

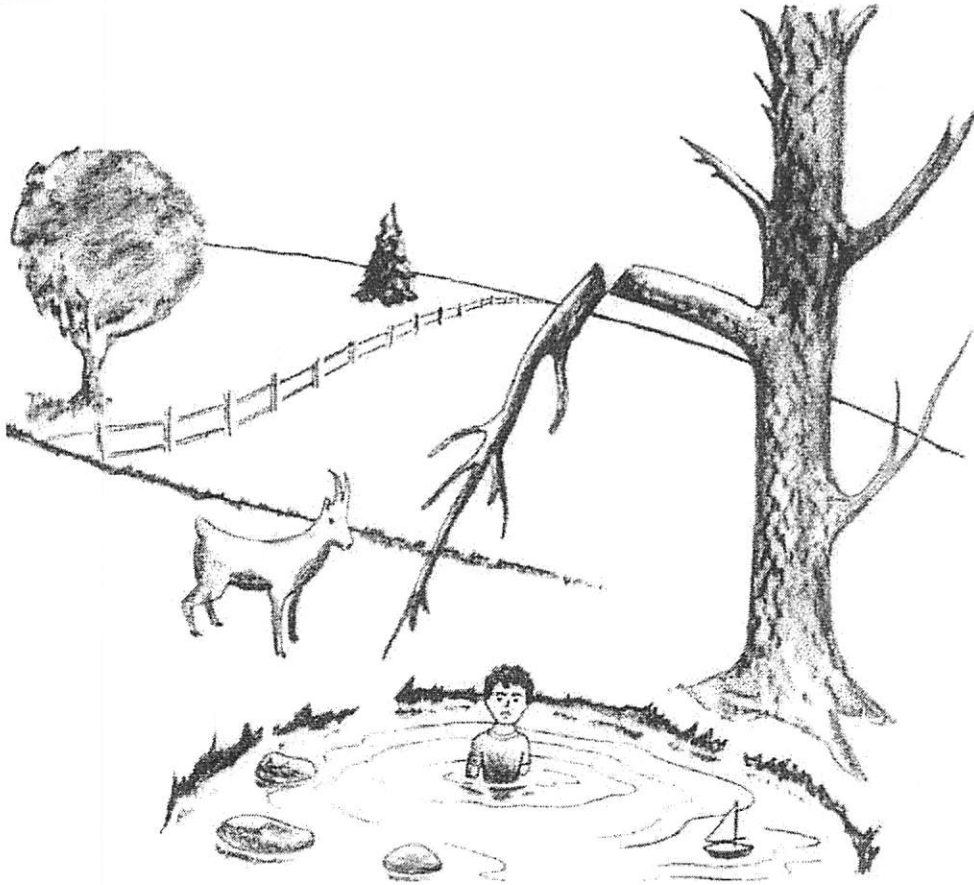
Name: \_\_\_\_\_ Date: \_\_\_\_\_ Hour: \_\_\_\_\_

### ***Observations vs. Inferences***

**Observation:** recognizing or noting a fact or occurrence

**Inference:** a conclusion based on observations

Use the picture of the boy in the water to determine if the following statements are observations or if the statements are inferences. Place an "I" in the blank for inference and an "O" in the blank for observation.



- |   |   |
|---|---|
| ___ 1. The boy is in the water                                      | ___ 9. There is a sailboat in the water           |
| ___ 2. The weather is cold  | ___ 10. The sailboat belongs to the boy           |
| ___ 3. The tree branch is broken                                    | ___ 11. The goat will soon leave the pond         |
| ___ 4. If the boy crawled out of the water, the goat would push him | ___ 12. The tree by the pond has no leaves        |
| ___ 5. The boy fell off the branch                                  | ___ 13. There are three rocks in the pond         |
| ___ 6. The goat is standing by the pond                             | ___ 14. The tree by the pond is dead              |
| ___ 7. The branch will fall on the boy's head                       | ___ 15. If it rains, leaves will grow on the tree |
| ___ 8. The boy fell off the rocks                                   | ___ 16. The goat pushed the boy into the pond     |

# The Scientific Method

*A systematic series of procedures that is used to solve problems*

1. \_\_\_\_\_: identify the problem that needs to be solved.
2. \_\_\_\_\_: identify any previous research, observations, studies, and/or surveys on the chosen problem
3. \_\_\_\_\_: make an inference that can be tested; an educated guess
  - i. \_\_\_\_\_: characteristics of an experiment
  - ii. \_\_\_\_\_: the factor(s) in the experiment that remain the same
  - iii. \_\_\_\_\_: the factors in the experiment that the scientists changes
  - iv. \_\_\_\_\_: the factor that occurs as a result of the independent variable; this variable is always \_\_\_\_\_

(Example) If artificial and live bait are used to fish, then the artificial bait will catch the most fish.

Independent - \_\_\_\_\_

Dependent - \_\_\_\_\_

Controls - \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_

4. \_\_\_\_\_: test the hypothesis by performing an experiment.
5. \_\_\_\_\_: decide whether to accept or reject the hypothesis based on the collected data and the background knowledge
6. \_\_\_\_\_: identify any facts that are evident from the research.