



23RD ANNUAL SCIENCE FAIR

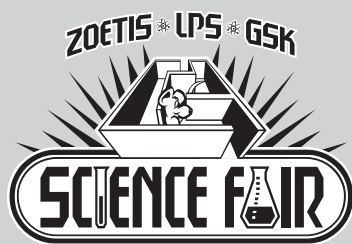
Thursday, March 1, 2018
Lancaster Event Center
5:00-7:30 p.m.

Open to all 5th-8th grade students

Registration Deadline: February 9, 2018

Register online at www.lps.org, jump code PTBV

Teacher Guidebook



Welcome to the 23rd Annual Zoetis*LPS*GSK Science Fair 2018!

Thursday, March 1, 2018

**Lancaster Event Center • 4100 North 84th Street • Pavilion 1
Lincoln, Nebraska
5:00-7:30 p.m.**

NOTE: REGISTRATIONS ARE DUE FEBRUARY 9, 2018

TEACHER GUIDEBOOK

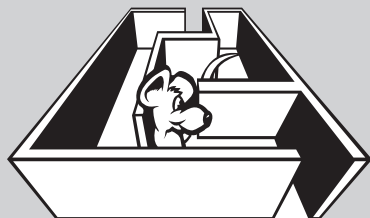
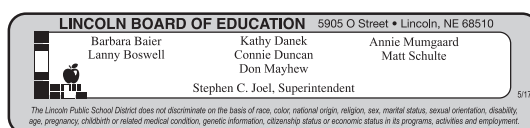


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SCIENCE FAIR THEME: SUSTAINABILITY

The theme for the 2018 LPS Science Fair is Sustainability!

Sustainability is a BIG topic that covers a range of ideas for using our resources in an environmentally responsible manner. According to the Environmental Protection Agency, "to pursue sustainability is to create and maintain the conditions under which humans and nature can exist in productive harmony to support present and future generations." Sustainability is vital for the future of the earth, and it is better achieved through science.

Projects that align with the sustainability theme will focus on reducing non-renewable natural resource use, and can cover topics such as energy, transportation, waste, environmental management, sustainable agriculture, and environmental science, among others.

For those students that choose to do a sustainability themed project, you will be eligible receive a "Going Green" ribbon for your project. This green ribbon is in addition to whichever ribbon your project receives based on score. If you would like to be eligible to receive a "Going Green" ribbon, please be sure to check the box on the registration form indicating that you have opted to do a sustainability project.



INFORMATION FOR CLASSROOM TEACHERS

Date of Fair: Thursday, March 1, 2018

Location: Lancaster Event Center
4100 North 84th Street
Pavillion 1
Lincoln, Nebraska

Important

Dates and Times: Student registrations **due February 9, 2018**

March 1: Student check in and set up at Lancaster Event Center from 4:15-5:00 p.m.

Judging Time—immediately following announcements at 5:00 p.m.

What is provided?: Table space. No chairs provided.
T-shirt for each participant.
Certificate and ribbon for each participant.

IMPORTANT!: **No outside food may be brought into the Event Center!**
Make certain you share this with your students!



COMMONLY ASKED QUESTIONS

1. Who can participate in the fair?

Any Lincoln Public School student in grades five through eight can participate in the science fair. There will be an Elementary Division (grade 5) and a Middle Level Division (grades 6-8).

2. How can I support the science fair?

You are a **key** promoter of the science fair. Keep encouraging your students to participate and complete a project. Write reminders on the board to remind them of time lines or suggestions of possible topics.

3. What else can I do?

As a promoter, talk to your students' parents about the fair. Include brief reminders in your weekly/monthly newsletters regarding the science fair. You might organize an informational meeting so that your parents can learn about the fair and receive answers about how they can help.

