

How scientific is it?

How do we decide that something is scientific versus something that is unscientific? Below, you will find six knowledge claim statements. Work with at least one other person and together:

- 1) Read each of the knowledge claim statements below.
- 2) Discuss and agree on an order to the claims, by letter, from that which you deem least to that which you deem most scientific.
- 3) Place the letters on the spectrum below from least scientific to more scientific.

Less scientific <—————> more scientific

- 4) Justification: Be ready to explain to others the justification you used for this order.

Knowledge claim statements

- A. All living things are composed of one or more cells. We know this because every living thing examined to date has been found to be composed of one or more cells.
- B. If you break a mirror, you will have seven years of bad luck.
- C. The Earth is flat. Anybody can see that!
- D. Taking Vitamin C prevents the common cold. Linus Pauling, the Nobel laureate who discovered the structure of Vitamin C, says it does.
- E. Humans have a soul. I believe this because it says so in the Bible. The soul is what separates us from animals.
- F. The rate of acceleration of all falling objects on Earth is constant. Two spheres of identical diameter and volume are dropped from the top of a building; one is made of steel, the other made of a plastic polymer. They both will accelerate at the same rate (32 ft/s^2) and hit the ground at the same time.

Adapted from Scharrman et al. 2005. Explicit reflective nature of science instruction: Evolution, Intelligent Design, and umbrellology. *Journal of Science Teacher Education* 16:27–41.