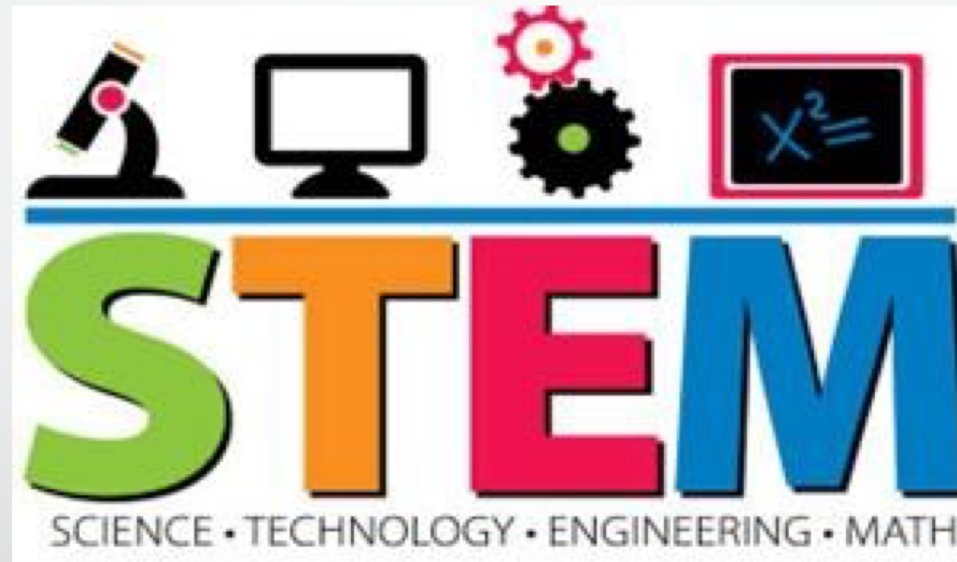


Porter Ranch Community School's STEM Expo 2024



Committee:

Anu Dimashkie

Amy Attiyah Muckenthaler

Christine Dizon

Ami Philipp

Science Fair Competition

What's Expected:

- After sign-up students (and their parents) will be contacted with additional details in the form of a “Welcome Packet” containing the guidelines of the fair and details are on the website: <https://www.prcsdream.org/stem>.
- Each student will also be paired with a volunteer STEM mentor. The mentor's role is to help the student define milestones of the project, define the problem and ensure the scope is age and skill set appropriate. Meetings will be held virtually over Zoom or similar videoconference tools.
- Students shall develop and submit a science based project from one of the following categories: Scientific Inquiry, Inventions, and Reverse Engineering.
- Details specific to the project category can be found in the Appendix of the packet. The Appendix includes project category specific explanations, project templates and grading rubrics.
- Projects submissions include:
 - A poster board outlining the project
 - A video recording of the student presenting their work
- Judging occurs during Expo Week and concludes with an award ceremony at the STEM EXPO community night 4/19/23

Science fair Competition Timeline

Milestone	Date
Sign Up Deadline	Friday, 02/23
Review Project Category and Ideas w/Mentor	Friday, 03/08
Project Selected and Finalized	Friday, 03/15
Project Completion & Video Submission	Sunday, 04/14
Finalist Judging	Friday, 04/19
Winner Selection and Award Ceremony	Friday, 04/19

STEM Expo Week Schedule (April 2024)

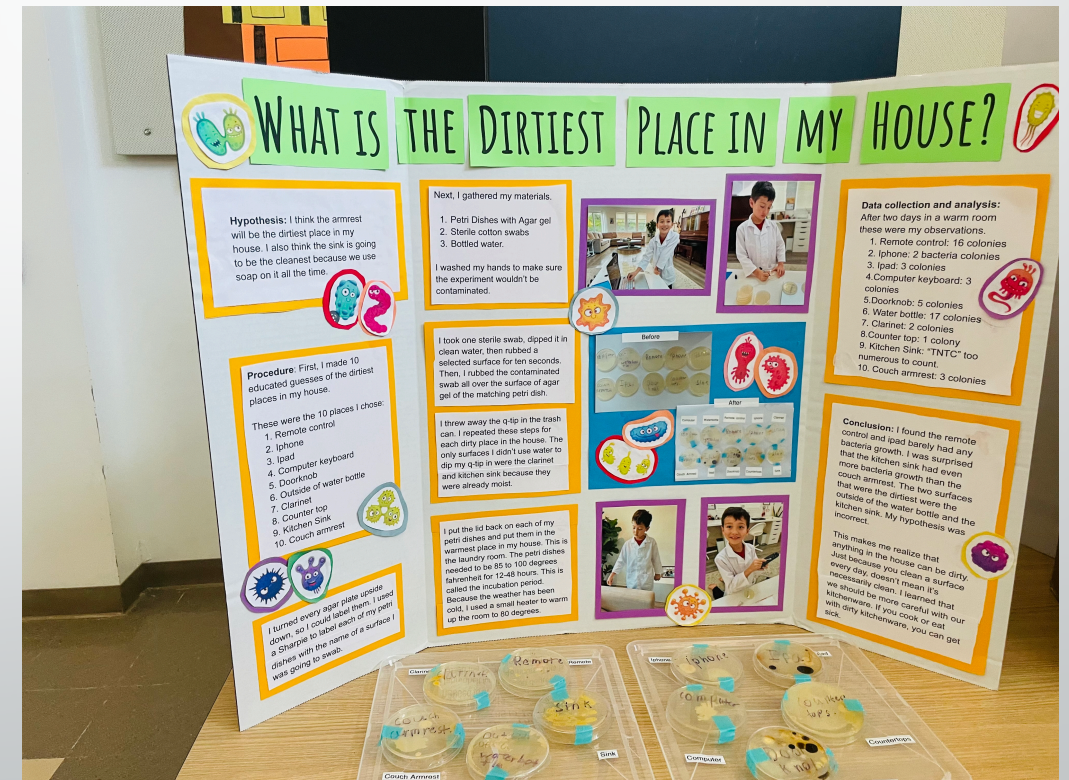
Date	Milestones	Activity Description
Friday, 02/23/24	Sign up Deadline	Welcome packet emailed and start thinking of ideas
Friday, 03/08/24	Review project Category and Ideas with Mentor	Meet with mentor with ideas on category and experiment
Friday, 03/15/24	Project Selected and Finalized	Work on Milestone 1 and 2 worksheets and meet with mentor virtually to review
Sunday, 04/14/24	Project completed & Video Submission	Submit video on google forms page and through schoology
Friday, 04/19/24	Finalist Judging, during school hours	Finalist will be notified on Wed. 04/17/24 and will present in person to judges during school hours
Friday, 04/19/24	Winner Selection and award ceremony	Awards ceremony will be held on at the STEM Community night at 6:30pm

