

GETTING STARTED: PROJECT IDEAS, HOW TO PARTICIPATE, RESOURCES

**GSDSEF Student Leadership Board
Outreach Committee**

- WANT PEER ADVISING TIME AFTERWARDS?

- PLEASE FILL OUT OUR GOOGLE FORM IN THE DESCRIPTION TO JOIN OUR MEETING!

WELCOME!

THE STEM FAIR IS ABOUT:

- STARTING RESEARCH
- CONNECTING TO THE SCIENTIFIC COMMUNITY
- HAVING FUN!

FAIR UPDATES

- STILL HAPPENING in March 2021! (spread the word!)
- Will be **fully virtual**
- Safety and digital project screening is the same as usual
- MUST still keep a project notebook (may be asked for during judging)

CHANGES FOR 2021 FAIR

- **No backboard** required, *but project notebooks are required.*
- **Group projects** - discouraged due to social distancing guidelines.
- **The Application Fee** - \$25 per student.
- **Video about your project** - highly recommended, but not required
- **For virtual judging**, students will:
 - a. Make a **digital slide deck** (pdf Powerpoint or Google Slides)
 - i. **Pictures** of the student researcher in action!
 - b. **Virtual interview** with judges
 - c. Display/refer to the **notebook** if asked by a judge.

More Details to come! Please monitor the website and social media!

SLB MEMBER INTROS!

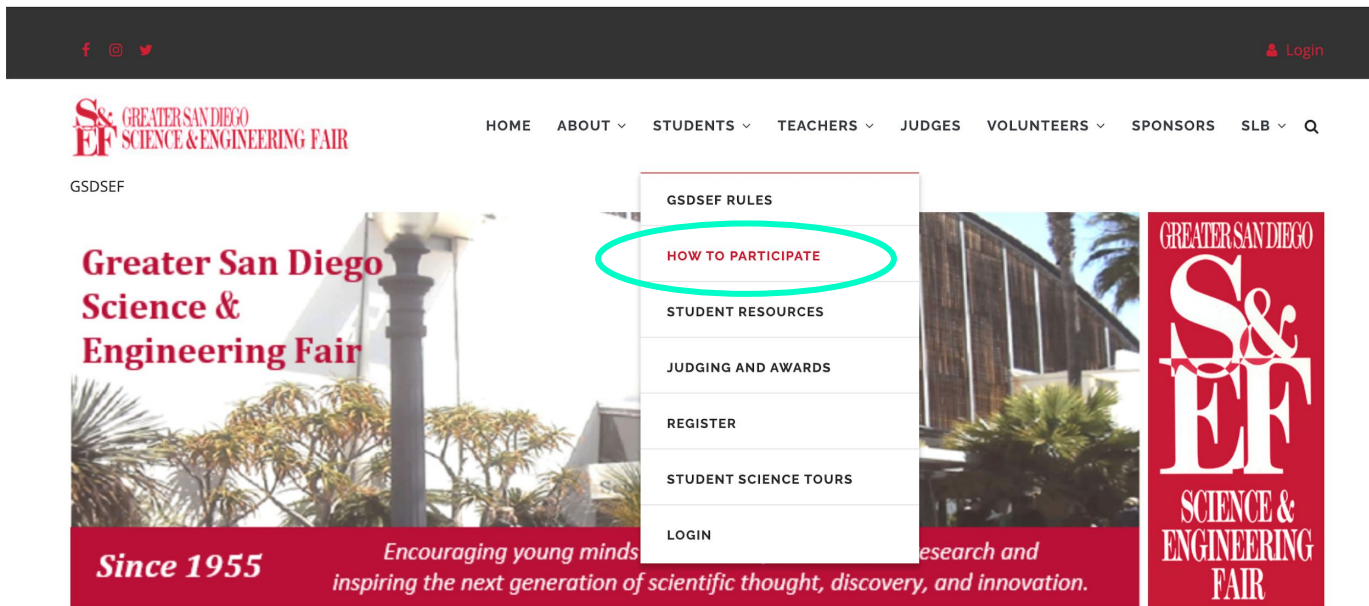
AGENDA

- Tips for getting started
- GSDSEF Website, Resources, GSDSEF Account Procedures
- Recommended schedule and planning your project
- SRC Pre Approval Process
- Important components of a project
- Notebook Content
- Peer Advising Time

