University of South Carolina Region

Science and Engineering Fair

2025 Rules and Participation Handbook

Elementary Grades (4th – 5th Grades) Competition

Friday, March 7, 2025

Pastides Alumni Center

900 Senate Street

Columbia, SC 29201

Important Dates

Early Project Registration	Friday, February 14, 2025 Online, MySciFair.com

Elementary School Student Researchers may register for and pay their registration fee on the day of the event. Early registration is preferred.

Science and Engineering Fair Competition	Friday, March 7, 2025 Pastides Alumni Center, Columbia
Awards Ceremony	Friday, March 7, 2025 Pastides Alumni Center, Columbia

Every Elementary School Student Researcher will be recognized after the lunch break on the day of the Science and Engineering Fair and will receive their certificates and prizes at that time.

*Elementary School Student Researchers and their families are also welcome to attend the **Awards Ceremony on Sunday, March 23rd at 1:30 pm in the Booker T. Washington Auditorium**. Elementary School Student Researchers in attendance will be recognized on stage and have their names called.*

Project Registration

Project registration will be managed through www.myscifair.com.

Creating a student account:
Video Directions
Written Directions

Create a teacher account:
Video Directions
Written Directions

Project Registration Fees

Individual Project	$25
Group Project (two or three group members)	$45

Students, please find out from your teacher or mentor if your school or school district will be paying students' registration fees. If your school will be paying for your registration, please do not pay your registration fee individually.

To pay the registration fee for an Individual Project online, Click Here.
($1.00 convenience fee included when paying online)

To pay the registration fee for a Group Project online, Click Here.
($1.50 convenience fee included when paying online)

Please make paper checks payable to "**University of South Carolina**" and write **"Science Fair"** in the memo line. Mail paper checks to:

Center for Science Ed / SEF
715 Sumter Street
CLS 401 (Biology)
Columbia, SC 29208

Make sure to include the names of the student(s) and their school with payment by check!

Competition Rules

Participant Eligibility

Students in 4th – 5th grade enrolled in public, private or homeschool programs in the following counties are encouraged to prepare a project for the 2025 University of South Carolina Region Science and Engineering Fair: **Allendale, Aiken, Bamberg, Barnwell, Calhoun, Clarendon, Edgefield, Fairfield, Hampton, Kershaw, Lexington, McCormick, Newberry, Orangeburg, Richland, Saluda, and Sumter Counties**

If you live outside of the above counties and are looking for information about a Science and Engineering Fair in your area, please check this page.

Students are not permitted to enter more than one regional science and engineering fair in the same year.

An Individual Project is completed by one student. A Group Project is completed through collaboration of two or three students. The maximum group size is three students.

Ethics Statement

It's very important that scientists and engineers are honest when doing experiments and collecting data! When a researcher makes up data or is otherwise dishonest, it will be difficult for your future experiments or engineering work to be trusted. It's normal and expected that elementary school students will have help with their experiment or project, and you should include information about who helps you and how when you complete your Research Summary and Project Display Board. It's never okay to take credit for other people's work, so be sure to include a list of sources that you used when gathering information. If a researcher copies others' work or is dishonest in collecting data for their experiment, they may be disqualified from the South Carolina Region Science and Engineering Fair.

General Rules

It is the responsibility of the Student Researcher(s) and Adult Sponsor to evaluate the Research Plan prior to experimentation and / or data collection to ensure all required forms are completed and / or reviews and approvals have been obtained.

Projects must adhere to local, state and U.S. Federal laws, regulations and permitting conditions. In addition, projects conducted outside the U.S. must adhere to the laws of the country and the jurisdiction in which the project was performed.

Introduction or disposal of non-native and/or invasive species (e.g. insects, plants, invertebrates, vertebrates) pathogens, toxic chemicals and foreign substances into the environment is prohibited. It is recommended that students reference their local, state or national regulations and quarantine lists.

Failure to follow Competition Rules may result in research projects being displayed as Exhibition Only, meaning the project will not be considered for awards, or in projects and / or Student Researcher(s) being prohibited from participation in the University of South Carolina Region Science and Engineering Fair.

Schedule of Events

Friday, March 7, 2025

Time	Location	Event
8:30 am	Lobby	Doors Open for Check-In
8:30 – 9:30 am	Lobby and Exhibit Hall	Check-In and Project Display Board Set Up
9:30 – 10:15 am	Exhibit Hall	Judging
10:15 – 10:30 am	Exhibit Hall and Lobby	Break
10:30 – 11:15 am	Columbia, SC	Judging, Continued
11:15 – 11:30 am	Exhibit Hall	Project Take Down
11:30 am – 12:30 pm	Columbia, SC	Lunch Break
12:30 – 1:45 pm	Exhibit Hall	Awards Ceremony

Scheduling Notes

We will do everything possible to stick to the above schedule, and any necessary changes to the timeline will be announced aloud and via on-screen projection in the Exhibit Hall.