4. What is the time line for the fair?

Posters, student guides, teachers guides to buildings by **January 8, 2018**

Begin discussions about fair in classrooms: **December 2017 and January 2018**

Students develop their projects: **January, February 2018**

Registration forms due **February 9, 2018**

Science Fair: **March 1, 2018**

4:15 p.m.	Student Check in and project set up time
5:00 p.m.	Opening Ceremony
5:00-7:30p.m.	Project Judging begins after opening announcements

5. Does each student need a project display board?

Yes. If the science fair project is required as part of the science curriculum, then the school should supply boards without any cost to students. If the science fair is optional, it becomes an extra standard activity and the fee waiver policy applies. Low-income students may apply for the boards to be supplied to them without cost.

6. Who can I contact if I have a question about the fair?

Please contact one of the following LPS staff members.

Rochelle Settles	402-436-1151
James Blake, LPSDO	402-436-1802
Nancy Peters, Culler	402-436-1210
Ann Jablonski, Kooser	402-436-1146
Rob Rickert, Kooser	402-436-1146
Brittney Albin	402-436-1072
Lindsey Luly	402-436-1799



SCIENCE FAIR PROJECT IDEAS

The greatest hurdle facing most students when starting a science fair project is the selection of a topic. We have included some example project ideas. Your school's media center, the city library, the internet, and the LPS Science web site will have additional ideas for projects.

EARTH SCIENCE

How does temperature affect the rate of evaporation?

How does the size of its container affect the rate at which water evaporates?

What kinds of particles are found in our air?

What is the average speed of wind in Lincoln?

How does composting aid the environment?

Which biodegradable objects break down into compost faster?

Does turning compost accelerate decomposition?

How do greenhouse gases warm the Earth?

How does agricultural runoff affect aquatic life?

How can water flow be used to produce energy?

How is solar energy captured?

How do wind turbines create clean energy?

Which lights are most energy efficient?

How does the recycling process work?

PHYSICAL SCIENCE

- How does temperature affect the rate at which a banana ripens?
- How does the size of a fruit affect the number of seeds it contains?
- How does the method of popping affect the volume of popcorn?
- How does the brand of popcorn affect the ratio of popped to unpopped kernels?
- How does water temperature affect the rate at which sugar dissolves?
- How does the speed of a cart rolling down a ramp change with the angle of the ramp?
- How does the color of a surface affect the rate at which it absorbs or releases heat?
- How does the number of wraps of wire affect the strength of an electromagnet?

LIFE SCIENCE

- How does an individual's foot length relate to his/her height?
- How does heredity influence fingerprint patterns?
- What is the best surface for lifting fingerprints?
- How does exercise affect blood pressure?
- How does the position in which a seed is planted affect the way its seedling sprouts?
- How does the sprouting time for a seed change with planting depth?
- Can a plant's response to gravity be changed?