PART 1:
COMING UP WITH
YOUR PROJECT IDEA

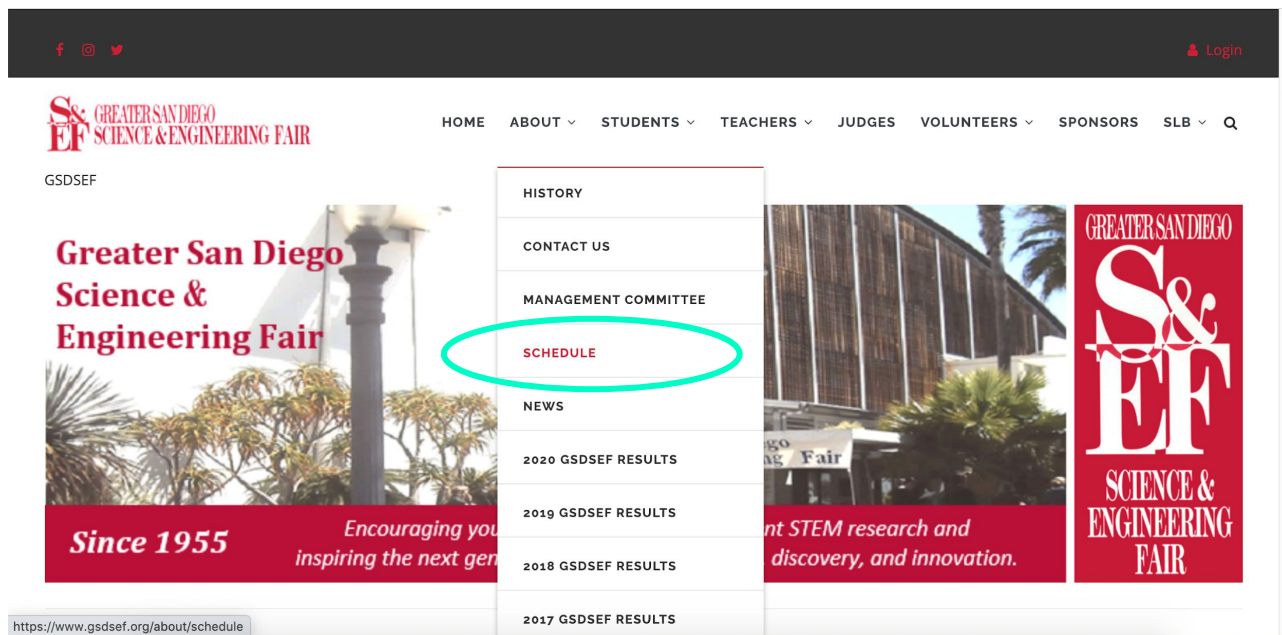
GSDSEF WEBSITE: HOW TO PARTICIPATE

- gsdsef.org → Students → How to Participate
 - <https://www.gsdsef.org/students/resources>



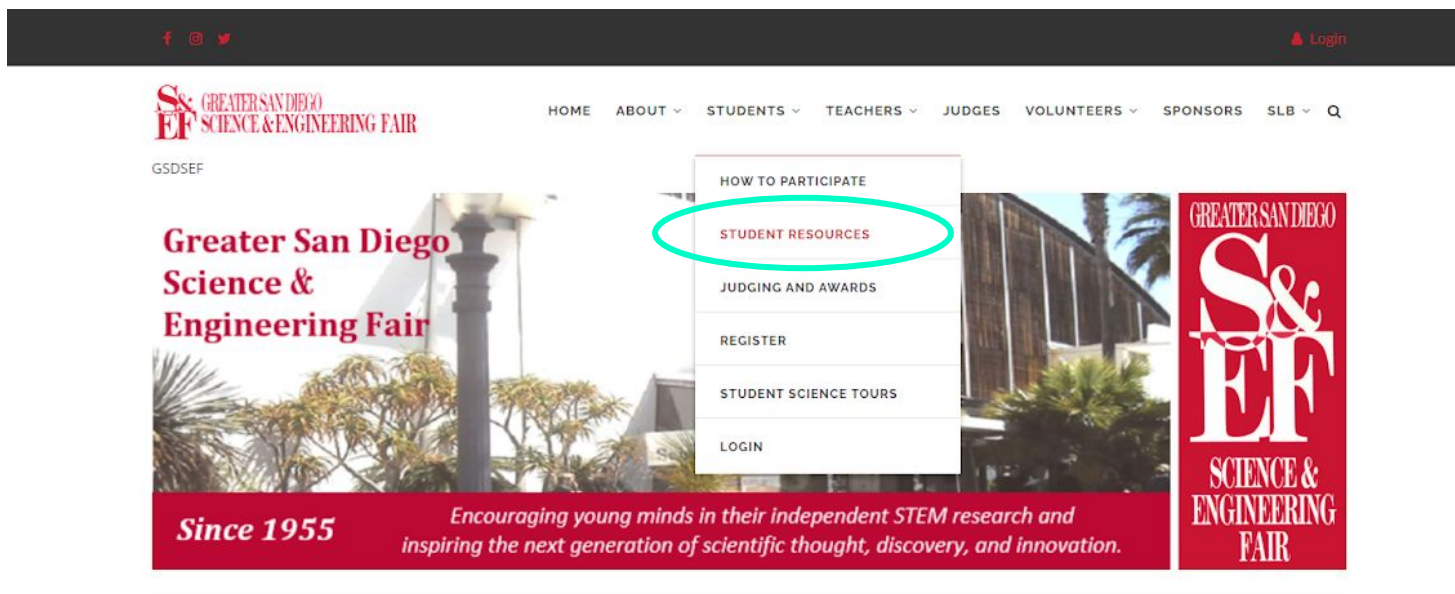
GSDSEF WEBSITE: SCHEDULE AND DEADLINES

- gsdsef.org → About → Schedule
 - <https://www.gsdsef.org/about/schedule>



GSDSEF WEBSITE: STUDENT RESOURCES

- gsdsef.org → Students → Student Resources
 - <https://www.gsdsef.org/students/resources>



Welcome To The 67th Annual Greater San Diego Science And Engineering Fair - 2020 -2021!