Judges will be expecting to hear a **five-minute** summary of research projects. Student Researchers who present longer summaries to judges may have less time for judges to ask questions.

Student Researchers are expected to return to the Exhibit Hall promptly after scheduled breaks.

The Research or Design Process

Planning the Research Project

All projects must have a Research Plan, which will be written **prior to experimentation or data collection**. The Research Plan will be written in future tense and include the following sections:

- A short summary of the background of your research question or engineering goal. Explain why this research is important.
- Research question and/or engineering goal
- List of materials
- Steps to complete your experiment or project. Give lots of details!
- Use the Risk Assessment / Form 3 to identify any possible safety risks and the safety precautions needed to complete the project.
- Information sources

Student Researchers will complete the Student Checklist / Form 1A. This is required for all projects before experimentation or data collection begins.

The Student Researcher(s) and Adult Sponsor (usually the student's science teacher) will discuss the Research Plan, including discussing the Risk Assessment / Form 3. The Adult Sponsor may require the Student Researcher(s) to revise the Research Plan before data collection can begin. Once the Research Plan is ready, the Adult Sponsor will complete the Checklist for Adult Sponsor / Form 1 and the Student Researcher(s) and their parent/guardian will complete the Approval Form / Form 1B, and data collection may begin.

In order to minimize risks to Student Researchers and the subjects of their research projects, Elementary Grade Projects may not include the following:

- Use of human subjects
    - Exceptions:
        - Studies where humans are observed doing everyday activities, but behaviors are not influenced by the Student Researcher(s)
        - Surveys that do not collect personal or private information and have no risk of causing emotional distress
        - Physical activities where the participants are doing activities with no more risk of harm than would be encountered in normal, every day activities
        - The Student Researcher(s) testing their own invention or prototype themselves, a parent / guardian, or the Adult Sponsor / teacher
        - Data available from public sources (sports statistics, crime statistics, etc.)
- Experimentation on vertebrate animals
    - Exceptions:
        - Studies where animals are watched, but behaviors are not influenced by the Student Researcher(s)
- Microbes, including bacteria, viruses, etc.
- Potentially hazardous biological agents such as tissues from living animals, body fluids, etc.
- Hazardous chemicals, activities or devices

Experimentation and/or data collection may not begin on any project until the Student Researcher(s) and Adult Sponsor have discussed the Research Plan and Risk Assessment, and Form 1, Form 1A and Form 1B have been completed, including dated signatures of the Student Researcher(s), Adult Sponsor and parent/guardian.

Experimentation, Data Collection and Data Analysis

Once the Research Plan is complete and the Student Researcher has discussed it with the Adult Sponsor or teacher, data collection and / or experimentation can begin. Similar to "real life" scientific or engineering work, the Research Plan may need to be modified as the project progresses. This is normal and not a problem! The Student Researcher(s) should work with the Adult Sponsor to make sure that changes to the Research Plan don't involve increased risks. The Student Researcher(s) will keep careful records documenting their experimentation and / or design process.

Writing the Project Summary

Student Researchers will complete their Project Summary after data collection is completed. Most Project Summaries will include the following sections:

- Descriptive project title
- Introduction / background information
- Problem statement, design goal or hypothesis
- Steps of the experiment or process for development of design solution / prototype
- Summarized data, shown in tables or graphs
- Discussion or evaluation of design solution / prototype
- Information sources

Preparing the Project Display Board

Student Researchers will prepare a Project Display Board to showcase their research or engineering process and results at the University of South Carolina Region Science and Engineering Fair. Displays will have a maximum depth (front to back) of 30 inches, width (side to side) of 48 inches, and height (table surface to top) of 42 inches.

Student Researchers will include their **first and last name** on their Project Display Board. Student Researchers will also include their project number, assigned through MySciFair SEF management system. If a student is unsure about their project number, it can be confirmed at project check-in on the day of competition and added to the Project Display Board at that time.

Student Researchers should **NOT** include the names of their teacher or other mentors, school or school district on their display board. Student Researchers should also not include personal information such as home address, email address, social media account information, etc.

Project displays may incorporate a laptop computer to compliment or enhance the information presented on the Project Display Board. If used, a laptop computer should be placed on the table in front of or next to the Project Display Board. Electrical supply for laptop computers during the event is not guaranteed. The University of South Carolina Region Science and Engineering Fair will not be responsible for lost, damaged or stolen laptop computers.

