

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 Swimming in Sweetness - The effects of artificial sweeteners on Daphnia magna  
Is this a continuation of a previous project?  Yes  No

2. STUDENT'S NAME (Last, First, Middle) Norris, Laurel, Brianne

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 10495 Canyon Lake Drive, San Diego CA, 92131

4. Phone (858)-530-0341 email lbnorris@me.com

5. School Thurgood Marshall Middle School Grade 8

6. Teacher 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: Home

10. People, companies, etc. providing equipment, materials, workspace: Thurgood Marshall Middle School,  
Sanford Burnham Medical Research Institute

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

To counteract a growing obesity problem worldwide, artificial sweeteners and non-nutritive natural sweeteners are increasingly used. They are considered safe to consume, however, anecdotal and some scientific evidence persists that many sweeteners have negative side effects. The manufacture process, discarded sweeteners and their presence in human waste result in detectable levels of some sweeteners in wastewater, landfill leachate and watersheds. These sweeteners include saccharine and sucralose found in Sweet 'n Low and Splenda. It is not know whether the presence of these sweeteners in water supplies affects the aquatic biota that live in them.

The purpose of this project is to use the water flea *Daphnia magna* as a model aquatic organism to study the effects of artificial sweeteners on its heart rate, survival and reproduction. Although they are not known to be present in watersheds, the sweetener aspartame and the natural sweeteners stevia and its commercial counterpart TruVia will be included in the study. *Daphnia* will be exposed to the different sweetener solutions at 0.25 and 25 mg/l for 2 minutes or 24 hours, and their heart rate per minute determined. The survival and reproduction studies will be preformed by culturing 10 daphnia in 25 mg/l sweetener solutions and counting them after 1 week. The largest 10 daphnia will be transferred to fresh cultures and the same steps repeated for a total of 3 weeks. The results of these studies should provide information on whether or not artificial and non-nutritive sweeteners are toxic to aquatic organisms.

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.

*Leanne Thomas*

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.

*Paula*

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*.

*ESPOK*

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*