A Guide to Planning a
Science Fair

Proudly presented by Science Buddies: Providing free science fair project ideas, answers, and tools for serious students.

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Introduction

Science fairs provide innumerable benefits to students, which encourage their educational and even social development. Perhaps one of the most valuable benefits is the chance to show, explain, and talk about their projects to others. It's rewarding for fellow students, parents, teachers, and community members to have an opportunity to see and appreciate their many weeks of hard work. Because science fairs also offer judging, students are motivated to strive for excellence and understand what worked well in their projects and where they can improve. Science fair participants are able to:

- Create their own learning experiences and innovations, just as scientists do in the real world.
- Design display boards to communicate the stories of their science projects.
- Participate as a community and support and encourage their fellow students at the fair.
- Learn from other students.
- Interact with adults and improve presentation skills by answering questions from visitors.

About this Guide

Science Buddies strongly believes in the advantages of science fairs, which is why we created this guide as a starting point to help you arrange a science fair at your school. Science Buddies is a nonprofit organization that provides free science fair project ideas, answers, and tools for teachers and students in grades K-12. The goal of this guide is to give you tools to overcome some common science fair challenges.

Challenge	How this Guide Provides a Solution
The time it takes to plan a fair	• Clear and easy steps that focus on how the fair can benefit the students the most
Using volunteers effectively	• Advice on determining how many volunteers you will need • Recruiting and scheduling tools and ideas • A judging guide and scorecard that are comprehensive enough to turn volunteers who possess a basic science or technical background into competent project judges
Promoting the fair to achieve the fair's core purpose: a venue for sharing scientific work	• Tested ideas to attract the school community

Other Essential, Supporting Materials

This guide focuses on guidelines and details for holding a science fair. See the Teacher Resources page (http://www.sciencebuddies.org/science-fair-projects/teacher_resources.shtml) of the Science Buddies website for other essential information for guiding students in doing their projects, including assignments and student worksheets. The Teacher Resources page also includes a guide for parents on how to help without interfering.

Audience for This Guide

This guide is aimed at a teacher who:

- Has never run a science fair or is looking for ideas to enhance a basic fair.
- Teaches any grade, but especially upper elementary and middle school grades.

Science Fair Planner

Follow the step-by-step directions below to organize a terrific, well-attended science fair with the help of effective volunteers.

Before You Kick Off Your Science Fair Program

Step 1: Set goals for the science fair.

Set goals for your program. Here are some suggestions:

- **Make the experience positive for each student; every student should come away with a sense of accomplishment.** To meet this goal, it is imperative to break the project down into manageable chunks, each of which is graded and provides an opportunity for you to offer support. While your students might not all currently have an active interest in science, each of them should have a positive experience.
- **Students should perform every step of the scientific method.** This includes doing the appropriate background research and preparation of a research paper. The fair is not only a great opportunity for them to apply the scientific method, but also to apply other scientific subjects they have studied.
- **Teach students to teach themselves.** Science fair projects introduce students to a process for acquiring knowledge that they can transfer to any subject.
- **Give students the opportunity to communicate what they have learned to others.** Science is a collaborative process, and students can learn a great deal by sharing their results with others. Explaining to others often deepens a student's own understanding.
- **Encourage student accomplishment by offering public recognition and rewards.** This is common in sports, but all too rare in academics. Science fairs are a unique opportunity to evaluate and judge results, and then let talented students appear in the spotlight.
- **Support students in applying what they've learned in other classes.** A science project is not only a wonderful way for students to apply their science skills, but they can also reference skills they have learned in other classes, such as writing, presenting, and math.
- Others? _____

Step 2: Set the date and place for the science fair.

You will need to find a location for the science fair that can accommodate the display boards of your students and remain open long enough for judging and visitors. We strongly suggest that you hold at least part of the fair after school or in the evening so that all parents can attend.

- Calculate how much table space you will need.
  Note: Each display board will be around 36" wide, when open with sides angled, and you can usually get four boards, back-to-back, on a six-foot table.
- Determine which locations will accommodate the appropriate number of tables. Your location will also affect how long you can hold the fair. Here are some possibilities:
  - Library: An easy location due to the lack of disruption to other school activities, but it may be limited in space.
  - Your classroom: Best if you have only one or two classes doing projects.
  - Multi-purpose room: Offers the chance to have the fair during the school day and into the evening. Some school activities may have to change.
  - Cafeteria: Easiest if the fair takes place only after school.
- If you need to use a location that affects the school, involve your principal in the decision-making and planning at this point.

- If possible, book a smaller room near the fair room for volunteer breaks, judging orientation, judging discussions, etc.

Now set the date, taking the planning you did in the step above and the availability of the location into consideration. Again, discuss this with your principal. Closer to the date of the fair, you will determine the specifics of the schedule for the day of the fair itself.

