



June 2009

Great Information Jewels You Don't Want To Miss!

Treasures for Teachers TREASURE CHEST NEWSLETTER

Please RECYCLE this newsletter by passing it on to a friend.

What's In This Issue?

Activity of the Month

How High Can It Go?

Upcoming Workshops

- Fundamentals of Inquiry
- Field Trip Into Space
- The "E" in STEM Education
- Introduction to Internet Resource Materials
- Science Take-Home Bags
- Family Math or Science Night
- Kid-Friendly Report Design & Science Journals
- Project Learning Tree
- Project WET
- Project WILD

What's In Stock?

Free classroom materials for your classroom—New goodies from Sea World have arrived!

Things To Know About

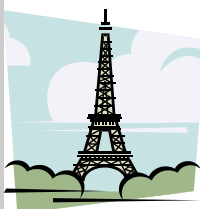
- On the Moon Educator Guide

Spider's Prey

Web Sites of the Month:

- Children's Engineering Educators

Activity of the Month



How High Can It Go?

Using the simple materials of paper and tape your students can employ their imaginations as well as experience the Engineering Design Model when they undertake the challenge of seeing, "How High Can It Go?"

See the last page of this NEWSLETTER for attached activity.

What will you be doing this summer to ensure you have lots of great teaching ideas for next year?

MARK your calendar then **JOIN** us for **FREE WORKSHOPS** to improve your **SCIENCE TEACHING!**

Come today, use it tomorrow!

The Science & Technology Teacher Resource Center offers **FREE** science workshops to teachers! Join us for a few hours and add some new ideas to your science repertoire. All workshops are offered at The Science & Technology Teacher Resource Center in Point Loma or

they may be scheduled at a time or place more convenient to you.

Call 619-847-5518

to schedule a time or to sign up for a **FREE** workshop.



Come and see our extensive collection of science and technology curriculum that you can download for **FREE!**

NEW!

Fundamentals of Inquiry

From the *Exploritorium* in San Francisco, this series of 3 workshops serve as building blocks for an immersion into inquiry by focusing on various hands-on approaches and process skills related to inquiry learning.

Workshop I Comparing Approaches to Hand-On Science Participants discover that different approaches to hands-on teaching support different goals for learning,
Workshop II Process Skills Participants identify the tools needed to carry out inquiry and examine the role of these skills in learning.

Workshop III Raising Questions Participants examine the kinds of questions learners ask about phenomena and find out how to turn "noninvestigable" questions into "investigable" ones.

These **3½ hour** workshops will be held on Monday mornings in August at the Resource Center. The Workshops will run from 8:30am—noon on **August 17, 24, and 31.**

Call 619-847-5518 to sign up for this FREE Workshop Series

Things To Know About!

Science programs you don't want to miss.



On the Moon Educator Guide

Together, NASA and "Design Squad" have developed the On the Moon educator guide. The guide brings hands-on engineering and the adventure of space exploration to life for students in grades 3-12. The activities are related to NASA's Lunar Reconnaissance Orbiter and NASA's Lunar Crater Observation and Sensing Satellite missions. In this guide, students are challenged to design and build:

- An air-powered rocket.
- A shock-absorbing system that will protect two marshmallow "astronauts."
- A rubber band-powered rover.
- A cardboard crane for maximum load-lifting ability.
- A paper cup modified so that it can carry a marble down a zip line and drop the marble onto a target.
- A solar hot water heater to cause the greatest rise in temperature.

Download this FREE Educator Guide at:

www.nasa.gov/audience/foreducators/topnav/materials/listbytype/On_the_Moon_Guide.html



Spider's Prey

Web Sites of the Month

Children's Engineering Educators—Developing Technological Literacy at the Elementary Level: Bringing the T & E to STEM Education

These folks have grade specific design challenges ready for you to use in your classroom!

<http://www.childrengineering.com/everydaywoolridge.htm>

<http://www.childrengineering.com/everydaydesignbriefs.htm>

Summer Reading Suggestion

Are you looking for something to read this summer that will build your repertoire of teaching skills? Try *The Skillful Teacher: Building Your Teaching Skills* by Jon Saphier, Mary Ann Haley-Speca, and Robert Gower. Published in 2008 by Research for Better Teaching this book offers both beginning and experienced teachers a treasure trove of practical, research-based strategies for improving teaching and learning.

