

*Boone Elementary Science Fair
21-22 January 2020*

*Handbook for students in grades 3 - 5
All projects are due January 13, 2020*



My Name _____

Teacher _____ *Grade* _____

Name of my project:

EXPERIMENT, DEMONSTRATION/MODEL with REPORT, or COLLECTION?

Boone Science Fair projects in grades Pre-K through second grade can be a collection, a demonstration/model, or an experiment. **Students in grades 3rd through 5th can do a demonstration/model with report, or an experiment.**

Please use the Criteria Sheets for guidance.

A **DEMONSTRATION OR MODEL with Report** shows how something works. In a demonstration, the student takes *known* facts and *known* results to show how a process, device, or procedure works, and writes about their research on the topic. Frequently, ideas from books will result in a demonstration because the student already knows the results.

A written report about the topic should accompany the model.

Examples: What are the types of jobs bees have in a honeybee colony?
Uses of rocks and minerals in everyday life
Make each of the following and describe how it works:
Barometer, anemometer, wind vane, rain gauge
How do compounds form?
Different ways to measure the volume of objects
Turbines and their use in producing energy

AN **EXPERIMENT** follows the steps of the Scientific Method and clearly *asks a question*. An experiment is an operation or set of tests carried out under controlled conditions in order to discover an *unknown* effect or to test a hypothesis. Most significantly, the results of the experiment are *unknown* to the student prior to conducting the experiment. There must be some level of originality to the idea being tested. **A journal or logbook should accompany an experiment.**

Examples: The effect of different kinds of activities on pulse rates
How heating water affects the rate at which materials dissolve
What foods do mealworms prefer?
What effect does the size of particles have on how fast a solute dissolves?
Factors that affect leaf decay
Factors affecting the ability to memorize

A **COLLECTION (Pre-K-2nd only)**, also called a classification, is an accumulation of objects gathered for study, comparison, or exhibition. Collections must be organized based on some type of classification scheme using observations to group objects or events according to similarities or differences. Classification schemes can be one, two, or several.

Examples: Different bird beak shapes made of clay
Biodegradable and non-biodegradable materials
Models of three types of galaxies
Pictures of fossil fuels and their by-products

For more information, go to www.sciencefest.austinenergy.com

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Criteria Sheet for Demonstration/Model with Report

Ask yourself, "Can I think of a project that no one else has done?"

"How does my project relate to my life or to the lives of others?"

"What are the real world connections?"

____ **Title**

____ **Report:** The report should be in your own words (you write it).

Is spelling and grammar correct? Is the work neat?

____ **Definitions:** Define words that are new to you or might be unfamiliar to others.

____ **Models or Drawings:** These should be original (your own work).

Models or drawings should show how something is arranged or how it works. Models are something you build or make.

____ **Demonstration:** Show how something works when you present your project.

____ **What I Learned:** This needs to be in your own words.

____ **References:** List all sources, such as books and web addresses you used.

____ **Acknowledgements:** Tell who helped you, and be specific about what they did.

____ **Presentation to the class:** Stand straight, face the audience, and explain well—in a clear, public voice—what you know about your topic.

Demonstrate to help explain your topic.

**Projects will be judged in accordance with student's grade level, Pre-K-5th. Students may not have all of the above categories, depending on student's grade level.

All projects are due Monday, January 13th.

Boone Science Fair

Criteria Sheet for Experiment

Ask yourself, "Can I think of a project that no one else has done?"
"How does my project relate to my life or to the lives of others?"
"What are the real world connections?"

____ **Title**

____ **Question:** What are you trying to find out?

____ **Hypothesis:** What do you think will happen?

____ **Background Information:** Look up information about your topic, and include it on your board in your own words. Is spelling and grammar correct? Is the work neat?

____ **Procedure:** Keep a journal or log-book recording your progress and display it. Write down the steps of your experiment and number them on your display board. Include the materials you used.

____ **Results:** Tell what happened. Make charts, tables, or graphs.

____ **Conclusion:** Tell why you think you got the results you described.

____ **What I Learned:** This needs to be in your own words.

____ **References:** List all sources, such as books and web addresses you used.

____ **Acknowledgements:** Tell who helped you, and be specific about what they did.

____ **Presentation to the class:** Stand straight, face the audience, and explain well (in a clear, public voice) what you did. Show what you did when possible.

