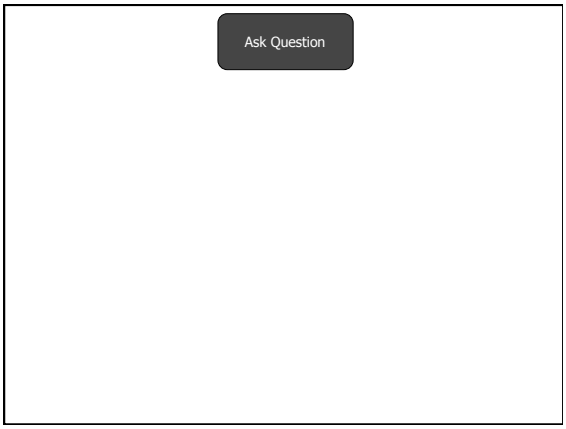
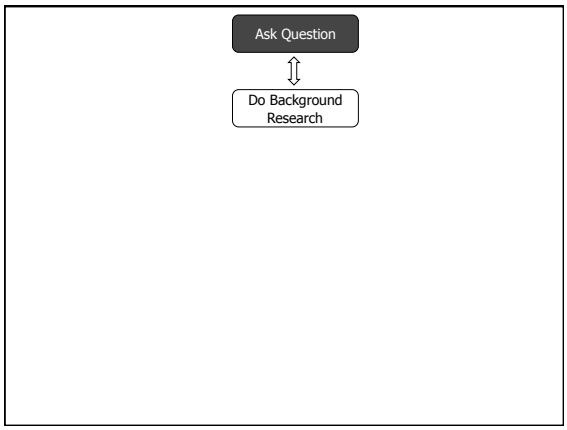
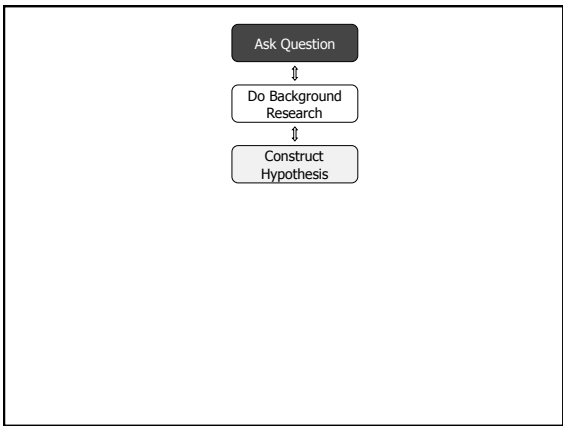
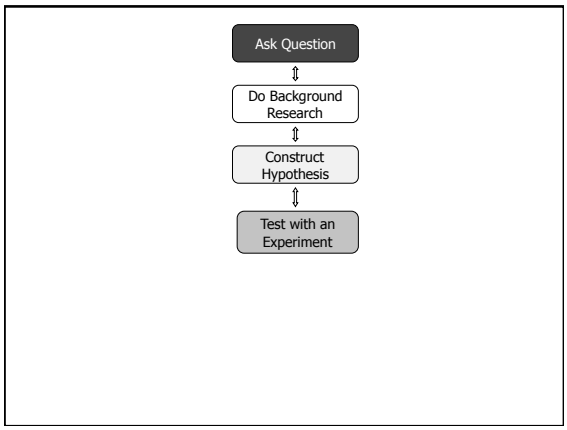
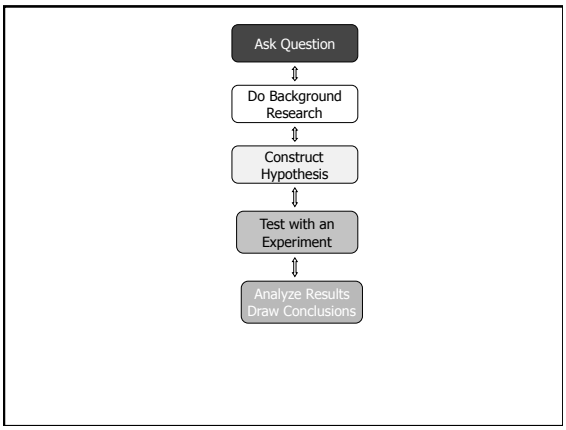
Scientific Method

