Veteran Education Transfer Plan
Cover Sheet

Title of ETP	**No Sweat Science Fair**
Name of IISME Fellow	**Molla Huq**
Fellow's year-round email	**Mollahuq@sbcglobal.net**
Sponsor Company	**Intel Corporation**
Name of Mentor	**Carina Miller**
National Board Certificate Area	**Single subject Science : Biology; Young adulthood science Standard**

I, the IISME **Fellow** named above, affirm that the ETP I am submitting is my own work, that I acknowledged sources where appropriate, and that I avoided including any proprietary information of the Sponsor Company. By my submission I am assigning to IISME my entire copyright in the ETP. I understand IISME is simultaneously granting me a license to use the ETP for pedagogical purposes.

Signature _____ Date _____

Category	**Science : Curriculum**
Objectives	**The student will be able to identify problems, and select from alternative strategies to solve problems.** **The student will be able to make informed decisions.** **The student will contribute ideas, suggestions and effort for completion of group tasks.** **The student will cooperate as a member of a multi-ethnic, mixed gender community.**
Abstract (50 words or less)	**Scientific inquiry is part of the state standard for 9th and 10th graders. Most teachers cover this standard by teaching "scientific method". This ETP describes easy step by step method to help a student use scientific method to do a small research topic and take the results to a science fair.**
Describe how your ETP aligns with the National Board Standard stated in your proposal.	**The national board Standards states: Equitable participation: To ensure that all students, including those from groups which have historically not been encouraged to enter the world of science, participate in the study of science.** **The student body of the Independence High School is made up mostly of children of the immigrants. Approximately 34% are Latinos, 33% Asians and 33% locals including African Americans. Most students are from lower middle working class families. Slightly over 50% of these are females. As participation in Sciencepalooza science fair is highly recommended and the participant groups are formed as mixed gender & ethnicity thus the equitable participation of the student body is guaranteed.**

Describe the connection between your ETP and the Summer Fellowship.	**This summer part of my work is to analyze data to answer certain question of the sponsor's interest. I among others who believe that involving students in science fair is one of the ways to make them interested in science. East Side School district has created a Science Fair, Sciencepalooza, for its students. However not all science teachers of the district participate. It is believed that an easy to follow procedure for a science fair may improve the situation. This ETP is therefore written to explain the steps one need to follow for science fair project for students including data processing and presentation of data using technology.**
Growth-Measurement Devices	
Resources Needed	**Most resources needed for the science fair projects already exists at the school, some that are needed as an individual basis are provided by the Synopsys foundation.**
Evaluation/Assessment Measures Used	**Rubric is provided for in-class evaluation. However the Fair authorities usually have their own process of evaluation.**
Submitted Copy	

I, the **Mentor** named above [please select one of the following],

- ❑ Have read the attached ETP, and my comments, if any, appear below.
- ❑ Have read the attached ETP, and, as outlined in the IISME-Company Fellowship Agreement, have reviewed it on behalf of the Sponsor Company, and have determined that the ETP does not contain any Sponsor-proprietary information. My additional comments, if any, appear below.

Comments:

Signature _____ Date _____

Administrator's comments:

Signature _____ Date _____

No Sweat Science Fair

By

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No Sweat Science Fair

Description of the lesson:

Science fair: This lesson is intended for 9th and 10th grade students who have a science class everyday, however it can also be modified for any grade level. In our school we have 50 minutes periods. All 9th and 10th graders have one science class everyday. The East Side Union High School District in collaboration with Synopsys Foundation annually conducts "The Sciencepalooza Science Fair" for its students. Sciencepalooza is held during early March and accepts projects with experimental results on certain areas of all sciences. Ideally, the students will get sufficient time to work on their projects in class. Because Sciencepalooza is a competition among students of the 10 schools in the School District, only well done projects have a chance for recognition. Thus, a participant must take careful steps in all stages of the work beginning with the selection of a problem to the presentation of the results of the project in display board, to defending the work during the judging process.

In schools where there is no science fair organized by the school district, the students can participate in the science fair at the Synopsys Championship Science Fair or any local science fairs. The teacher may choose to do this just for his/her class and if deemed fit may like to make it available to the school population. This is a good lesson, where the student learns inquiry-based project preparation, and masters' scientific methods and its application in solving a given problem.

Contexts of science: To create opportunities for students to examine the human contexts of science including its relationship with technology and its ties to mathematics so that the students make connections across the disciplines of science and into other subject areas.