Science Fair Competition- Poster Board

- Template / Example

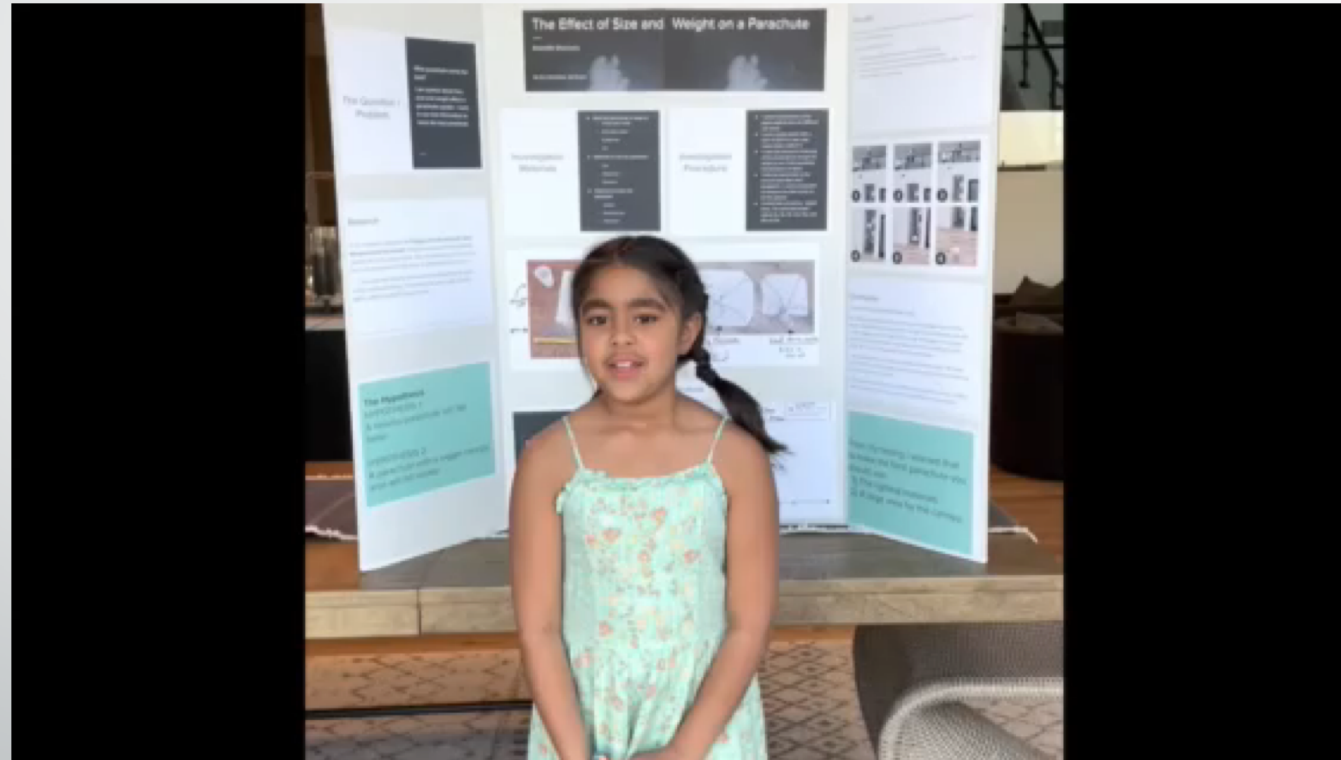
Scientific Discovery Poster Template

Question / Purpose	Project Title Scientific Discovery Student Name, Grade	Results
Research	Investigation Procedure & Materials	Conclusion
Hypothesis	Data & Analysis	