The way to get good ideas is to get lots of ideas,
and throw the bad ones away."

~Linus Pauling, American scientist

Science is FUN

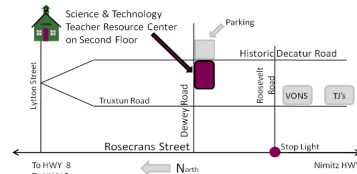
Sherlock Holmes and Dr. Watson are walking past a bush covered in lead, copper, silver, gold and lots of other chemicals.

"What is this?" says Dr. Watson.

Holmes replies "It's an element tree my dear Watson"

Science & Technology Teacher Resource Center

Located at NTC Promenade
(former Naval Training Center)
in Point Loma, just off
Rosecrans Street
2825 Dewey Road # 205
San Diego, California 92106



CALL 619-847-5518
for an appointment
to view the Center.

We can be reached at:
sfreeburn@sgeei.org

Questions, comments, or to add or
remove yourself from the
mailing list
email us at sfreeburn@sgeei.org or
call **619-847-5518**



What's In Stock?

Sea World has delivered some
wonderful **posters and books!**
Hurry to pick some up while they
remain on our shelves!

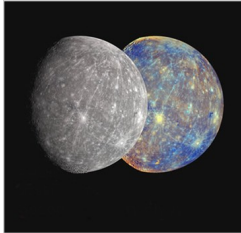
We have **tote bags** from conven-
tions that were held in San Diego.
Tote bags are a wonderful way to
store science units. Drop by and
pick some up to help organize your
science materials.

Discover all of the wonderful
FREE treasures available to take
back to your classroom!

Big things are happening in Space

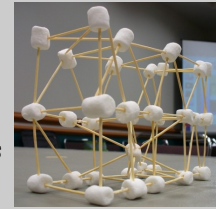
Are you including them in your teaching??

Join this exciting workshop to find ways to create this historical event into **A FIELD TRIP INTO SPACE** for your classroom. Learn how to incorporate NASA's MESSENGER program materials into your classroom's study of the Solar System during this hands-on, collaborative, interactive presentation. Learn the latest information about the flyby. Make a scale model of the Solar System. Make a model showing how craters are made. This **3 hour** workshop will be presented at the Resource Center from 5:30-8:30 pm on **June 15, 2009**.



Do you teach the "E" in STEM Education?

Discover how to teach higher order thinking skills in an exciting, meaningful way by incorporating Engineering into your curriculum. Learn how easy it is to create design challenges that engage your students and require only simple materials. This **3 hour** workshop is available at the Resource Center from 5:30-8:30 pm on **July 9, 2009**.



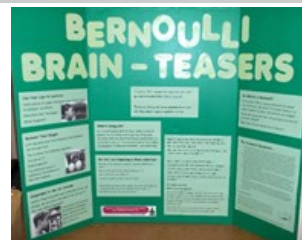
Introduction to Internet Resource Materials

The internet is loaded with FREE supplementary science materials. Find out where they are located and how they will help you meet the California Science Standards in this hands-on workshop. This **3 hour** workshop will be held at the Resource Center from 5:30-8:30 pm on **July 20, 2009**.



Science Take-Home Bags

How can a convention bag help you teach science? Attend this workshop and find out!! We will provide the bags and ideas. You will provide some imagination!! This **2 hour** workshop will be held at the Resource Center from 5:30-7:30 pm on **June 11, 2009**.



Family Math or Science Night

Create excitement and get parents involved with your school. Attend this workshop to find out HOW to organize this event at your school. We will discuss WHAT to include and WHERE to get ideas to make the event a success. This **2 hour** workshop will be held at the Resource Center from 5:30-8:30 pm on **July 30, 2009**.



Kid-Friendly Report Design & Science Journals

Looking for a more interesting way for your students to present science reports? Have you been wondering how to implement science journals into your curriculum? This workshop will introduce you to a fun, kid-friendly report design. This **3 hour** workshop will be held at the Resource Center from 5:30-8:30 pm on **June 25, 2009**.

