Sample Abstracts

The following 8 abstracts were actually submitted to SEFMD for competition in prior years. A variety of abstracts are given, include projects that have been accepted and projects that were rejected - 7th grade through 12th grade.

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Sample Abstract #1	
Grade:	8
Category:	CH-Chemistry
Title:	On Your March, Get Set, Rust!
Abstract:	The title of my project is called On Your March, Get Set, Rust! The purpose of my experiment was to find out if salt water rusts nails faster than freshwater and which type of nails, galvanized or common will rust quickly.The procedure involved sanding ten galvanized and common nails.The nails were placed in glass jars and added with 150mL of water mixed with 15mL of salt. The experiment was observed for two weeks. Theamount of rust was recorded on both types of nails. I repeated these steps for two types of nails in freshwater. My results of my data resolves that galvanized and common nails in freshwater had a higher average or rust than the other nails in salt water. My data also concludes that the rusting color was black. In conslusion the nails in frehwater rusted more than the nails in saltwater. Saltwater may rust something faster than freshwater, but salt contains sodium chloride in which it causes the nails in saltwater to rust at a slower rate.
Bibliography:	http://www.mcnallyinstitue.com World Book Encyclopedia. Macmillan Publishing Company. volume 3.1991. The New Book of Knowledge.Grolier Incoparated. volume17.2002
Project Resolution:	Project Accepted **Awards Received:** Received Green Ribbon

Sample Abstract #2	
Grade:	9
Category:	EA - Earth and Space Science
Title:	1,2,3,...Pull! Which Parachute Materials
Abstract:	The purpose of this investigation is to determine, from the samples that were given to me by several companies, which parachute will descend at the slowest rate. Making it the safest. I plan to make three parachutes out of the 9 materials given to me. That will give me 27 parachutes. They will be wing-shaped and will be 39cm in width and 20cm in length. Then I will cut 108 pieces of kite string that are going to be 40cm a piece. Now tape 4 strings to the four corners, then tie the ends together. Then take 2 pennies and tape them to the tied ends. Now do the same for the other parachutes. Find a high place off the ground like a stairway or ladder so you can drop the parachutes. Now measure out 8 feet. Make sure the area at the bottom is flat. Take your first parachute drop it, and time it as it descends. Stop when it hits the ground. Repeat this step ten times a piece for each parachute. So you can validate your results. Record the data. Previously, I have found that a parachute by the name of Tandem Icarus seemed to descend at the slowest rate. But this year I have added three more parachutes to my research. So far, a parachute by the name of Prima is descending at the slower rate. I hope that this will enable my project to produce more accurate data.
Bibliography:	1)Precision Aerodynamics,inc. 2)www.astro.uni-bonn.del/~prosche/astroia.html Keywords: History of astronomy 3)APCO Aviation Ltd. : Power Parachute Company
Project Resolution:	Project Accepted **Awards Received:** Blue Ribbon plus professional awards

Sample Abstract #3

Grade:	10
Category:	CH-Chemistry
Title:	Will These Germs Really Die
Abstract:	This project will exdplain whether or not antibacterial soap really kill germs. Antibacterial soap is known to be the most germ killing soap. To perform this experiment you must have a veriable and a control. The variable will be the antibacterial soap in which you will have to test three differnt times for each of the 3 soaps. The soaps will be Daial with antibacterial and dial without antibacternal, lever2000 with antibacterial and Lever without antibacterial, zest with antibactrial and zest without antibacterial. The control will be regular soap. The test will be used using petri dishes with chicken broth in them. Chicken broth makes it easier to see germs.
Bibliography:	McMillion Chemistry book Microsoft encarter 2001 www.sciencefair.com
Project Resolution:	Rejected code: H - no prior SRC approval Notes: Projects involving humans, animals, recombinant DNA, tissue, and PATHOGENS require prior SRC approval. Growing bacteria MUST be done in a school lab (not at home) and MUST have prior SRC approval

