

# Science Fair - Start to Finish!

- Making it all come together



# WHAT IS A SCIENCE FAIR PROJECT?

- **Express a problem** (best if it has a practical application).
- **Propose an answer** (hypothesis)
- **Design Experiment to TEST the hypothesis.**
- **Conduct Experiment.**
- **Analyze data to determine if hypothesis is rejected, supported or is inconclusive.**







# IDEAS????

## Where do I start???

## Just give me an idea.





<http://sciencebuddies.com/>

## Science Fair Project Ideas

- Over 1000 Project Ideas to choose from

- Topic Selection Wizard: Looking for a science fair project? The Topic Selection Wizard will recommend a science fair project idea that is just right for you.

*Lots of different topics*

# ***NOTHING IN LIFE IS ORIGINAL***



**Find a good idea  
and DO IT BETTER!!!**

**Make it your own----  
don't plagiarize!**



# Pure Mathematics Project Ideas



**Free Science Fair Project Ideas, Answers,  
& Tools for Serious Students**

## **Tiling with Spidrons**

**This is a great science fair project for someone who is interested in both mathematics and art. Spidrons are geometric forms made from alternating sequences of equilateral and isosceles ( $30^\circ$ ,  $30^\circ$ ,  $120^\circ$ ) triangles. Spidrons were discovered ....**