Two Months Before the Fair

Step 1: Determine a schedule for the fair.

Think through a rough schedule for the science fair. The flow of how projects get set up and viewed will depend on your location and the specifics of your school. Here are some considerations that you need to evaluate for your own situation:

Allow Time For:	Estimated Time	Considerations
Setting up the room	Varies	Set-up time depends upon the size of your fair, how much furniture you need to move, and the number of volunteers you have available. Because of all these variables, we cannot give you an estimate, but we can emphasize the importance of allowing plenty of time.
Judging	3 hours	Don't expect judges to volunteer for more than three hours each. Allow thirty minutes of each judge's time for orientation and score discussion, and 2.5 hours for judging of boards. Later, we'll help you estimate how many judges you will need.
Visits by other science classes and administration	1 hour minimum	Give students the opportunity to stand by their projects for at least 1 hour during visiting hours so they can answer questions from other students and staff. This is recommended especially if participants are speaking to younger visitors—they will feel proud and usually less nervous than when speaking to adults. They will usually abandon reading their displays and instead communicate in their own words, especially to younger children. To accomplish student visits, you will have to consider the specifics of your situation. If students in younger grades are not in the fair, they can come in during their regular class day. If all students are in the fair, then you could have students switch roles of visiting displays and standing by displays.
Visits by parents	2-3 hours minimum	At least some visit time should be in the late afternoon or evening to accommodate working families. Students do not need to be standing at their boards during this time.
Returning room to normal	Varies	Duration depends upon fair specifics.

How you handle scheduling these components will depend upon your school and how many students are participating. Here are brief descriptions of some typical schedules followed at schools around the country.

- After-school fair: Students set up during the last class of the day or immediately after school. The students leave while the judges evaluate projects and place ribbons. Later the fair re-opens in the evening or on the next day for parent and student visits.
- Mixed class-time fair/after-school fair: Volunteers set up the room before school opens. Participating students set up projects during the day and stand by them for at least part of the

day as other classes visit. Since this model requires additional school coordination, we recommend that you discuss the students missing classes with your school principal and staff. Another option would be to have the students only stand by their projects during their science class period. Volunteers judge the projects in the afternoon and place ribbons. The fair re-opens after judging is complete, in the late afternoon or evening, for parent and student visits.

- Adjusted schedule fair: At the middle school level, you can adjust students' schedules to remove them from their other classes for part of the day to allow them to have more time to stand by their projects and interact with the judges. Since this model requires additional school coordination, we recommend that you consider it for subsequent years or if you have strong commitment to asking the judges to interview students.

Step 2: Plan science fair location details.

First, determine if there are enough tables in the science fair location. Given the width of each display board, determine if you need to get extra tables from other locations in the school.

Second, write a description or sketch a map of where the tables will go in the room.

Third, meet with custodial staff and administration to go over the details. Your agenda could include (depending upon your school specifics):

- Unlocking and locking procedures: Who handles this task if the fair takes place partly outside school hours?
- Room setup or takedown: Do custodians want or need to be involved?
- School disruptions caused by the room being used for a day: How can administration help?
- Additional tables needed: Could these come from other classrooms?
- Where should refreshments be set up, if offered? Do you need plugs for hot or cold items?

Step 3: Identify the type and number of volunteers required.

The number of fair event volunteers (not including judges) that you will need to perform event management and registration, will depend upon the number of projects at the fair. Use the chart on the following page as a guide.

Staffing Event Volunteers

Number of projects	Recommended number of event volunteers (not including judges), per shift:	
	Peak times: Setup, registration, and takedown	Regular times: Visiting hours, judging
Under 50	4	2
51-100	6	4
Over 100	8	6

Note: These volunteer estimates are generous. If the participants are older, such as middle school students, you might need fewer volunteers, since students themselves can assist with some tasks, such as setup.

Note: You will likely need to come up with volunteer shifts to avoid over-burdening volunteers. Therefore, the total number of individuals participating will be greater than above.

General fair event volunteers should perform the following tasks:

- Help set up the room.
- Set up refreshments for volunteers.
- Help students set up projects.
- Assist in checking safety (teachers should always take primary responsibility for this activity).
- Monitor the event.
- Direct visitors.
- Assist in tabulating scores.
- Help fill out certificates.
- Help return the room to normal.

Registration volunteers should perform the following tasks:

- Set up a registration system and organize data prior to the fair.
- Work on assigning projects to tables and create table labels prior to the fair.
- Check students in.
- Direct students to their assigned tables.
- Receive and organize score sheets from judges.
- Lead score tabulation.
- Lead the process of completing certificates and assigning awards.

