Leonardo da Vinci
K-8th SCHOOL

Science Fair

April 4th – April 10th, 2014

Presented with funds from
The LDV Parent Teacher Council Science and Technology Committee
PROJECT CATEGORIES

I. Experimental Science Project
Experimental science projects must follow the traditional, eight-step scientific method (described at right). Displays must include,

1) A statement of the question/problem to be investigated,
2) The hypothesis being tested,
3) A description of the experimental methods and materials used to test the hypothesis,
4) A record and/or description of the results of the experiment, and
5) Comparison of results with hypothesis, analysis/discussion of results and, conclusion.

II. Exploration Science Project
Students should observe events or phenomenon in nature and attempt to describe and draw conclusions from their observations. Example topics include demonstration projects (e.g. principles of light, motion, sound, sensory perception etc.), field observations, and other projects not requiring hypothesis testing. Displays should include sections describing the principle(s) or subject(s) investigated recorded observations or an actual demonstration. Displays should cite at least one literature reference regarding the topic

III. History of Science Project
Entries may either be a poster or students may come to science fair night in costume dressed as the scientist. Students posing as a scientist should be prepared to discuss their contributions to science with judges and other fair participants. Poster entries should include a portrait of the scientist and a brief summary of the following information:

1) Important events from the person’s life,
2) A description of how they carried out their work and why it was significant,
3) Their special contributions or problem solved, and
4) A brief discussion of the significance of the scientist’s work to our culture.

SPIRIT OF DA VINCI AWARDS
Each participant will receive a ribbon for their contribution to the Science Fair with special recognition for the top science projects.

SACRAMENTO REGIONAL SCIENCE AND ENGINEERING FAIR
You may want to enter your project in the Sacramento Regional Science and Engineering Fair, especially if it is an Experimental Science Project. Check with your teacher and www.sacstemfair.org for that fair’s requirements.

Leonardo da Vinci Science Fair is about...

- Paying tribute to the wide-ranging interest and creativity of Leonardo da Vinci, a Renaissance master of the Arts and Sciences,
- Encouraging all students to participate in their own unique way,
- Stimulating enthusiasm, curiosity and creativity,
- Examining our environment in new ways and sharing our learning with others,
- Cultivating the many different individual skills and interests of our intricate society, and
- Recognizing that each unique form of self-expression enhances our school community and enriches our culture.

Examples of their work may be included as illustrations. Project information must be mounted on a self-supporting background

Please note that 5th grade through 8th grade students are required by their teachers to submit an Experimental Science Project for the Science Fair. Kindergarten through 4th grade are encouraged to participate in the Science Fair and are welcome to submit an Experimental, Exploration or History of Science Project for judging.
ELEMENTS OF SCIENTIFIC THOUGHT

Observing – Use all your senses to find out what is happening in the world around you.

Measuring – Measurements are a basic requirement for developing scientific knowledge. They allow scientists to observe differences, make comparisons, and analyze results. Try to think of your observations in terms that can be measured: how big? how many? how rough? how cold? etc.

Comparing – Notice and record how things are alike and/or different, e.g. large/small, heavy/light, smooth/rough, fast/slow, bright/dark, etc.

Ordering – Put concepts or objects into a logical order - e.g. first to last - or note where information should be placed in a range of data e.g. smallest to largest.

Categorizing – Recognize and describe patterns and groupings of objects or events sharing similar characteristics, such as similar rocks, types of light waves, stars, diseases, or animals.

Relating – Determine the relationship between different things such as sunlight, soil, water and plant growth. Establish rules about why things are the way they are based upon experimentation/hypothesis testing.

Inferring – Make scientific conclusions as to scientific laws or principles based not on direct observation of those laws but on what must be the underlying reason for the scientific observations. For example, you can make a conclusion about the law of gravity based on observations of how objects move.

Applying – Use the knowledge gained through the scientific method to solve problems.

Communicating – Explain what you observe, conclude, or know using written language or other methods of sharing your perceptions.

EIGHT-STEP SCIENTIFIC METHOD

1. **Select a problem or area of interest.**
2. **State your problem as a question.** For example, “Will runoff from my lawn affect aquatic creatures?”
3. **Make a hypothesis.** This is an educated guess or prediction about what you think might happen. For example, “I think the runoff from my lawn will help aquatic bugs grow faster.”
4. **Develop and describe your methods.** -Plan the steps to test your hypothesis -List your materials used and procedures followed.
5. **Have a control.** -Keep all conditions the same for the control except for the single variable being tested. For example, keep all control and test jars with water bugs at the same temperature, light, and feeding schedule; let only the water source be different.
6. **Do your experiment.** -Test your hypothesis. Keep daily or regular records of what happens (your observations)
7. **Describe your results.** Describe the experimental conditions you set up and how you carried out your experiment -List the results of your experiment -Compare the results to what you predicted would happen in your hypothesis.
8. **Make conclusions.** Study your results. -Report your observations and what you think they mean. -Did your results support your hypothesis or not?

