

Understand the Scientific Method

Name _____ Per. ____

1. A boy is walking near a pond and observes a frog catching an insect by flinging its tongue out to grab it. He wonders how the frog's tongue can grab an insect. So he makes a hypothesis.

- Below are three statements. Only two of them are true hypotheses about the frog. Mark the one that is NOT a hypothesis and then explain why it is not.

____ The frog's tongue is sticky, so that when he flicks it out, the insect sticks to it.

____ The frog believes with all his heart that he can catch the insect, and he does.

____ The frog's tongue quickly coils around the insect when its tip touches it.

2. Pick one of the real hypotheses in #1 above and explain how you would test it to see if it is correct.

3. According to astrology, the traits of a person born in June, under the sign of Gemini, include the ability to do more than one task at the same time. Assume a person you know who is a Gemini is able to rub his stomach and pat his head at the same time. Does this prove that astrology can correctly predict someone's abilities? _____ Why or why not?

4. A girl believes her mom when she is told that going out in the cold and snow will give her a cold, so she always bundles up. She rarely catches a cold. But her friend who does not bundle up as much has a cold. Even though some of her other friends who do not bundle up do not have colds, the girl explains to her friend with a cold that she has a cold because she did not bundle up. Is the girl's conclusion based on the scientific method? _____ If not, what parts of the scientific method are missing?

a. Is there an observation? If so, what is it?

b. Is there a hypothesis? If so, what is it? Is a good hypothesis?

c. Is there an experiment or test? Explain.

d. Do you know whether or not the girl's mom read a published science article about catching colds?

e. The girl believes her mom's statement about catching colds, but is her mom's warning and her friend's cold enough to prove that catching colds is caused by bad weather?