Science Fair Projects

3rd Grade to 5th Grade

Title: Human Body

"Think Fast"

Stating the Problem – The Big Question

Measuring the reaction times of various people is interesting and a lot of fun. What do you want to learn from your experiment? Write a question that asks what you want to find out from your scientific investigation.

Forming a Hypothesis – A Smart Guess

Are the reaction times of all people the same? How do they differ? Make a smart guess. Write a sentence that predicts what you will find out from your investigation.

Planning the Procedure

What things determine if a person will have quick reactions or slow reactions? Is a person's reaction time controlled by the brain or by the muscles? Use some books and articles about your body's nervous system to find out what part of the nervous system controls a person's reaction time.

Have your friends hold their thumb and index fingers 5 cm (2 inches) apart. You hold a dollar bill suspended between their fingers with the bottom of the dollar about 5 cm below their fingers (that leaves about 10 cm above their fingers). Let go of the dollar bill. If they can catch it before it falls through their fingers, they can keep it. Few people are quick enough to catch it. It only takes 0.15 of a second for the dollar bill to fall 10 cm. This experiment tests a person's reaction time. Do girls have quicker reaction times than boys? Are older people quicker than young people? Do athletes have quicker reactions?

There are many different experiments that you can perform to test a person's reaction time. One very simple experiment is similar to the dollar bill trick mentioned above. Have someone spread the thumb and index fingers as in the dollar bill trick. Hold a yardstick in the vertical position with the bottom of the yardstick between the person's fingers. Tell the person to catch the yardstick between his or her fingers as soon as possible after you release it. Record the distance that the yardstick fell before the person caught it. Conduct the experiment five times with each person.

This project is from Daryl Vriesenga's book, *Science Fair Projects, Grades 4-6*,
Michigan, Schaffer Publications, 1990. The Guide is available on line at: SchooDoodle.com

Science Fair Projects

3rd Grade to 5th Grade

Title: Human Body

"Think Fast" (continued)

The experiment just described can be done with a number of different people. Try to find patterns in your results. Does it matte which hand a person uses? Do boys react faster than girls? Does reaction time change with age? There are other experiments that can test a person's reaction time. Try to invent one of your own.

Write a step-by step description of your experiment. Make a detailed list of materials that will be needed.

Make a chart on which to record the results of your tests. Here is a sample of what you might use.

Chart

Yardstick Reaction Time Test									
Name	Age	Sex (M/F)	Hand (R/L)	Distance Yardstick Fell					
				1st Drop	2nd Drop	3rd Drop	4th Drop	5th Drop	Average

Recording Results

3…2…1…Think fast! It's time to start measuring reaction times. Record the results of your test carefully. After you have collected a good sampling of test results for various groups, such as boys and girls, young and older people, right-handed and left-handed people, etc., find the average results of each group. Plot the results of the various groups on a graph to compare the results.

Drawing a Conclusion

How did the results of your test compare to the predictions that you made before you did your experiment? Did you notice any patterns in your results? Was your hypothesis supported? Write a report that explains what you learned about reaction time. Your report should include the steps of the scientific method: your Big Question, your hypothesis, the procedure of your experiment, the result, and your conclusion.

This project is from Daryl Vriesenga's book, *Science Fair Projects, Grades 4-6*, Michigan, Schaffer Publications, 1990. The Guide is available on line at: SchooDoodle.com

Science Fair Projects

3rd Grade to 5th Grade

Title: Human Body

"Think Fast" (continued)

Display

Make a display that explains to others the purpose, procedure, results and conclusion of your scientific investigation. You may also have equipment available for observers to try the experiment.

This project is from Daryl Vriesenga's book, *Science Fair Projects, Grades 4-6*,
Michigan, Schaffer Publications, 1990. The Guide is available on line at: SchooDoodle.com