

Characteristics of good science

1. Science is progressive.

Scientific knowledge is built upon and extends prior research.

2. Science is predictive.

"It must have been the will of God" is a non-scientific statement that permits no predictions to be made. Think of it more as a consolation than as an explanation.

Science relies on generating a testable, tentative explanation for an observed event. This hypothesis must be scrutinized with a series of what-if scenarios: IF this hypothesis is correct THEN we should expect to observe A. IF this hypothesis is false THEN we should expect to observe B.

3. Scientific truths are tentative.

If valid and verifiable evidence is discovered, even scientific laws must be abandoned or revised to account for this new evidence.

4. Science relies on careful observation and generation of hypotheses which are, in principle, testable and falsifiable.

Falsifiable means that a hypothesis is capable of being revealed to be false if it is, in fact, false.

5. Science is self-correcting.

Eventually, biases (e.g., racial differences in IQ) will be found and eliminated by testing of hypotheses, examining their predictions, and careful, controlled experimentation.