Student Researchers may bring props or models / prototypes to include with or on their displays, and props, models and prototypes must stay in the immediate area of the display board. The following will not be allowed in the exhibit hall:

- Living, dead or preserved organisms
- Human or animal parts or fluids
- Bacteria or mold cultures
- Chemicals or liquids, including water
- Poisons, drugs, granules, powders, grease/oil, controlled or hazardous substances
- Sharp items, such as needles or knives
- Glass or glass objects
- Pressurized tanks or containers
- Batteries with open top cells
- Dirt, soil, sand, rocks or gravel
- Photographs or drawings of animals or people undergoing or engaged in surgical techniques or necropsies
- Any other items deemed potentially hazardous by SEF staff

At the time this Handbook is being published, availability of electrical outlets for demonstrating project components is not yet known. Please check the University of South Carolina Region Science and Engineering Fair website for updates closer to the date of competition. Use of electrical outlets in the Exhibition Hall or other locations in the Pastides Alumni Center for charging personal devices such as phones, tablets, etc. will be prohibited during the Science and Engineering Fair.

Judging Rubrics and Protocols

Judging Criteria for Science Projects

Research Question or Hypothesis (10 points)

Clearly and focused
The experiment will give information that could be useful or helpful
Can be tested using scientific method

Experiment Design and Procedure (15 points)

A clear plan to collect data
Independent and Dependent variables are defined
All other variables are kept constant

Data Collection, Analysis and Interpretation (20 points)

Data is collected in a step-by-step way, so it's easy to understand the process
Data is presented in a way that is easy to understand
There's enough data collected to answer the research question or hypothesis

Creativity (20 points)

The experiment is creative and interesting

Presentation (35 points)

Project Display Board (10 points)

The writing on the display is easy to read and understand
Graphs, tables and pictures are clear

Interview (25 points)

Student Researcher(s) answer the judges' questions clearly
Student Researcher(s) understand the science ideas of their experiment
Can describe their results without reading the results from the display board
Can tell which parts of the experiment they did alone and which parts they had help with (having help is okay!)
Can tell how their results are important or useful
For team projects, can tell which parts of the project each team member did

Judging Criteria for Engineering Projects

Research Problem (10 points)

Description problem to be solved by designing a new invention or process
List of criteria that will be used to determine if the problem is solved

Design and Methodology (15 points)

Description of all the ways the Student Researcher tried to solve the problem
Information about the best solution found
Drawing, pictures or model of the prototype of the best solution

Construction and Testing (20 points)

Description of how the best design solution was chosen as best
Data from tests of the best design solution

Creativity (20 points)

Design process or solution show creativity

Presentation (35 points)

Project Display Board (10 points)

The writing on the display is easy to read and understand
Graphs, tables and pictures are clear

Interview (25 points)

Student Researcher(s) answer the judges' questions clearly
Student Researcher(s) understand the science ideas of their experiment
Can describe their results without reading the results from the display board
Can tell which parts of the experiment they did alone and which parts they had help with (having help is okay!)
Can tell how their results are important or useful
For team projects, can tell which parts of the project each team member did

Judging

Projects will have approximately four official judge interviews in **one round of competition**. Student Researchers should prepare a **five-minute** summary of their research and be prepared to answer approximately five minutes of questions from judges in each interview. Student Researchers should be aware that if their summary presentation takes longer than five minutes, judges will have less time to ask questions. Student Researchers are asked to remain with their Project Display Boards as much as possible during the judging period. Official interviews may be conducted by individuals or pairs of judges. An interview by a pair of judges will be considered two official judge interviews.

Competition Categories

- Animal Sciences
- Behavioral and Social Sciences
- Biology and Biomedical
- Biochemistry and Chemistry (includes experiments and design projects focused on states of matter, chemical changes and physical changes)
- Earth Sciences, Environmental Sciences and Environmental Engineering
- Engineering, Sustainable Materials and Design, and Materials Science
- Mathematics and Computer Sciences
- Physics and Astronomy
- Plant Sciences
- Technology Enhances the Arts

Note: Categories may be grouped or split by SEF management as necessary.

Awards and Awards Ceremonies

Category Awards

Category awards will be presented to students in each of the Competition Categories listed above. There will be multiple winners in 1st, 2nd and 3rd place, in proportion to the number of entries in each category.

Dr. Gary Allen Excellence in Scientific Communications Award

Communication of scientific and engineering findings is a critical skill, and the Dr. Gary Allen Excellence in Scientific Communications Award will be presented to Student Researchers in recognition of individuals with the top Project Display Boards and/or judge interviews.

Awards Ceremony

Every Elementary School Student Researcher will be recognized after the lunch break on the day of competition and will receive certificates and prizes at that time.

Elementary School Student Researchers and their families are also welcome to attend the **Awards Ceremony on Sunday, March 23rd at 1:30 pm in the Booker T. Washington Auditorium**. Elementary School Student Researchers in attendance will be recognized on stage and have their names called.