

November 19, 2014

Dear Parents of Travis Heights Students:

This packet is coming home to let you know the requirements for this year's Travis Heights Elementary Science Fair. We will be using the same standards as the Austin Energy Science Festival guidelines. We will need some parent representatives from our school to serve as **judges and volunteers** both during our school fair in January, and/or the Austin Energy Festival in February. If you are interested in serving in either or both capacities, then please contact Mrs. Penney at tonya.penney@austinisd.org or by calling 841-0864 (please leave a message if I am unable to take the phone call.) There will be training required for these positions, and I can give you further information about the dates and times when you contact me.

Your child's teacher may have additional requirements, but here is the general timeline for this year's Science Fair:

November 19, 6pm-7pm: 1st Science Fair Training for parents and teachers of 3rd – 5th grade students, as well as interested parents of pre-K through 2nd grade, and packets sent home in the Wednesday folders. Parents need to look over the packet and encourage their children to choose a topic idea. (www.sciencebuddies.org and www.sciencefest.org have some ideas, but an original idea is better.)

November to January: Projects should be underway; data gathering is taking place, observation journals are being filled out, and conclusions are being made.

January 7, 6pm-7pm: 2nd Science Fair Training for parents and teachers of 3rd – 5th grade students, as well as interested parents of pre-K through 2nd grade, and packets sent home in the Wednesday folders. Parents need to look over the packet and encourage their children to choose a topic idea. (www.sciencebuddies.org and www.sciencefest.org have some ideas, but an original idea is better.)

January 15, Thursday: Travis Heights Science Fair Day!

- The science fair will be open for display from 9am – 10:30am for classes to walk through and observe.
- **NO ONE WILL BE ADMITTED DURING JUDGING! 11am-5:30pm (no exceptions!)**
- The Travis Heights Science Fair will be OPEN for parents, teachers and students to visit from 5:30pm – 6:30pm
- Awards Ceremony: 6:45pm-7pm
- 7:00pm: Take projects home and help take tables down after ceremony. (We will need a crew to do this. Please contact your child's teacher if you are interested in helping.)

February 21st, Saturday- Austin Regional Science Festival at Palmer Events Center

Students whose projects are chosen to go on to the Austin Regional Energy Science Festival will need to bring their projects back to school in early February or arrange to have them delivered to the Palmer Events Center on the afternoon of Friday, February 20th for check in. The Austin Energy Science Fest will be held on Saturday, February 21st, with judging from 8:30am to 1:30pm. An awards ceremony will be held from 3pm-4:30pm. If your child's project is selected to go to the regional fair, you will be receiving more specific information closer to the time of the fair.

For any questions, ask your classroom teacher, or email Mrs. Penney. Thank you in advance for all of your hard work.

Types of Science Fair Projects

For Collection: Recommended for K-2:

1. Remember to write a journal entry every time you do any work on your project. List the date and how much time you worked for each entry. Be sure to take pictures as you go along that can be used for your "Journal" or on your project board.
2. Choose items that you already have or can get easily. These items must be similar enough to be called a collection, but different enough to be put into different categories.
3. Begin background research by taking notes from books, websites, or articles that talk about your subject. These will be your "References". You will know you have completed your research when you can discuss your topic in your own words for about 5 minutes.
4. Once research is completed, begin organizing all the information into paragraphs. This will be the "Background Research" that you'll put on your project board.
5. Define categories based on physical properties, species type, or where it was found. Physical properties are things like color, weight, or shape. Make sure you have at least 2 samples for each category. Also make sure you clearly identify the categories. This is the "Classification Scheme."
6. Decide if you will have your collection attached to the board or in front of it on the table.
7. Don't forget to include "Acknowledgements" on your project board. (Names of the people who helped you with your project and how they helped)
8. Pay close attention to the layout of the project board. The order of information should make sense and be visually interesting. Be sure to include all the required elements, photos and log book. As a last step, add a creative "Title". Be sure to list the person who took the photos under "Acknowledgements" on your board.

For Demonstration/Model-Recommended for K-2:

1. Remember to write a journal entry every time you do any work on your project. List the date and how much time you worked in each entry. Be sure to take pictures as you go that can be used in your "Journal" or on your project board.
2. Decide if you want to construct a model. Be sure to leave enough time for this, since some models can take a lot of time to create.
3. If you don't make a model, decide what you'll use instead, such as photographs, drawings, or objects from home.

4. Begin background research by taking notes from books, websites or articles that talk about your subject. These will be your "References". You will know you have completed your research when you can discuss your topic in your own words for about 5 minutes.
5. Once research is completed, begin organizing all the information into paragraphs. This will be the "Background/Research" section that you'll put on your project board.
6. You'll also need to have a "Written Explanation" section on your board, in which you explain what your project is about.
7. Create a section called "Conclusions" in which you talk about what you have learned and what you could have improved upon in your model.
8. Don't forget to include "Acknowledgements" on your project board. (Names of the people who helped with your project and how they helped)
9. Pay close attention to the layout on the project board. The order of information should make sense and be visually interesting. Be sure to include all the required elements, photos and a log book. As a last step, add a creative "Title" and be sure to list the person who took the photos under "Acknowledgements".
10. Be sure you understand and are able to talk about what you've learned from your project. Practice presenting to an adult.

