A TESTABLE

HYPOTHESIS

Whenever scientists conduct experiments, they know what they are trying to demonstrate. In fact, scientists very seldom prove anything. Normally, they just support or reject their hypothesis.



Since the support or rejection of the hypothesis is critical in determining the success of the experiment, the hypothesis that is developed and tested is very important in the experimental procedure. In this exercise, you will have the chance to develop a hypothesis that might be tested in a laboratory. [Note: You will not actually test your hypothesis, but your hypothesis must be testable.]

On the back of this paper are two observations. You will have about 30 minutes to develop a workable hypothesis that could be used in an experiment to test some aspect of the observation. Follow the directions below and go over the rubric so that you know what is expected of you.

DIRECTIONS

- 1. Read the paragraphs located above.
- 2. Each student in the group is to develop a hypothesis for each observation on their own sheet of paper. Then, as a group, discuss each individual's hypotheses.
- Come to an agreement on the best single hypothesis for each observation assigned.
 [Note; you may use a combination of several group members' hypotheses.]
- 4. As a group, choose which one of the observations you would like to use.
- 5. Write all of your information on the display board.
- 6. Groups will present to the class its answers for the first 3 steps in the scientific method.
 - I. Identify the problem
 - II. Form a testable hypothesis
 - III. Develop a procedure
 - Identify the control group
 - Identify the experimental group



OBSERVATIONS



GROUP 1:

- A. Bees spend hours flying around the paper carriers when they wear bright yellow "high visibility" vests, but not when they do not wear the vests.
- B. When Scruffy the dog gets a bath with dog shampoo, his coat is thick and shiny. When he gets a bath with regular dishsoap, his coat is dull and oily.

TESTABLE HYPOTHESIS RUBRIC

 Appropriate title Illustration of problem or experiment Problem or observation identified Hypothesis is testable Experiment which follows scientific method Creativity 		(2) (4) (4) (4) (4)
TESTABLE HYPOTHESIS PRESENTATION:		
 Every group member introduced Problem is identified Testable hypothesis is identified Experiment is discussed 	(((4)	(2) (4) (4)
 Control group/ Experimental group 	((4)
TOTAL	((40)



GROUP 2:



B. Twin sisters Suse and Sally went to the beach. Suse surfed all day and Sally just sunbathed. They used the same sunscreen, but Suse got sunburned and Sally did not.

TESTABLE HYPOTHESIS RUBRIC

 Appropriate title Illustration of problem or experiment Problem or observation identified Hypothesis is testable Experiment which follows scientific method Creativity 	$ \begin{array}{c} (2) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ \end{array} $
 Every group member introduced Problem is identified Testable hypothesis is identified Experiment is discussed Control group/ Experimental group 	$ \begin{array}{c} $
TOTAL	(40)



GROUP 3:

- old after a week in an
- A. Kim notices that Hoffman's bread does not mold after a week in an open bag. However, Wholehouse White bread produces a layer of black "fur" in the same length of time in its open bag.
- B. Roy R. notices that his horse, Trigger, wears out his horseshoes twice as fast when he is ridden on pavement rather than on dirt trails.

TESTABLE HYPOTHESIS RUBRIC

 Appropriate title Illustration of problem or experiment Problem or observation identified Hypothesis is testable Experiment which follows scientific method Creativity 	$ \begin{array}{c} (2) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ \end{array} $
TESTABLE HYPOTHESIS PRESENTATION:	
 Every group member introduced Problem is identified Testable hypothesis is identified Experiment is discussed 	
Control group/ Experimental group	(4)
TOTAL	(40)





- A. While fishing, Johnny Q. notices that a "stupid bullfrog" will strike at an artificial fly lure when it dangles above the water. However, when Johnny Q.'s little brother placed 20 dead "real" flies on the water, the frog loses interest.
- B. Last week, Henrietta watered her grass during the midday sun (hottest time of the day) and the grass turned brown.

TESTABLE HYPOTHESIS RUBRIC

 Appropriate title Illustration of problem or experiment Problem or observation identified Hypothesis is testable Experiment which follows scientific method Creativity 	$ \begin{array}{c} (2) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ \end{array} $
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TOTAL	(40)



- A. Coach Lulu notices that her soccer team performs better when they drink Gatorade versus water.
- B. A pond in the forest is green and murky in the summer but is clear and clean looking during the winter.

TESTABLE HYPOTHESIS RUBRIC

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TESTABLE HYPOTHESIS PRESENTATION:	
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 Control group/ Experimental group 	(4)
TOTAL	(40)



GROUP 6:

OBSERVATIONS

- A. Bobby the boating enthusiast complains about having to scrape barnacles from the hull of his sailboat that is moored in San Diego Bay. He says he never has to scrape them from his houseboat in Lake Meade.
- B. Cindy notices that her heart rate increases after drinking a caffeinated soda.

TESTABLE HYPOTHESIS RUBRIC







GROUP 7:

A. While camping, Smelly refuses to bathe. He claims that "real mountain men" hardly ever took baths. Scrubby, on the other hand, takes a sponge bath every other day. After two weeks, Scrubby has many mosquito bites, and Smelly is virtually bite-free.

OBSERVATIONS

B. Lou's pet parrot looks as though it has many more feathers on cold days than it appears to have on warm ones.

TESTABLE HYPOTHESIS RUBRIC

 Appropriate title Illustration of problem or experiment Problem or observation identified Hypothesis is testable Experiment which follows scientific method Creativity 	$ \begin{array}{c} (2) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \\ (4) \end{array} $
TESTABLE HYPOTHESIS PRESENTATION:	
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 Control group/ Experimental group 	(4)
TOTAL	(40)





- A. Two jars of home-canned beans are placed on a shelf. Both were canned at the same time by the same person. After a month, one jar is still good. The other jar is discolored and smells horrible upon opening.
- B. Jack runs a faster mile in his Nikes than his Reeboks.

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