Science inquiry: Develop the mental operations, habits of mind and attitudes that characterize the process of science inquiry in students.
The students are encouraged to work in groups and select a project of the group's choice. Students are guided throughout the process of their work. They experience the scientific methods at work. They use technology tools for processing and analysis of their data and for the preparation of charts, graphs and visuals. Thus the students understand the connection between science, math and technology.
During the science fair, the students find themselves competing with students of other schools and thus have an opportunity to work with the larger student community.

Objectives:

The students will find interest in science and technology. They will also be able to use scientific methods to perform scientific inquiry and will be able to use technology for data processing and make tables and graphs. The students will be able to solve math problems using technology and will learn the use of technology to present data in a professional way.

Teacher: There is no doubt that taking students to a science fair means lots of extra work and many days of working after school with these students. During those days of after school work, the students will be hungry and thirsty, so a contingency plan should be in place. However, the satisfaction of a student's excitement in understanding scientific method is a great reward. Synopsys Championship Science Fair helps participating students financially for materials and supplies and also give financial incentive to the teachers. Check their website www.science-fair.org for details.

Parent involvement: It is important that the parents are involved and informed about this activity. Synopsys Championship Science Fair insists on and highly recommends parent involvement. One might start with an informative letter explaining what it is, the time line of activities and the benefit the student will get by joining a science fair with the results of an experimental project. This will not only make it easier to motivate the student to do the job putting extra time after school but also will prepare the parents for the support that is needed. The parents will also receive letters from the Fair Authorities congratulating them for their wards success in pursuing scientific activities. **Appendix 1** shows the sample of the letter.

Step I. Scientific Methods: Students are given the option to form their own group of no more than three students and must also be multiethnic and mixed gender. The fair authorities permit no more than three in a group. Once the group is formed, the class will observe a video on "the Scientific method". Then a discussion will be held to help students process the information and understand the scientific method **(Table 1).** After ascertaining the level of understanding through verbal inquiry, each student gets a copy of scientific method worksheet **(Table 2)** that they will take home as homework. Next morning they will be verbally tested on the content of the table.
Depending on the results of the verbal test the table will be further explained. And then the students will be asked to explain the scientific method. By this time most students understand the scientific method. It is also a good time for a formal quiz on scientific method.

Step IIA. Project Selection: Now the students will be given homework to come up with three topics for their science fair project. They may visit websites mentioned in **Table 3.** Also they may like to consult www.yahoo.com and www.google.com for

"science fair ideas". Intel organizes the International Science Fair and helps students with volunteers and mentors. Students may like to contact Intel as well. **Appendix 2** lists some problems worth considering. Also they may consult family members or friends for a problem that they may like to work on. They are also required to research on each one of the selected topics and report all that is known and not known.
Once in class, they will be asked to reason within their group and select one problem that they would like to work on. They then will be asked to write the problem in the format of a question. That becomes the group's science fair project. They then will write the hypothesis in the "if and then" format. A hypothesis is an educated guess about possible solution to the problem. At the end of the experiment, the hypothesis will or will not be supported. Thus it just does not matter if the student has a right or wrong hypothesis.

Step II B. Materials and Methods selection: The next homework will be to find a method to conduct the experiments on that science fair project and to write down the source the information. Once in the class they will then discuss within their group, agree on a method and write their procedure for the experiment and make a list of materials they will need to carry on the research. Once each group has written the name of their project and has selected the method. Each group then is required to present its research problem along with the background data, hypothesis and procedure to the class for class discussion. Thus, the group will defend its project proposal in the class and finalize their science fair project. This activity helps strengthen the project proposal. The finalized science fair proposal will then be sent to the Science fair authorities for their approval. The authority may accept or ask for modification or may reject the proposal altogether. If modification is asked for then comply. If approval is not given then the students need to go back to the project selection stage and select a new one and resubmit. The student may start the work only when the project is approved. Synopsys Championship science fair participants need to fill in the appropriate project proposal form and submit it for their approval. The work should only be started after the proposal is approved. If the project is done for the class only, then the teacher will do the approval.

Step III. Record Keeping: Each student of each group must be informed about the importance of records keeping. They need to understand that record keeping is a very important activity of science. They are informed that to display the logbook is one of the requirements of Science fair. All Science Fair authorities including County Science fair, State Science fair and International Science Fair requires display of the logbook. Every day, everything they do must be recorded in the logbook with the corresponding date and time.
Record keeping will also mean taking photographs. Plan to take photographs of the work from the beginning until the end, at different stages of its progression. Photographs will be a proof of what ever the researcher is trying to proof or disproof. Evidence is very important in science. Photographs are very strong evidence. Use digital camera. Make sure that it is compatible with the computer available for student use.

