

The Scientific Method & its Importance

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{youtube}SsxzglGtErU{/youtube}

The scientific method attempts to minimize the influence of bias or prejudice in the experimenter. Even the best-intentioned scientists can't escape bias. It results from personal beliefs, as well as cultural beliefs, which means any human filters information based on his or her own experience. Unfortunately, this filtering process can cause a scientist to prefer one outcome over another. For someone trying to solve a problem around the house, succumbing to these kinds of biases is not such a big deal. But in the scientific community, where results have to be reviewed and duplicated, bias must be avoided at all costs.

That's the job of the scientific method. It provides an objective, standardized approach to conducting experiments and, in doing so, improves their results. By using a standardized approach in their investigations, scientists can feel confident that they will stick to the facts and limit the influence of personal, preconceived notions. Even with such a rigorous methodology in place, some scientists still make mistakes. For example, they can mistake a hypothesis for an explanation of a phenomenon without performing experiments. Or they can fail to accurately account for errors, such as measurement errors. Or they can ignore data that does not support the hypothesis.

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