SCIENCE FAIR 2017

ZOETIS ❄ LPS ❄ GSK

SCIENCE FAIR

22ND ANNUAL SCIENCE FAIR

Thursday, March 2, 2017
Lancaster Event Center
5:00-8:00 p.m.

Open to all 5th-8th grade students

Registration Deadline: February 10, 2017

Register online at www.lps.org, jump code PTBV by February 10, 2017

Teacher Guidebook

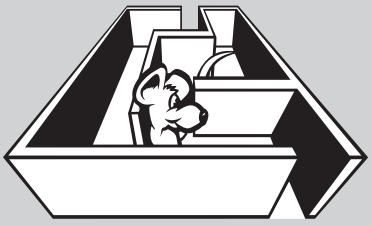
Welcome to the 22nd Annual Zoetis*LPS*GSK Science Fair 2017!

Thursday, March 2, 2017

Lancaster Event Center • 4100 North 84th Street • Pavilion 1
Lincoln, Nebraska
5:00-8:00 p.m.

NOTE: REGISTRATIONS ARE DUE FEBRUARY 10, 2017

TEACHER GUIDEBOOK



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INFORMATION FOR CLASSROOM TEACHERS

Date of Fair: Thursday, March 2, 2017

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

Important Dates and Times: Student registrations **due February 10, 2017**
March 2: 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!

Video: Make certain the students are able to view our LPS Science Fair video: ***"Investigating with Milli Liter–Preparing Science Fair Projects"***

It is an excellent introduction into preparing a display (either a demonstration or experiment) for the science fair. They are available in your school's media center.

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 4, 2017**
Begin discussions about fair in classrooms: **December 2016 and January 2017**
Students develop their projects: **January, February 2017**
Registration forms due at Meadow Lane: **February 10, 2017**
Science Fair: **March 2, 2017**

4:15 p.m.	Student Check in and project set up time
5:00 p.m.	Opening Ceremony
5:00-8:00 p.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

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?

t is the best surface for lifting fingerprints?
oes 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

1. Each project will be reviewed by at least two different judges. Judges will be teachers, administrators, and community members.
2. 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 ceremony.**
3. Judges will have a folder with assigned judging forms included. From the student registration form and from our review of the student's topic question, we have assigned them to a demonstration or experimental evaluation form.
4. The judging forms are 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.

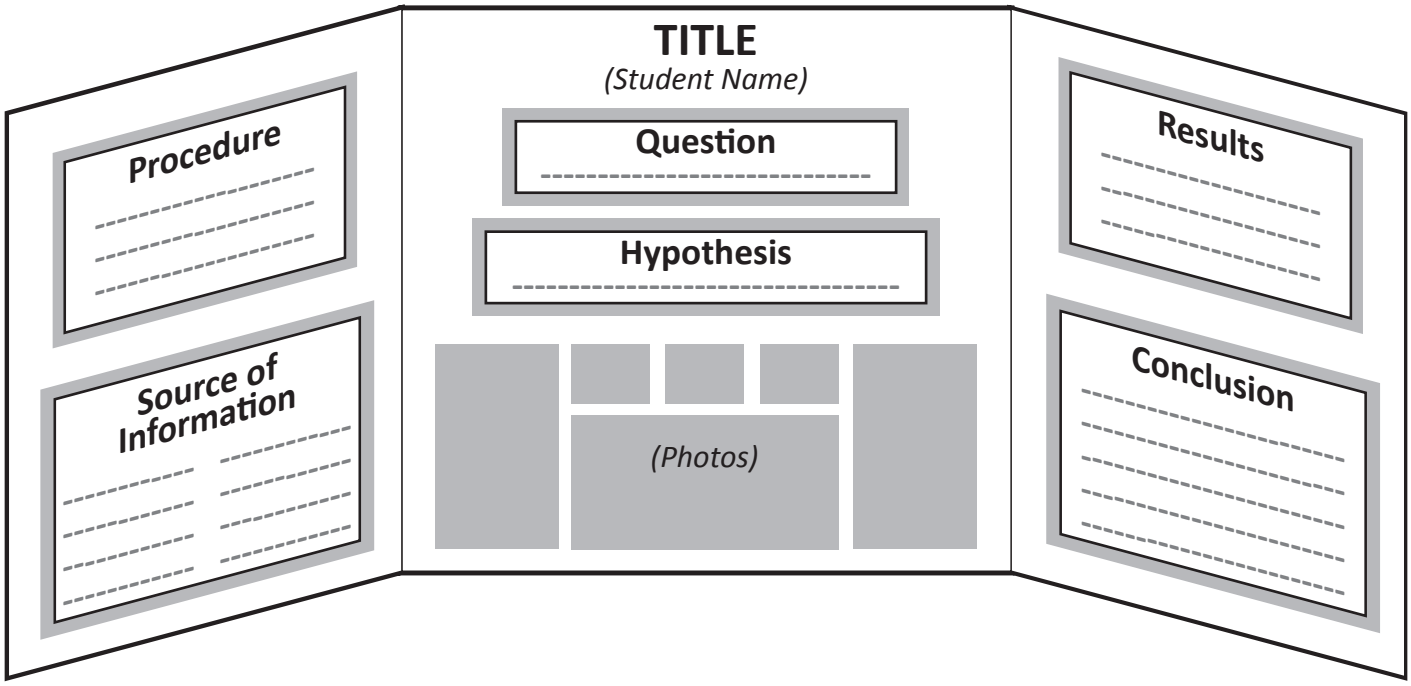
   Knowledge demonstrated by the student and the thoroughness of their display represents 70 percent of their score. The technical portion of the display represents 30 percent of their score.