Staffing Judging Volunteers

Possible Judging Volunteers	How to Ask
• Parents of students (Note: They should not judge their student's class.)	• By e-mail or memo: See text below to write an invitation to volunteer. Record the details of those who wish to help in a simple spreadsheet.
• Your own professional network	• By phone or e-mail: Contacting friends or others in your own network is one of the easiest ways to find volunteers, especially judges.
• Other teachers at your school	• If you are putting on the fair with other teacher(s), you could judge projects from students not in your classes. If you are putting on the fair by yourself, you could still ask teachers to help judge during their planning periods.
• High school science students	• If you can schedule judging after school hours, call or e-mail your local high school science teachers, especially those that teach advanced science or run the school science club, to help recruit their students. It can be a valuable learning experience for both your students and the high school students.
• Local college science education or science students	• Contact the office that runs the college's volunteer or internship programs.
• Professional contacts or colleagues of parents	• Ask parents for leads to find judges when you contact them about volunteering for the fair. Parents who work for scientific or engineering companies might be able to recruit colleagues to serve as judges.
• Service organizations • American Association of University Women • Local engineering professional societies	• Check websites and contact individuals in the leadership positions or on the board of these groups if you don't have a parent contact.

Judges' Duties

Judges should perform the following tasks:

- Attend an orientation meeting prior to the fair.
- Judge projects by reviewing display boards.
- Stay briefly after completion of judging to assist in score tabulation and to verify accuracy of the awards assignments.

Find judges who:

- Have a college degree in science, mathematics, or engineering and/or work as a scientist, engineer, healthcare professional, educator, etc. The exceptions are university or advanced high school students.
- Represent diverse areas of science—an important attribute, especially if students are in middle school or above, when projects become more sophisticated. Even if you are a specialized science teacher, it is difficult to have deep knowledge in all areas of science. Judges from diverse backgrounds will have useful and different perspectives for evaluating projects.

- Ideally, are at least somewhat familiar with the aptitude of the participants' age group. It is best to balance professional scientist judges with judges who have an education background and understand what students in the age group can typically accomplish.

Number of Judges

Judging is time-consuming, so this activity represents your most significant volunteer need. Calculate how many judges you will need:

Ideal number of judges = (Number of projects * 2) / 15

This formula assumes that:

- Each judge spends an average of 10 minutes per project (that is, each judge can evaluate 15 projects during his or her whole shift). More advanced schools and projects may require up to 15 minutes per project; elementary school projects may require only 5 minutes per project.
- Each judge is on-site for 3 hours. Each judge evaluates projects for 2.5 hours and is in orientation for 30 minutes.
- Each project receives evaluations from 2 judges. Having at least two judges review each project will help minimize the impact of some judges grading more strictly and some grading more leniently; however, in a pinch you can get by with only one judge per project. In that case, as judging comes to a conclusion, have judges jointly review the top-scoring projects to insure that they are fairly ranked. While it's ideal to have multiple judges per project, this alternative will help to avoid egregious errors.

Step 4: Recruit volunteers.

Sample Text for Recruiting Science Fair Event/Registration Volunteers

"Would you enjoy being a part of a lively science fair event where enthusiastic students are proudly showing others their hard work? Are you looking for a one-time, half-day volunteer opportunity, rather than a long-term commitment? Then consider volunteering as an event or registration volunteer at the <NAME OF SCHOOL> Science Fair, to be held on <DATE> from <TIME> to <TIME>. You will be able to sign up for a <LENGTH OF SHIFTS> shift to help students set up projects, direct visitors and monitor the event, assist in tabulating scores, and perform other tasks to keep the fair moving.

Please contact me at <CONTACT> if you are interested or have any questions. I will be sending a sign-up sheet to interested volunteers as a next step.

Sample Text for Recruiting Volunteer Judges

" Are you interested in encouraging young students' appreciation for science? Do you work as a scientist or engineer, or do you have a science, engineering, or other related degree? Are you looking for a one-time, half-day volunteer opportunity, rather than a long-term commitment?

Then consider volunteering as a judge at the <NAME OF SCHOOL> Science Fair, to be held on <DATE> from <TIME>. Judging will take place for three hours, beginning at <TIME>. We will provide you with a brief orientation, clear guidelines, and a form for judging projects. You will judge display boards that students have created to explain their projects (interviews are not part of our basic judging process).

Science projects are often the first experiences that inspire students to take steps to becoming professional scientists. Come see what interests the scientists of tomorrow! The students and I would appreciate your support of this process.

Please contact me at <CONTACT> if you are interested or have any questions. Please indicate your specific science field of expertise and background experience.