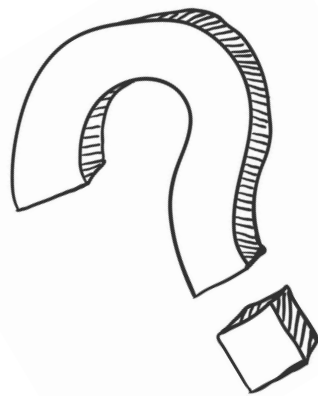
RESOURCES PAGE

- 6 Sections to take you through the whole project development process
 - **Section A:** Project Type: Science, Engineering, Mathematics, or Computer Science
 - **Section B:** Getting Project Ideas/Designing a Unique Project
 - **Section C:** Deciding Which Forms are Needed Before Starting a Project
 - **Section D:** Resources on How to Design and Conduct a Science or Engineering Project
 - **Section E:** Resources for Background Research/Articles
 - **Section F:** Publishing Your Project in Scientific Journals

PROMPT YOURSELF WITH QUESTIONS

- What **area in STEM** are you interested in?
- What scientific questions puzzle you?
- How does x affect y ?
- What **problems** do you see in the world that you could help fix?
- What is something that **really matters to you**?
- Has this project been done before?
- Is this a demonstration or investigation?

These can be broad or arbitrary!



REVIEW PREVIOUS PROJECTS!

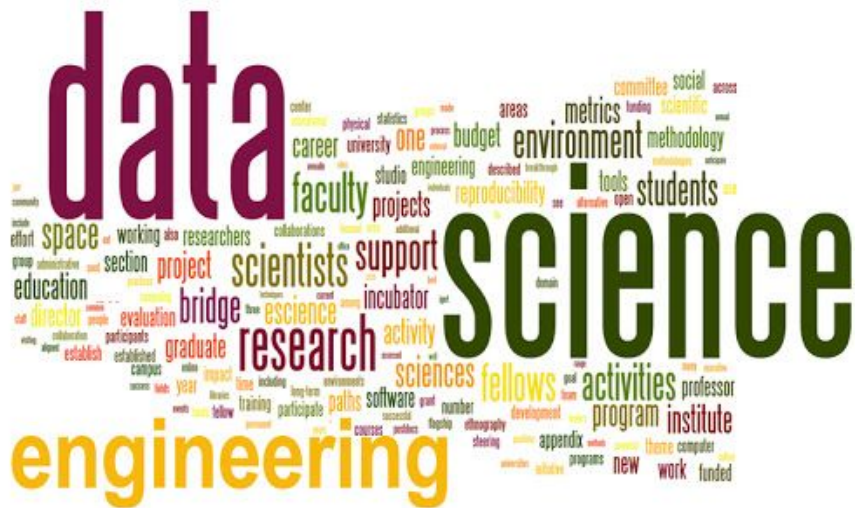
- **Section B** of Student resources
- Review winning projects
 - For middle schoolers, visit previous Broadcom MASTERS projects
 - <https://student.societyforscience.org/2018-top-300-masters>
 - For high schoolers, visit previous ISEF projects
 - <https://abstracts.societyforscience.org/>
- Bounce ideas off your science teachers/advisors, parents, peers



THE 16 PROJECT CATEGORIES

- Animal Sciences
- Behavioral and Social Sciences
- Biochemistry
- Chemistry
- Computer Science
- Earth and Planetary Science
- Engineering – Electrical and Mechanical
- Engineering – Energy and Transport
- Engineering – Materials and Bioengineering
- Environmental Sciences and Management
- Mathematical Sciences
- Medicine and Health
- Microbiology
- Physics and Astronomy
- Plant Sciences
- Product Testing/Consumer Science (Junior Division Only)

SCIENCE, MATH, AND ENGINEERING



- You can submit ALL to the science fair.
- All work very closely together
- Scientists create the theories, engineers implement them
- Many projects combine all three areas

GUIDELINES for Choosing a Project

- **SAFETY FIRST. ALWAYS.**

- Is it “doable”?
- Resources and budget?
- NO Gender Comparisons
- Can you access a significant sample size?