For an Experiment – Required for 3-5

1. Remember to write a journal entry every time you do any work on your project. List the date and how much time you worked for each entry. Be sure to take pictures as you go along that can be used for your "Journal" or on your project board.
2. You will need to identify the problem. The "Problem" is the question that your experiment is trying to answer. **The question must be something that you're trying to test.**
3. Formulate a "Hypothesis". A hypothesis is a guess of what you think will happen when you test your experiment.
4. Find the "Definitions" of any important words that are written in your "Problem" or "Hypothesis."
5. Begin background research by taking notes from books, websites or articles that talk about your subject. These will be your "References". You will know you have completed your research when you can discuss your topic in your own words for about 5 minutes.
6. Once research is completed, begin organizing all the information into paragraphs. This will be the "Background/Research" section that you'll put on your project board.
7. Make a list of the "Materials" that you will need to conduct your experiment.

8. Write up your "Procedure," or the steps that you will follow when doing your experiment. Be detailed so that someone reading your project board could perform your experiment using just your instructions.
9. An experiment must consist of 2 groups. One group is the "Control" and the other is the "Variable." Both groups are identical, except for one specific element. The "Variable" is the specific element that is different; it is the very thing that you are trying to test. (An example might be to test a stain remover. The stained garments, your washing technique and your drying technique would be exactly the same for both groups, with one exception. In the Variable group, you would use a stain remover. In the Control Group, you would *not* use the stain remover.)
10. Use a timeline to plan how long it will take you to complete your experiment and create a project board. If you need live subjects (people, plants or animals), be sure to allow enough time. (Remember plants will take time to grow.)
11. Perform your experiment. Record the "Results" which tells what happened. Remember a good experiment will have results that you can clearly measure. Use a chart and /or graph to clearly show your results on the project board.
12. After you find "Results," form a "Conclusion" paragraph which answers the questions in the "Problem" and talks about what happened in your experiment. Be sure to include ways to improve your experiment were you to redo it in the future.
13. Don't forget to include "Acknowledgements" on your project board. (Names of the people who helped you with your project and how they helped)
14. Pay close attention to the layout of the project board. The order of information should make sense and be visually interesting. Be sure to include all the required elements, photos and a log book. As a last step, add a creative "Title".
15. Be sure you understand and are able to talk about what you've learned from your project. Practice presenting to an adult.



Austin Energy Regional Science Festival 2014 ELEMENTARY RULES FOR PARTICIPATION

1. Participation

Students **must be in grades 3 – 6** to participate in the Elementary Division of the Austin Energy Regional Science Festival.

2. Project Forms

All Elementary students must complete an **Elementary Project Research Form** and submit it with their registration packets.

3. Scientist Training

The Scientist Training program is **not available** at the Elementary Level.

4. Projects That Are Not Allowed

No student in the Elementary Division will be allowed to design or conduct any science project that involves

- firearms, explosives or discharge air pressure canister devices (i.e. potato guns)
- **growing bacteria or mold of any type**
- causing pain, suffering, sickness or death of an animal
- any activity or substance that presents a danger to the student or the environment, including hazardous chemicals or radioactive materials

5. Display and Safety Guidelines

All student projects must follow the guidelines listed below to be allowed to display in the festival exhibit hall.

Items Not Allowed

- **No organisms; living, dead or preserved (plants or animals)**
- No human/animal parts or body fluids (for example, blood, urine)
- No human or animal food
- No liquids – laboratory/household chemicals including water
- No poisons, drugs, controlled or hazardous substances
- No sharp items (for example: syringes, needles, pipettes, knives, tacks, nails)
- No glass or glass objects unless encased or an integral and necessary part of a commercial product (for example, a computer screen)
- No pressurized tanks or containers
- No batteries with open top cells (so that battery acid can be seen)
- No dirt, soil, gravel, rocks, sand, waste products, etc.
- No project, device, activity or substance that may be deemed hazardous to student health or safety
- No photographs or pictures of animals or people in surgical techniques, dissections or necropsies.

Discouraged Items

- Expensive, breakable or fragile items.

(More on next page)

Allowed and Encouraged Items

- Photographs, drawings, stuffed animals/artificial plants or imitation (play) food should be used to depict the prohibited or discouraged items.
- Students should always plan on taking photographs of their project steps as a visual explanation of their effort. Students must ask permission before photographing any other individuals for display on project.
- Be sure to properly credit/acknowledge all sources of graphics and photographers on the display Board (Photograph taken by . . .).
- Students may use a computer and printer for written parts of the project.
- Electrical projects may use batteries as sources of electricity.

6. Display Board

Project display should be on sturdy tri-fold board available at local craft and office supply stores. Written material, drawings and pictures should be securely attached to the display board.

Projects will be displayed on tables that are 36 inches high. Size of display area may not exceed the following measurements: 15" deep, 48" wide, and 72" high. Due to space limitations, displays that exceed these measurements cannot be accepted.