Science Buddies – www.sciencebuddies.com



THE JUDGING PROCESS ON FAIR DAY

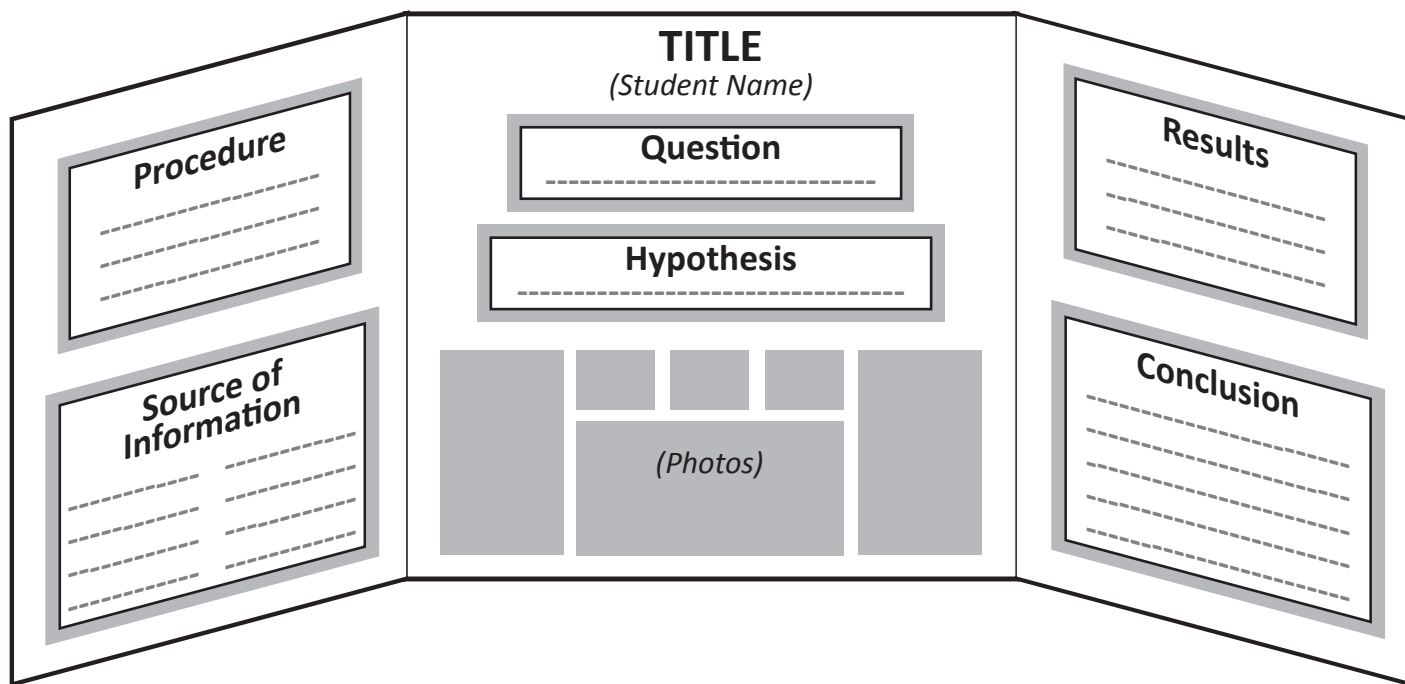
- Each project will be reviewed by at least two different judges. Judges will be teachers, administrators, and community members.
- Judges are encouraged to walk around the display floor and view a variety of projects. This will give them a 'feel' for the overall quality of the projects and then they will evaluate the assigned projects. **Judging will not begin before the completion of the opening announcements.**
- Judges will have a folder with assigned judging forms included.
- The judging form is divided into several subsections each with differing point totals. The judges will read the descriptors and choose the one that fits best for the project.

Knowledge demonstrated by the student and the thoroughness of their display represents 70 percent of their score. The technical portion of the display represents 30 percent of their score.

Judges are encouraged to add additional comments to the judging form. The space may be limited but it is invaluable to the student to know what they did well and what needs to be improved.

A sample judging form is found on the following pages. Please review this carefully with your students.
- Judges may share with the students the score they have received but this should not be expected.
- A group of volunteers will review each judging form at the conclusion of the science fair. They will be checking for errors in the addition of points awarded and will enter the total score on the master data list.
- Judging forms will be returned to the student along with their certificates and ribbons. These will be sent to your building in a timely manner through school mail.

SCIENCE FAIR DISPLAY BOARDS



This template is a three-panel display board. The central panel features a title box, a question box, a hypothesis box, and a photo section. The left and right panels contain procedure, source of information, results, and conclusion sections.

TITLE
(Student Name)