Optional: Participating in Upper-level Fairs

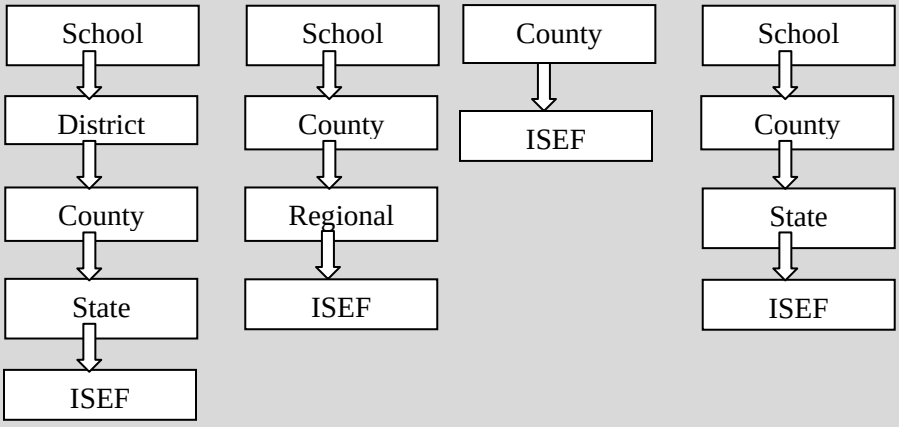
To further enhance their excitement and exposure to other science projects, consider getting your students involved in science fairs beyond the school level. The information below is an introduction to this process.

Participating in Upper-level Fairs
In most areas, there are science fairs beyond the school level, often at the school district or county level. Many of these fairs are part of the Intel International Science and Engineering Fair (Intel ISEF) program, which culminates in an international fair held annually in May for high school students who qualified at lower levels. Similarly, the Discovery Channel Young Scientist Program, also part of the Intel ISEF program, offers opportunities for students in grades 5-8. Enhance your science fair program by encouraging students to enter not only your school fair, but also these upper-level fairs.

Benefits
Upper-level fairs offer key benefits for students who have already participated in a school-based science fair. Upper-level fairs give students:

- An opportunity to meet peers with common interests, which is one of the most important benefits according to students surveyed at upper-level fairs, such as Intel ISEF.
- Exposure to more-sophisticated projects so that students get ideas about what might be possible for them to accomplish in subsequent years.
- The opportunity to interact one-on-one with professional scientists during judging interviews.
- A chance to win scholarships.
- An experience that strengthens college applications and opens doors for college admission.

Background
If your students are interested in advancing to higher levels of science fairs, that's great! You should be aware that science fair organizational structures vary widely from state to state and even county to county. Each location might qualify a different number of students or require varying numbers of steps to advance to ISEF. We've included a few charts below, which depict possible science fair organizational structures. Please be sure to check with your district, county, or state well in advance of your school fair to confirm the route and requirements for your students to advance.



How to Begin
First, to facilitate these benefits for your students, schedule your fair before March so that students will have a chance to qualify (if necessary) for upper-level fairs in time.

Second, get specifics regarding the upper-level fair possibilities in your area. Due to the high degree of variability in how these fairs are structured around the country, we will try to offer some general advice, but finding the details may take some additional detective work on your part.

To find out the specifics, here are the steps that we suggest.

- Check to see if your local school district office has a science fair representative who supports school-based fairs and advises on higher levels of competition.
- Contact the closest ISEF-affiliate fair. See the Competitions page on the Science Buddies website for more information: http://www.sciencebuddies.org/science-fair-projects/competitions_index.shtml.
- Find out if your state has a state science fair and contact the coordinator. See the Competitions page on the Science Buddies website for more information: http://www.sciencebuddies.org/science-fair-projects/competitions_index.shtml.

How to Apply

Once you know the specifics, it's a good idea to act early to let organizers know that students in your school are interested. Some upper-level fairs only accept students who have placed at a school-based fair. Even if you do not yet know the specific names of who has placed, you still must request a certain number of slots at the fair. These fairs frequently use guidelines to determine how many slots are appropriate for your school. These guidelines might be based on the total number of participants in your school fair or some other metric. It is very important to be aware that the deadline for requesting slots is usually before most schools hold their own school-based fairs.

Some upper-level science fairs accept any students who wish to participate. In this scenario, publicize the fair to your students and encourage them to participate. Some teachers go so far as to fill out the application for students and arrange with their parents to take the students and their boards to the fair. In schools where there is no tradition of science fair participation and parents are unfamiliar with the benefits, this proactive first step can be a powerful way to jumpstart the process.

With either type of fair, students often must submit forms that are more detailed than those at the school level. For example, there are usually forms that request detailed experiment safety information. Once you have signaled your interest to have students compete, then the organizer of the upper-level fair will usually make you aware of these other guidelines and deadlines.

One Month Before the Fair

Step 1: Invite visitors to the fair.

Encouraging visitors to come and view the displays is a key part of the success of a science fair. For participating students, having visitors see their projects reinforces that their work matters to a larger community. Non-participating students who come to the fair may get ideas and become inspired for a time when they may have a chance to participate. Parents who visit show their appreciation for and help motivate their students. Administrators who visit will understand the extra work that you and your team put in to make the fair happen.