7. Electricity for Your Display

- Electrical projects may use batteries as sources of electricity.
- If a project requires electricity, indicate this need when registering the project online.

8. Project Organization at Austin Energy Regional Science Festival

(See Project Types & Judging Criteria in this document or on the website for more details.)

- A. Grade Level: Each project is categorized by grade level or grade level equivalent
- B. Project Categories: There are two types of projects that students may enter. These categories are explained in detail later in this guide.
 - (1) Exhibit: Model or Display
 - (2) Experiment

Note: Many students have difficulty discerning the difference between Exhibit and Experiment projects. Remember, an Experiment follows the steps of the scientific method.

It clearly asks a question to which you do not already know the answer without testing. An Exhibit is an explanation of how or why something works. It reveals details about the topic. An Exhibit is an explanation, not a question.

(More on next page)



Austin Energy Regional Science Festival 2014 ELEMENTARY PROJECT JUDGING

PROJECTS

A. EXHIBIT: Demonstration, Model, or Display

An exhibit can be a demonstration, a model or a display. A demonstration or model describes how or why something works. A display reveals details about the topic.

DISPLAY BOARD ELEMENTS

TITLE of Demonstration, Model or Display

RESEARCH REPORT gives background information about exhibit (may include diagrams and pictures)

EXPLANATION of what the exhibit shows

CONCLUSIONS

REFERENCES and ACKNOWLEDGEMENTS

CRITERIA FOR JUDGING

Exhibit: Demonstration, Model, or Display

← LEAST

HIGHEST →

• Title – Student states project title	1	2			
• Research Report – Student provides written background Information	1	2	3	4	5
• Exhibit Explanation – Student describes what the exhibit shows. (Pictures of the student doing each step are encouraged.)	1	2	3	4	5
• Conclusions – Student describes what was learned	1	2	3	4	5
• References and Acknowledgements – Student credits all sources	1	2	3	4	5

EXAMPLES

Demonstration

You might want to demonstrate how light reflects off different objects. For instance, you might arrange a set of Lucite mirrors (no glass) or even pieces of foil to show how a beam of light from a flashlight bounces from one reflective surface to another. Your report could explain that light travels in straight lines. Many demonstrations are found in books like “Mr. Wizard,” which are available from the library.

Model

You might like to make a model of a bridge out of wood or sticks. Diagrams could show the parts, and your report could explain how a bridge is constructed.

Display

You might design a display about monkeys, showing pictures of different types of monkeys. Your report could explain where the monkeys live, what they eat, and describe some interesting habits.

Remember to check the list of prohibited/discouraged/allowed items in the “Elementary Division Rules for Participation”.

*Students should always plan on taking photographs of their project steps as a visual explanation of their effort.
(More on next page)*

B. EXPERIMENT

An experiment is a test of a question to which you do not already know the answer. To test your question, you must follow the steps of the scientific method. The display board elements below lists these steps.

DISPLAY BOARD ELEMENTS

TITLE of experiment

PROBLEM: What question are you trying to answer?

DEFINITIONS: Explains the meanings of any special words stated in the "Problem."

HYPOTHESIS: This is what you think will happen before you start to test.

BACKGROUND INFORMATION: What do books, articles, and the Internet say about your topic? **EXPERIMENTAL MATERIALS:** What items do you need to perform your experiment? **EXPERIMENTAL PROCEDURE:** These are the steps you follow to test your problem.

RESULTS: What happened? (Use tables of data or graphs plus a description.)

CONCLUSION: What is the answer to the question in your "Problem?" How do you explain your results? **REFERENCES and ACKNOWLEDGEMENTS:** Books, resource people, articles (include the title and author) or specific Web sites (include the date the site was accessed). Neither search engines, such as Google and Yahoo, nor Wikipedia are scientific sources.

CRITERIA FOR JUDGING

Experiment	← LEAST → HIGHEST →				
	1	2	3	4	5
• Title of Project – Student states project title	1	2			
• Problem – Student asks a testable question or states his/her goal	1	2	3	4	5
• Definitions – Student knows the meaning of the words in the problem	1	2	3	4	5
• Hypothesis/Goal – Student predicts what the results will be or what they are trying to achieve	1	2	3	4	5
• Background Information – Student provides written research information of test	1	2	3	4	5
• Experimental Procedure – Student describes steps of test or construction	1	2	3	4	5
• Experimental Materials – Student lists items needed for test or construction	1	2	3	4	5
• Results – Student describes what happened; tables and graphs display data.	1	2	3	4	5
• Conclusion – Student answered the question posed in the problem or met their goal	1	2	3	4	5
• References and Acknowledgements – Student credits all sources	1	2	3	4	5

EXAMPLES

Do ants like diet soda? Do batteries of the same brand last the same amount of time?
Does warm water freeze faster than cold water?

Remember to check the list of prohibited/discouraged/allowed items in the "Elementary Division Rules for Participation".

Students should always plan on taking photographs of their project steps as a visual explanation of their effort.