Question

Hypothesis

Procedure

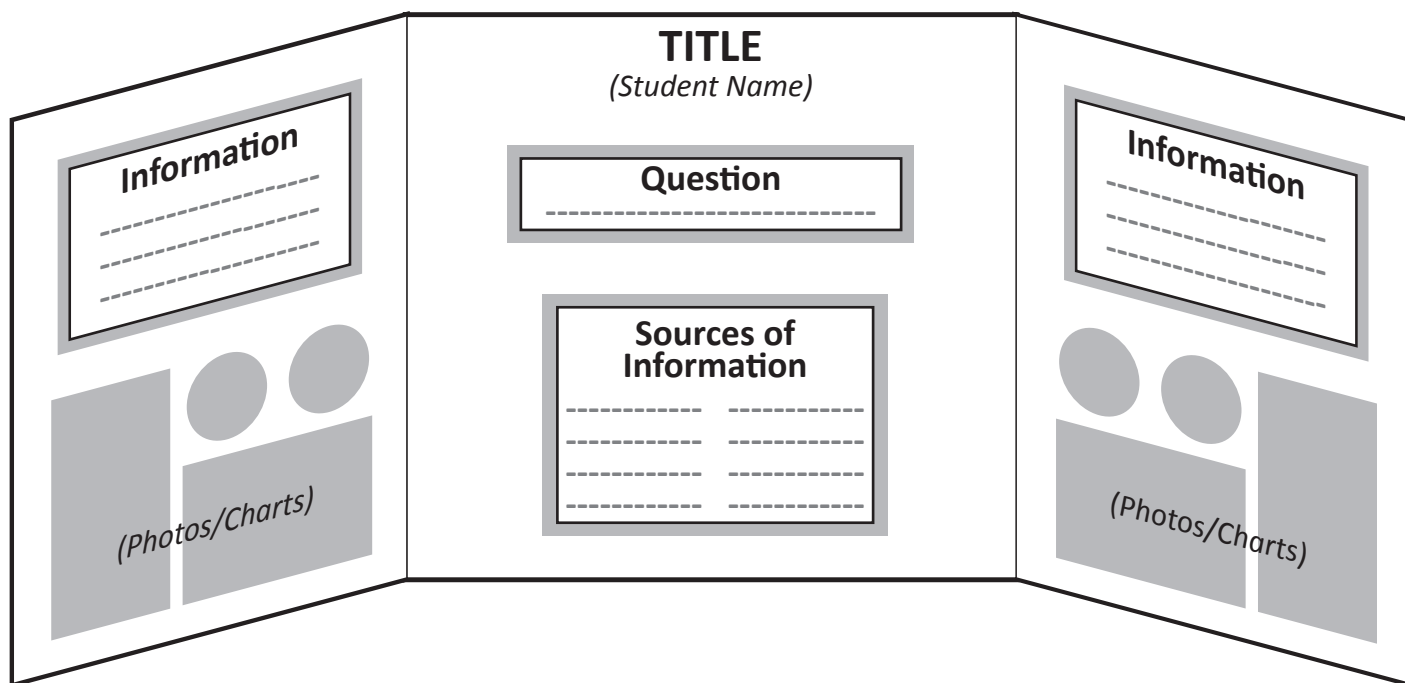
Source of Information

Results

Conclusion

(Photos)

OR



This template is a three-panel display board. The central panel features a title box, a question box, and a sources of information box. The left and right panels contain information boxes and photo/chart sections.

TITLE
(Student Name)

Question

Sources of Information

Information

(Photos/Charts)

SCIENTIFIC INVESTIGATION JUDGING FORM
Zoetis-LPS-GSK Science Fair
Lincoln Public Schools

Project #: _____

Student Name(s): _____ Final Score: _____

Topic: _____

SCIENTIFIC THOUGHT (Verbal Presentation)**a. Knowledge of Scientific Fact or Theories**

- 23-25** Knowledgeable, shares information freely, good understanding of topic, able to answer questions.
- 20-22** Provides explanation of some facts and shows general understanding of topic.
- 17-19** Provides some facts with prompting.
- 15-16** Minimal information shared on topic.

Comments

_____/25

b. Planned and Organized

- 14-15** Understands and utilizes the Scientific Method to complete project.
- 11-13** Demonstrates some knowledge of the Scientific Method.
- 8-10** Exhibits limited understanding of the Scientific Method requires prompting

Comments

_____/15

c. Explains Graphs, Charts, and Display

- 9-10** Is able to explain graphs, charts, or other visual aids as they pertain to the project.
- 7-8** Is able to explain graphs, charts, or other visual aids with prompting.
- 6** Gives limited explanations to graphs, charts, or other visual aids.