Promote your fair by choosing to execute some or all of the ideas in the table below. Further information about some of the ideas follows the table.

Inviting Visitors

Possible Visitors	How to Invite Them	When
Students and teachers who are not participating in the fair	• Mention the fair at a teacher's meeting. • Send teachers the text below by email or in a memo. • Have your classes create posters for the school (see below). • Make sure that the date of the fair appears on the school calendar. • Ask students to write a newsletter or website article about the fair (see below).	One month before the fair
	• Mention the fair again at any teacher's meetings. • Send a reminder by email to teachers.	Reminders at each of the following times: • Two weeks before the fair • One week before the fair • Day before the fair
School administrators and school district officials (e.g., science fair coordinator)	• Send administrators the text below by email or in a memo.	One month before
	• Send reminder emails	• One week before the fair • Day before the fair
Parents of participants	• Send the **Final Science Fair Participation Reminder for Parents** included in this guide. Send it as a flyer or as an email. • Include information in the PTA newsletter. • Give students extra credit if parents attend (see below).	Two weeks before
	• Remind students to bring their parents for extra credit.	Day before the fair

Sample Text for Inviting Visitors

"The students of <CLASSROOM name> are pleased to invite you to our <NAME OF FAIR>, to be held on <DATE> from <TIME> to <TIME>. Come see <NUMBER OF PARTICIPANTS> exciting experiment display boards. We are scheduling visits from other classrooms in 30-minute shifts from <TIME> to <TIME>. Our participating students are looking forward to explaining their projects. We welcome administrators and district officials at any time. Parents are welcome any time during the whole day, as well as after school."

Posters

Ask your classes, or work with the art teacher and his or her classes, to create posters and even directional signs. Here are some signage ideas.

- Publicity posters: Decorate the school and publicize the fair before the event. Include date, time, and location.
- Event directions: Where to park, where to go for the fair.
- Science-themed murals for the walls (most appropriate for elementary schools): What about children painting different habitats? Or murals of other science themes, such as the solar system?

Newsletter or Website Articles

Have students write a school newsletter or website article that includes:

- Date, time, and location of the fair.
- Encouragement for students who are working on their projects.
- A reminder for participants' parents to consult their guides (distributed by teachers) on how to help their children.
- Some exciting and fantastic facts:
    - A sample of unique topics already chosen by students.
    - Quotes from students about what they are experiencing.

Step 2: Schedule volunteers.

Schedule volunteers, recruited earlier. Write in the different time blocks that are appropriate for your fair. Ask each volunteer to work for at least two hours (judges for three hours), and ideally half a day. Please see the Appendix at the end of this guide for sample worksheets to assign shifts and to organize the judges' contact information.

Step 3: Decide on awards categories and method.

Use the chart below to customize your awards for your situation.

Deciding on Awards

Consider whether to acknowledge participation.

- You may wish to give each participant a customized certificate including his or her name and ideally the name of his or her science project. Certificates are usually more relevant for elementary school students than middle school students.

Decide what percentage of participants will win a competitive award.

- To make the competition meaningful, many schools give competitive awards to around 30%-40% of projects.
- Determine first-place, second-place, etc., divisions. For example:
    - 1st place ribbons: Top 10%
    - 2nd place ribbons: Next 10%
    - 3rd place ribbons: Next 10%
    - Honorable mentions (if you have decided to award up to 40% of projects): Next 10%
- After you tabulate scores, you will determine what point values correspond to the top 10%, next group, etc. The points that students will need will vary from year to year depending upon the level of competition.
  Note: The judging scorecards on the Science Buddies website will guide your judges in assigning points to each project.

Determine if you want to give awards only by point levels or also by category.

- If you give awards only by point levels, you will have multiple projects in each award class without regard to topic category. You could give out ten blue ribbons, for example, if 100 students are competing.

-OR-

- If you want to recognize achievements in the following science categories, you can give 1st, 2nd, 3rd, and Honorable Mention ribbons (again you might give multiple ribbons per category in each to reward the target percentage of participants).
    - Life Science
    - Physical Science
    - Earth and Environmental Science

Take into account grade level.

- If multiple grades are participating, then you will probably want students in each grade to compete only within that grade. For example, sixth graders would have their own set of winners, and around 30% of sixth grades would win awards.

Determine if you want to award a grand prize.

- Consider the age of your students and the unique characteristics of your school to decide if awarding a grand prize is appropriate. In the first years of a fair, a grand prize might be too controversial, but it can also be a great incentive for students to hone their projects.
- Ask judges to discuss, using points as a guide, but also their impressions, which project should win the overall grand prize. This ultimate award should go to either one project for the whole fair or one project per grade, regardless of category.

Decide on any special awards, including possibilities below.

- Sponsor awards: Given by community organizations who might want to recognize projects in certain areas of science
- Best Display (you could give one per grade)
- Most Creative (you could give one per grade)

Step 4: Set up a registration system and organize data.

