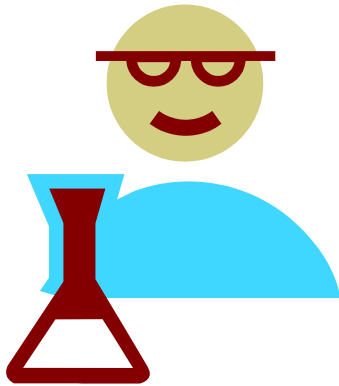


# **Big Country Elementary Science Fair**





# Big Country Elementary Science Fair 2018-2019

Dear Parents,

Big Country Elementary Science Fair is quickly approaching. A science fair project is a wonderful opportunity for a child to use the scientific method to process thoughts. These are basic skills used in everyday life to make sense, clarify problems, and to find creative solutions to these problems. **Science fair projects are a requirement for all 3<sup>rd</sup>- 5<sup>th</sup> grade students and is OPTIONAL for K-2<sup>nd</sup> grade, although it is a great experience.**

**Projects are due January 23, 2019.** Teachers will evaluate the projects from each class and will send the top 2 or 3 projects that will then compete in the campus science fair. Projects that are brought in late will not be accepted for judging.

Projects will be judged according to visual appeal, organization, originality, thoroughness, clarity, the written report and use of the scientific method. 1<sup>st</sup> and 2<sup>nd</sup> place winners from each grade level will participate in the District Science Fair, which will be held at **SWISD's Central Office on January 31, 2019**.

Attached you will find an informational packet to assist you and your child. Remember, this is to be a child conducted investigation project. Parents are encouraged to assist in the planning and supervision; however, students are responsible for conducting the experiment and identifying the results. To assist you in getting started, have your child write the experiment question, explain why it is important to society and/or why it interests them, and explain how the question is to be tested. Be sure to follow the timelines set up by your child's teacher.

**Science Fair Boards** will be given to all families who attend the Big Country Academic Night which will be held on **December 4, 2018**. Parents who have attended in the past have found this to be informative and valuable in supporting their child. If you are not able to attend, you may still purchase a Science Board in the school office for \$5.

We look forward to your child's participation! If you have questions, please do not hesitate to contact your child's teacher.

# Exhibit Specifications

## **RULES**

No live animals

No dangerous or flammable materials

Display can not exceed 36" H x 60" W

Projects must include a report

Project ideas must have teacher approval

Do not have your name displayed on the front or in your report

Pictures cannot show faces

## **QUALITY** – what makes an outstanding science project for the elementary level?

**Knowledge** – understanding the project and being able to talk about it

**Creativity** – experimenting with something that interests the student. There are many ideas available in the library and on the internet. Volcanoes are not considered projects but instead are displays or models.

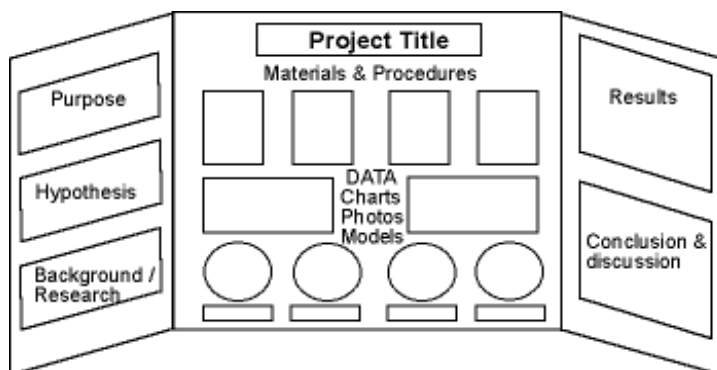
**Thoroughness** – the inclusion of a written report

**Neatness** – lettering should be neat and extra marks erased. Use colorful paper to mount information on the display board

**Accuracy** – be sure information gathered is accurately reported

**Scientific Method** – projects should identify the steps of the scientific method –

1. Ask question
2. Do background research
3. Develop a hypothesis (an educated guess)
4. Do your experiment (testing the hypothesis)
5. Look at data and draw conclusions
6. Communicate and/or display your results.



