

Scientific and Experimental Literacy Assessment (SELA): Draft notes

General science questions (constraints on speculation).

Pick and ANSWER ONE (and only one) of these four questions (which ever question you feel most comfortable with).

- Explain as clearly as you can: why a perpetual motion machine is impossible?

- Explain as clearly as you can: why homeopathic “medicines” cannot possibly work?
(Do you understand what a homeopathic medicine is? yes no)

- What evidence leads to the assumption that matter is composed of atom?

- Explain why claims of a young Earth and intelligent design creationism are incompatible with a wide range of empirical observations.

ANSWER BELOW

- sorry, I have no idea how to answer any of these questions

Please Answer All of these questions

1) Biological experiments are often said to employ positive and negative controls; explain what is meant by a positive control experiment and a negative control experiment. (sorry, I have no idea)

2) Experimental studies on humans are sometimes designed to be “double-blind” and randomized; explain why such a design is used, i.e. when is it necessary? (sorry, I have no idea)

3) You are asked to evaluate the scientific plausibility of a new “revolutionary” observation you have read about on the web; what are the factors that you would consider in order to form a decision? (sorry, I have no idea)