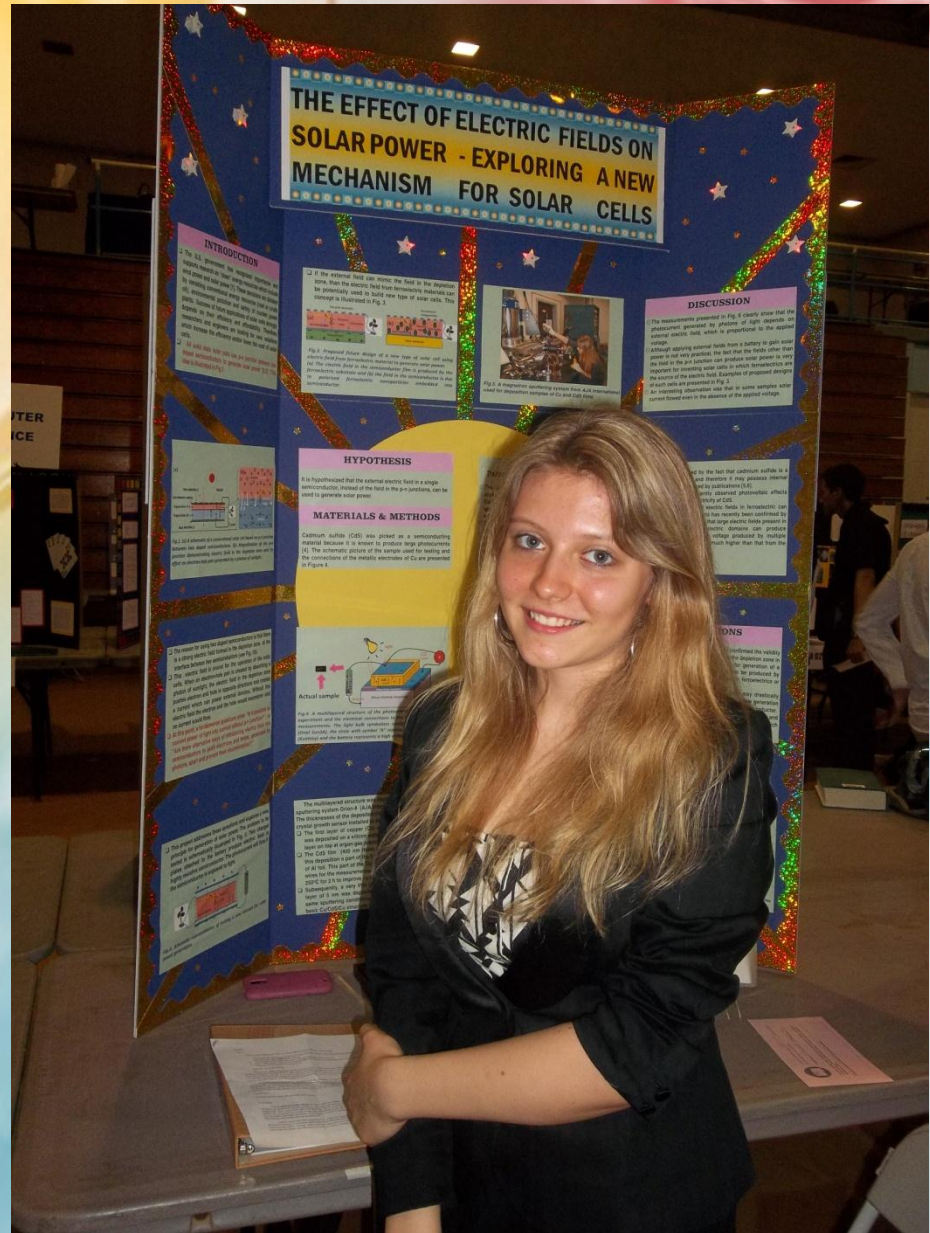
**Example of math idea...**

[Read more...](#)

**Difficulty = 7 - 10**

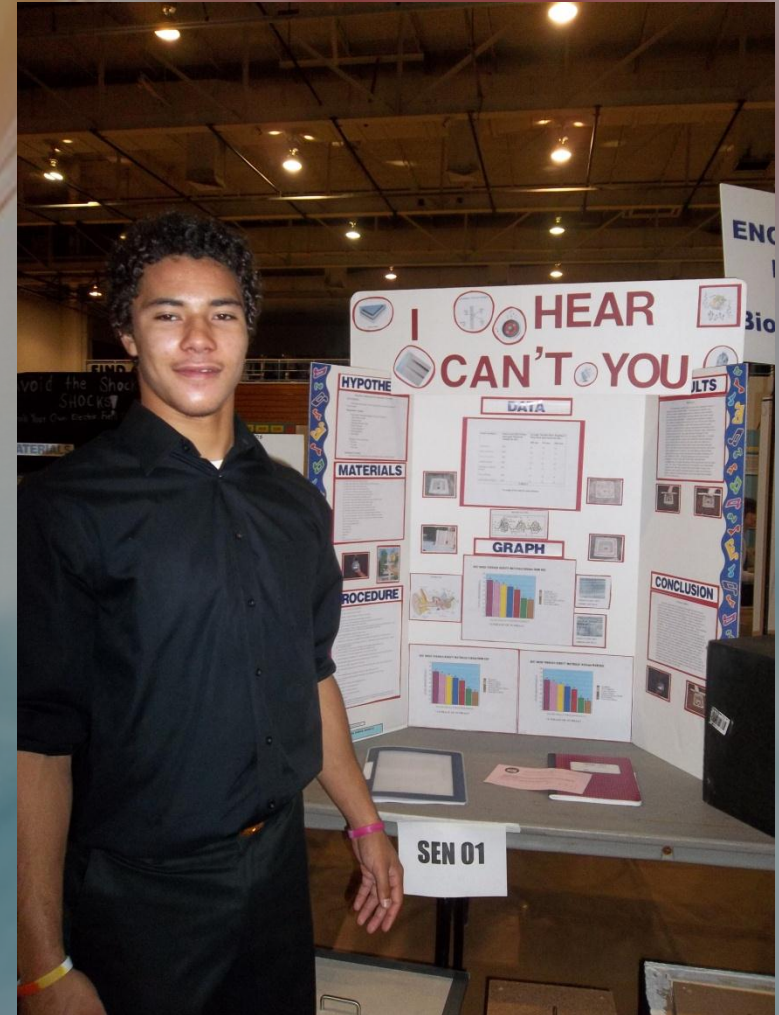
# SEEK MENTORS!

Kinga worked  
with UNO  
professor in  
physics lab. She  
won Region;  
State; ISWEEEPS,  
ISEF and Genius  
Olympiad!



