Example 1

During what season was the aerial photo shown taken?



- A** I conclude that the aerial photo was taken in summer.
- B** People usually wait for warmer weather to uncover their pools.
- C** The aerial photo shows two pools that are uncovered.
- D** The fact that there are two uncovered pools makes it a strong case.

Note that you do not have to go in ABCD order.

ABCD Example 2

What happens to the temperature of a gas inside a container when it gets compressed?

- B** Charles' Law states that temperature and volume are inversely proportional to each other.
- C** The container is compressing so it has a decreasing volume.
- A** Therefore if the volume is decreasing, the temperature must be increasing.
- D** Charles' Law is a well-established scientific principle and we have to take the question at its word, so we have a solid case here.

Note that you do not have to go in ABCD order.