



# Science Fair



A variety of Science activities offered in Academic Rodeo  
Contest Support provided by the University of Texas at Tyler School of Education and Psychology

## General Contest Rules

Revised July 2021

The purpose of the Academic Rodeo Science Fair is to encourage scientific experimentation and study. There are 4 Divisions in the Science Fair Contest:

- Class Display – Class research project (Kindergarten, 1<sup>st</sup>, or 2<sup>nd</sup>) classes under the teacher's direction.
- Experimental – 3 levels of competition for Elementary (grades 3 through 5), Middle School (grades 6 through 8), and High School (grades 9 through 12)
- Models and Demonstrations – 3 levels of competition for Elementary (grades 3 through 5), Middle School (grades 6 through 8), and High School (grades 9 through 12)
- Scientific Drawing or Illustration – 3 levels of competition for Elementary (grades 3 through 5), Middle School (grades 6 through 8), and High School (grades 9 through 12)

## Contest Format

### 2 to 3 Weeks Prior to Contest:

- All Scientific Illustrations and all Journals/Notebooks for Experimental and Demonstration projects are submitted for judging.
- Each entry is assigned a number based on the level, division and/or category of the project. Numbers are specific to categories and divisions. For example, all Elementary projects are in the hundreds and the hundred level determines the category (100s for Behavioral, 200s for Biological, 800s for Illustrations, etc.), Middle School projects are in the 1000s, and High School projects are in the 10,000s.  
This number is used to label **all components** of the project by Academic Rodeo, including score sheets. IF the entry is entered in the wrong category or division when registering the student, score sheets pulled for the judges may be incorrect. PLEASE look carefully when selecting the Division and Category for the entry AND notify Academic Rodeo immediately if a change is made. Changes will be made at check-in as needed but may result in the project being displayed in the wrong group.

### At the Contest:

- Students with Experimental or Model/Demonstration projects attend on Contest Day. Students in Scientific Drawings or Illustrations Division do not have interviews and do not have to attend the contest. Kindergarten, 1<sup>st</sup> Grade, and 2<sup>nd</sup> Grade Class Displays are display only and students do not attend.
- On Contest Day, a 1 to 2-hour window is available for set-up of projects by students and/or teachers or other designated adults. See Science Fair Timeline for schedule.
- At set-up, a card will be in place on the table to indicate the project that is to be placed in that space. The card will indicate the assigned project number (done by Academic Rodeo), Division, Category, Level, Student Name, Grade, and School. Please notify the check-in volunteers if anything is in error. Approximately 3 projects fit on each side of the 8-foot table.

- After project has been set-up, teachers and students may leave to return at the scheduled time for the contest interviews and/or may explore other contest entries on display. This is a good time for taking photos of the student with the project. You may NOT take photos while interviews are occurring.
- When judging begins, students are called in small groups to stand by project and be interviewed by one or more judges. The process may be staggered to have younger students arrive first with secondary students arriving later, shortening the length of time at the contest. When enough judges are available, all levels will be judged simultaneously.
- Once the student has been interviewed, he or she is free to leave.
- Teachers and parents must remain in the seating area or may look at entries from other contests that are NOT within the judging area. **No one** is to be in the judging area other than judges, students, and volunteers while judging is occurring. Any photos with projects should occur before judging begins or after judging has ended.
- Students with entries in both Science Fair and Computer Science and students with Science Fair entries who are competing in Pentathlon will be given flexibility as needed in when the projects will be judged at the contest.
- Results are posted within 2 to 3 days.

## Resources

There are many good overviews of how to develop experimental science projects on the internet.

The Globe Project – <https://www.globe.gov/news-events/globe-events/virtual-conferences/2020-international-virtual-science-symposium/resources> - provides several helpful resources:

- Steps in the Scientific Process
- Sample Research Report
- Worksheet to Evaluate Possible Research Questions
- Ten Secrets to Giving a Good Scientific Talk
- Classic Poster Template PowerPoint
- Creative Poster Examples

An overview of project and Journal elements will be available on the Science Fair page.

## Awards

1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> places are awarded in each level in the Scientific Illustrations Division.

1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> places are awarded in each category of each level in the Experimental Division.

1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> places are awarded in each level in the Models/Demonstrations Division.

Elementary students (3<sup>rd</sup> – 5<sup>th</sup> grades) who place in one of the above Divisions will also receive a cash award.

Middle and High School students who place in one of the above Divisions are eligible to apply for Academic Rodeo Scholarships.

Students who do not place receive a Participation Ribbon.

In the Display Division for K-2<sup>nd</sup> Grades, a Rating MAY be awarded for the class project. Students in each group will receive ribbons. No cash awards are awarded in the Display Division.