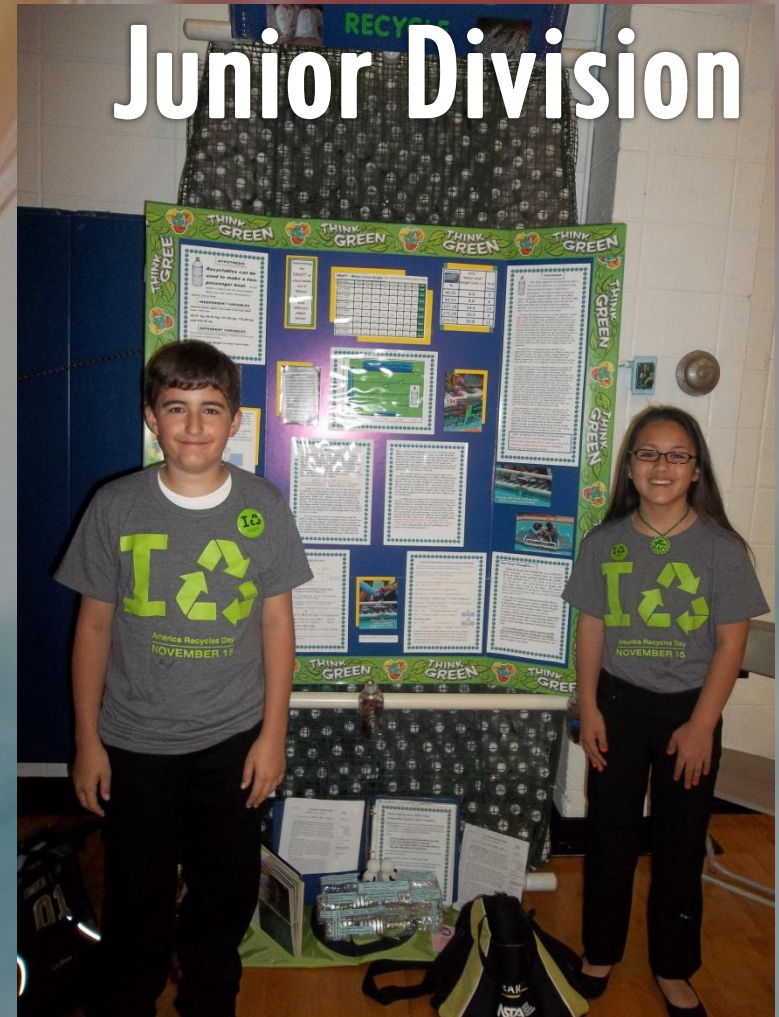


***EXPECT MORE AND YOU GET MORE!  
ENCOURAGE.....***





# GET THEM YOUNG.....



# SCI FAIR PACKET

- **Guides the student.**
- **Put in a Working Sci Fair Folder.**
- **Put all corrections in the folder to refer back to..**

**You will be  
been given  
Packet**



# **HAVE DUE DATES FOR “PIECES”**

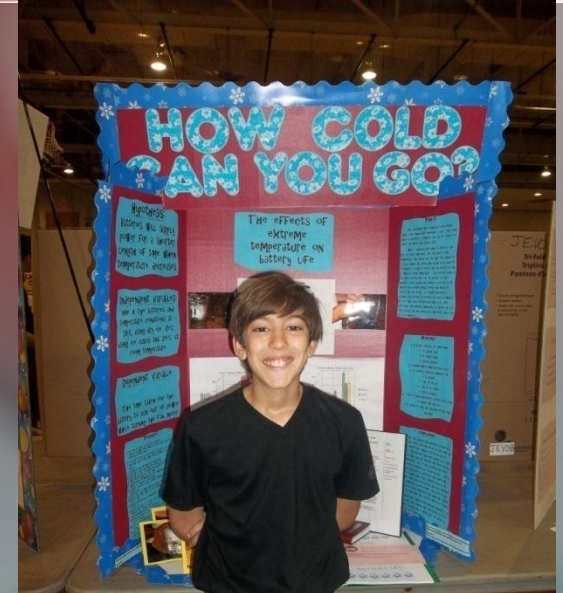
- Tues., Sept. 11<sup>th</sup> - Hypothesis, independent & dependent variables. Special certification forms due SEPT. 28th
  - Tuesday., Oct. 2<sup>nd</sup> - Typed Research (4-8 pp.; 3<sup>rd</sup> person, 12 pt., factual) + Works Cited (minimum 5+ sources)
  - Tues., Oct. 16<sup>th</sup> - Method + Materials (3<sup>rd</sup> person, numbered steps for most kids)
  - Tues., Oct. 30<sup>th</sup> - Results, Data Table, Graph, Conclusion + Photographs showing YOU doing it (no direct face shots)!
  - Tues., Nov. 13<sup>th</sup> - **Final Sci Fair Folder** with table of contents, abstract , **LOGBOOK**, AND include all original items + **CORRECTIONS!**
-

# GET THE KIDS INVOLVED..





# GET STUDENTS INVOLVED & EXCITED! WHAT ARE THEIR INTERESTS?



# VARIABLES

**Independent variables**: variable that you purposely change and test. (manipulated). **HAVE a CONTROL!**

**Dependent variable**: The measure of change observed because of the independent variable. (Responding). It is what you are **MEASURING** (metric)!





