

Hebrew Day Institute 2011-2012 Science Fair **“Environmental Issues”**

It is once again time to begin our Hebrew Day Institute Science Fair Project. Creating a science fair project is a great learning experience because it involves so much more than science. Although learning about science is at the heart of the science fair projects, they are also a great way for students to become more knowledgeable about how the world around them works. Students need to acquire sufficient science literacy skills to make educated decisions about what they see in the world around them. Preparing a science fair project is an excellent example of what education experts call active learning or inquiry (also “hands-on” learning). It is a very effective instructional method; indeed, it is recommended as a cornerstone of successful science teaching.

With this in mind, I have laid out the expectations and a plan for students to follow in constructing their projects. This is meant to be an exciting learning process for the students and therefore it is imperative that they choose a topic and experiment that they are truly interested in. As always, the teachers are always here to help and guide.

This year the topic will be “Environmental Issues.” Students will pick project ideas from the list they have received. Much of the work will be completed in school, although the actual experiment and some of the write-ups and final Science board will be done at home. The enclosed pages are work-pages for the students to do their preliminary work. These pages will be handed in during the next few months and can be either typed on or hand written. The actual Science Board will need to be typed.

Please pay careful attention to the Schedule and Check-Off List which is attached. It will help to keep the students on track to what is due and when it is due.

If you have any questions, please contact me.

Sharon Turpie
HDI Science Specialist

The Hebrew Day Institute 2011 - 2012 Science Fair

Students in 3rd-6th Grade are required to do an individual Science Fair project. Students will select a project from their class list. Students in the younger grades will work on a class project.

You may do your Science Fair project either as a “**By Myself**” or the “**With Help**” category. Although much of the work will be done in class, students will have to complete their projects at home.

I do want to stress that if you chose **With Help**, the projects must still be the student’s work.

The following must be filled out by each student:

Name _____

Grade _____

Please indicate which category you choose

___By Myself

___With Help

The Science Fair will be held this year on **Wednesday, January 25, 2012**. To help you prepare for this event and to plan your time wisely, the following deadlines will need to be met. I also wish to remind students that you must **CONDUCT AN EXPERIMENT that answers a scientific question; NOT a demonstration**. Your science project is part of your Science grade, so please see that all the requirements are completed on time! Please have Mrs. Turpie and your parents initial each section on completion. Much of the preliminary work will be done in school although students may need to supplement it with extra time at home. The actual experiment and preparing the final science board will be done at home.

Schedule and Check-Off List

	<u>Due Dates</u>	<u>Parent</u>	<u>Teacher</u>
Hand out Packets	Wednesday	September 14	
Select Question	Wednesday	September 21	
Research	Wednesday	November 9	
Bibliography	Wednesday	November 9	
Variables, Prediction	Wednesday	November 16	
Hypothesis	Wednesday	November 30	
Parent/Teacher Approval	Wednesday	November 30	
List of Materials	Wednesday	December 14	
Procedures	Wednesday	December 21	
Complete Project	Wednesday	January 18	
Science Fair	Wednesday	January 25	

In case pages get separated, put your name and grade on every *page* and on your project board.

Please look over the criteria by which your project will be graded.

The following is your hard copy of the science fair packet. If it is lost or you require another copy, you may request one from your teacher.

Please carefully read the following grading criteria so that you know what is expected and sign.

I have read the project criteria and understand how the science fair project is to be graded

(signed) _____.

Science Fair Project Grading Criteria

Differentiated expectations.

The expectations and quality of the work will be higher for older grades than for younger grades. Students in older grades will be expected to write more fully and more in-depth than those in younger grades.

	Criteria	Score
1.	Is the Science Fair packet complete and turned in on time?	/5
2.	Effort Shown.	/5
3.	A research question that can be answered through experimentation and handed in on time.	/5
4.	Bibliography included in the correct format and handed in on time.	/10
5.	Research shows understanding of topic and handed in on time.	/10
6.	Variables identified. One is isolated and turned in on time.	/5
7.	Prediction of outcome of the experiment and turned in on time.	/5
8.	The hypothesis predicts a possible outcome of the experiment	/5
9.	Parent and teacher approval is handed in on time	/5
10.	List of materials is complete with quantities where appropriate and turned in on time.	/5
11.	Procedure is in a step by step form that can be clearly understood and turned in on time	/5
12.	Observations/data are recorded in detail with appropriate units	/5
13.	Observations are summarized and/or presented on display	/5
14.	Charts, graph, diagrams, photos, etc. with appropriate labels to explain observations	/5
15.	Conclusions explain why the experiment turned out the way it did.	/5
16.	Conclusions show additional things students learned	/5
17.	Student used a computer	/5
18.	The materials used in the experiment are with the project, if appropriate	/5
19.	The project shows good scientific reasoning and understanding	/5
20.	In a brief oral presentation, students can explain and discuss their work and field questions as appropriate	/5
21.	In oral presentations, student asks appropriate questions about classmates' projects.	/5
22.	Bonus for outstanding features not listed, such as originality	/5

Name _____

Grade _____

Due Date: Wednesday, September 21

Scientific Question

Your job is to pick a question from the list of topics for your class. Your topic must be something that you need to do an experiment in order to find the answer. Your selection is due Wednesday September 21, 2011. Your teacher will review it with you.

Name _____

Grade _____

Due Date: Wednesday November 9

Research Bibliography

Students will receive a list of suggested sources and websites to help them with their research. Students are not limited to these sources and are encouraged to use additional sources of information. Students will be given time to work on their research and bibliography in class but may need to complete it and type it up at home.

Sources of information can include: Books, Magazines, Newspapers, Journals, Films, News programs, Videos, Websites, and Interviews.

You need to write a bibliography of where you got your information from. Please use the correct MLA format for citing you information. This can be found at www.hebrewdayinstitute.org under curriculum.

Books, Magazines, Newspapers, Journals

Films, Filmstrips, Video

Specialists, Professionals, Professors

Name _____

Grade _____

Due Date: Wednesday November 16

Isolating a single Variable and making a Prediction

This sheet is designed to help you outline your experiment. This will be done in class.

1. List all the variables in your experiment

2. Select one of the variables. This is the one you are going to change, keeping the other variables the same.

3. Predict what you think will happen when you change this variable.

Name _____

Grade _____

Due Date: Wednesday November 30

Hypothesis & Science Fair Approval Form

Your question must be in a form that is testable. The hypothesis states what your question is and what you think will happen when you do the test. This will be done in class. Your teacher will review it with you.

Please remember, you must do a **scientific investigation**. You may not do a demonstration. The experiment may not be changed without approval of the teacher or there will be one letter grade taken off.

Student Signature _____

Parent Signature _____

Teacher Signature _____

Comments or Modifications:

Name _____

Grade _____

Conclusions

Was the hypothesis correct? Why or why not?

What else did you learn from this experiment?