## **DIVISIONS**

### **CLASS DISPLAY PROJECTS**

The **Class Display Division** is designed for Kindergarten through 2<sup>nd</sup> grade classes to complete a **class** research project and encourage an interest at an early age in scientific research. Up to 3 projects from each grade level (K-2) at the school will be accepted.

- The entire class will work together under the supervision of the classroom teacher to select a topic for research.
- The Scientific Method **MUST** be used throughout the project.
- The classroom teacher will present information to the class to inspire and support their research project. Students may be assigned small group or individual research activities to contribute to the background knowledge for the project and assist the entire class in developing the hypothesis and research activities.
- The components of the project should be suitable for the age of the students in the class.
- A Journal/Notebook should be maintained throughout the project giving details about the purpose and hypothesis, procedures and experiments performed, results, and conclusions of the class. Include individual and group graphs and charts to support the project information. Some groups have each student complete a Journal. Some groups submit one Journal for the entire group. Regardless of the option chosen by the group, evidence of each student's participation should be obvious from the Journal or Journals submitted.
- Prepare a display of the project and its results. The display will highlight the information contained in the Journal or Notebook.
- Submit a short description of the project with a photo inserted into the document to display during the Virtual Academic Rodeo. Do **NOT** put this in the Journal. It should be entitled Project Summary and be given to the staff separately when submitting the project.
- Set-up can be by the teacher only or by the teacher and some or all the students.
- Projects will receive an Achievement Level – Satisfactory, Good, Outstanding, Superior – and will receive some type of award to be displayed in the classroom. Each student will receive an appropriate ribbon. **NO** cash awards are presented at this level.
- The class is not required to be present for judging. Schools are encouraged to bring their classes after the Science Fair has been judged to see all exhibits.

### **SCIENTIFIC DRAWING OR ILLUSTRATION**

**Scientific Drawing or Illustration Division** will allow students to submit scientific drawings of various science principals and organisms. A scientific illustration could be thought of as operating on three levels:

1. A simple line diagram that is an accurate visual description, a plan or map
2. An illustration that visually conveys the subject accurately but incorporates specific details such as color, patterns, etc.
3. Artwork that is an illustration based on all of the above but is also aesthetically pleasing
4. Accuracy in terms of shape, scale and proportion, and related parts is important, regardless of the amount of detail.

Scientific correctness will receive the heaviest weight in scoring, but artistic attributes will be considered.

The drawing (**size between 8"x10" and 11"x14"**) must be mounted on poster board, no larger than 12"x18". Do **NOT** use foam board or canvas for mounting drawing as it cannot be displayed when projects are placed on boards with push pins.

Students must work alone in this division.

Up to **6 entries** per contest level (E, MS, or HS) are allowed per school.

## EXPERIMENTAL PROJECTS

The Experimental Division includes projects involving scientific research and experimentation.

### Project Requirements

Each Experimental project should include the following items. See the Science Fair Score Sheet to see how each item is scored.

- **Journal** with supporting research that has guided the student's development of a hypothesis and research methods. It should show the entire process from developing the hypothesis and procedures through the daily planning and research to completion of project with results and conclusions.
- **Project Board** –The board should be free-standing and no larger than 4' X 4'. It is a concise and attractive display highlighting the components of the project.
- **Visual aids** or other display items to explain the project and its results
- **Student Interview** – This is done at the contest when judges are present.
- **A one-page Abstract and photo** which details the projects research procedures and results (for experimental) or gives an overview of the principle modeled. – This will be used to display in a notebook during the virtual Academic Rodeo on display during the East Texas State Fair. The Abstract should be labeled on back and submitted with the photo apart from the Journal.

### General Guidelines for All Projects:

1. All projects **must** be designed to experimentally test a hypothesis.
2. Each project must have been researched and developed within the last 12 months. If the project is an ongoing, long-term project, designation of work done in the last 12 months must be shown.
3. **Students may work alone or in teams of 2 with each documenting his or her portion of the work in the Journal/Notebook.**
4. Projects may **NOT** use chemicals or flammable materials that could be deemed dangerous or hazardous to the health of the general public. Chemicals, tissue samples or any element that would be dangerous or hazardous to the health of the general public may not be displayed at the Academic Rodeo Science Fair. Photographs of experiments are acceptable.
5. Display Project Board **MUST** be freestanding and no larger than 4' X 4'. Academic Rodeo will provide tables for all displays. Tables will **NOT** be against walls, thus the need for freestanding boards. **Display boards should be labeled on the top left back with the student's name, grade, category, and school.** Any display items should be marked as belonging to the student in some way.
6. **Journals should be labeled** for identification on the top left corner of the back of the journal with the student's name, grade, school, and category. Academic Rodeo will assign a number for the project and the journal will be labeled with that number on the front for judging purposes.
7. Judging of entries in the **Science Fair** will occur on the set date and time designated on the Timeline. Displays must be set-up no later than one hour prior to the time set for judging. See

the Contest Timeline for the set-up time frame.

