SCIENCE BUDDIES Newsletter November 2011

Science Buddies Kits

One-stop Shopping for Science Project Materials

With a Science Buddies kit, everything you need for the project is in the box!

We recently announced the availability of "kits" for some of our popular Project Ideas. **Science Buddies kits** contain the materials required for the science project, all in **one convenient box**. Purchasing a kit lets you focus more on doing the steps of the project and less on trying to gather the right supplies. Kits are available for the following Project Ideas:

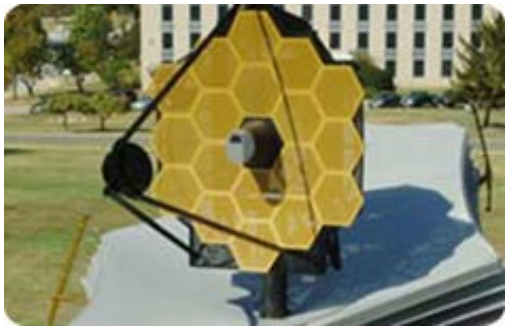
- From Dull To Dazzling: Using Pennies to Test How pH Affects Copper Corrosion
- Is *This* Connected to *That*?
- Forensic Science: Building Your Own Tool for Identifying DNA
- Which Orange Juice Has the Most Vitamin C?
- Electrolyte Challenge: Orange Juice vs. Sports Drink
- Shaking Up Some Energy
- Where There Is Charge, There Can Be Sparks!
- Spin Right 'Round with This Simple Electric Motor
- Build Your Own Crystal Radio
- Veggie Power! Making Batteries from Fruits and Vegetables
- Investigating the "Mpemba Effect": Can Hot Water Freeze Faster than Cold Water?

Science Buddies has partnered with AquaPhoenix Education to produce and ship these kits. AquaPhoenix Education is currently offering **free ground shipping** on orders shipped in the continental U.S. 10% of the kit purchase price goes to support Science Buddies. Note: kits do *not* contain perishable items required by some projects.

Cutting-edge Astronomy and Physics

The James Webb Space Telescope

Students can simulate the engineering challenges and solutions being devised for this powerful space telescope



With a primary mirror nearly three times the diameter of that of the Hubble Space Telescope, the James Webb Space Telescope (JWST), set to launch in 2018 with the help of the NASA Goddard Space Flight Center and Northrop Grumman, may enable scientists to answer even more questions about the formation of the universe. Launching such a large mirror is an engineering challenge, however! The solution is to send the mirror up in hexagonal pieces that will be reassembled in space. Another problem is heat. To protect the telescope from extreme heat, engineers have developed a tennis-court sized sunshield. The James Webb Space Telescope's Amazing Multiple Mirrors and Sunshield Project Idea shows students interested in physics how to construct a multiple-mirror light collector similar to the JWST's primary mirror and investigate ways to shield the mirror from heat.

Science Connections & Successes

Support Science

[Into the Wild Blue Yonder: The Science of Launching an Airplane by Catapult], developed in collaboration with the Intrepid Sea, Air & Space Museum, lets students explore the aerodynamics of catapult-assisted takeoff.

Families can turn mixing up lemonade into a fun and mouth-puckering [exploration of "sour"] and kitchen chemistry. Science Buddies health and human biology projects like this one are sponsored by the Medtronic Foundation.

By building and testing his own Archimedes screw pump, this young scientist [learned to move water] with a twist of the wrist, just like the "waterbenders" on *Avatar*, his favorite TV show!

Does twenty seconds of hand washing get rid of all the germs? With the help of an ultraviolet light and Glo Germ, students can explore [hand washing and the spread of germs].

Love colorful candy coatings?
Turn extra trick-or-treat candies into an [exploration of paper chromatography] and find out what dyes make up your favorite candy colors.

Fake webs on bushes are a hallmark of Halloween, but if you look closely, you may turn up a number of real and amazing [webs and spiders]--and a great opportunity to explore local biodiversity with your students and kids.

Snapping the inner core to [activate a glow stick] starts a cool chemical reaction. In the [Measure Luminescence in Glow-in-the-Dark Objects] project, students build a light detector to investigate how bright the sticks glow and for how long.

Literacy

*Donate to **build** science literacy and **inspire** young people.*

Donate

Chemistry Contest!

Science Buddies and Astellas are excited to announce the **2011-2012 Chemistry Project of the Year Contest**, open to U.S. students in grades K-12. Stay tuned for more information, including requirements, deadlines, and prizes. Astellas is the sponsor of Science Buddies [Chemistry Project Ideas].

Science At Home

Scientific American recently featured two Science Buddies activities in their [Bring Science Home] area, a section devoted to fun science for six- to 12-year-olds and their families:

- [Keep Your Candy Cool with Physics]
- [Find the Hidden Colors of Autumn Leaves]

Support for Educators

Ask an Expert Forums for Teachers

Teachers can find advice, support, and inspiration at Ask an Expert

Our new [Science Teachers: Fairs, Projects, and General Support] forum at Ask an Expert is dedicated to science teachers and educators. We invite your questions related to any aspect of science education, including supporting science exploration in the classroom and organizing, or participating in, a science fair.