

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 Sweet Spot of a Cricket Bat
Is this a continuation of a previous project? Yes No

2. STUDENT'S NAME (Last, First, Middle) Wadhwa, Sahil

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 9472 Capricorn Way, San Diego, CA 92126

4. Phone 858-547-9236 email sahilwa@gmail.com

5. School Marshall Middle School Grade 8

6. Teacher Mrs. Elaine 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: Garage at

9472 Capricorn Way, San Diego CA 92126

10. People, companies, etc. providing equipment, materials, workspace: N/A

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

The purpose of this project is to find out the sweet spot of a cricket bat. Sweet spot is the part of the bat which provides maximum rebound velocity to the ball at impact.

To test different lateral and longitudinal impact positions on the bat, a swing machine shall be created. The cricket bat will be mounted on the machine and will be swung in a pendulum like motion and will hit the ball at different spots of impact.

For mounting the bat like a pendulum, the bat handle will need to be tightened to a pipe. The pipe, which is fastened to the bat, will be attached to a circular beam which will be attached to a strong weight bearing structure. A light fishing line will be attached to the ceiling of a wall, which will be attached to the ball by a small screw on top of the ball. The bat will then be positioned close to the impact position. The fishing line length will be adjusted to change the impact spot on the bat. The bat structure can be moved laterally to change the lateral impact of the spot. The bat will be swung in a pendulum like motion and speed of the ball shall be recorded using a radar gun for each trial. The ball position shall be modified by adjusting the length of the fishing line to test different impact spots from 5 cm - 30 cm from base of the bat in 5 cm increments. The bat shall be moved centrally 1 cm and 2 cm from the center position to evaluate different impact spots. Each spot shall be repeated 6 times. The average of all readings shall be taken to evaluate the final results.

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.

Sahil Wadhwa

09-01-14

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.

Deepak Wadhwa

09-01-14

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*.

ESD

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