Step IV. Data collection & processing: At the time of selecting method or procedure for the project, a decision should be made as to the types of data that the project will generate and how to record that data. All observations must be very carefully

recorded. Data could be in words or in numbers or a combination of both. Because it is an experimental project, the work will require repetition at least three times. The student should be taught to calculate at least mode, median and average of the collected numbers. However in experimental work the standard deviation of each group of data needs to be calculated. Statistical analysis of the variation of data within and between groups will help explain if the data indicates statistically significant differences. Many hand held devices are there for this purpose. However, computers will help process these calculations using appropriate programs. The student needs to be taught the use of Excel program for making the tables and math calculations from the data presented in these tables. The students need to learn how to make graphs from these tables and how to present these tables the best way possible.

Step V. Writing the Results: It is important, that the students understand that writing is an important part of scientific communication. It must be written clearly enough that in the absence of the author, the reader should be able to understand the work just by reading it. The presentation should be in simple short sentences without any ambiguity and in passive voice and not in active voice as is often the practice of English subject writing. There should be no punctuation, spelling, or grammar errors. Have someone proofread the work. Make the student use a computer to write the report. This will help in correction as well in display board preparation where different styles, fonts, colors will be needed to make the board look good.

Most Science Fair authorities in addition to the display board ask for a written report of the work done. The report needs to be written in the following format:

Problem: Here the student introduces the problem and gives background information and explains the problem that the student is trying to solve. Restate the purpose of the experiment.

Hypothesis: This is a statement about the possible solution to the problem that the workers have guessed based on the experience and existing information. Hypothesis is done before the experimentation ever begun and not after the experiment is done.

Materials: List the materials used in the project.

Results: Describe the results obtained in the experiment. Just state the results obtained and make neither comments nor any inferences from these results.

Discussion: Results are discussed here. State if the data show a relationship or reveal some pattern. State if there is a significant difference between the groups or within the group. State if the experiment has any practical application.
State here any weakness of the experiment, observation, measurement and what the researcher will do in future to avoid these.
In a separate paragraph or under a subtitle, state what could be a future project on this problem that the researcher would like to do or suggest to be done.

Conclusion: Make a statement to conclude the results and discussion. Make connections between results and hypothesis. The hypothesis was either supported or not supported by the data. Avoid making statements that the hypothesis "proved" or "disproved". A small one time experiment cannot prove or disprove anything.

Abstract: Abstract is the last requirement. This is a one page written material, needed both for the report as well as for the display board. It does not go on the display board. It is set on the table on which the display board rests. Write no more than a page about the work. It will include the title of the work, names of the students worked in the project, background information, methods used, results obtained, discussion and conclusion made. It must be written in the abstract format. Follow the guidance of the science fair authorities for the maximum number of words permitted for it. Check the minimum number of copies the authorities require. Keep at least that many there.

Step VI. Evaluation: Science Fair authorities do their own evaluation. It is a good idea to do one's own evaluation on the basis of a rubric. Each student should get a copy of the rubric (**Table 4**). Explain the content of the rubric and make sure that the student understands that rubric is the tool to be used for the evaluation of the project. Thus the group should consult the rubric at every stage of their work.

Step VII. Display Board: Science Fair display board or Science fair boards as they are called is the main tool that the student has to attract the attention of the judge and display the work properly. The knowledge of usage of Microsoft word program is very important. Because it is a display thus artwork is important. Various combinations of fonts, font size, color choice and some artistic ideas do wonder. The group needs to try different combination until it is satisfied with the display material.

The board must be presented in such a way that it meets the standard set by the fair authorities and at the same time attractive enough so that the judge will find it interesting. It should be reader friendly. There is no one set rule for using the space of the Display Board. Display rules vary so read the instruction of the Fair authorities. The board has three panels, the left, the right and the central. The left and the right panels are equal to each other but are shorter than the central one. Usual display criteria are shown in **Figure 1.**

Title: The **"title"** goes to the top center. Keep the project title short and use large letters (16 – 20 font size) to make it stand out. Make a catchy title that will attract the attention of viewers and judges. It may be different from the approved one as long as the approved title is there. Unusual but interesting title draws attention. Use letter style, font size and color combination such that it becomes attractive, neat and interesting. Use contrasting colors, but limit the number of colors used. Following the title on top central panel, names of each of the students should be there. Tables, graphs, drawings and photos go here too. Display these using appropriate backgrounds.
On the table in front of the center panel goes the following: Journal, Report, Abstract, Models, and Equipment used (Figure 1).