Comments

_____/10

THOROUGHNESS OF DISPLAY (Visual Presentation)**a. Scientific Method and Sources of Information**

- 18-20** Display accurately reflects the use of the Scientific Method (hypothesis, procedure, results, conclusion) **and/or** includes detailed sources of information (demonstrations, research reports from first hand or published sources-such as observations of nature)
- 16-17** Display accurately reflects some evidence of the Scientific Method **and/or** includes detailed sources of information
- 14-15** Display reflects limited evidence of the Scientific Method **and/or** includes limited sources of information

Comments

_____/20


FILL OUT PAGE 2 OF FORM

Points Earned-Page 1: ____/70

THOROUGHNESS OF DISPLAY *(continued)***b. Accurate and Complete Visual Aids**

- 9-10 Display includes two or more of following: graph, chart, photograph, illustration, or model that accurately reflects project.
- 7-8 Display includes one of the following: graph, chart, photograph, illustration, or model that accurately reflects project.
- 0 Display does not include a visual aid.

Comments

_____/10

TECHNICAL SKILL (Visual Presentation)**a. Exhibit 'Catches the Eye' and Focuses Attention of Visitor**

- 5 Display 'grabs' your attention and interest.
- 4 Display is neat and organized but not 'eye-catching'.
- 3 Display is organized but lacks neatness.
- 2 Display is unorganized and appears put together quickly.

Comments

_____/5

b. Words are Spelled Correctly.

- 5 All words are spelled correctly.
- 4 1 or 2 words are misspelled.
- 3 3 or 4 words are misspelled.
- 2 5 or more words are misspelled.

Comments

_____/5

c. Labels are Neat and Easy to read.

- 5 Labels are attractive, neat, and easy to read.
- 4 Labels are fairly easy to read.
- 3 Labels are difficult to read.
- 2 Few or no labels present.

Comments

_____/5

ORIGINALITY**a. Original and Unique Ideas for Topic and Display**

- 5 Unique and original topic and display.
- 3-4 Original topic and/or unique display.
- 1-2 Some originality in topic and display.

Comments

_____/5

RIBBON EARNED - EXPERIMENT**PURPLE**

90-100 Points

BLUE

80-89 Points

RED

70-79 Points

WHITE

69 or Below

Points Earned-Page 2: ____/30

Points Earned-Page 1: ____/70

Total Points: ____/100

BIBLIOGRAPHY OF RESOURCES

Use this form to record your sources of information. You may need to make additional copies.
(This information must be included in your display.)

Book:

Author _____
Title of Book _____
Publisher _____
Copyright _____

Book:

Author _____
Title of Book _____
Publisher _____
Copyright _____

Encyclopedia:

Author (if available) _____
Title of Article _____
Title of Encyclopedia _____
Edition _____ Date of Publication _____

Encyclopedia:

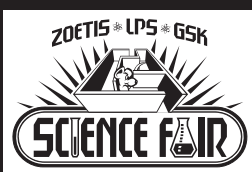
Author (if available) _____
Title of Article _____
Title of Encyclopedia _____
Edition _____ Date of Publication _____

Electronic Sources:

Author (if available) _____
Title of CD-ROM, video, web site _____
Year of Publication _____

E-Mail Communication:

Writer's Name _____
Subject Heading _____
Type of Document _____
Date of Document _____



REGISTRATION FORM

Exhibit #:

(for office use only)

Registration Deadline: February 9, 2018

*(Registration is required **for each participant**)*

Register Online at: www.lps.org -- jump code PTBV

Exhibitor's Name: _____
(Please print first and last name)

Partner with: _____
(Optional. Print first and last name)

Grade Level: _____ School: _____

Teacher's Name: _____

Question to be answered: _____

Field of Science (check one): ☐ Life ☐ Earth ☐ Physical

Sustainability Project: ☐ Yes ☐ No

T-Shirt Size (adult sizes): ☐ Small ☐ Medium ☐ Large ☐ X-Large

NOTE:

I agree to set up my exhibit between the hours of 4:15 p.m. and 5:00 p.m. on March 1, 2018.
I will stay until 7:30 p.m. and dismantle my exhibit by 7:45 p.m. that evening.

Required:

Student Signature: _____

Parent or Guardian Signature: _____

Parent Email: _____

Teacher Signature: _____

REGISTRATION FORMS ARE TO BE SENT TO:

Rochelle Settles • Fredstrom Elementary School • 5700 NW 10th Street • Lincoln, NE 68521