**Projects will be judged in accordance with student's grade level, Pre-K-5th.

Students may not have all of the above categories, depending on student's grade level.

All projects are due Monday, January 13th.



Boone Science Fair: January 21-22nd, 2020
This page is for student & family use; it doesn't need to be turned in.

Name _____ Science Fair Projects are due: Monday, January 13, 2020

Title of my Project: _____

____ Experiment ____ Demonstration/Model ____ Collection/Classification (*PreK-2 only*)

Experiments:

If you are doing an experiment, what is your question? _____

Did you do research about your question, using books or online resources? Did you explain what you learned in writing?

Did you keep a list of books and websites where you found information (a bibliography)?

Did you describe the procedure in words, drawings, or photographs? Could someone else follow your steps?

Did you collect data using tools such as rulers, scales, thermometers, stopwatches, magnifying glasses?

Did you display your data in a chart or a graph?

Does your conclusion relate back to the question you asked? Did you get a clear answer to your question, or are your results inconclusive? (It's okay to conclude that the results are inconclusive.)

Did you give credit in writing to people who helped you with your project?

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Demonstration/Model with Report:

If you are doing a demonstration/model with report, what are you investigating? What is it that you want to learn more about and present in your project?

Did you do research about your question, using books or online resources? Did you explain what you learned in writing?

Did you keep a list of books and websites where you found information (a bibliography)?

Did you build or draw a model showing how something works? Did you label your model?

Did you give credit in writing to people who helped you with your project?

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Keeping track of my science fair project...

___ I'm keeping a list of references.

___ I'm keeping a list of helpers.

___ I'm taking photographs.

___ I'm developing each part using
the criteria sheet for a
demonstration, experiment, or
collection (collections for PreK-2 only)

___ I'm making tables, graphs, charts

___ I have my display board

___ Is there someone I can interview?
Do I have written questions for
my interview person?

Looking for Ideas? Here are a few suggestions.

Go to: <http://boone.austinschools.org/>

Choose: Library Catalog and Online Resources

Try: World Almanac for Kids

Mackinvia

Discovery Kids

Science Online

Note: If you need passwords for these resources, contact Mrs. Lightbourn at michelle.lightbourn@austinisd.org
or 414-5320.

<http://school.discoveryeducation.com/sciencefaircentral/>

www.sciencefest.austinenergy.com

www.sciencebob.com/sciencefair

www.all-science-fair-projects.com

www.education.com/science-fair/all

<http://www.sciencebuddies.org/>

www.chemistry.about.com/od/sciencefairprojectideas

RULES

GLASS/LIQUIDS/SOIL: No liquids or glass will be allowed on display.

SPACE: Each project is limited in size. The project should fit on one student desk.

WRITTEN DISPLAY: Each project should be explained in writing on folded poster board or some other type of vertical support which fits on a desktop. Student name must be **on back** of the project board. References must be listed.

TYPES OF PROJECTS: See page titled "Collection, Demonstration/Model, or Experiment". Pre-K through 2 may do a collection, a demonstration/model, or an experiment. Third through fifth graders may do a demonstration/model or an experiment **only**.

PARENT HELP: Some students are fortunate in that their parents have time to help them. Parents who do the thinking or display *for* their children do not help students. Parents are encouraged to help their children in these ways:

- *read and discuss this handbook
- *help select projects which are appropriate for child's age level
- *plan and manage project work times and cleanup times
- *take children to the public library
- *purchase needed supplies
- *help draw straight lines for young children
- *listen to your child's oral explanation of the project
- *help an older child maintain a work schedule for their project
- *take pictures of your child working on their project

Students must list any adult help (including that for photographs) in the References and Acknowledgements section of the project.

COMPUTERS: Students may use a computer, word processor, and printer for written parts of the project. They may use the Internet, but the work that goes on their boards must be their own. **Websites used must be listed as references.**

LIVING THINGS: Students should not cause injury or stress to any animals for their project. This includes giving chemicals to an animal or keeping an animal in a container not similar to its usual habitat. Live animals may not be brought for display at the science fair.

SAFETY: Electrical projects may use batteries. Containers must be unbreakable.
No live bacteria or mold cultures are allowed.