# KRUSTY KRAB'S EXPERIMENT



**SEARCH:**

**Sponge Bob and variables**

<http://sciencespot.net/Media/scimethodconvar2.pdf>

# MR. KRAB.....

.....created a



***secret ingredient*** for a breath  
mint that he thinks will “**cure**”  
**the bad breath** people get  
from eating crabby patties at  
the Krusty Krab.





**He asked 100 customers with a history of bad breath to try his new breath mint. He had fifty customers **(Group A)** eat a breath mint with a secret ingredient after they finished eating a crabby patty.**



**The other fifty (Group B)**  
**also received a breath mint** after  
they finished the sandwich,  
however, it was just a **regular**  
**breath mint** and did **not**  
have the secret ingredient.



- **Both groups** were told that they were getting the breath mint that would cure their bad breath.

– **Blind study...**



- Two hours after eating the crabby patties,

**30** customers



in **Group A (with special ingredient)** and **10** customers in **Group B (plain mint)** reported having **BETTER BREATH** than they normally had after eating crabby patties.....



# WHAT DO YOU THINK???



- What is the **control**???
- What are the **Independent Variables**??? (manipulating)
- What is the **Dependent Variable**?? (measuring )

# ANSWERS...



**Control?** Group w/ PLAIN mint

**Independent variables?**

Group w/plain mint & group w/  
special ingredient in mint.

**Dependent variable?** Bad breath? Yes  
or No? (subjective but still measurable).





## One last suggestion

**Whether you are a research scientist or a first-time science fair student, a logbook is a crucial part of any research project. It is a detailed account of every phase of your project, from the initial brainstorming to the final research report.**

# **RECOGNITION... OPPORTUNITIES... TRIPS.....**

***Money, Trips, Scholarships,  
Meeting other students  
interested in science from all  
over the world.***



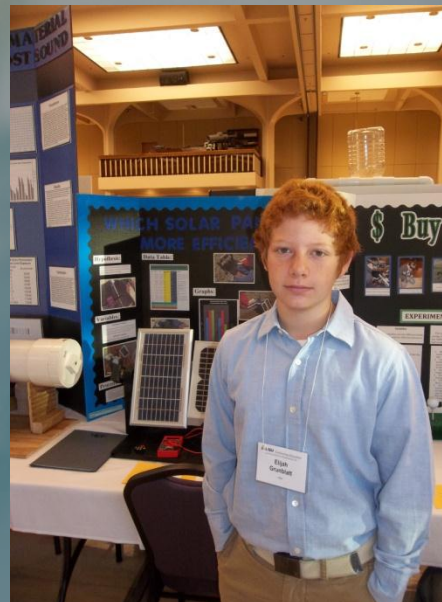


# REGION IX SCIENCE FAIR!





# STATE SCIENCE FAIR





# ISWEEEP

**I-SWEEEP is an international science fair; it is a unique science fair because it focuses on energy, engineering, and environmental.**

**International Sustainable World**

**Energy Engineering**

**Environment**

**Project Olympiad – Houston, TX.**





Hotel Crosswalk - 2r



**I-SWEEP**

*Welcome to*

**I-SWEEP 2012**

**MAY 2 – 7, 2012**

George R. Brown Convention Center  
Houston, Texas, USA







**ISEF 2012 — Pittsburgh, PA**











**15-year old WINS Big ISEF!**

[http://www.youtube.com/watch?v=tG2cH\\_gIRQU&feature=fvwrel](http://www.youtube.com/watch?v=tG2cH_gIRQU&feature=fvwrel)





***ISEF 2012 in Pittsburgh, PA....BIG winner.... Jack Thomas Andraka, 15, North County High School, Glen Burnie, Maryland for winning the Gordon E. Moore Award and \$75,000 for his research "A Novel Paper Sensor for the Detection of Pancreatic Cancer."***



**TEACHERS ARE  
THE CATALYST.**