Sample Abstract #4

Grade:	7
Category:	EV-Environmental Science
Title:	The Effect of Motor Oil on Daphnia magna
Abstract:	The purpose of my project was to model how motor oil released to a lake impacts the organisms that live there. Whole effluent toxicity (WET) testing is used by regulatory agencies to determine how clean an effluent must be before release to the environment. In a WET test, aquatic animals are exposed to an effluent to determine if the effluent harms the animals. I conducted eight experiments using the organism Daphnia magna. I added oxygenated, dechlorinated water to sample containers, then added varying concentrations of motor oil. For each experiment, two replicates were prepared. To each sample, I added Daphnia magna and then recorded the number of organisms alive after 24 and 48 hours. Great care was taken to properly maintain the Daphnia magna culture for the experiments. I maintained optimal temperature and lighting and followed the appropriate schedule for feeding and water changes. I initially tested motor oil concentrations of 0.2% and higher. When all the Daphnia magna neonates died, I conducted two experiments using NaCl, since their response to NaCl is known. When the Daphnia magna reacted as expected, I continued the experiments, eventually using motor oil concentrations as low as 0.00017%. Using data from Replicate #1 Experiment #8 24-hour observations, I was able to generate a graph which revealed a motor oil LC50 of 30 mg/l. This is the concentration at which 50% of the organisms die. This very low concentration confirms how only a little bit of oil can cause serious damage to the environment.
	Documents: " Great Lakes and Environmental Assessment Section Procedure #24: Daphnia magna Static Acute Toxicity Tests"

| Bibliography: | EPA Manual " Methods for Measuring the Acuute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms"

Books:
Title: Science/Technology/Society Projects For Young Scientists
Author: David E. Newton
Publisher: Instructional Horizons
Date Published: 1991
Page #: 110-112 |
| Project Resolution: | Project accepted
Awards Received: GRAND Award |

Sample Abstract #5	
Grade:	12
Category:	CS-Computer Science
Title:	VLSI Design Automation
Abstract:	As the size and complexity of today's most modern computer chips increase, new techniques must be developed to effectively design and create Very Large Scale Integration chips quickly. For this project, a new type of hardware compiler is created. This hardware compiler will read a C++ program, and physically design a suitable microprocessor intended for running that specific program. With this new and powerful compiler, it is possible to design anything from a small adder, to a microprocessor with millions of transistors. Designing new computer chips, such as the Pentium 4, can require dozens of engineers and months of time. With the help of this compiler, a single person could design such a large-scale microprocessor in just weeks.
Bibliography:	http://ece-www.colorado.edu/~bart/book/intro.htm http://www.iclayoutonline.com/Education/CMOSIntro/introindex.asp http://www.rulabinsky.com/cavd/index.html
Project Resolution:	Project accepted Awards Received: GRAND Award plus FIRST in State

Sample Abstract #6	
Grade:	9
Category:	PH-Physics
Title:	Salt Water Chronicles
Abstract:	purpose:the purpose of my project is to see if salt changes how fast an icecube melts procedure:1.place 2 icecubes fo similar siz onto seperate saucers. 2. sprinkle table salt atop of one of the icecubes 3.observe the progerss of the icecubes ove an elapsed period of time. 4.record my data

| Bibliography: | internet, |
| Project Resolution: | Rejected code: M & P - Project inappropriate for grade level and no/incomplete bibliography |

Sample Abstract #7

Grade:	10
Category:	CS-Computer Science
Title:	What Effect Computer Speed Most: CPU, Software Extension, or Backside Cache?
Abstract:	I needed data's of the hardware I was going to use, I found that out by looking at the manufacture box, and ran the computer to see how the hardware is set.
Bibliography:	Internet PC WORLD- Magazine Motherboard Manual
Project Resolution:	Rejected code: C-No/inadequeate indication of scientific or engineering techniques

Sample Abstract #8

Grade:	12
Category:	ME-Medicine and Health
Title:	Examination of the anterior cruciate ligament (ACL)
Abstract:	I will be researching on the anterior cruciate ligament (ACL). Currently I am in a medical mentorship program at Acclerated Rehabilitation Center and I am shadowing the physical therapist, David Ross. He is helping me to learn more about the ACL. We will be going over the rehabilitation procedure and viewing an ACL surgery. On my own I will research about how this ligament is injuried and more on the surgery. I recently began observing a client that has got been through the surgery and I hope to come to understand the patients view on this injury.
Bibliography:	Microsoft® Encarta® Encyclopedia 99. © 1993-1998 Microsoft Corporation. All rights reserved. http://goto800.oingo.com/apps/domainpark/results.cgi? Partner=goto800&Keywords=anterior+cruciate+ligament Human Anatomy and Physiology. Alexander Spence, Elliott Mason. West Publishing company, Copyright 1992 http://www.anteriorcruciateligament.com/index.php?
Project Resolution:	Rejected Codes: CEH C-No/inaddequqate indication of scientific or engineering techniques E-Incomplete Abstract H-Project required prior SRC approval Other notes: The project must involve an experiment and can not be just a mere book report or observation

Sample Abstract #1	
Grade:	
Category:	
Title:	
Abstract:	
Bibliography:	
Project Resolution:	