Volusia County Schools
Elementary Science Exposition
2013

“A celebration of student achievement in science!”

Who: The top Fifth Grade Science Fair winners from each Volusia County Elementary School

What: Elementary Science Exposition

Where: Volusia County Fairgrounds

When: Friday, May 3, 2013
8:00-8:45 (Project Registration)
9:00-12:00 (Project Interviewing and Environmental Stations)

Why: To celebrate student achievement in science

- Students will be chosen by their schools to participate. The number of students will be determined by the quota formula provided by the VCS Science Department.
- All projects presented at the Expo must follow the district rules.
- A detailed agenda will be shared before the Science Expo.
- Parking will be limited.
Quick Reference
(Prohibited Items/Substances)

For safety reasons, students **MAY NOT** work with or display:

<table>
<thead>
<tr>
<th>PATHOGENS</th>
<th>HAZARDOUS SUBSTANCES OR DEVICES</th>
<th>HUMAN SUBJECTS/NON-HUMAN VERTEBRATE ANIMALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Mold</td>
<td>• Alcohol (does not include rubbing alcohol)</td>
<td>• Eggs</td>
</tr>
<tr>
<td>• Fungi</td>
<td>• Acid rain</td>
<td>• Foods made from animals</td>
</tr>
<tr>
<td>• Bacteria</td>
<td>• Insecticide</td>
<td>• Human or animal parts or body fluids (i.e., blood, saliva)</td>
</tr>
<tr>
<td>• Microorganisms collected, isolated, and/or cultured from any environment (i.e. pond water)</td>
<td>• Herbicide</td>
<td>• Human or animal tissue</td>
</tr>
<tr>
<td>• Food mold</td>
<td>• Dry ice</td>
<td>Anything that may cause psychological or physical risk</td>
</tr>
<tr>
<td></td>
<td>• Nicotine/tobacco</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Poisons</td>
<td><strong>PLEASE NOTE:</strong></td>
</tr>
<tr>
<td></td>
<td>• Toxic chemicals</td>
<td>• teeth, hair, nails, dried animals</td>
</tr>
<tr>
<td></td>
<td>• Drugs/controlled substances</td>
<td>bones that are professionally sterilized can be used</td>
</tr>
<tr>
<td></td>
<td>• Fire/flames/matches</td>
<td>• dairy products can be used</td>
</tr>
<tr>
<td></td>
<td>• Weapons/ammunition/firearms/paint ball guns</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Sharp items (needles/syringes)</td>
<td></td>
</tr>
</tbody>
</table>

If you are not sure, please ask your teacher.

Students who use any of the items listed here in their science fair project will **NOT** be permitted to participate in the Volusia County Schools Elementary Science Exposition.
If you have any questions, please ask your teacher.

- Projects will be disqualified if chemicals are used to do human/vertebrate animal testing.
- NO EATING, TASTING, TOUCHING or SNIFFING of any chemicals will be approved.
- All chemicals should be handled minimally and under adult supervision. Students should handle chemicals using gloves, goggles and aprons under adult supervision.
- If a student uses a chemical that is not on this list and has NOT been approved by the supervising teacher and Science Department, the project will NOT be permitted to participate in the Volusia County Elementary Science Exposition.

Approved Items/Substances (with restrictions)

<table>
<thead>
<tr>
<th>aluminum foil</th>
<th>hair spray</th>
<th>finger nail polish</th>
</tr>
</thead>
<tbody>
<tr>
<td>antacids</td>
<td>sunscreen</td>
<td>salt</td>
</tr>
<tr>
<td>baking soda</td>
<td>hand lotion</td>
<td>sugar</td>
</tr>
<tr>
<td>hand soap</td>
<td>starch</td>
<td>caulk</td>
</tr>
<tr>
<td>lemon juice</td>
<td>teeth whiteners</td>
<td>vinegar</td>
</tr>
<tr>
<td>chalk</td>
<td>toothpaste</td>
<td>seltzer water</td>
</tr>
<tr>
<td>laundry soap</td>
<td>mouthwash</td>
<td>water colors</td>
</tr>
<tr>
<td>hair gel</td>
<td>hair mousse</td>
<td>cola/soda</td>
</tr>
<tr>
<td>saline</td>
<td>non-toxic glue</td>
<td>glycerin</td>
</tr>
<tr>
<td>shampoo/conditioner</td>
<td>wood polish</td>
<td>laundry stain removers</td>
</tr>
<tr>
<td>gum</td>
<td>hydrogen peroxide</td>
<td>make-up</td>
</tr>
<tr>
<td>Ph test kit</td>
<td>Epsom salts/aquarium salt</td>
<td>baby powder</td>
</tr>
<tr>
<td>plant food (not fertilizer)</td>
<td>Windex (not pure ammonia)</td>
<td>cooking oils</td>
</tr>
<tr>
<td>vitamin C, calcium (small amounts with supervision)</td>
<td>water-based markers</td>
<td></td>
</tr>
<tr>
<td>iodine, rubbing alcohol, bleach (small amounts with supervision)</td>
<td>ink</td>
<td></td>
</tr>
<tr>
<td>Personal Information</td>
<td>Preserved Animals</td>
<td>Living and Non-Living Things</td>
</tr>
<tr>
<td>----------------------</td>
<td>-------------------</td>
<td>-----------------------------</td>
</tr>
</tbody>
</table>
| ● Photographs of faces  
● Names  
● Addresses  
● Telephone numbers | ● Taxidermy specimens  
● Animals stored in preservatives | ● Dried plant material  
● Dirt  
● Soil | ● Any and all liquids (including water) | ● Batteries with open cell tops |

- The science project board is to communicate the experiment that is done at home or school and its results, findings and conclusions. Graphs, charts, data sheets, and pictures are encouraged. Students should follow the sample project display format. Additional objects and materials are not appropriate for display at the Science Expo.