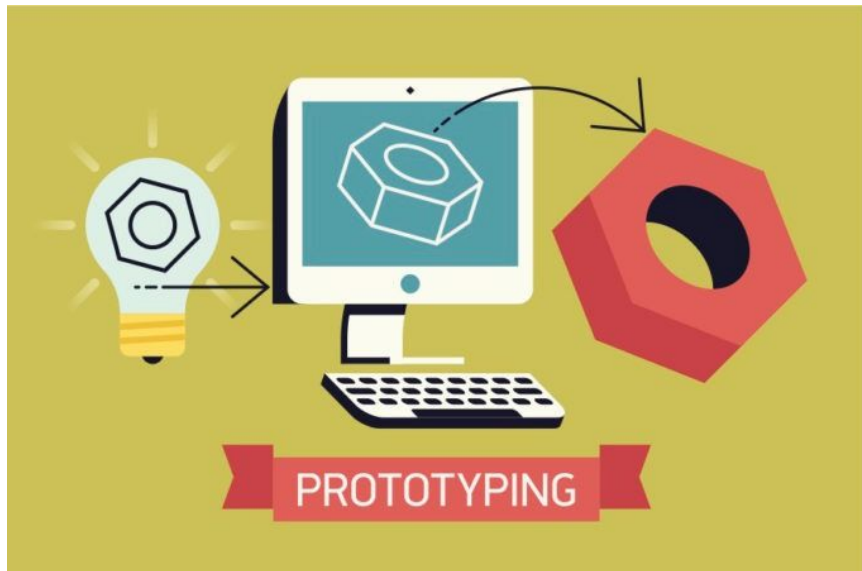
KEEP
CALM

AND

DO SOME
SCIENCE



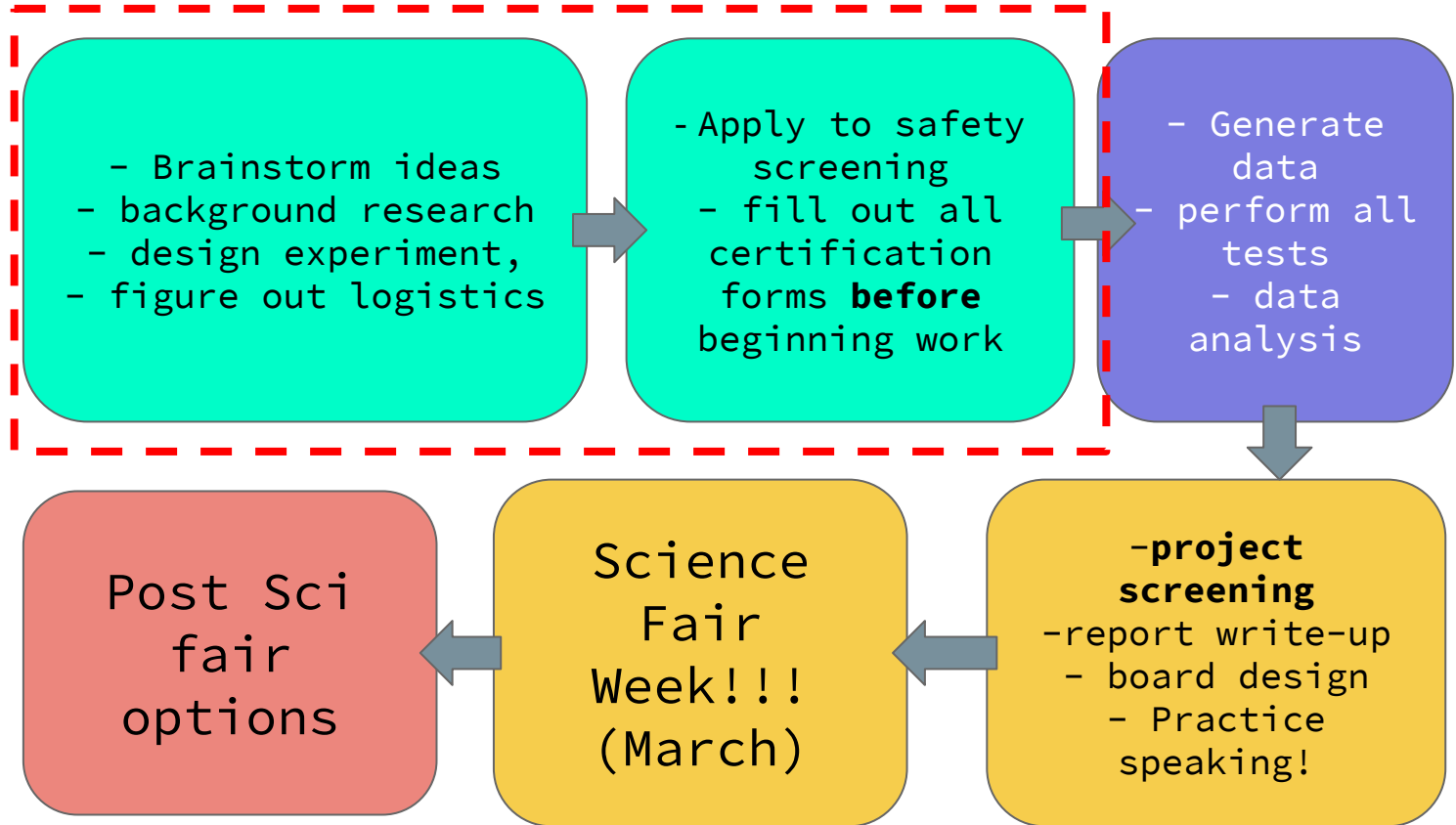
UPDATING OLD PROJECTS



- Changing test subject or **variable**
- Extend the initial idea
- Further **prototyping**
- Continuations need to be **significantly different** (extra form for continuation)

