



Earth Science!

What is Science??





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Science is not knowing things, it is how we learn things.





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What is Science?

Science is nothing more than:

- **Seeing what is really there.**
- **Trying to figure out what it means.**
- **Connecting actions with consequences.**



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What is Science?



The most important questions in Science:



- What was that? and, can I make it do it again?



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What is Science?

It is that **Scientific Method**



1. Observe and Ask a Question (The Problem)
2. Find Out All You Can (Research)
3. Make a Guess About the Answer (Hypothesis) That Can Be Tested
4. Test Your Hypothesis (With Your Procedure)
5. Figure Out What Happened and Get Your Conclusion
– You now know what is going on and can predict what will happen in the future



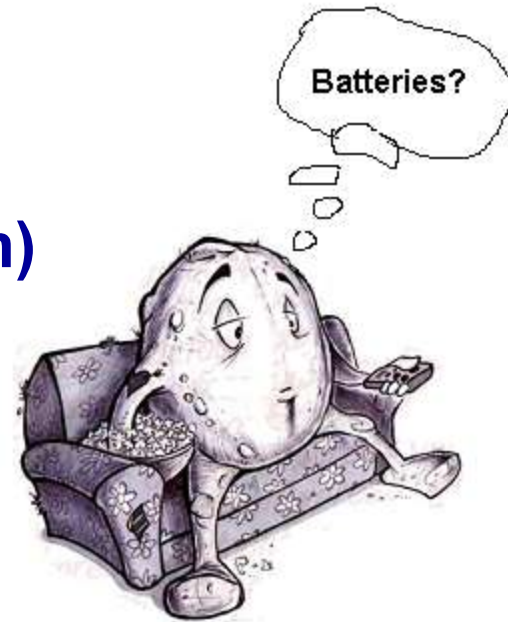


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What is Science?

It is that **Scientific Method** !

1. Why won't the TV turn on? (The Problem)
2. Remotes use batteries and TVs need electricity (Research)
3. Make a Guess About the Answer (Hypothesis) That Can Be Tested
4. Test Your Hypothesis (change the batteries)
5. Figure Out What Happened and Get Your Conclusion
– Did that work? Or do I try something else, like plugging in the TV?





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What is NOT Science??



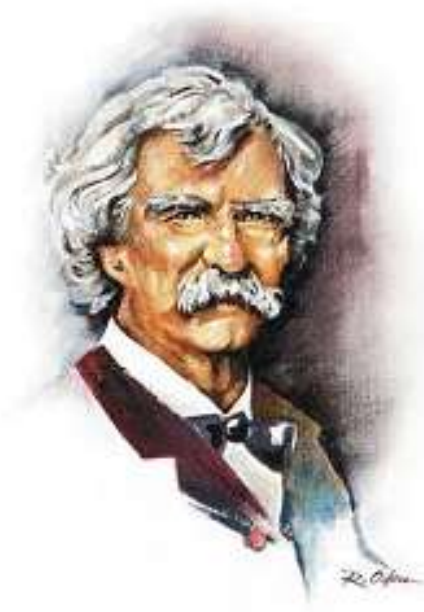


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What is NOT Science??

1. Guessing and Making Assumptions

“EVERYBODY” knows



“It's not what we don't know that hurts us, it's what we know for certain that just ain't so.”

Mark Twain

That empty space in your head can be filled, but NOT if it is already filled with something that is not true!



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What is NOT Science??

1. Guessing and Making Assumptions

2. Unverified Authority

“I heard on Fox News that THEY said....”

“She is famous, so she *must* be very important, and know a lot about

- Global warming
- Animal rights
- Diet and health
- World peace”



← insert train-wreck of the week here.

“Famous” does not mean “Important” –
Who are Jack Kilby and Robert Noyce?



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What is NOT Science??

1. **Guessing and Making Assumptions**
2. **Unverified Authority**
3. **Untestable**

Example: Which is the “best” selling car?

Scientists do not “take it on faith”



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What is NOT Science??



1 experiment is worth a million expert opinions



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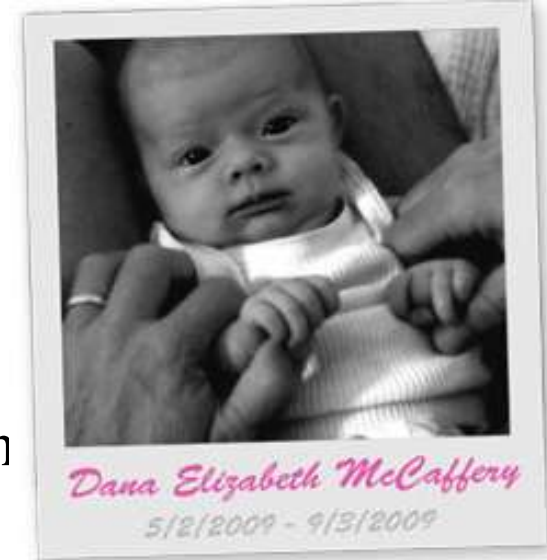
What is NOT Science??

- **Rejecting science can KILL!**

In America, people who claim vaccines cause autism are a major health threat.

Whooping cough is now officially an epidemic in California. Whooping cough is almost completely preventable, but because people like Jim Carey (is he a doctor?) say that the vaccine is dangerous, people are not getting their children vaccinated and there have been well over 900 cases of whooping cough in California this year.

There been 12 deaths this year from whooping cough, *all babies under three months of age.*





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WHAT is Earth Science??

It is understanding how the Earth works, to make sure that

the Earth can continue

to → **sustain** ←

HUMAN life.