You will need to organize your student and project data to facilitate registering students on the day of the fair, directing them to their tables, as well as filing score sheets and determining awards. Using a spreadsheet or word processor, create a registration form based on the details of your fair. You can find a downloadable student registration and project spreadsheet template and sample at http://www.sciencebuddies.org/science-fair-projects/Teacher_ScienceFair_RegistrationSpreadsheet.xls.

Create a layout of where students will place projects.

You will not need to map the exact location of every single project, but should have a general idea of where you are going to send each student. Create table labels so that students will know they are placing their projects in the right place. If you are using codes, you will just include the code on each table label.

Step 5: Gather supplies.

For a smooth fair experience, you will need to prepare and order awards and/or certificates, gather emergency project fix-it supplies, and assemble clipboards and paperwork for judges.

Awards and Certificates

- Order ribbons from a teacher supply form or online. Many vendors offer the opportunity to customize ribbons with the name of your school.

- If you have decided to give participation certificates, type in student and project names in advance, using information provided on each student's **Science Project Proposal Form** found at: http://www.sciencebuddies.org/science-fair-projects/project_proposal_form.pdf.

  Note: You can use the sample certificate template found at: http://www.sciencebuddies.org/science-fair-projects/Teacher_ScienceFair_AwardCertificate.doc.

Project Fix-it Supplies

Gather the following supplies in a central place, so that students can easily repair any unforeseen problems with their displays:

- Batteries
- Dictionary
- Extension cords
- Glue
- Hammer
- Markers
- Scissors
- Screwdriver
- Tape
- White-out

Judging Supplies

In advance, prepare the following for each judge.

- Clipboard and pen
- Name tag
- Copy of the Judging Guide, found here: http://www.sciencebuddies.org/science-fair-projects/Teacher_ScienceFairGuide_Judging.pdf.
- Copy of the fair schedule
- Copy of awards to be given
- Judging scorecards: See the Teachers Resources page for judging scorecards found at: http://www.sciencebuddies.org/science-fair-projects/teacher_resources.shtml. Pick the one that is appropriate for your grade level. Print a set of scorecards for each judge. Print enough copies for the number of projects that each judge will assess. **Note:** You should pre-assign which students' projects each judge will review. Save the judges time by pre-entering student and project names on the top of each sheet.

Refreshments

Ideally, organize basic refreshments for volunteers. Include tea, coffee, and a light snack, such as bagels or cookies.

Step 6: Send a reminder to parents and students.

Send home the **Final Science Fair Participation Reminder**, included in the Appendix, for parents and students. Customize the reminder by adding information regarding extra credit, other organizations participating, or other unique features of your fair.

The Day of the Fair

The science fair, the culminating event of your program, has finally arrived. Excited students are arriving carrying display boards and project supplies. You've done a lot of preparation for this event, so follow the steps below and everything should go smoothly.

Step 1: Set up the room.

Ask the parent volunteer(s), any custodians involved, and perhaps the first participating students arriving to help set up the room.

- Use your layout map or description to help direct those involved.
- Move and clear tables to make room for display boards.

- Get the extra tables, if you need them.
- Set up a registration area near the entrance, and stock it with registration lists and supplies.
- If you have purchased refreshments for volunteers, set them up in the volunteer room.

Step 2: Conduct orientation for judges.

Do this step at least 30 minutes before judging is scheduled to begin. See the Judging Guide on the Science Buddies website for details.

Step 3: The Fair Begins

A. Register participants as they arrive.

Two registration volunteers or staff members should check students in as they arrive to set up projects. Note that registration might take place throughout the day if students are setting up at different times; for example, during each class's regularly scheduled science period. This process includes the following steps.

- Record the attendance of each student.
- Give each student his or her project code, if judging has been blinded.
- Track any changes that might affect the judges, such as students who have failed to bring projects, or any last-minute changes in project titles.
- Direct students to the general area where they should set up (students can then consult the table labels to find their specific locations).

B: Set up display boards.

- Help students display their projects.
- Ask parent volunteer(s) to circulate through the room and help where needed.
- **Critical Safety Check: Check and re-check the safety of each project display board.** Even when the project proposals have passed a safety review, it is still critical to ensure that students have not brought anything unsafe to the fair. As students set up and BEFORE visitors arrive, look for and remove the following hazards (Fredericks & Asimov, 2001, p. 64-65):
  - ☐ Display boards that are flimsy and could fall over
  - ☐ Animals: Absolutely no animals should be on display. Only photographs are allowed.
  - ☐ Chemicals and liquids in open containers
  - ☐ Wiring hazards, such as frayed insulation, exposed wires, or loose connections
  - ☐ Foul-smelling or allergy-provoking substances, such as molds, in open containers

Note: Setup and safety checks might take place throughout the day if students are setting up at different times; for example, during each class's regularly scheduled science period.