PART 2: PLAN YOUR PROJECT

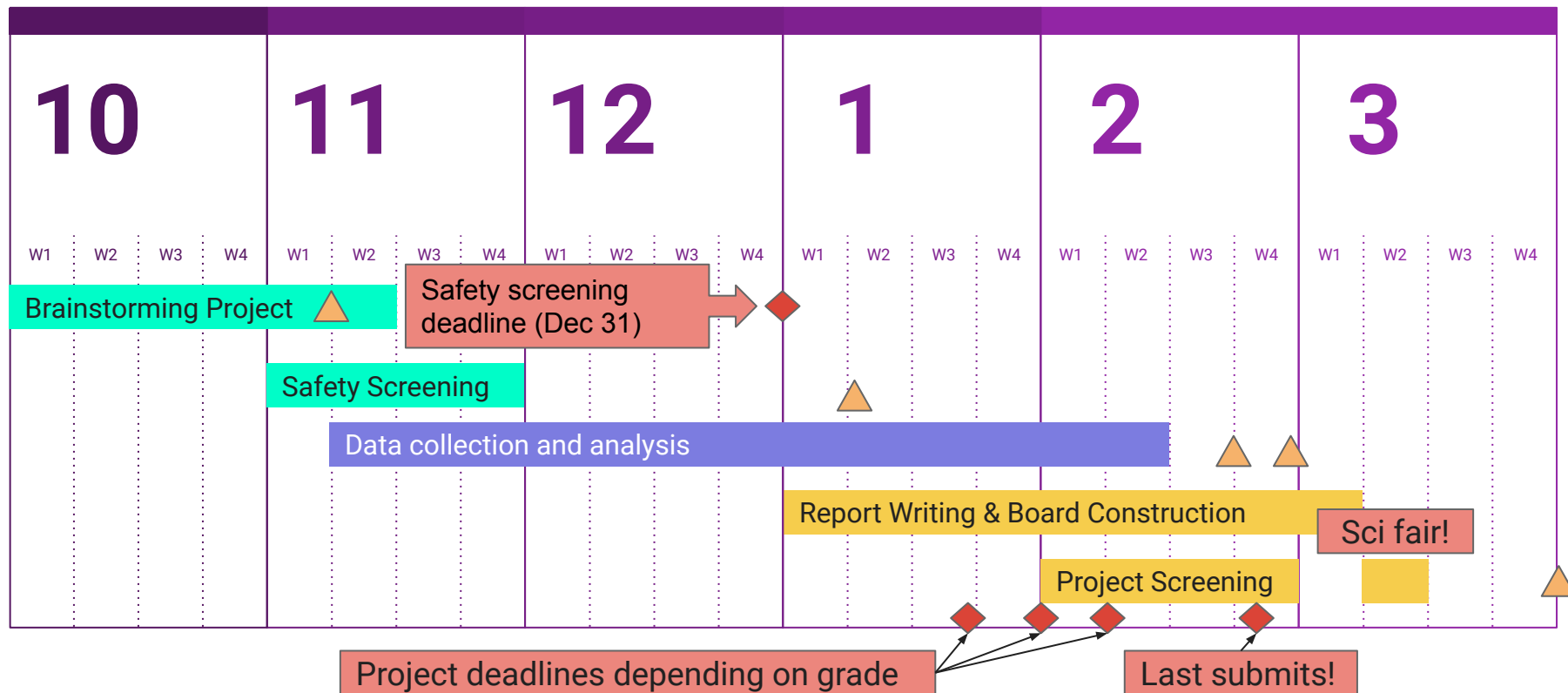
WORKFLOW OF A SCI FAIR PROJECT



RECOMMENDED SCHEDULE

◆ = important deadlines

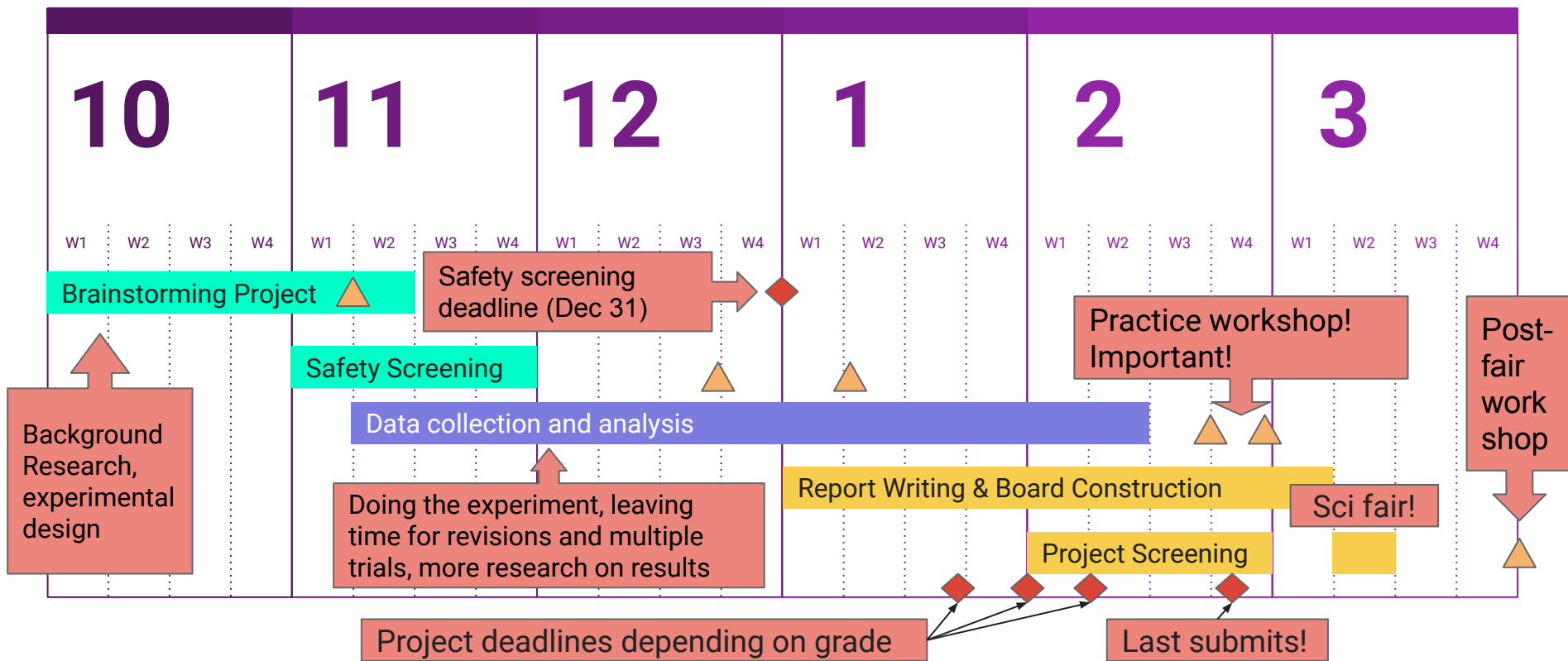
▲ = SLB Workshops!!!



