

GREATER SAN DIEGO SCIENCE & ENGINEERING FAIR (GSDSEF)
PROJECT PROPOSAL/SIGNATURE* FORM (GSDSEF-1, 2015)

This form must be completed and signed prior to starting project work. It must be placed in the student's notebook with an ABSTRACT OF THE PROJECT for the GSDSEF Screening Fair. (Use the "Tab" key to move from line to line)

1. Project Title Plants: What is the Fastest Way to Grow?

Is this a continuation of a previous project? Yes No

2. STUDENT'S NAME (Last, First, Middle) Singh, Richa

2a. Partner's Name (for Senior Division 2 person projects only) _____

EACH SENIOR DIVISION PARTNER MUST SUBMIT A SEPARATE PROJECT PROPOSAL FORM.

3. Address, City, Zip 11596 Petenwell Road, San Diego, 92131

4. Phone 858-705-5065 email manishs18@gmail.com

5. School Marshall Middle School Grade 7

6. Teacher Mrs. Gillum

7. This project involves (check all that apply):

- Live Vertebrate Animals (GSDSEF-2, 2015)
- Humans as subjects, helpers, or interviewees (GSDSEF-3, 2015)
- Hazardous Substances (anything that could cause injury) (GSDSEF-4, 2015)
 - Chemicals
 - Infectious Agents
 - Bacteria, Fungi and/or Molds
 - Mutagenic Agents
 - Carcinogenic Agents
 - Teratogenic Agents
- Human or Other Vertebrate Tissue (GSDSEF-5, 2015)

8. WHERE REQUIRED (see #7 above), the following supplemental forms must be completed and included with the project proposal form (CHECK ALL THAT APPLY):

- Certification of Humane Treatment of Live Vertebrate Animals (GSDSEF-2, 2015)
- Certification of Compliance of Research Involving Humans (GSDSEF-3, 2015)
- Certification of Hazards Control (GSDSEF-4, 2015)
- Certification of Vertebrate Tissue Source & Safety (GSDSEF-5, 2015)

9. Location where experimental procedures will take place: In backyard or garage

10. People, companies, etc. providing equipment, materials, workspace: Tomatosphere; provided

tomato seeds from outer space

11. Describe, in 200 – 250 words, the planned project/experiment and the procedures to be used:

This project will be using hydroponic systems, soil systems , magnets, and seeds from outer space and from Earth to find the fastest way to grow out of all the combinations made. There will be eight basic stations: soil, soil with magnets, hydroponic system, and hydroponic system with magnets, which will be tested on both kinds of tomato seeds.

The hydroponic systems will have vermiculite, the growing media in it. The cups with seeds in them will have to have small holes in the bottom for excess water to leak out. The hydroponic systems will use two cups, one for the reservoir and one for the vermiculite and seeds. The cup with the vermiculite and seeds will have to be above the reservoir so that the excess water will just leak back into the reservoir. The cups will be separated by a piece of cardboard. The water will be brought up to the cup with vermiculite and seeds by a wick, or braided cotton rope, which will saturate water up to the seeds. The cups with soil will be the control group. The hydroponic systems and soil systems with magnets will have two connected magnets at the bottom of the cup with seeds.

Just before the screening fair, attach a 200-250 word ABSTRACT of your project to this form.

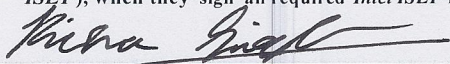
**Continue to next page for required Signatures*

GREATER SAN DIEGO SCIENCE & ENGINEERING FAIR
(GSDSEF) PROJECT PROPOSAL/SIGNATURE FORM (GSDSEF-1, 2015)
REQUIRED SIGNATURES:

Student:

I have read the *Rules and Regulations* of the GREATER SAN DIEGO SCIENCE AND ENGINEERING FAIR and certify that my project complies with them. I understand that failure to meet the terms of these rules and regulations will result in the disqualification of my project.

SENIOR DIVISION: GSDSEF forms meet the requirements of California law; therefore, all Senior Division students agree that, should they be selected to compete at the 2015 *Intel International Science and Engineering Fair (Intel ISEF)*, when they sign all required *Intel ISEF* forms they will predate them to agree with the date on this form.

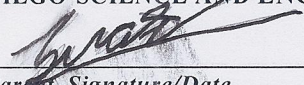


9-1-14

Student Signature/Date

Parent/Guardian:

I am aware of all potential safety hazards connected with this project, approve the precautions being taken to ensure my student's safety and will, when appropriate, provide guidance and/or supervision. I understand that failure to comply with *Rules and Regulations* of the GREATER SAN DIEGO SCIENCE AND ENGINEERING FAIR will result in the disqualification of the project.

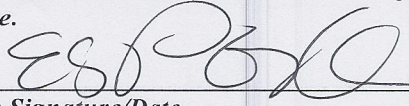


9-1-14

Parent Signature/Date

Teacher:

I approved this project prior to the student beginning work on it and verified that it complies with the *Rules And Regulations* of the GREATER SAN DIEGO SCIENCE AND ENGINEERING FAIR. Any concerns about the project's design, appropriateness, safety, or legality were submitted to the GSDSEF Scientific Review Committee (SRC) for approval prior to allowing the student to proceed. I understand that failure to comply with the Fair's *Rules And Regulations* will result in the disqualification of the project. I will provide all needed supervision (other than that specified on other included forms) and will ensure that this proposal and all required supplemental forms are included in the student's notebook at the screening fair. I will have the student, if invited to apply for entrance to the GSDSEF, submit all SRC requested certification forms with their *2015 Application for Entrance*.



9-1-14

Teacher Signature/Date

Additional Advisor (if required)

When certification forms (*GSDSEF 2, 3, 4 or 5, 2015*) are signed by someone in addition to the science teacher, a signature here ensures that the procedures described on these forms will be followed.

Additional Advisor Signature/Date