- Using common sense will further ensure the safety of the student.

- Projects that do not follow the guidelines will NOT be permitted to participate in the Volusia County Elementary Science Exposition.
## Science Project Display Board

<table>
<thead>
<tr>
<th><strong>Backboard</strong></th>
<th>The display board must be freestanding. The backboard panels must be hinged, fastened, taped together or all one piece depending on the type of backboard materials used.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Material</strong></td>
<td>A sturdy piece of cardboard, plywood, fiberboard, Styrofoam or other material can be cut for the backboard. Many office supply companies sell “ready made” science project display boards.</td>
</tr>
</tbody>
</table>
| **Display**   | Information on the backboard may be handwritten, typed or computer printed. Edit your work for spelling, capitals and punctuation. Main points should be large and simple. Headings may be printed, made by hand or can be purchased. Titles should be larger than the scientific process headings. You may include:  
  - Drawings, pictures, outlines  
  - Charts, tables or graphs (use proper titles, labels, and units of measure)  
  - Photographs of the experiment (may not include faces) |

Students must follow the rules defined in the “Quick Reference” found earlier in this packet (page 4).
The Southern Standard Building Code identifies redwood for its strength, durability, and resistance to adverse weather conditions; however,.....

According to my results, oak wood was most resistant to salt water. I came to this conclusion because.....

The boards were observed each evening at 6 p.m. over a period of 15 days. On Days 1-4 there was no visible changes to the pine boards, the oak boards or the redwood boards. On Day 5-8 the oak board began to lighten in color but.....

The purpose of this project is to determine which wood holds up better in salt water.

It is expected that the oak surface will hold up better because it is considered a hard wood.

The materials for most projects will fall into three categories: softwood, hardwood and manufactured panels such as plywood.

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Sample
Judge Score Sheet
Score 0-5 (0=least, 5=greatest)

Section A.  Project Board Components:  (55 points)

_____ Testable Problem (not an opinion, model, demonstrations, or book report)
_____ Hypothesis (includes research support or previous experience)
_____ Experiment (List of all needed materials and steps in a procedure that are clear and complete)
_____ Evidence of Control Group (normal condition)
_____ Evidence of Limiting Variables (only one manipulated variable)
_____ Repeated Experiment (10 trials) or Large Experimental Group (10 tested at a time)
_____ Data (pictures, graphs, tables, diagrams, charts, labels, information)
_____ Results (narrative of data)
_____ Conclusion (explanation of the results)
_____ Application (relationship to real-world)
_____ Display board arranged in correct format

Section A TOTAL: ________________

Section B. Interview Components:  (45 points)

_____ Student understands and can explain the purpose of the project.
_____ Student can thoroughly explain the set up of the experiment.
_____ Student can explain the formation of the hypothesis.
_____ Student knows what the control group is in the experiment and why it is important.
_____ Student can explain the importance of limiting variables (one manipulated variable).
_____ Student can explain the importance of repeating an experiment or using a large experimental group.
_____ Student can explain the data and the connection to the conclusion.
_____ Student can explain what has been learned and how the project relates to the real world.
_____ Overall Presentation

Section B TOTAL: ________________

OVERALL TOTAL: ________________

Recommended for EXPO?
_____yes  _____no
Scientific Process Planning Outline

Write the QUESTION. What do you want to find out?
______________________________________________________________
______________________________________________________________

Write the PURPOSE. What is the reason for your project?
______________________________________________________________
______________________________________________________________
______________________________________________________________

Do RESEARCH on the topic. Gather information to form a hypothesis.

Write the HYPOTHESIS. What do you think will happen? Use information gained from research and/or previous experiences to explain why it will happen.
______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________

Design the EXPERIMENT. How can you test what you think will happen? Make sure to include a control group and only one variable. In addition, make sure you repeat your experiment (10 trials) or use large experimental groups (10 tested at a time).
Materials: (Use metric units and scientific tools for precise measurements.)
______________________________________________________________
______________________________________________________________
______________________________________________________________
______________________________________________________________
Procedure: (List detailed sequenced instructions using numbered steps.)

1. _____________________________________________________________
2. _____________________________________________________________
3. _____________________________________________________________
4. _____________________________________________________________
5. _____________________________________________________________
6. _____________________________________________________________
7. _____________________________________________________________
8. _____________________________________________________________

Record the DATA. Use charts, graphs, tables, and pictures as appropriate.

Write the RESULTS. Restate the data in narrative form.

________________________________________________________________
________________________________________________________________
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________________________________________________________________
Draw a CONCLUSION. Is your hypothesis supported? Why or why not? What would you do differently next time?

________________________________________________________________________
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Make APPLICATION. How do the findings from the experiment relate to the real world?

________________________________________________________________________
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________________________________________________________________________