RECOMMENDED SCHEDULE

◆ = important deadlines

▲ = SLB Workshops!!!



IMPORTANT DEADLINES

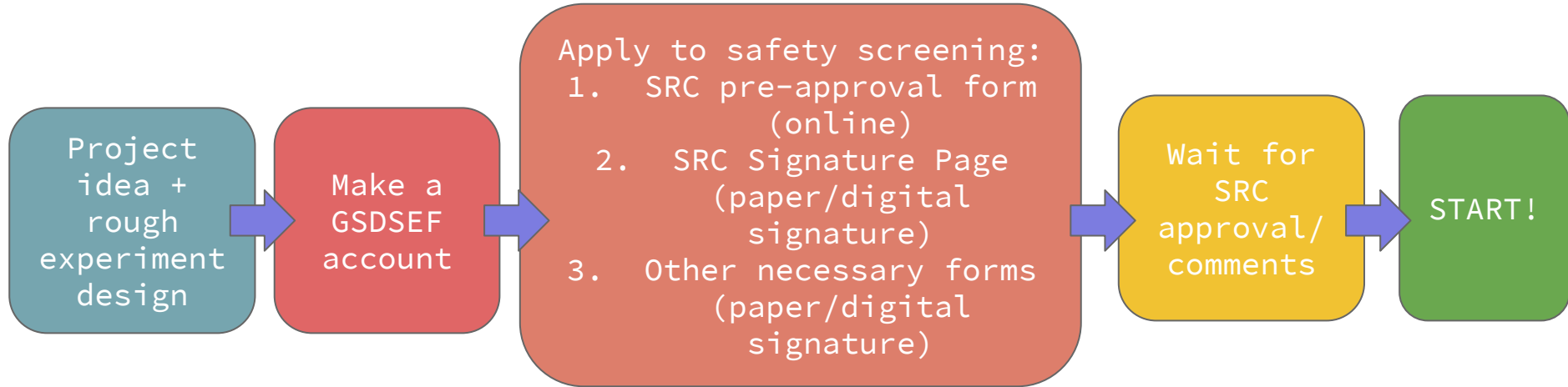
Mark your calendars!

There are no exceptions to late submissions, but early ones are highly appreciated!

- Dec 31st – Safety Screening deadline
 - Digital Project screening deadlines (by grade):
 - Jan 20th – 6th & 7th
 - Jan 29th – 8th
 - Feb 8th – 9th-12th
 - Feb 17th – Digital project resubmissions
 - Feb 24th – final payments
 - Mar 16-21st – Fair week!
-

PART 3: APPLYING TO THE FAIR

OVERVIEW OF APPLYING:



BRAINSTORMING YOUR PROJECT

Before starting your project...

- <https://www.gsdsef.org/students/how-to-participate> for the step-by-step procedures to participate in the GSDSEF.
 - The rules, any required certification forms, and the directions for the SRC Pre-Approval, Screening, and Application process.
- Discuss your project with your teachers, parents, and mentors...
- Go over the tips presented earlier if you're stuck!

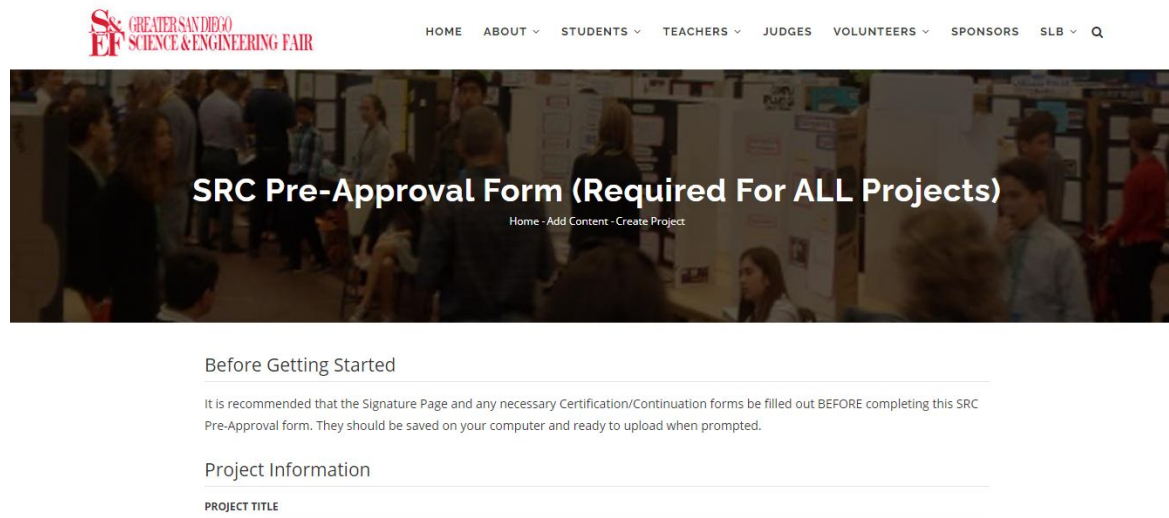
GSDSEF ACCOUNT PROCEDURES

- Teacher Advisor must establish account at [gsdsef.org->Teachers->Register](https://gsdsef.org/Teachers/Register) so you can select them when you apply
- Make your account at [gsdsef.org->Students->Register](https://gsdsef.org/Students/Register)

SAFETY SCREENING

1. Log in and fill out the **GSDSEF SRC Pre-Approval Form**

- basic info
- project plan
- all your brainstorm stuff



The screenshot shows the GSDSEF SRC Pre-Approval Form page. At the top, there is a navigation bar with links: HOME, ABOUT, STUDENTS, TEACHERS, JUDGES, VOLUNTEERS, SPONSORS, SLB, and a search icon. Below the navigation bar is a header image showing a group of people at a science fair. Overlaid on the image is the text "SRC Pre-Approval Form (Required For ALL Projects)" and a link "Home - Add Content - Create Project". Below the header image, there is a section titled "Before Getting Started" with a paragraph of text. Below that is a section titled "Project Information" with a form field for "PROJECT TITLE".

