



Oakland Unified School District

2017 K-12 Science Fair

Schedule • Participation Form
Overview, Procedures & Guidelines

2017 OUSD Science Fair

Dates and Schedule

January	Information sent to the school sites and posted on the Science in Oakland website (http://science.ousd.org).
February-May 11	Schools organize site fairs
March 31	Registration deadline for school sites at http://science.ousd.org
May 11	Project Entry Forms due
May 15	3-6 pm - Sites deliver projects to Chabot Space and Science Center (CSSC). PROJECTS MUST BE RECEIVED WITHIN THIS TIME PERIOD. NO EXCEPTIONS.
May 16-17	10-5 pm - Projects on display. CSSC open to OUSD students and teachers to view projects, exhibits, and planetarium shows. Free admission.
May 17	5-8 pm - Evening celebration at CSSC. Free admission, family activities, exhibits, and planetarium shows. Food and drinks will be provided. 8:00-8:20 pm - Projects removed by students or teachers. PROJECTS CANNOT BE STORED AT CHABOT AND WILL BE DISCARDED IF LEFT BEHIND.

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More information at <http://science.ousd.org>

2017 OUSD Science Fair

Overview, Procedures, and Guidelines

Overview

The annual OUSD Science Fair will take place this year in May 15-17 at the Chabot Space and Science Center (CSSC). It is a non-competitive event with each school selecting up to six participating projects (possibly more depending on the number of participating schools). During the day on May 16 and 17, teachers are invited to bring their students on field trips to CSSC to view the projects with paid admission. Students, families, teachers, and the community are invited to a reception on May 17, 5-8 PM, to honor and celebrate our students' work. This free event will include food, planetarium shows, and family activities from Chabot, the Oakland Zoo, the Oakland Museum, East Bay Regional Parks, and other local organizations. All participating students will receive custom certificates and medals.

Objectives

- Students will work as scientists and successfully create a science project and share it publicly.
- Students will understand and apply methods of science appropriate to their grade level.
- Students will apply and extend science concepts learned in class.

Project Guidelines

Projects submitted to the District Science Fair can fall into one of three categories:

1. **Scientific Investigations** are controlled experiments in which only a single variable is changed. They may be original or duplicate an existing experiment to confirm a result.
2. **Systematic Observations** of natural events and conditions in order to discover how things work and the laws and principles that govern them.
3. **Engineering Challenges** where students create original designs to meet a specific purpose.

These categories are widely used in the scientific community and reflect Oakland's commitment to preparing all students for the challenges described in the Next Generation Science Standards. The type of project your students choose to submit should be based on his/her interest and developmental level. Use the state science standards as a guide to determine what would be appropriate to expect from your students. For example, kindergarten students may wish to focus on developing their observations skills, one aspect of a scientific investigation. High school students may

work on more extensive research projects. Group or class projects are encouraged when possible.

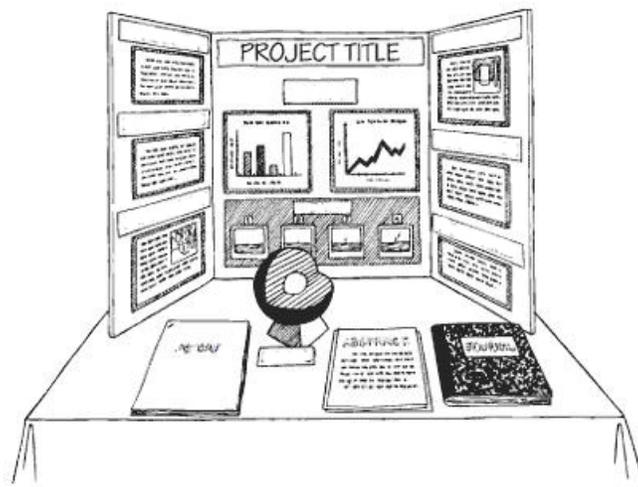
Below are some general suggestions for classroom teachers:

- Plan ahead and allow ample time for project development.
- Create a timeline for students and help them stay on track.
- Work with your students closely throughout the process. Provide time within the regular school day for working on projects and give students the opportunity to stay after-school if they need extra help.
- Share the rubric with students early in the process and clarify all expectations.
- Keep parents informed by sending out letters and notices weeks prior to the Science Fair encouraging them to be appropriately involved.
- Involve the community by reaching out to local scientists or college professors to talk about their work, provide demonstrations, or help with judging.

Additional resources, rubrics, and templates can be found at the Science in Oakland website at <http://science.ousd.org>.

Project Display

Due to limited space at the Chabot Space and Science Center, each entry is allotted a table space of 61 cm (24 in) wide by 71 cm (28 in) deep and 122 cm (48 in) high. Please do not exceed this size as space is limited. Strong backing and sides are recommended as the project must stand by itself. Standard tri-fold science fair display boards made of cardboard or foam-core are highly recommended (36"x48" unfolded).



Sample display from *Janice VanCleave's Guide to the Best Science Fair Projects*, Janice VanCleave (John Wiley & Sons, Inc., 1997)

For a scientific investigation, the following sections should be included on the display along with artifacts and documents related to the project. Note that sections may vary for systematic observations and engineering challenges. See associated rubric for more information.