Problem, Hypothesis, Materials and Methods subtitles with their respective text are placed on the left side panel. **Results, Discussion and Conclusion** goes to the right. Use smaller letters than the title for the headings (Problem, Hypothesis, Procedure, etc.). Headings are written with bigger fonts and their texts slightly smaller however big enough so that reading is easy. Here again the font, letter style and color combination matters for attractive display.

Place all typed material on a colored backing, such as construction paper. Leave a border of about ¼ inch around the edges of each piece. Use a paper cutter so that the edges will be straight.

Do not glue any thing on the board. Use adhesive that holds the papers in place however will allow easy movement when needed. Move materials around until the setting is perfect and attractive. Before "gluing", layout your parts and move them around to achieve a balanced and attractive display. Ask the opinion of other students, teachers, or family members. Too many large objects will make the display look cluttered and too many small objects will be lost on a large board.

Bibliography: Include citations – the source of the information, a citation is a link to the bibliography.

Table 1. The Scientific Method

(Borrowed from http://www.howe.k12.ok.us/~jimaskew/hsimeth.htm and modified)

Step 1: State the problem.	**You cannot solve a problem until you know exactly what it is.** State the problem in the form of a question

	My Problem is - "Who could be my date for Friday Night?"
Step 2: Research the problem.	**What will it take to solve my problem?** **What do I know, and need to know, about my problem?** **To solve my problem, "I need someone to take out Friday Night".** **Who can I take?** **- Examine the possibilities.** **- Eliminate poor choices.** **- Consider likely choices.**
Step 3: Form a hypothesis.	**A possible solution to my problem.** **The simplest solution is often the best solution!** State your hypothesis in the form of "if and then" format. **"If I ask then (Name) will be my date."**
Step 4: Test the hypothesis.	**Perform an experiment to see if your hypothesis works.** **"Ask (Name) for a date Friday Night".**
Step 5: Draw conclusions from the data.	**Data are the results of an experiment. In its simplest form, there are only two possible conclusions:** **<u>Conclusion 1</u> If your hypothesis was correct, you now have a date for Friday.** **PROBLEM SOLVED!** **<u>Conclusion 2</u> If your hypothesis was incorrect, the experiment failed.** **DON'T GIVE UP! DO MORE RESEARCH!** **- What was wrong with your original hypothesis?** **- Did you make a poor selection?** **- Was your experiment flawed?** **- Form another hypothesis based on additional research.** **- Test the new hypothesis.**

Continue this process until the problem is solved!

Table 2. The Scientific Method worksheet

Step 1: State the problem. ***State the problem in the form of a question***	
Step 2: Research the problem. ***What will it take to solve my problem? What do I know, and need to know, about my problem?***	
Step 3: Form a hypothesis. ***A possible solution to your problem.*** **State your hypothesis in the form of "if and then" format.**	
Step 4: Test the hypothesis. ***Perform an experiment to see if your hypothesis works.***	
Step 5: Draw conclusions from the data. ***<u>Conclusion 1</u> If your hypothesis was correct, you now have a date for Friday.*** ***<u>Conclusion 2</u> If your hypothesis was incorrect, the experiment failed. What was wrong with your original hypothesis?*** ***- Did you make a poor selection?*** ***- Was your experiment flawed?*** ***- Form another hypothesis based on additional research.*** ***- Test the new hypothesis.*** **DON'T GIVE UP!** ***Continue this process until the problem is solved!***	

Table 3. Research links and Web pages

Science Fair Web Pages

Science fair resources sites

http://faculty.washington.edu/chudler/fair.html
http://www.howe.k12.ok.us/~jimaskew/hsimeth.htm
http://www.lib.lsu.edu/sci/chem/internet/science_fairs.htmlhttp://www.chipublib.org/008subject/009http://dmoz.org/Kids_and_Teens/School_Time/Science/Science_Fairs/scitech/scifair.html
http://www.isd77.k12.mn.us/resources/cf/welcome.html
http://www.internet4classrooms.com/sciencefair.htm
http://www.kn.pacbell.chttp://www.reacheverychild.com/science_fair.htmlom/wired/fil/pages/listsciencest2.html
http://www.all-science-fair-projects.com/
http://www.csun.edu/~lg48405/resources.html
http://www.usc.edu/CSSF/Resources/GettingStarted.html
http://www.ipl.org/div/kidspace/projectguide/
sciencebuddies.org