GSDSEF GREATER SAN DIEGO
SCIENCE & ENGINEERING FAIR

HOME ABOUT STUDENTS TEACHERS JUDGES VOLUNTEERS SPONSORS SLB Q

SRC Pre-Approval Form (Required For ALL Projects)
Home - Add Content - Create Project

Before Getting Started

It is recommended that the Signature Page and any necessary Certification/Continuation forms be filled out BEFORE completing this SRC Pre-Approval form. They should be saved on your computer and ready to upload when prompted.

Project Information

PROJECT TITLE

SAFETY SCREENING

2. Download and get signatures for **GSDSEF SRC**
Pre-Approval Signature Page: [gsdsef.org->Students->How to Participate](https://gsdsef.org/Students->How%20to%20Participate) -> Fill out and save on computer/phone.

GSDSEF SRC Pre-Approval Required Signatures

Greater San Diego Science and Engineering Fair Scientific Review Committee

Download this document, type in names, and either: print the document, obtain the signatures, scan as a pdf (preferred)/take a picture, and save on your computer; OR digitally sign using Acrobat or Preview (Macs) and save on your computer. This completed Signature Page must be uploaded with your SRC Pre-Approval Form (done online). Your Pre-Approval Form and this attached Signature Page must be *approved* before you start with experimentation.

STUDENT:

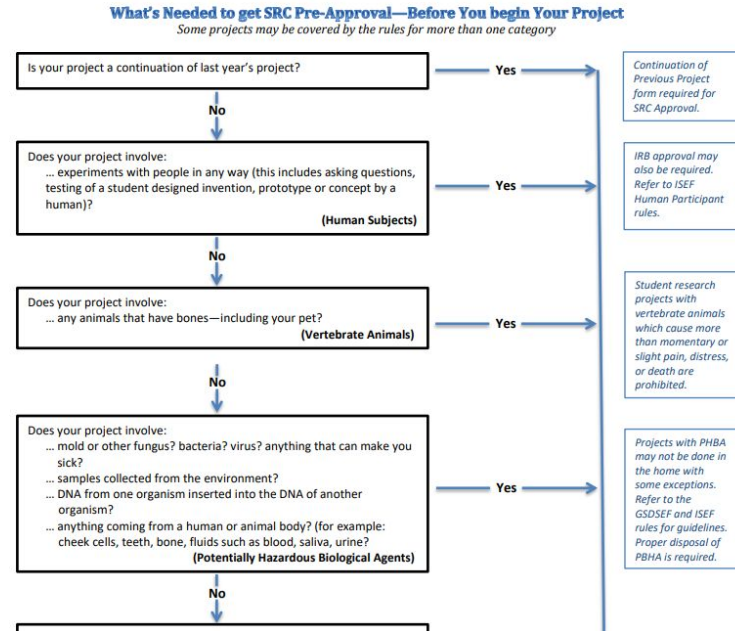
I have read the [Rules and Guidelines of the International Science and Engineering Fair \(ISEF\)](#) and [Participation Rules of the Greater San Diego Science and Engineering Fair \(GSDSEF\)](#) and certify that my project complies with them. I understand that failure to meet the terms of these rules will result in the disqualification of my project.

SAFETY SCREENING

3. ADDITIONAL forms – Go through certification form flowchart

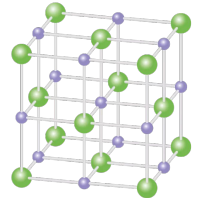
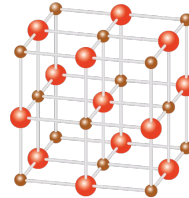
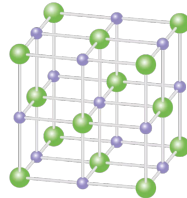
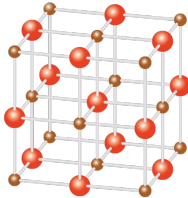
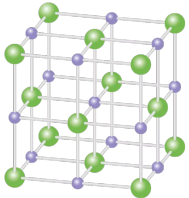
(e.g. continuation form, vertebrate animal form, human subjects, potential hazardous substances, etc.)

- If needed: *Download and fill out **Certification Forms:***
gsdsef.org -> Students -> How to Participate -> Step 3, Certification Forms



PROJECT SPECIFIC RULES

- If you are planning research involving **live vertebrate animals**, please check to make sure that you are complying with the **California Education Code** and the **Intel ISEF** and **GSDSEF Rules and Regulations** (provided on the certification forms)
- In general, make sure you are complying with all three of the documents above before you start your project



SUMMARY OF FORMS & SUBMISSION

Need to review the process?
Watch our [YouTube series](#) on
how to apply, from getting account
to competing at the fair!

- You need to prepare these forms by November:
 1. **SRC Pre-Approval Form** & attached **Signature Page**
(required for all projects)
 2. *Additional **Certification forms** (if needed)*
- Attach SRC Signature Page on pre-approval form
-If necessary, attach **Certification Forms**.
- Submit and wait for approval **BEFORE** experimentation!