Environmental Education Workshops

These award winning programs provide more than just an introduction to environmental ed. They are balanced programs that **teach how to think, not what to think**. Each program is aligned to the California Science Standards and teaches science concepts and skills in fun, collaborative ways. **Attendees to each workshop will be provided a FREE 450+ page Environmental Education Guide of games & activities to enhance your teaching of water, wildlife, or the environment.**



What do you do with a Tree Cookie?

Discover activities to increase your students' awareness and knowledge of the environment, as well as their place within it. Project Learning Tree is a **6 hour** workshop that will be held at the Resource Center from 9am-3pm on **June 13, 2009**.



WET stands for Water Education for Teachers.

Join us for an introduction to how water impacts our lives. Learn how to teach water related concepts through hands on games and activities. This **6 hour** Project WET workshop will be held at the Resource Center from 9am-3pm on **August 15, 2009**.



How much wildlife is in your school yard?

This **6 hour** Project WILD Workshop provides you with games and activities to use with your students that introduce them to how animal life fits into the environment. This workshop will be held at the Resource Center from 9am-3pm on **July 25, 2009**.

Call 619-847-5518 to schedule a time or to sign up for a FREE workshop.

How High Can It Go?

Using the simple materials of paper and tape your students can employ their imaginations as well as experience the Engineering Design Model when they undertake the challenge of seeing, "How High Can It Go?"

Materials

- 6 inches of masking tape per team for round one
- one piece of copy paper per team for round one
- yardstick for measuring
- additional materials for subsequent rounds

Design Criteria

Using a single piece of paper and 6 inches of tape, how high a tower can you construct in 10 minutes that will stand for at least 1 minute?

SCAMPER

SUBSTITUTE- Instead of ... I can ...

COMBINE - I can bring together ... and ... to ..

ADAPT - I can adapt ... in this way ... to ...

MODIFY- I can change ... in this way ... to ...

PUT TO OTHER USES - I can re-use ...
in this way ...by ...

ELIMINATE - I can eliminate ... by ...

REARRANGE -
I can rearrange ... like this ... such that ...



Post the design criteria on the board.

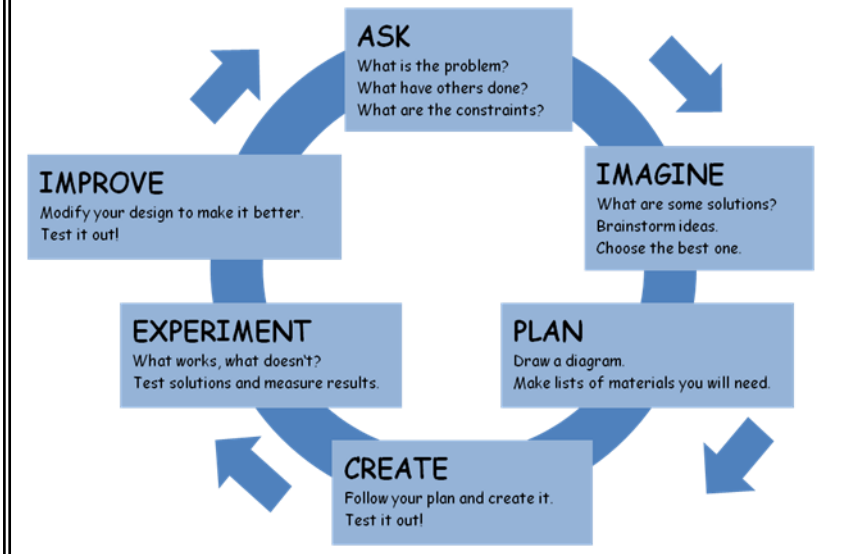
Have pairs of students work through the Engineering Design Model answering the questions and creating a plan prior to implementing it. Have them use the SCAMPER process to help generate ideas during the brainstorming section.

They may bend, tear, crumple, roll, and cut the paper while constructing their towers.

Did their solution succeed in meeting the design criteria?
What would they have done differently?

Have them cycle through the design model again taking advantage of the things they learned in their first attempt.

Engineering Design Model



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