Step 4: Judging

A. Conduct judging and support judging.

After the judges finish their orientation meeting, they should begin judging. Direct them to the right projects by giving them project names in advance, either as a list from the registration sheet or a set of score sheets with student and project names filled out in advance.

After judging, the judges should stay briefly in case the registration volunteers and teaching staff members have any questions about discrepancies in points, the winners' list, etc.

B: Monitor the event.

Monitor the room routinely to remove any safety hazards and to prevent damage to projects. Note: Instructions for parents and the rules discourage students from leaving any valuables, especially laptops, present.

C: Make sure that all students receive many project visitors.

Participants who are very enthusiastic about their own work, often track how many people visit their project. Ensure that all students get a chance to shine by implementing one or more of the following ideas:

- When parents are visiting, encourage parents to circulate around the room and visit all of the display boards.
- In elementary schools, ask young children to rotate from project to project. Ring a bell or clap when it is time to move to the next one.

Step 5: Awards

A. Complete certificates (optional).

If you are giving out certificates, you probably filled them out before the fair, as advised above. A registration volunteer should just go through and make sure they are complete and accurate.

B: Tabulate scores and determine winners.

As judges turn in score sheets, registration and event volunteers should do the following:

- Total the score on each sheet to save judges time.
- File each score sheet by award category; for example, by grade and/or science category.
- Collate score sheets according to project name, if each project has more than one judge.

When judging is complete:

- Sort the score sheets in each award's category from high to low.
- Determine which projects fall into each place.
  Note: For example, if first place presents the top 10% in a category, calculate how many projects will win first based on the total number in that category. Select the top 10% from your score sheets in ranked order. Be sure not to exclude projects that tie for the lowest qualifying score for first place.

  Tip: Try to finish tabulation while at least some of the judges are still present in case there are any discrepancies or areas for discussion.
- Create an official list of winners so that there are no disputes if ribbons or score sheets become lost.
- Be sure to have the tabulated sheets and/or copies readily available for students. Interested students may want to find out how their project was scored, so judges should write their comments with the student in mind. Their comments should be written as possible ways to improve the project, rather than criticisms.

C: Distribute awards.

One option to distribute awards is to place the ribbons on projects before students and parents return to the fair for after-school or evening hours. When the doors open, students go to their projects to see the results.

Another option is to have a small awards ceremony, again during the after-school or evening hours of the fair. Plan to have a microphone in the room, and simply ask attendees to gather

around the front. Read out the awards from the lower places to the higher ones, and mention the name of each project, as well as the names of students. If you taught all of the students and are familiar with the efforts, you might mention some details about what the students did.

Whether or not you have an awards ceremony, publish the names of the winners on the school website or newsletter after the fair. You could also set up a bulletin board in the hall or in your classroom. In addition, if the principal conducts regular assemblies, you could ask him or her to mention the names of winners at that time.

Step 6: Return the room to normal.

Students should remove their projects as the fair ends. Ask parents who are present to help re-arrange the room, or rely on a few of your volunteers.

Program Follow-up

After the science fair, follow up on volunteers and participants, and evaluate your program.

Send thank you notes to volunteers.

Send thank you notes to all volunteers, including parent event volunteers and all judges. Involve your students in preparing these.

Publicize the winners.

Submit the names of winners and their projects to the school newsletter or website. If you wish, put up a bulletin board honoring the winners. If the principal has regular assemblies, provide him or her with a note to mention the winners.

Assist select students to go on to other fairs.

You may have selected prize-winning students to go on to the next level of competition, such as a district or city fair. Alternatively, perhaps any student can volunteer to go on to the next level.

Provide these students, and also their parents, with a follow-up letter that includes the following information.

- Reminders to fill out additional paperwork or forms
- Save-the-date: A note about the time and location of the upcoming fair
- Emphasize the importance of participating. This is a once-a-year opportunity that could place students on a path of competing at higher levels in subsequent years where they can earn scholarships
- A way for students and parents to confirm their intention to participate

Evaluate your program.

Review the goals of the program, and assess how well you achieved them.

Goal Assessment

Goal	**Assessment**:	**Ideas for Next Year**: What would you do again? What would you avoid?
Every student should come away with a sense of accomplishment.	Did any students fail to complete a project? ☐yes ☐no How many? _____	
Students should perform every step of the scientific method.	What percentage of projects were experiments? _____ What was the reaction of students? How did you evolve as a teacher?	
Teach students to teach themselves.	Are students thinking about future projects or research, or even independent research? Have you noticed a change in the students' abilities to answer their own questions, problem solve, or troubleshoot on their own?	
Give students the opportunity to communicate what they have learned to others.	How many visitors came? _____ Other students? _____ Parents? _____	
Encourage student accomplishment by offering public recognition and rewards.	What was the reaction of the judges? How did students react to competition?	
Support students in applying what they've learned in other classes.	What skills from other classes did students incorporate in their projects?	