# Structure for a Science Fair Project

- I. **Question/Purpose/Introduction** – A statement about what you want to investigate or prove.  
Example – In the area of San Antonio, there are different kinds of wildflowers. I want to find out which wildflowers are found most often in the Big Country area.
- II. **Hypothesis**- Make a prediction on what you think is going to happen
- III. **Materials** – A list of all items used to collect information and/or prove question.  
Example – camera, pencils, pictures, tablet
- IV. **Procedure** – The steps that you followed to conduct your investigation
- V. **Results/Data** – pictures, graphs, notes – all information gathered during the experiment. If you use pictures, be sure not to show faces
- IV. **Conclusion** - Tell what happened and why you think it happened and discuss if your hypothesis was correct or not. You can also add what you learned from the experiment.

Reports- A report using the information collected.

**Investigation** report should consist of all the information listed above, but in a research type format. It can be a narrative and should say what you studied and discuss the results found.

**Bibliography:** This lists the websites, books and all sources you used to gather information. Finally, there should be an **Acknowledgements** page. This should include recognition of all people who assisted you with their project and how they assisted you.

## Science Fair Projects – Do's and Don'ts

Very often parents think that winning an award is the goal for science fair competitions. The purpose of the science fair is to allow students to apply science through the scientific method. Every child who participates in the science fair is a winner.

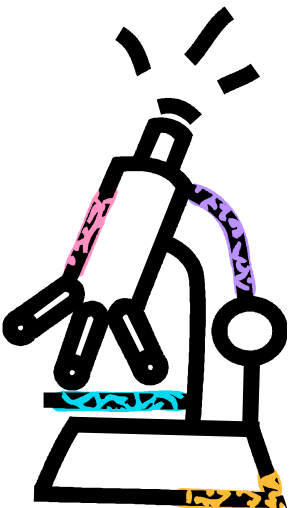
### DO's

- Encourage your child to participate
- Ask to see science project related information that your child does in school
- Allow your child to conduct the experiment
- Allow your child to write their report - let them use their own words
- Offer to help locate sources of information
- Help your child acquire materials
- Insist your child practice safety
- Help construct a realistic timeline



### DON'TS

- Do not do the work for your child – this is your child's project
- Do not encourage your child to do a common project – ex. Volcanoes
- Do not make the focus of the experiment the competition
- Do not copy materials that are copyright protected



# Big Country Elementary Science Fair Tips

## Project Steps

### 1. SELECTING A TOPIC

The first step in preparing a good science fair project is to select a topic for your project. This can be a hurdle you face when starting a science fair project. Choosing an appropriate project is important because it can make the difference between a good project and an excellent project. You should pick a topic you are interested. Second, remember it doesn't have to be complicated. Students often select complicated projects and then do not fully understand the concepts or sometimes give up on the project. The ideas page has a list of generic project ideas that can be simplified or expanded to fit student needs.

### 2. RESEARCH YOUR TOPIC

After selecting the topic, learn all about it. Books and information on the topic can be found in libraries, bookstores and on the internet. Use search engines to find information or check out the Science Links page on the BCE website. Remember that copying someone else's work is plagiarism and will negatively affect your grade,

### 3. MAKE A PLAN

Once you consider yourself an expert about your topic, make a plan as to how you will conduct your experiment. Your plan should include the following:

- The purpose of your experiment

- The variable(s) or the things that you are going to change during the experiment

- The hypothesis or what you think the outcome of the project will be

- A detailed procedure outlining how you will conduct the experiment

### 4. CONDUCT THE EXPERIMENT

The next step is to follow the plan that you have written. While conducting the experiment keep detailed notes of everything you observe. You may even want to take pictures or make sketches of your observations. These notes are vital to you experiment – they will provide needed information when you write your report and prepare your display.