   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.

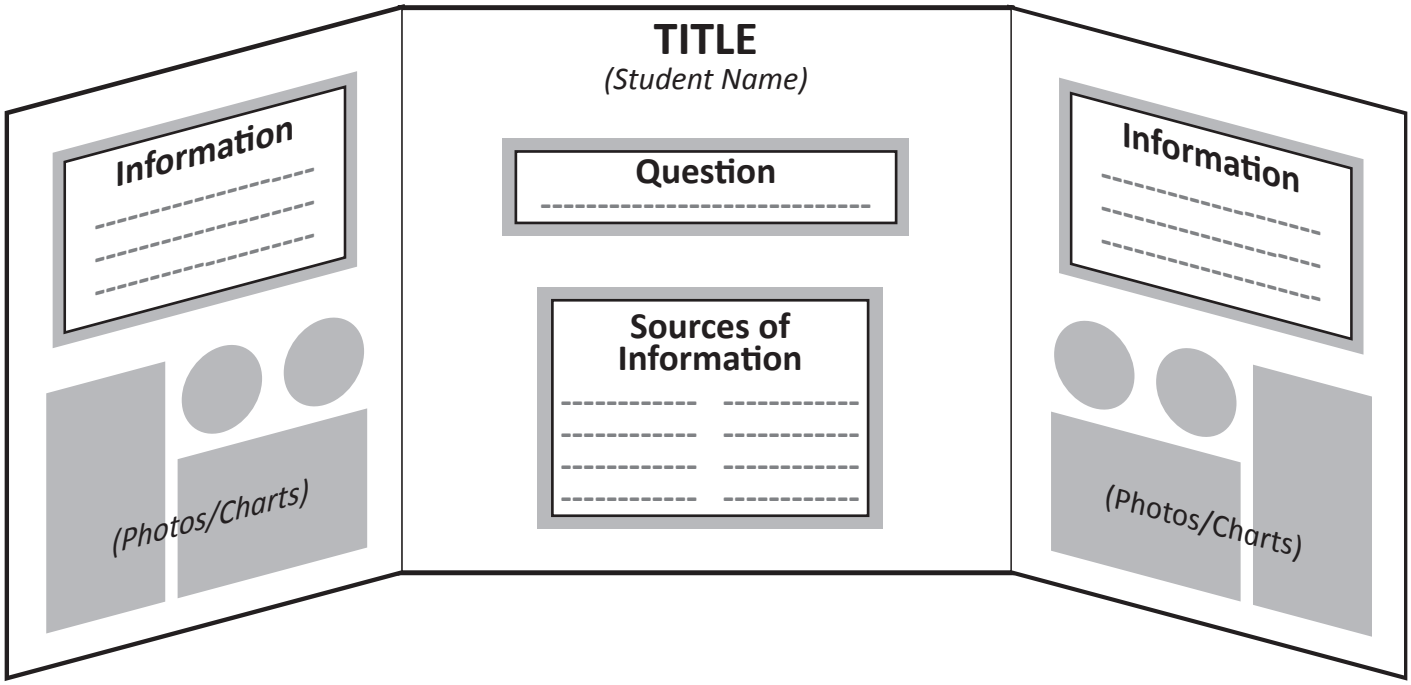
   Sample judging forms for experiments and demonstrations are found on the following pages. Please review these carefully with your students.
5. Judges may share with the students the score they have received but this should not be expected.
6. A group of volunteers will review each judging form at the 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.
7. Judging forms will be returned to the student along with their certificates and ribbons. These should be in your building no later than Friday after the fair.

