Scientific Method

science 2k19

Scientific Method:

* scientists follow steps to answer questions and solve problems

Step 1 and Step 2:

* Ask a QUESTION
* MAKE AN OBSERVATION

* either step could be the 1st step. Let's think about this…

* Im observing deformities in tadpoles in the pond next to my house.

Steps 3:

* Form a HYPOTHESIS.
* This is a prediction based on your observation/question.
* If a substance in the pond water is causing deformities, then some tadpoles will develop deformities when they are raised in that water.

Step 4: Design Experiment

- Design it to show if a particular “FACTOR” is causing the outcome.
- Controlled experiment: tests only one factor at a time and consists of a control group and 1+ experimental groups.
- All of the factors are the same except for ONE FACTOR
- EX: tadpoles in pond: factors…?

Step 5: Collect /Analyze

* Scientists always try to test many individuals/multiple numbers/TRIALS.

* the greater the number of organisms they test, the more certain they can be of data.

* to support conclusions

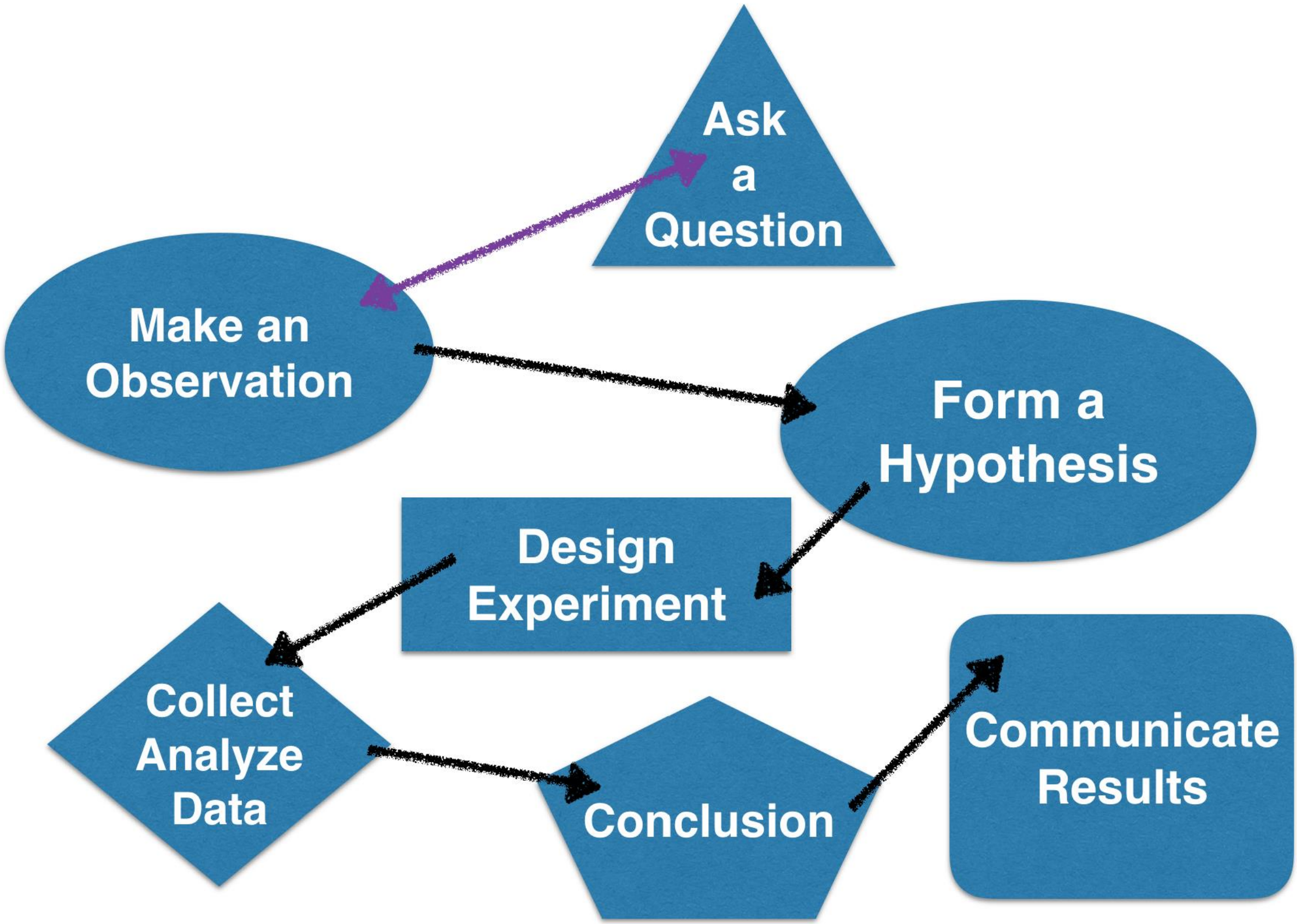
Step 6: Make Conclusion

- Analyze the data and see if the results support the hypothesis
- Was it really the pond water that was causing the deformities?

Step 7: Communicate Results

* Communicate results with other groups or scientists to see if they got the same results

* repeat, compare or maybe new data can be added to strengthen existing hypotheses.


Ask a Question
Make an Observation
Form a Hypothesis
Design Experiment
Collect Analyze Data
Conclusion
Communicate Results