Let Science Buddies know about your experience.

If you have used this guide in any way, we would love to know about your experiences. Teachers are wonderfully creative in how they organize their programs. We would appreciate the opportunity to feature your ideas in an upcoming revision of the guide. You can find a feedback form on the Teacher Resources feedback page:
http://www.sciencebuddies.org/science-fair-projects/teacher_resources_feedback.shtml.

Appendix: Printable Worksheets & Resources

See the following pages for these printable worksheets:

- Worksheet for Assigning Registration/Event Volunteer Shifts
- List of Judges
- Student Registration Form
- Final Science Fair Participation Reminder

Worksheet for Assigning Registration/Event Volunteer Shifts

Activity	Volunteer Assignments	Backup Assignments
• Set up the room.	1) Name: Phone: Assigned time: 2) Name: Phone: Assigned time: 3) Name: Phone: Assigned time: 4) Name: Phone: Assigned time:	1) Name: Phone: Assigned time: 2) Name: Phone: Assigned time:
• Register and check in students.	1) Name: Phone: Assigned time: 2) Name: Phone: Assigned time:	1) Name: Phone: Assigned time:
• Assist with project setup. • Direct students to tables. • Assist in checking safety.	1) Name: Phone: Assigned time: 2) Name: Phone: Assigned time: 3) Name: Phone: Assigned time: 4) Name: Phone: Assigned time:	1) Name: Phone: Assigned time: 2) Name: Phone: Assigned time:
• Monitor the event. • Direct visitors. • Assist judging, when in session, by directing judges to projects, collecting score sheets, filing.	1) Name: Phone: Assigned time: 2) Name: Phone: Assigned time: 3) Name: Phone: Assigned time:	1) Name: Phone: Assigned time:
• Finish registration and tracking tasks. • Assist in determining winners.	1) Name: Phone: Assigned time: 2) Name: Phone: Assigned time:	1) Name: Phone: Assigned time:
• Return the room to normal.	1) Name: Phone: Assigned time: 2) Name: Phone: Assigned time:	1) Name: Phone: Assigned time: 2) Name: Phone: Assigned time:

List of Judges

Assigned Time: _____

Contact Information for Confirmed Judges	Contact Information for Back-up Judges
1) Name: Phone: Email: 2) Name: Phone: Email: 3) Name: Phone: Email: 4) Name: Phone: Email: 5) Name: Phone: Email: 6) Name: Phone: Email: 7) Name: Phone: Email: 8) Name: Phone: Email: 9) Name: Phone: Email: 10) Name: Phone: Email:	1) Name: Phone: Email: 2) Name: Phone: Email: 3) Name: Phone: Email:

Student Registration Form

School Science Fair
REGISTRATION FORM
(Due Date: _____)

Student Name: _____	
Project Title: _____	
Science Category: _____	
Grade: _____	**Science Teacher:** _____
Table Number: _____	**Project Code:** _____

Project Abstract (Project Summary) - Write neatly below, or attach a typed copy with your name and problem on it.

_____ **Approved** _____ **Not Approved**	**Teacher's Signature:** _____
Parent's Signature: _____	**Student's Signature:** _____

Final Science Fair Participation Reminder

To Students and Parents of Students in _____ Science Fair

Here are the rules and information that you need to have a successful science fair experience.

Rules

1. The fair will not provide access to electricity, gas, or water.
2. Your display board should not exceed:
   Width: 4 ft, 122 cm Depth: 2.5 ft, 76 cm Height: 5 ft, 152 cm
3. Make a sturdy display board. Two days before the fair, test it by setting it up to make sure it stands alone.
4. Do not bring animals to the fair. Bring photos instead.
5. The fair cannot be responsible for any loss of items. We advise that students should not display laptops or other items of value.
6. You must remove your project at the end of the expo. We do not have storage space for unclaimed projects.

Dropping off Projects

Drop off projects in the _____ between _____ and _____ on _____.
You may park in the _____ .

Make sure to bring the following, if your child completed them:

1. Display board
2. Any items that go in front of the display board
3. Laboratory notebook
4. Pen, tape, glue, and other quick-fix items in case the display board gets damaged in transit
5. Final report (if assigned)

Visiting the Fair

Parents and other family members are welcome to visit the fair between _____ and _____ on _____. We highly recommend that you visit the fair to give students the chance to feel proud of showing their work.

Removing Projects

You must remove projects by _____ on _____. The school does not have space for the storage of projects.

Works Cited

Fredericks, Anthony D. and Isaac Asimov. *Science Fair Handbook: The Complete Guide for Teachers and Parents*. Tucson: Good Year Books, 2001: 64-65.

National Research Council (NRC). *National Science Education Standards*. Washington: D.C.: National Academy Press, 1996.