Science fair project ideas

http://earthquake.usgs.gov/4kids/sciencefair.html
http://school.discovery.com/sciencefaircentral/scifairstudio/ideas.html
http://response.restoration.noaa.gov/faqs/projects.html
http://www.terimore.com/
http://www.terimore.com/chemistry-science-fair-project-ideas/
http://www.scienceproject.com/projects/index/senior.asp
http://www.kidsolr.com/science/page2.html
http://www.centralusd.k12.ca.us/west.hs/Data/Library/ResearchResource/sci.html
http://dir.yahoo.com/Science/Education/K_12/Fairs_and_Competitions/Projects_and_Ideas
http://www.cloudnet.com/~edrbsass/edsci.htm.

Table 4. **Rubrics for experimentation and data processing**

(Borrowed from Internet and modified)

	Understanding	Data Collection	Interpretation of results	Graphic organizer	Drawing Conclusion
4 Advanced	Designs an experiment according to Scientific Method and applies appropriate steps	A comprehensive set of data is collected and presented in a high quality manner	Data is interpreted correctly and in alignment with experiment design	Has an appropriate title; lines, boxes and texts are neat and legible, easy to follow, & accurate and no grammar mistake	Conclusion: employs the appropriate information and evidence, identifies main points that are relevant to the topic, shows understanding of the concept
3 Proficient	All steps are used according to Scientific Method and applies appropriate steps	Data is collected as described in the experiment design	Interpretation of data is justified	Has an appropriate title; lines, boxes and texts are neat and legible, easy to follow, & accurate and some grammar mistake	Conclusion: employs the appropriate information and evidence, identifies main points that are relevant to the topic, shows some understanding of the concept
2 Partially Proficient	Not all steps of the Scientific Method are applied correctly	Data is incomplete or not collected as described in experiment design	Incomplete or inaccurate interpretation of data	Has an appropriate title; lines, boxes and texts are neat and legible, not easy to follow, & not accurate and some grammar mistake	Conclusion: employs the appropriate information and evidence, identifies some points that are relevant to the topic, shows some understanding of the concept
1 Non Proficient	Several steps of the Scientific Method are missing	Little or no data is collected	No interpretation of data	Has an appropriate title; lines, boxes and texts are not neat and legible, not easy to follow, & not accurate and considerable grammar mistake	Conclusion: employs the appropriate information and evidence, identifies points not relevant to the topic, shows no understanding of the concept

Figure 1. Sketch of a Science Fair Display Board

Appendix 1: Letter to parents

Science Fair

The time has come for us to prepare ourselves for the Science Fair for the 2005- 2006 academic year. Projects for science fair are important for the student as well as for the school. Each student must enter a project in the fair, either individually or as part of a group of no more than three students. The project must meet the standards set by the Science and Fair authorities. All students must participate in the science fair; however we encourage students to compete also in the Synopsys Championship Science and Engineering Fair.

Winners of a first or second prize at any of the two science fairs, in addition to getting prizes from the science fair authorities will receive extra credit on their second semester grade. All participants in the Science Fair will have their grade raised by one increment for the second semester. Student failing to do all their class work will not receive this privilege. During the first semester, a student will get the points allotted for completing the tasks and meeting the deadlines shown below.

Student may work in any area of science of his/her interest...
We suggest that the student take note of the following dates and point values:

a. Preliminary proposal due 30th September. 15 points

b. Library research report (present status of the problem the student want to work on) and at least three supporting references due October. 25 points

c. Final project proposal due October 30th. 25 points

d. Submit project proposal to Sciencepalooza &/ or Synopsys Championship by November 15th. 15 points

e. Start working on the project as soon as the fair authorities grant the approval. Journal entry required. 10 points

f. Journal entry showing progress of the research. Due 15th December. 10 points.

Please carefully read the following:

G. THINGS TO CONSIDER BEFORE SUBMITION THE PROJECT

1. The project presented must represent student's own work. The student may receive help from others but the final effort must be that of the student.

2. The project must be the result of careful planning.

3. The project must indicate a through understanding of the chosen topic.

4. The project must be well constructed.

5. All information must be accurate.

6. The display board must be of approved size and quality.

7. The student must follow correct presentation format**.**

I have read and understand that participation in science fair is required for grading procedure as mentioned in the green sheet.