Science Fair Competition- Video

- Example:



STEM Mentor Volunteer Information

- Do I qualify to be a mentor?
 - PRCS has MANY parents that work in STEM fields. If you work in any of these fields or related fields, then yes.
 - Mathematics
 - Biology
 - Healthcare (Doctor, Pharmacist, Nursing, Clinical Scientist and Research etc.)
 - Engineering (any and all e.g. Electrical, Mechanical, Aerospace, Computer, Civil, Structural etc)
 - Software Developer
 - Information Technology
 - Data Science
 - Chemistry
 - Physics
 - Science (General)

Mentor FAQ (1/3)

- What do I do as a Mentor?
 - Help the student with the defined milestones of the project. The students typically struggle with the very first part, defining the problem/question correctly so it's measurable, doable, and appropriate for their age and skillset.
- How much time am I committing?
 - **About 2-3 check-ins with the student.**
 - Some students may be good with two, some will need more help.
 - A check-in could be as short as 10 minutes conversation
 - **Meeting 1:** Vet the question/problem posed and provide guidance on whether or not it's a measurable, solid, problem/question. Help them fill out their
 - **Meeting 2:** Help student complete Milestone 1 page
 - **Meeting 3:** Help student complete Milestone 2 page
 - Optional check in before project completion
- What type of projects are students going to do?
 - https://8db1d952-b64f-4915-b48e-d16657e9e60a.usrfiles.com/ugd/8db1d9_886e02dd68b545489889a4dca45899fo.pdf
- Can I use any virtual meeting platform?
 - All virtual meetings need to have the presence of a parent.

Mentor FAQ (2/3)

- What if I am mentoring a student on a project not within my field and have questions?
 - You have a community of support from the other volunteers
 - Take a poll of which mechanism to use: email, chat app (WhatsApp, TeamSnap, etc.), FB Page, Other?
- What about the STEM Expo week, do I have to do anything?
 - You don't have to but if you'd like to help with the week of the expo, there are opportunities
 - Be a judge for the classroom judging (can't judge your own kid's class)
 - Arrange a time to talk to your kid's class about your job/career
 - STEM Expo week volunteer
- Can I get a copy of the packet?
 - Yes, a link will be emailed to you by EOD Friday, February 23, 2024 and is on the website
 - <https://www.prcsdream.org/stem>

Mentor FAQ (3/3)

- What is an example of a bad science fair project question?
 - I want to see which plant grows
- What is an example of a good one?
 - Which type of soil will provide the tallest growth of a plant?
 - Student can measure the height of each plant to determine the conclusion
- Qualities of a good question/project:
 - Question is phrased so that it can be measurable
 - Question is phrased so you can formulate a guess or draw out the proposed solution
 - Data collected can have quantitative conclusions

Final Thoughts...

- Thank you for volunteering...ask us questions.
 - Anu asadhu@gmail.com
 - Amy aaattiyah@yahoo.com
 - Christine csimbula@gmail.com
 - Ami Philipp athako3@gmail.com

The Highlights/Objectives

STEM Expo Week April 15-19, 2024

- The Expo is a STEM education event that gets the attention and focus from everyone at the school...from the youngest to the oldest, regardless of your role.
- It is a collaboration between parents, teachers, staff, and administrators to encourage STEM-based projects, events, and career paths.
- It has a purpose to inspire the next generation to dream big and pursue these fields (or in the least not be afraid of them!).
- It will start with the students presenting their STEM projects and incorporates STEM activities that are fun and educational throughout the week.
- Involve parent volunteers who work (or have worked) in a STEM field. There are many interesting and different STEM careers that touch upon every aspect of our daily lives and there are plenty of PRCS parents that represent these careers.
- The first PRCS STEM Expo was in Spring 2019. We took a break during the pandemic and now we are bringing it back.

Why a competitive STEM Fair?

- PRCS STEM Expo without competition dilutes the learning:
 - Competition is the great educator. Competition creates necessity and necessity is the mother of invention. Examples: Xprize
- Failure is part of STEM:
 - Thomas Edison...
 - JPL late 1990s
 - SpaceX reusable rocket attempts
- Recent studies support introducing new concepts, particularly math/science and competition, in third grade in order to have it be more comfortable long term for the students.

Future Years

- PRCS STEM Expo, like many other activities, got derailed due to the pandemic.
- We aim for this to be a mandatory participation in the future, with Opt-Out instead of Opt-In option. We want this activity to be part of the regular academic year for every student.
- Future years, with more advanced planning, could support winners at PRCS to participate at regional events sponsored by the district and perhaps even go to national competitions.
- Once we gather some lessons learned from our first years, we can add activities to involve the bigger Porter Ranch and surrounding communities.
 - Extend Expo to PR community by hosting guest speaker series and open to community attendance. STEM EXPO could eventually be an evening where community can check out the great inventions. Sponsors could fund honorariums to guest speakers, etc.
- Other ideas are welcome!