- **Title** – the title must succinctly describe the focus of the project. It should be short, neatly lettered and easy to read. Also include grade level, team members and teacher names.
- **Prior Knowledge** – prior knowledge includes what students already thought they knew about their topic/question as well as a summary of any background research conducted before the start of the investigation.
- **Question** – the question must be a clearly stated and investigable. It may be an extension of classroom science learning.
- **Prediction** – the prediction statement clearly demonstrates and is informed by students' prior knowledge on their topic/question. Secondary students should include a testable hypothesis for Scientific Investigations or Design Brief for Engineering Challenges.
- **Materials** – specific materials are listed with quantities and units of measure.
- **Methods** – methods are clearly described, sequenced and aligned with the question.
- **Data Collection** – raw data (including appropriate headings and units) as well as an appropriate organizational format (graphs, pictures, diagrams) are present and facilitate interpretation of the data.
- **Claims & Evidence** – evidence is drawn from investigation data to support a claim, which may be further strengthened by scientific reasoning.
- **Conclusion** - the original question is answered, citing specific claims and evidence.
- **Final Reflection** – this may include how students' thinking has changed over time, what new questions or ideas have arisen, and why findings are important.

Chabot Space and Science Center will be open to the public and thousands of students will be visiting the displays. For the safety of visitors, please make sure all projects meet the following guidelines:

- All loose items should be taped or tied down to the display or table.
- Liquids should be in sealed and taped containers.
- Animals (live or preserved), mold, dangerous chemicals, radioactive materials, explosives, drugs, hypodermic syringes or needles, lasers, or open flames may not be included in any exhibit.
- All wiring of electrical apparatus must conform to the national Electric Code.
- Students will not have access to running water or electrical outlets.
- Substitute pictures or photographs for living organisms, food, or items of value.

Please note that while strong efforts will be made to insure the safety of the displays, OUSD and Chabot cannot be responsible for lost or damaged items.

Students who attend the evening reception are asked to stay with the project for at least 10-15 minutes to discuss their project and answer questions.

Guidelines for School Sites and Coordinators

There are many ways a school site can participate in the District's Science Fair. Traditionally, most schools organize a schoolwide fair. However, if there is limited interest among the staff, schools can organize a fair by a single grade level, course, or a small number of classes. If only one teacher is interested, even a single class can represent the school.

Regardless of the number of projects, only up to six projects per school can be submitted to the District's event due to limited space at Chabot and the need to reserve space for all schools.

All participating students in the District Fair will receive custom certificates and each project will receive a medal. Family, staff, and community members are all invited to the evening event at Chabot on May 17. Personal invitations for the participating students will be provided to the Site Coordinators.

The determination of which projects are submitted to the District Science Fair is up to the individual sites. It is important to establish the judging criteria in advance so that teachers and students are informed. (See below for more information related to judging.)

The Science Fair should not be seen as a one-day event but rather a culmination of weeks, or even months of science-focused learning. Projects can come from extensions of existing classroom lessons and activities. Individual, group, or even entire class projects are acceptable. In addition, science fair projects provide a unique opportunity to integrate skills in other academic areas such as math, reading, writing, oral presentations and research.

In the past, schools with successful science fairs have provided time for the development of student projects during the school day. This structure gives teachers the opportunity to provide feedback to students as they develop their ideas and minimizes unwarranted parental involvement.

Please visit the Science in Oakland website, <http://science.ousd.org>, for a wealth of planning resources and templates.

Judging

Because the District Science Fair is a showcase event, judging takes place only at the site level. To assist sites with the judging process, several sample rubrics and scoring sheets based on the State of California Grade Level Standards, Investigation and Experimentation can be found on the Science in Oakland website.

It is recommended that teachers review the sample rubrics and develop a tool that is appropriate to the needs of your site. For example, you may want to add additional requirements or criteria such as using more than one language or narrowing the choice of topic to the science standards of the grade. It is important to familiarize students with the judging criteria before they begin their own project. You may also want to consider allowing students to self-assess and peer-assess projects using the rubric.

Many schools recruit a team of judges including the principal, science teachers, or members of the scientific community. It is important that all judges understand the rubric. Each project should be judged by at least two people and the scores averaged.

All students who score the maximum possible points should be given equal opportunity to represent your school at the district Science Fair Reception. If you have more than six projects that are eligible, consider a random selection.

Timeline and Deadlines

To participate, each school site must register their participation on the OUSD Science website by March 31. This will communicate an intent to participate and facilitate planning.

An electronic Project Entry Form will be sent to the designated coordinator and needs to be completed by May 11. This form allows sites to provide the title of the top projects and names of students. The information is used in the program and award certificates.

Projects will need to be dropped off at Chabot Space and Science Center between 3-6 PM on May 15 with **no exceptions**. Chabot staff will not be able to take projects during regular hours.

Projects must also be removed at the conclusion of the evening event between 8:00-8:20 PM on May 17. Projects cannot be stored at Chabot and will be discarded if left behind.

District Contact

For questions or further assistance, please visit the Science in Oakland website at <http://science.ousd.org> or contact Caleb Cheung at 510-336-7307 or caleb.cheung@ousd.org.