_____ _____
Student signature Date

_____
Print name _____
Date

_____
Parent signature

_____
Print name

Appendix 2. List of possible topics for Science Fair.

(Borrowed from several internet cites and modified)

1. Would music in the classroom have an affect on test scores?
2. Does viewing television affect pulse rates?
3. Does plant food affect how a plant grows?
4. Does magnetism have an affect on plant growth?
5. Does heat affect root growth of houseplants?
6. Are dominant hands stronger?
7. Can a nail be made rustproof?
8. Do frozen liquids melt in the same amount of time?
9. Can I make a bigger bubble?
10. Do brand and type of battery really make a difference?
11. Does color affect reflection of heat?
12. Which type of pan cooks fastest?
13. Which warms faster, the beach or the ocean?
14. Do snails control algae?
15. How does temperature affect the volume of air?
16. Is heat conserved when hot and cold water is mixed?
17. What factors affect traffic patterns?
18. What does soap do to water tension?
19. Can the densities of several liquids be compared?
20. Which moves faster: cold or warm molecules?
21. Which is a more effective insulator: wool, cotton, or nylon?

22. What is the viscosity of various liquids?

23. What effects speed up the browning process of an apple?

24. Does air have mass?

25. Does space affect the rate at which plants grow?

26. How absorbent are diapers?

27. How does acid rain affect a plants growth?

28. What effect will a catalyst have on a chemical reaction?

29. What affects the speed of a pendulum?

30. Can oil be removed from water?

31. What conditions does mold need to grow?

32. What happens when sugar is burned?

33. How much bacteria really is in milk?

34. How does bleach effect color?

35. Does cereal contain iron?

36. Will coconut milk aid in the growth of plants?

37. How much moisture do your lips contain?

38. What is the best home insulator?

39. How long does it take for the regeneration in planarian?

40. Colors' effect on heat absorption.

41. Will wing design for balsa planes affect its flying?

42. What is the best chemical battery?

43. How can you prevent iron from rusting?

44. How economically Electroplating can be done?

45. How to reduce the hazard of distillation of alcohol?

46. How to build a homemade hygrometer?

47. Do all substances have the same conductivity?

48. Does reaction time depend on temperature?

49. Does temperature effects density?

50. Does ultraviolet light affect bacteria?

51. Kite design with respect to aerodynamics.

52. Do all antacids have the same pH?

53. What is the best design for reduced wind drag?

54. Does color affect memory?

55. What is the best smoke detection system?

56. Does sound affect plant growth?

57. Mineral content of drinking water.

58. Do smokers and non-smokers have the taste sensitivity?

59. Which bleach works best?

60. Testing for nutrients.

61. How does lack of sleep affect behavior?

62. Design of robotic equipment.

63. Testing for ESP.

64. How many earthworms are there in a given area of different fields?

65. How different paints hold up to weathering?

66. Social behavior of ants.

67. Does nose cone shape effect rocket performance?

68. Is it possible to learn while sleeping?

69. Does temperature affect crystal growth?

70. How to make fabrics fire resistant?

71. How acids affect metals?

72. Which detergent works best?

73. Designing a solar engine.

74. Which is better-front or rear wheel drive?

75. Does oil stain or oil paint provide better protection?

76. Does cigarette smoke affect houseplants?

77. Solar distillation.

78. Porosity of soils.

79. Sugar content of food.

80. Effect of light on the reproductive growth of paramecia.

81. Comparison of blood pressure variation.

82. Effects of fertilizer on earthworms.

83. Plant tolerance to salt.

84. Fat content of margarine.

85. What material is best for road construction?

86. How does television viewing affect behavior?

87. Are rats' social animals?

88. How are seeds affected by radiation?

89. Suspension bridge design.

90. How flammable are household goods?

91. Color preference of gerbils.

92. Effects of junk food on mice.

93. Paper recycling.

94. Do seeds germinate at the same time in different temperatures?

95. Which soil type is best for plant growth?

96. Design of a color blindness test.

97. How to purify water economically?

98. Spider web construction.

99. Comparison of biodegradable detergents.

100. How the wing design of airplane affects lift?

101. Does magnetism affect seed germination?

102. Does TV change kids' moods?

103. Optical illusions.

104. Search for the best natural filter for ground water.

105. Desalting water.

106. What are the spectra of elements and compounds?