Wasatch Science Fair

January 22, 2016
4th – 6th Grades

Entry Forms are due in the office by:
2:00 p.m. on Friday, January 15th

If you have any questions about the Science Fair, please contact:
Betsy Isom – 5th/6th Grade Teacher
Phone: 801-374-4910 ext 2860
Email: betsym@provo.edu

Display Boards are available for purchase in the office.
White= $3.00 Colored= $4.00

All entries are REQUIRED to have a NOTEBOOK, JOURNAL, and DISPLAY BOARD.

What is the Wasatch Science Fair?

The Wasatch Science Fair is a time for 4th-6th grade students to show off their great scientific thinking! It is NOT a time for science reports. Make sure that your Science Fair Project is about a QUESTION and an EXPERIMENT to answer that question. Remember, if you can find the answer to your question on the internet, it is not a science fair project. The results of your experiment should answer your question.

How do I get started?

What do you do to get started on your project? Ask Questions!! Look around you and observe what is happening. Find something that is interesting to you and start asking questions about it. That is the first step in the Scientific Process. Next? Research your question and see if someone else has already answered it. If they have, ask the question a different way. Below are a few ideas of good Science Fair Project questions:

QUESTIONS FOR A SCIENCE FAIR PROJECT	~~SCIENCE REPORT (PLEASE DON'T DO THESE!)~~
How does the amount of soap affect cleaning time when washing dishes?	~~Atoms and Molecules~~
Does the pan size affect baking time when baking bread?	~~Our Friend the Sun~~
Does distilled water freeze faster than tap water?	~~How Butterflies See~~
Does a change in temperature affect the time it takes mealworms to change into beetles?	~~Cake vs. Pepsi Poll~~

After you have a question that works, follow the rest of the steps of the Scientific Method
(The steps of the Scientific Method are listed on the following page).

What forms do I have to turn in?

All 5th and 6th grade students are required to turn in the following forms:
-Wasatch Science Fair Entry Form
-Wasatch Science Fair Safety and Rules Form
-CUSEF Packet (Entry Form, Project Abstract, Parent/Teacher/Student Signature page)

4th Grade students are required to turn in the following forms:
-Wasatch Science Fair Entry Form
-Wasatch Science Fair Safety and Rules Form

What should I expect the day of the Science Fair?

Students should dress professionally and plan to be in the gym during their grade's judging time. During the judging time, students should plan to be able to sit quietly and read while waiting for their project to be judged. When their project is being judged, students should stand and tell the judge about their Project and answer questions.

How will my project be judged?

All participants will have their projects judged on the day of the Fair by at least 2 judges. Each judge will be looking for evidence of the Scientific Process, creativity, as well as student understanding. Please make sure that you can EXPLAIN your project in your own words. Don't use words or language on your display or in your journal that you don't understand!

When can I set up and take down my Project?

Students can set up their DISPLAY BOARD and JOURNAL the morning of the Science Fair – between 8:00-8:30am on Friday, January 22nd.

When will awards be announced?

Awards will be announced on Monday, January 25th. Students will be invited back to gym that morning to receive their awards and then they need to take their Journal and Display Board home.

What is required for my project?

You are required to have the following for your Science Fair Project:

SCIENCE NOTEBOOK- an informal record of your experience and the process you followed. See handout "How to Keep a Notebook"

JOURNAL- published/formal record of your project. See hand out "Science Fair Project Journal"

DISPLAY BOARD – brief description and overview of your project including pictures and graphs. See hand out "Display Board Requirements"

You may NOT have any other objects or materials at the Fair.

What is the SCIENTIFIC METHOD?

1. **Select a Topic:** Find something that is interesting to you. You might think about earth science, life science, computer science, engineering, physical science, consumer science, or product testing. (Just a hint: product testing isn't winning awards at the next level.)
2. **Form a Question:** Your question should state what you want to find out as a result of your experiment. DO NOT try to answer more than one question.
3. **Do Research:** Gather information about your project so you can state an informed hypothesis. Books, magazines, the Internet, people, companies, and products are all great resources.
4. **State Your Hypothesis:** The hypothesis is your prediction of what will happen as a result of your experiment. So, state your hypothesis before you begin your experimentation. Make your best guess, but base your answer on the information you gathered. Remember that a hypothesis does not have to be right. More scientists are WRONG in their hypotheses than are right. A wrong hypothesis can lead to further experimentation.
5. **Gather Materials for Experimentation:** Gather all the materials that you will need to do your experiment and make a list of EVERYTHING you use.
6. **Write Your Procedure:** Write a detailed description of how you will conduct our experiment. Check to make sure you will be controlling ALL variables (making everything the same) except the ONE thing in the experiment that will change or be different – the variable that you are testing.
7. **Conduct the Experiment:** Be sure to conduct your experiment at least TWO TIMES to make sure your results are accurate. This can be done at the same time or separately, whichever works best for your experiment.
8. **Gather Data:** While you are conducting your experiment, be sure to write down everything that is happening. IT IS A GREAT IDEA TO TAKE PICTURES OF YOUR EXPERIMENT, ESPECIALLY IF IT INVOLVES PATHOGENIC OR ACIDIC MATERIALS THAT CAN'T BE SHOWN WITH YOUR DISPLAY. IT IS A GREAT IDEA TO HAVE YOU IN THE PICTURE WHEN APPROPRIATE TO PROVE THAT YOU DID THE WORK. When you have concluded your experiment, put your data into a chart. Then show the information in a graph. The chart and graph will make it easier to analyze your data.
9. **Analyze the Data:** Explain in word form the results of your experiment using the data you have collected. Be sure not to state your conclusion here.
10. **Come to a Conclusion:** The conclusion is stating whether your hypothesis was correct or not.