SCIENCE FAIR DISPLAY BOARD

EXPERIMENTS



DEMONSTRATIONS



EXPERIMENT 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 with 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 includes sources of information.

16-17 Display reflects some evidence of the Scientific Method and includes sources of information.

14-15 Display reflects limited evidence of the Scientific Method and includes sources of information.

Comments

_____**/20**

FILL OUT PAGE 2 OF FORM

Points Earned-Page 1: _____**/70**

Page 2 of Experiment Judging Form

THOROUGHNESS OF DISPLAY *(continued)*

b. Accurate and Complete Visual Aids _____/10

Comments

- **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.

TECHNICAL SKILL (Visual Presentation)

a. Exhibit 'Catches the Eye' and Focuses Attention of Visitor _____/5

Comments

- **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.

b. Words are Spelled Correctly. _____/5

Comments

- **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.

c. Labels are Neat and Easy to read. _____/5

Comments

- **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.

ORIGINALITY

a. Original and Unique Ideas for Topic and Display _____/5

Comments

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

RIBBON EARNED - EXPERIMENT

PURPLE	BLUE	RED	WHITE
			
90-100 Points	80-89 Points	70-79 Points	69 or Below

Points Earned-Page 2: _____/30

Points Earned-Page 1: _____/70

Total Points: _____/100

DEMONSTRATION JUDGING FORM
Zoetis-LPS-GSK Science Fair
Lincoln Public Schools

Project #: _____

Student Name(s): _____ Final Score: _____

Topic: _____

KNOWLEDGE (Verbal Presentation)

a. Knowledge of Facts or Theories _____/25

22-25 Knowledgeable, shares information freely, good understanding of topic, able to answer questions.
20-21 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

b. Planned and Organized _____/15

13-15 Shares information in an organized and sequential manner.
11-12 Shares information in a fairly organized and sequential manner.
9-10 Shares information with a prompting from the judge.
6-8 Shares information in an unorganized manner.

Comments

c. Explains Visual Aids _____/10

9-10 Is able to thoroughly explain visual aids as they pertain to the project.
7-8 Is able to explain visual aids with prompting.
6 Is unable to explain visual aids with prompting.

Comments

THOROUGHNESS OF DISPLAY (Visual Presentation)

a. Complete and Concise Text with Sources Identified _____/20

18-20 Display includes both visual and written information including at least three or more sources of information.
16-17 Display includes both visual and written information including two sources of information.
14-15 Display includes both visual and written information including one source of information.
10-13 Display includes both visual and written information without a source of information.

Comments

FILL OUT PAGE 2 OF FORM

Points Earned-Page 1: _____/70

Page 2 of Demonstration Judging Form

THOROUGHNESS OF DISPLAY *(continued)*

b. Accurate and Complete Visual Aids _____/10

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

Comments

TECHNICAL SKILL (Visual Presentation)

a. Exhibit 'Catches the Eye' and Focuses Attention of Visitor _____/5

- **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

b. Words are Spelled Correctly. _____/5

- **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

c. Labels are Neat and Easy to read. _____/5

- **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

ORIGINALITY

a. Original and Unique Ideas for Topic and Display _____/5

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

Comments

RIBBON EARNED - DEMONSTRATION

PURPLE	BLUE	RED	WHITE
			
90-100 Points	80-89 Points	70-79 Points	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 10, 2017

*(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: _____

Check one: ❑ Experiment ❑ Demonstration

Question to be answered: _____

_____

Field of Science *(check one)***:** ❑ Life ❑ Earth ❑ Physical

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 2, 2017.
I will stay until 8:00 p.m. and dismantle my exhibit by 8:15 p.m. that evening.

Required:

Student Signature: _____

Parent or Guardian Signature: _____

Teacher Signature: _____

REGISTRATION FORMS ARE TO BE SENT TO:
Rochelle Settles • Fredstrom Elementary School
5700 NW 10th Street • Lincoln, NE 68521