### 5. ANALYZE YOUR RESULTS

When you have finished the experiment, organize your notes. You may want to recopy your notes so that they are well organized and easily understood by others. Next, analyze your information. Ask yourself what happened, did the results agree with your hypothesis, etc. Make graphs and charts to represent the data and to help you explain your work.

## **6. WRITE A REPORT**

Write a detailed report about your project. Tell exactly what you did, how you did it, and what you discovered. Be sure to write about your plan, your experiment and include your data. Be sure you include background information and what you have learned.

## **7. MAKE YOUR DISPLAY**

The display is crucial to success during the science fair. It explains and displays your work and your project. The display must be neat and well organized. It should include background information, the problem, your hypothesis, your procedure, your results, your conclusion, your report and any graphs and charts you've created. You can include photos or drawings of your experiments. Remember, photos may not show your face.

## **8. REHEARSE YOUR PRESENTATION**

When you make your presentation to the judges, it is important that you are prepared and know what you are going to say before you say it. By rehearsing your presentation, you get an opportunity to work the bugs out and begin to feel comfortable talking about your project. You should start rehearsing by yourself, and then find volunteers to be mock judges and present to them. You will be calmer and more composed on the day of the science fair if you are prepared and know what you want to say.

## **9. DO YOUR BEST!**

During the judging, be calm and natural. Know what you are talking about and be confident – you will do great!

## **PROJECT HINTS**

Here are some additional project hints!

**CHOOSE A TOPIC THAT INTERESTS YOU** – you will enjoy the experience more and be happier doing the project.

**DO YOUR OWN WORK** – it is fine to get help and ideas, BUT, remember the project is to be your work, not someone else's.

**GIVE YOURSELF PLENTY OF TIME** – follow the timeline and plan. This will allow you to do quality work and get the most from the experience.



# Safety Rules

1. Read all instructions carefully before proceeding with an experiment.
2. Keep a serious attitude while experimenting. Fooling around can be dangerous to you and others.
3. Wear safety goggles when you are experimenting or are in a laboratory setting. Wear a lab apron if you are working with chemicals.
4. Do not eat or drink while experimenting and do not taste dry chemicals or solutions. All chemicals displayed in a project should be clearly marked.
5. Keep flammable materials away from sources of heat. When working with fire, hot liquid, caustic chemicals, or electricity, **adult supervision is a must!**
6. Have safety equipment such as fire extinguishers, fire blankets, and first aid kits nearby while you are experimenting and know where the equipment is. Be sure you or an adult know how to operate the equipment.
7. Don't touch glass that has recently been heated. It looks the same as cool glass. Bathe skin burns in cold water or apply an ice pack.
8. Do not touch any high-voltage source or anything connected to a high-voltage source.
9. Never experiment with household electricity without the **supervision of a knowledgeable adult.**
10. If you are unsure about the safety of a project, ask a responsible adult for help.
11. You may write the ISEF (International Science and Engineering Fairs) for their rules and regulations. Most science fairs follow the ISEF rules and regulations. You may also check their website: <http://www.societyforscience.org/ISEF/>
12. Design your display for easy transport to and from the fair.
13. Expensive and fragile items should not be displayed.
14. Items to be displayed should be adequately secured.



## Science Project Ideas

Identifying flavors when blindfolded – Kool-Aid, gum, sodas

Which toy car rolls farther?

Which bread molds more quickly?

Do different apples have different numbers of seeds?

Which materials dissolve in water?

Which materials conduct heat best?

Which paper towel absorbs more water?

Do large pieces of fruit have more seeds than smaller pieces of fruit?

Do coins change in salt water? Soda? Juice?

How does vinegar affect eggshells?

Does ice melt faster when it is crushed?

Does soda melt ice quicker than water?

In which kind of soil do plants grow best?

Do the same plants like the same type of soil?