8. Student should be present for judges' interviews during the time specified for judging. The interview plays a significant role in scoring of the project. Project of any student not present will be judged, but she/he will not receive the points given for an interview. It will be almost impossible for a student absent from judging to place in the top three.
9. All projects entered will be displayed throughout the remainder of Academic Rodeo and photos of the projects when available will be on display in a Virtual Academic Rodeo during the East Texas State Fair.

### **Experimental Categories:**

NOTE that Earth/Space is NO LONGER a category.

1. **Behavioral Sciences:** The study of animal and human behavior – Projects related to animals and humans should be limited to observations of behavior, perceptions, etc. and should not cause harm in any way.
2. **Biological Sciences:** The study of plants, microorganisms, and life processes - (Projects related to animals and humans should be limited to observations of scientific principles, perceptions, etc. and should not cause harm in any way. For example, an individual should not remove needed medications from a subject to observe results of the loss of that medication.)
3. **Chemistry:** Physical chemistry, organic chemistry (other than biochemistry), inorganic chemistry, soil chemistry and related chemical processes
4. **Environmental:** Pollution (air, water, land), pollution sources and their control, waste disposal, impact studies, environmental alteration (heat, light, irrigation, erosion, etc.), ecology.
5. **Physical Science (Physics):** Physical properties at work, materials, plastics, fuels, pesticides, metallurgy, etc.

Each school may submit 6 projects in each level in any combination of the 6 categories.

## **MODELS AND DEMONSTRATIONS**

**Models and Demonstrations Division** involves students presenting a model and/or demonstration of a scientific principal.

### **Project Requirements**

Each Experimental project should include the following items. See the Science Fair Score Sheet to see how each item is scored.

- **Journal** with supporting research – Project cannot be judged without Journal/Notebook. It contains research about the scientific principle or phenomenon represented in the project and provides conclusions about what was learned by doing the project.
- **Project Board** –The board should be free-standing and no larger than 4' X 4'. It is a concise and attractive display highlighting the components of the project.
- **Visual aids** or other display items to explain the project and its results
- **Student Interview** – This is done at the contest when judges are present.
- **A one-page Abstract and photo** which details the projects research procedures and results (for experimental) or gives an overview of the principle modeled. – This will be used to display in a notebook during the virtual Academic Rodeo on display during the East Texas State Fair. The Abstract should be labeled on back and submitted with the photo apart from the Journal.

### **General Guidelines for All Projects:**

The student(s) must:

- a. Research the scientific principle or phenomenon and give adequate background information to show an understanding of the principle, including why the event occurs and factors which relate to or may influence the outcome or significance of the event.
- b. Describe what the model or exhibit shows and why the materials used demonstrate the principle
- c. Give conclusions about what was learned in the preparation of the model.
- d. Students may work alone or in teams of 2 with each documenting his or her portion of the work in the Journal/Notebook.**
- e. Display Project Boards **MUST** be freestanding and no larger than 4' X 4'. Academic Rodeo will provide tables for all displays. Tables will **NOT** be against walls, thus the need for freestanding boards. **Display boards should be labeled on the top left back** with the student's name, grade, category, and school. Any display items should be marked as belonging to the student in some way.
- f. The **Journal/Notebook** must include credits for all sources used. The Journal/Notebook is critical in scoring of the project and the project will be considered ineligible without it and the research component of the Journal/Notebook.
- g. **Journals should be labeled** for identification on the top left corner of the back of the journal with the student's name, grade, school, and category. Academic Rodeo will assign a number for the project and the journal will be labeled with that number on the front for judging purposes.
- h. Judging of entries in the **Science Fair** will occur on the set date and time designated on the Timeline. Displays must be set-up no later than one hour prior to the time set for judging. See the Contest Timeline for the set-up time frame.
- i. Students should be present for judges' interviews during the time specified for judging. The interview plays a significant role in scoring of the project. Project of any student not present will be judged, but she/he will not receive the points given for an interview. It will be almost impossible for a student absent from judging to place in the top three.
- j. All projects entered will be displayed throughout the remainder of Academic Rodeo and photos of the projects when available will be on display in a Virtual Academic Rodeo during the East Texas State Fair.

Up to **four projects** may be entered in this division at each level of the school.