How Science Works

And What Doesn't Work

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Outline

What is the Method for Science?

Scientific Method

Science is not a linear process.

The common Scientific method is an oversimplification.

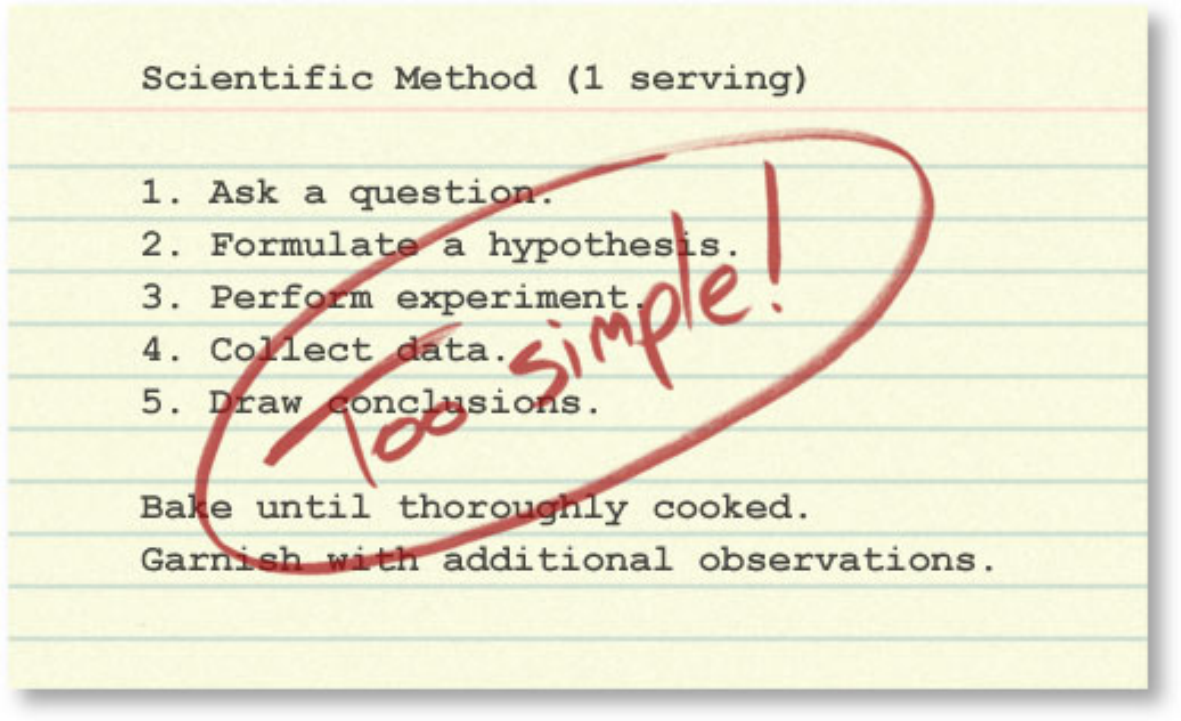

Figure 1: The myth of the step-by-step science recipe. [1]

Then... How Does Science Actually Work?

Science revolves around four interconnected cores:

- **Observation** – Gathering data from the world.
- **Testing** – Evaluating Hypotheses.
- **Feedback** – Refining and adjusting ideas with the Community.
- **Applications** – Using scientific knowledge for Society.

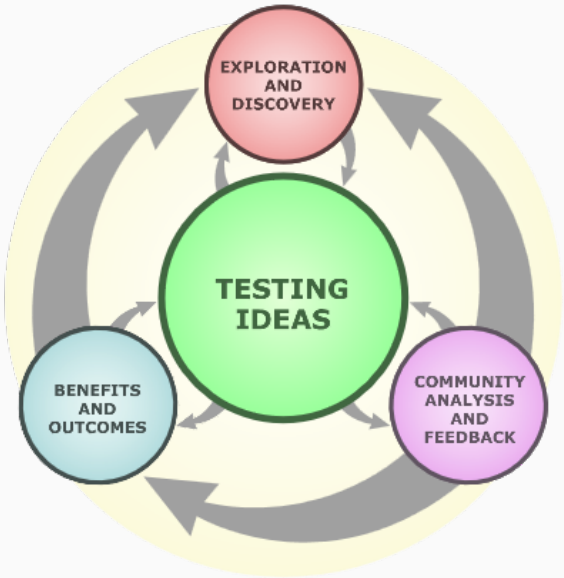

Figure 2: Interconnected nature of scientific processes. [1]

The Main Core: Testing Ideas

The heart of science is **testing ideas.**

Through experimentation and analysis, hypotheses are refined, rejected, or strengthened.

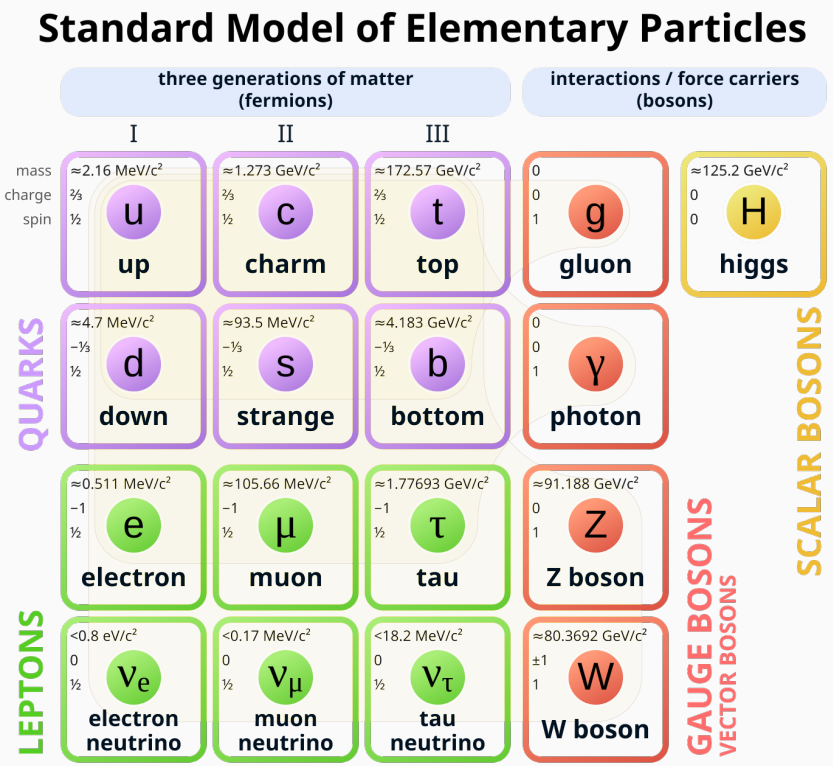

Figure 3: Elementary Particles of the Standard Model. [2]

Cores of Scientific Method

Practical Example

Important Facts

Conclusions

Bibliography

References

[1] Understanding Science. ***Understanding Science 101: How science works.*** URL: https://undsci.berkeley.edu/understanding-science-101/how-science-works/.

[2] Cush. ***Standard Model of Elementary Particles.*** Sept. 17, 2019. URL: https://commons.wikimedia.org/wiki/File:Standard_Model_of_Elementary_Particles.svg.