Identifying magnetic and non-magnetic materials

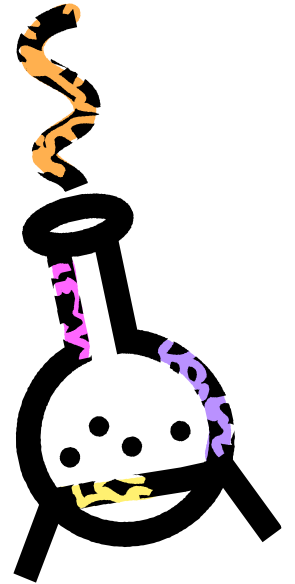
Testing a sundial against a clock

Which battery lasts longer?

What holds materials together better – nail, screw, glue?

Do bananas brown faster on the counter or in the refrigerator?

What color of birdseed do birds like best?



**For more science fair ideas, go to the Big Country website and click “FOR STUDENTS”**

# Writing Reports

A good research paper should include the following:

- **Title Page:** Create a title page including the title, school, date, and grade. *Reminder – do not write your name anywhere visible. Judging is anonymous.*
- **Table of Contents:** Include the page number for the beginning of each section.
- **Introduction:** The Introduction includes your hypothesis, an explanation of your data and how you got it. Also, include what you hoped to achieve when you started your project.
- **Experiment:** Describe in detail the method you used to collect your data and observations. Your report should be detailed enough for anyone to be able to repeat your experiment by just reading the paper. It would be a good idea to include detailed photographs or drawings of your equipment. (**Do Not** display yourself or faces in your pictures.)
- **Discussion:** In this section, your results are analyzed. This section should flow logically so that the reader can easily follow your train of thought. Compare your data with theoretical values, and expected results. Discuss how your results varied from similar events. Describe what you would do differently if you were to do this project again.
- **Conclusion:** Summarize your results. Do not introduce any new material that wasn't already mentioned in the previous parts of the paper.
- **Literature, Research and Acknowledgments:** In this section, you should give credit to all who assisted you. This can include individuals, businesses, and educational or research institutions. Identify any financial support or material donations received.
- **References/Bibliography:** This list should include any documentation that is not your own, such as books, articles, internet information that you used. Use proper bibliography format.

# Scientific Method Outline

State the Problem: What do I want to find out?

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Write the Hypothesis: What do I think will happen?

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Design the Experiment: How can I test what I think will happen?

Materials:

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Procedure:

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Record and analyze the data: What happened?

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Draw Conclusions: What did I find out and how does it compare with what I thought would happen?

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# Science Fair Timeline

ALL STUDENTS WILL BE EXPECTED TO MEET THESE DEADLINES. DETAILS WILL BE GIVEN PRIOR TO EACH DUE DATE.

<u>Assignment</u>	<u>Due Date</u>	<u>Completion Date</u>
Write question and purpose	_____	_____
Research topic and organize resources	_____	_____
Write hypothesis	_____	_____
Design experiment, list materials write procedures	_____	_____
Conduct experiment, gather data, keep records	_____	_____
Finish experiment	_____	_____
Bring display and report to school	_____	_____

# Science Fair Questions and Brief Write-up

Student \_\_\_\_\_

Question to be researched and experimented \_\_\_\_\_

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What is the purpose of this experiment? Why is it important to society?

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Brief write-up of how the experiment will be conducted:

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\_\_\_\_\_  
Parent Signature

# Acknowledgment Statement

I understand my child \_\_\_\_\_, is required to participate in the Big Country Elementary Science Fair. I also understand there will be an **Academic Night on December 4<sup>th</sup>** where I will be able to receive a free science board. Further, I understand the final project is due **January 23<sup>rd</sup>** even if my student is absent from school.

Science projects often count for multiple grades in multiple subjects. Students who do not turn in a science project will find it difficult to pass Science during the 2<sup>nd</sup> semester grading period.

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Parent Signature