**QUESTIONS & ANSWERS**

**Q. Who may enter?**

A. Any Leonardo da Vinci student from kindergarten through eighth grade may enter. Students may enter one or more projects in any category. Projects may be entered by individuals, as a group project or class project, or as a family project.

**Q. Any special requirements?**

A. Ask your teacher. Follow any special requirements for your class. Follow all general requirements and the specific requirements for each category

**Q. Any special rules?**

A. Understand and follow the safety rules. The rules are stated on the entry form (back cover). Unsafe projects will not be allowed at school!

**Q. What do I do with my project when it’s finished?**

1. Complete the entry form and label your project.
2. Bring your project to the school auditorium between 7:30 and 10:00 a.m., on Friday April 4th, 2014. Remove your project from the auditorium on Thursday, April 10th, 2104 by 3:00 p.m.

**Advice for Students**

- Talk to your teacher about ideas that are connected to the science taught in the classroom.
- Search on the internet by subject of interest to you: insects, rocks, chemistry, etc. Or go to: www.sciencebuddies.org for lots of ideas. Every science society, government agency (Smithsonian, American Chemical Society) and university has an educational website with ideas, too.

**Advice for Parents**

**YOU CAN...**

- Help your child to identify a project that is interesting and challenging but within their ability to do on their own,
- Read this booklet with your child,
- Take your child to the library, museum or other places to help get ideas or background information,
- Help to collect supplies or materials,
- Help your child develop a plan and reasonable time frame to complete the work, as well as identify which task comes first, second, third, etc.,
- Remind your child to keep careful and accurate records,
- Discuss ways to display information that are simple and attractive, and
- Give encouragement — even if the experiment doesn’t work, something can be learned.

**BUT DON’T...**

- Select the project for your student,
- Produce the display for your student, including lettering and layout (except kindergarten), or
- Let your child wait until the last minute.
Date | Time | Event
--- | --- | ---
February 10\(^{th}\) | | Sacramento Regional Science and Engineering (SRSE) Fair - If you plan to enter your LdV project, first visit www.sacstemfair.org for more information on their schedule and entry requirements. Check with your teacher about conflicting dates.

April 4th (Friday) | 7:30 - 10:00 a.m | LdV Science Fair! Bring completed projects to auditorium.
Evening | 6:00 - 9:30 pm | Judging (not open to the public).
April 16th (Wednesday) | 6:30 - 8:30 p.m | LdV Science Fair Open house in auditorium
April 10\(^{th}\) (Thursday) | 3:00 p.m. | Remove project

March 21\(^{st}\) & 22\(^{nd}\) | | 2014 Sacramento Regional Science and Engineering Fair at Rosemont High School. Check with your teacher.

SAFETY RULES
Fair officials reserve the right to remove any exhibit that is deemed objectionable or hazardous to public health or safety. Prohibited items include:

- Live animals
- Microbial or fungi culture
- Venomous, biting or disease-carrying insects
- Caustic chemicals or acids
- Flames, open or concealed
- Flammable materials
- Combustible solids, fluids or gases
- Poisonous chemicals, or combinations of household chemical which may be hazardous
- Thermometers containing mercury
- Batteries with open cells
- Wiring fastened with nails, tacks, or insulated staples
- Bare wire and exposed knife switches on circuits or more than 12 volts
- Electrical wires or connection in 110 volt circuits which are exposed or improperly connected.

110 Volt Power Will Not Be Available For Projects During The Science Fair

Clip along dotted line and attach this label to the back of your project.

ENTRY FORM
Leonardo da Vinci K-8 School Science Fair 2014

NAME: ____________________________

TEACHER: __________________________ ROOM#: _______ GRADE: _______

CATEGORY: ____ Experimental Science Project ____ Exploration Science Project

____: History of Science Project

PROJECT TYPE: ____________________________

TITLE: ____________________________

REQUIREMENTS FOR ALL PROJECTS

Labels – The clip-off label at left, with all information filled in, must be attached to the back of your project.

Size – Exhibits must be no larger than 2 1/2 feet deep (front to back edges) and 4 feet, side to side by 3 feet, top to bottom.

Self-supporting – Each exhibit must be self-supporting.

Appearance – Keep information simple, neat, attractive, and easy to read. If possible, use lettering guides, adhesive letters, stencils, typewriter or a computer. Parent may help with the text for kindergarten projects.

Durability – Make exhibits durable enough for a week of inspection by other students.