How to Keep a Notebook

It is suggested that a composition notebook be used – this way the pages won't fall out. However, you can use any notebook.

Make sure to write all entries in PEN.

Write the DATE on every entry. Make sure entries are to the point and explain what you did that day. Be specific (use measurements and exact details as much as possible)

Don't be too worried about the neatness, it is your personal record and should not be perfect. Also, do not scribble out incorrect information or entries; one line through the mistake is adequate.

You should use your notebook through your ENTIRE project and write down ideas, thoughts, sources, sketches, calculations, brainstorming, notes, and anything else that could be important. Remember that this is how you will show ALL THE WORK you put into your project.

At the end of each entry you may want to REFLECT on what went right or wrong as well as what you may want to do next time or do differently.

Make sure you write down any changes you make to your procedure. We all make mistakes and it is good to note these as you learn from them.

Be sure to write down ALL observations that you make during your experiment and throughout your project.

Your notebook will NOT be judged at the Science Fair, but it may help you answer questions from the judges about your project.

Science Fair Project Journal

The science journal should have a cover. (An example journal will be in the main foyer after the Christmas break.) Students should do their own work! Parents and teachers should only help in an advisory capacity. **Each of the following components of the journal should be found on a separate page and in this order**:

1. **Title Page:** The title page should include the title of the science fair project, student's name and grade, and the date of the science fair.
2. **Table of Contents:** List the components of your report and what page they can be found on in your journal. All pages need to be numbered.
3. **Introduction:** The introduction should tell why you decided to do this experiment.
4. **Question:** This part should include the one question that you hope to answer by doing your experiment. It can also include information that helped you form the question and/or why you want to know the answer.
5. **Research:** Tell about the research you did that helped you form your hypothesis.
6. **Hypothesis:** State your hypothesis and explain why you think your prediction is valid.
7. **Materials List:** Include a complete materials list. Don't leave anything out. If you used it, list it.
8. **Procedure:** This should be a very detailed explanation of EVERYTHING you did to conduct your experiment.
9. **Data:** This is where the information you gathered in your experiment is placed on a chart and then graphed for easier analysis.
10. **Analysis:** This will be the written description of your data and what it means.

    What happened? What steps were most important: You can also include any additional information that you found interesting as a result of your experiment such as what observations were expected or unexpected.

11. **Conclusion:** State whether your hypothesis was correct or not and then include what you learned, what you would do differently next time, or any suggestions or additional questions to investigate.

Display Board Requirements

The science display board should be sturdy and able to stand by itself. (An example board will be in the main hall after the Christmas break.) Each display board should include a PROJECT TITLE and Subtitles for each section listed below (question, hypothesis, etc.). Pictures are nice (especially when you are doing an experiment with items that you can't display i.e. mold or acid), but are not required. You should do your OWN work! Parents and teachers should only help in an advisory capacity.

**Note that some things that should be in your journal are NOT included on the display board!

1. **Title:** Use a "catchy" title that will draw attention to your board. Make it large enough that it can be read from a distance.

   Subtitles: (should be smaller than the main title)

1. **Question:** State just the question.
2. **Hypothesis:** State just your hypothesis.
3. **Material List:** Include your complete materials list.
4. **Procedure:** This should be a shortened version of what you did for your experiment.
5. **Data:** This should be the chart and graph that show the information you collected as you conducted your experiment.
6. **Results /Analysis:** State briefly the results of your data.
7. **Conclusion:** State whether your hypothesis was right or wrong.
8. **Name and Grade Level:** Please make this only large enough to be seen easily while standing right in front of your project.

(This is what a Science Fair Board should look like and contain)

Question **State your question here.** **Hypothesis** **State your hypothesis here. (Remember to do this BEFORE your experiment takes place.)** **Materials List** **List all materials you needed to complete the experiment. If you used it, put it.**	**"Catchy" Title** **Procedure** **Explain what you did for your experiment in such a way that someone else could recreate the experiment again.** (include pictures)	**Data** **This includes a table where information is recorded during the experiment and an appropriate graph that shows the data in a visual form.** **Analysis** **Briefly tell what the data shows, and what you found out.** **Conclusion** **State whether your hypothesis was right or wrong.**

White Boards: $3.00 - Colored Boards: $4.00

Boards available in the Main Office