



Topic/Objective CHAPTER: 1
 Scientific Method
Scientific Methods
 by [Bozeman Science](#)
<https://www.youtube.com/watch?v=GKGtkzgKfkc>

NAME: KEY
 Pd: 1 3 4 5 other
 DATE

Essential Question

What are Scientific Method and the Steps involved?

Cue: Review:
 Thoughts: Main Idea

Scientific Methods

6 steps needed:

QUESTION

HYPOTHESIS

EXPERIMENTS

VARIABLE

Independent

Dependent

CONTROL SETUP

CONTROL GROUP

DATA

NOTE Taking AREA:

- A set of procedures that scientists follow in order to gain knowledge about the world.
 - NO scientist's follow the EXACT same methods
1. Question "?" – Trying to solve the problem
 2. HYPOTHESIS – Educated guess that is based on two things:
 - a. Facts
 - b. XP (your experiences)
 With a proposed answer to a problem that can be tested
 3. EXPERIMENTS – the testing to prove or disprove your Hypothesis
 - a. Ordered investigations that are intended
 - b. Here is where you collect DATA.

Variable: a changeable factor or something that is changing

The thing "I" change (ALWAYS ON THE BOTTOM)

Result of the change (ALWAYS ON THE left SIDE)

Standard for comparison in the experiment YOU know the outcome or what you control

Recorded observations and measurements

NOTES CONTINUE ON OTHER SIDE



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NOTE Taking AREA:

OBSERVATIONS

4. OBSERVATIONS – statement of knowledge gained through the senses or through the use of scientific equipment.
a. Use your senses

ANALYSIS

5. ANALYSIS – comparing the results of the experiment to the prediction posed by the hypothesis.

Comparing your results

CONCLUSION

6. CONCLUSION – a statement of whether the original hypothesis was supported or refuted by the observations gathered.
b. Did it prove/disprove my hypothesis.

• Steps sometimes called “elements” DO NOT have to follow the order (or list)
o e.g. computer connection lost
• There is NEVER one way to answer a question

OTHER SKILLS

Charles Darwin
• Credited for Natural Selection using scientific methods

Scientist’s works is keep in check by peer review

PEER REVIEW

Peer Review – scientists critique each other’s work and decide whether it meets the standards of the scientific community.
• Even Darwin had to compete against other Naturalist such as Wallace and Lamarck
• But worked closely with his friends Hooker and Huxley

Other Skills that might be needed is:
CREATIVITY EXPERIENCE INTUITION
WWW.EducationPortal.com

SUMMARY:

Scientific Methods is a set of procedures that scientists follow in order to gain knowledge about the world. NO scientist’s follow the EXACT same methods.

There are 6 keys steps in this process: Questions, Hypothesis, Experiments, Observations, Analysis, and Conclusion.

You DO NOT need to follow the steps in order but they need to be completed.

Scientists all over the world (like Darwin) follow these steps to compete for recognition in the scientific community. If you discover something new, members of your peers will put your scientific methods steps to the test.