What is scientific research? How is its useful in finding truth?

Research conducted for the purpose of contributing towards science by the systematic collection, interpretation and evaluation of data and that, too, in a planned manner is called scientific research: a researcher is the one who conducts this research. The results obtained from a small group through scientific studies are socialised, and new information is revealed with respect to diagnosis, treatment and reliability of applications.

Scientific research reveals a lot about the unknown. It aims to uncover and explain how and why certain events occur.

It lets us test, determine, and even recreate each phenomenon. This systematic process allows us to create case studies and understand their workings further.

This is the pillar for various fields of study, such as psychology and chemistry. It helps explain and prove theories. It also helps in finding ways to address problems and find the needed solutions

**2. The Scientific Method**

Scientific research uses a systematic set of study methods when acquiring data. This is where the scientific method comes to its full utilization.

This method of knowledge acquisition is the key to the development of science. In this case, the method employs the use of careful observation. Along with it comes applied skepticism on said observation.

While used in various disciplines and fields of study, the steps that it involves stays the same. These steps define the scientific method as it becomes the basis for research. The steps are as follows.

* Question
* Background Research
* Hypothesis
* Experimentation/Testing
* Conclusion

Each of the research classifications uses variations of these steps. Said variations are to help get the results needed.

These define the stages of the study that a researcher follows. In doing so, these act as guides for how to study a certain phenomenon and find the answers needed.

Each of these steps has a certain approach that changes when applied to other study fields

 Scientific research can be classified in several ways. Classification can be made according to the data collection techniques based on causality, relationship with time and the medium through which they are applied

**Scientific Truth**

Explanations and theories that correctly predict new results from new observations

or experiments bring us

closer to a true understanding of nature and the

rules by which it operates. This true understanding of nature is

what I

call ``scientific truth'' in this text to distinguish it from other definitions

of truth as in religious truth, for

example. Scientific truths are based

on clear observations of physical reality and can be tested through

observation.

Certain religious truths are held to be true no matter what. That is okay

as long as it is not

considered to be a *scientific* truth. Some things

like love, honor, honesty, and compassion are known to be right

or true

without the test of experiments. Confusion between the religious and scientific

types of explanation has

been, and still continues to be, the source of

a huge amount of conflict between many people. Yes, it is possible

to be

a scientist and a devout member of a spiritual faith---I know of many scientists

who are serious

practitioners of their religion. In fact, several significant

advancements in science were made by clergy

Truth is a seemingly simple concept. From childhood, all of

us are admonished to ‘tell the truth’. When this follows a dispute

and both sides ‘tell the truth’, we are reliant on the wisdom

of an arbitrator (initially a parent) to decide whose

version of the truth is true.

To define truth seems simple, yet the study of truth has

become a science of its own, epistemology. Truth can be

altered by our own belief systems, our culture and our society.

If we live in a desert where grass is always brown, why

should we believe it true that grass is green? If a blind man

believes that tomatoes are brown, who is it to argue against

that personal ‘truth’. If we believe hormones are good for

postmenopausal women, is it harder for us to believe they may cause harm?

In science, what we refer to as truth is really a distillation

of evidence. The quality of scientific truth is therefore

dependent on the quality of the evidence, the quality of the

research protocol, the quality and integrity of those carrying

out the research and the vigilance and diligence of editors

and peer reviewers.