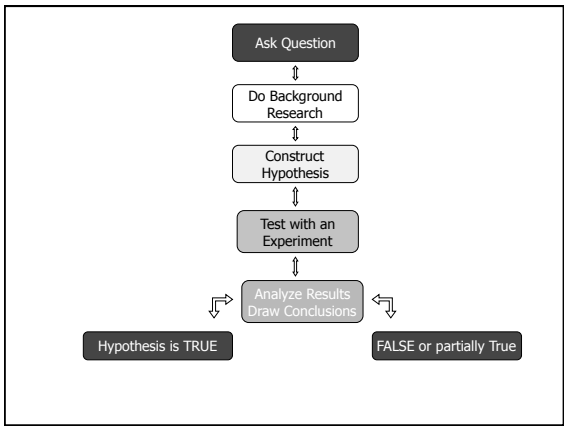


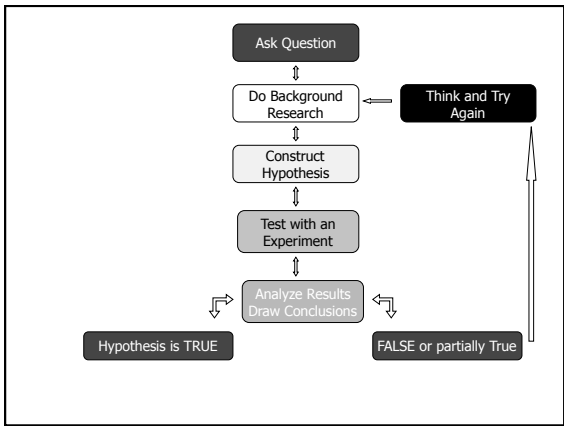


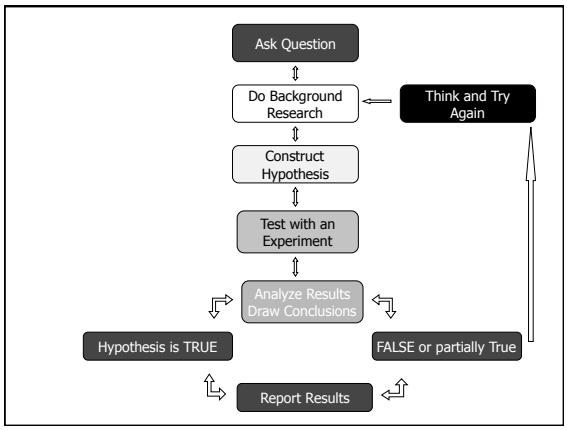












Ask Question

- The scientific method starts when you ask a question about something that you observe:
  - How?
  - What?
  - When?
  - Who?
  - Which?
  - Why?
  - Where?

In order for the scientific method to answer the question it must be about something that you can measure.

Do Background Research

- Rather than starting from scratch in putting together a plan for answering your question, you want to be a "savvy scientist" using library and Internet research to help you find the best way to do things and insure that you don't repeat mistakes from the past.

Construct Hypothesis

- A hypothesis is an educated guess about how things work:
  - "If ____(I do this)_____, then _____(this)_____ will happen."

Test with an Experiment

- Your experiment tests whether your hypothesis is true or false. It is important for your experiment to be a fair test. You conduct a fair test by making sure that you change only one factor at a time while keeping the other conditions the same.
- You should also repeat your experiment several times to make sure that the first results weren't just an accident.

Analyze Results and Draw a Conclusion

- Once your experiment is complete, you collect your measurements and analyze them to see if your experiment is true, false or partially true.

Accepting or Rejecting Hypothesis

- Scientist often find that their results are false, and in such cases they will construct a new hypothesis starting the entire process of the scientific method over again.
- Even if they find that their results are true, they may want to test it again in a new way.

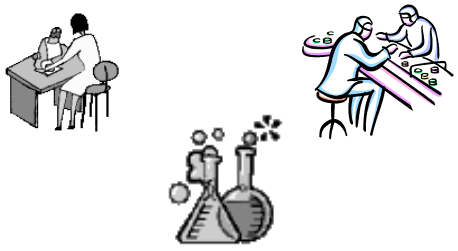
LAST STEPS

- Report Results
  - What did you find?
- Go further.....
  - What new questions can you now ask yourself based on what you've found?

Communicating Results

- To complete your science fair project or experiment you will communicate your results to others in a final report and/or a display board. Professional scientist do almost the same thing by publishing their final report in a scientific journal or by presenting their results on a poster at a scientific meeting.

NICE JOB!!!



Questions and Discussion?!?!?!