SAFETY APPROVAL

- After submitting your project for safety, you will receive an answer within 2-3 days.
- ONLY after receiving SRC safety approval may you START with your project.
- REMEMBER: THIS IS NOT DIGITAL SCREENING. IT IS A SAFETY CHECK ONLY. IF YOU MAKE IT THROUGH THE SAFETY CHECK, IT DOES NOT GUARANTEE YOU WILL GET THROUGH DIGITAL SCREENING (Feb.) AND PARTICIPATE IN THE GSDSEF.

ADDITIONAL NOTE FOR HIGH SCHOOL APPLICANTS...


- If you are in high school and require any extra certification forms: we highly recommend completing the **corresponding ISEF certifications** **IN ADDITION** to the GSDSEF forms
- ISEF-level certifications for higher fairs
 - Should be dated BEFORE you started your project
- [ISEF rules wizard](#)
- Email Mr. Rodecker @ stevegsdsef@gmail.com for more information

SRC PRE-APPROVAL SIGNATURE PAGE AND CERTIFICATION FORMS

Deadline to submit Signature Page, the online SRC Pre-Approval Page, and any necessary Certification Forms is **December 31st, 2020.**

* If you do not do this you WILL NOT be eligible for the fair this year!!!

PART 4: STARTING YOUR PROJECT



Don't procrastinate!
Judges can tell!

MENTORS



- Mentors are great to have!
- Junior Division – **Parents and teachers**
- Senior Division – **Teachers or University Profs./grad students**
- **DON'T BE SHY! And understand that an expert in the field can always give you important insights!**
- Science is a community – mentors & peer-reviews are a BIG part of it

SLB student
mentorship
program:

experienced SLB
members mentor
sci fair
first-timers!

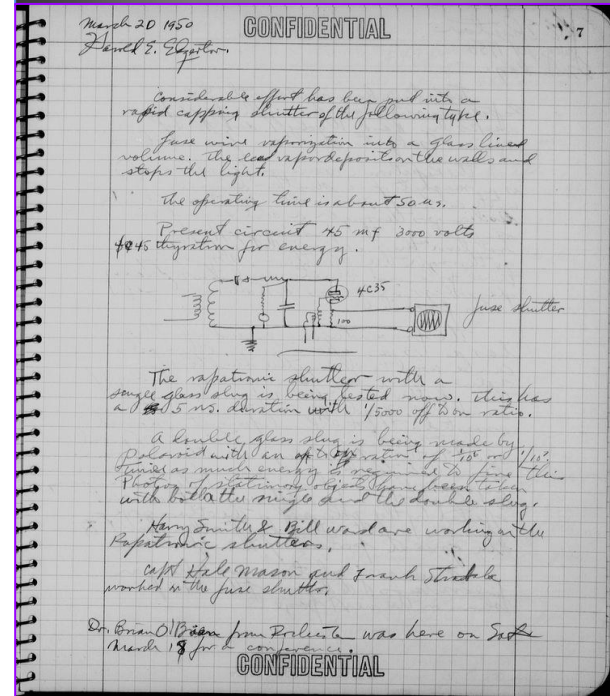
HYPOTHESIS/GOAL: PROMPT QUESTIONS

- Based on facts, what do you think will happen?
- What is your solution to the problem you want to solve?
- Is your hypothesis viable?
 - Testable with measurable results
- How will you test your hypothesis?
- Will you be able to conduct these tests?



BEGINNING A SCIENCE NOTEBOOK

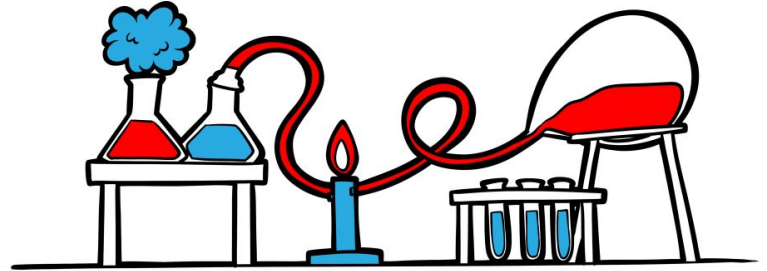
- Everyone needs one! (REQUIRED)
- Initial ideas, data recording, brainstorming
- Judges love to **see the work**, not just the polished product
- Example can be found on <http://www.gsdsef.org/wp-content/uploads/2013/10/GSDSEF-Sample-Notebook-rev-for-2018.pdf-.pdf>
- Take pictures, save **ALL** data



EXPERIMENTAL DESIGN AND DATA ANALYSIS

- Have someone review your design before doing it
- Pre-tests
- Compare and contrast – what are your controls?
- Read the literature: what do others typically do or test?

More on this in our second workshop!



WORKSHOP 2: DATA ANALYSIS & WRITING YOUR REPORT

- 1) EXPERIMENTATION AND RESULTS – How to analyze data, writing up results and your conclusions
- 2) How to write an abstract
- 3) How to submit for the Screening Process, and
- 4) How to put together your slides

STAY TUNED FOR DETAILS!

DATE: JANUARY 9TH, 2021, 9 – 11 AM

CONTACT US!

Questions on certification, starting a proj.,
getting mentors, etc.

gsdsefslb@gmail.com

Website: gsdsef.org



@gsdsef



@sandiegosciencefair

THANKS!

Peer Advising time!

Have questions? This is your opportunity to ask project-specific questions and get feedback from experienced science fair students!