

SCIENCE BUDDIES



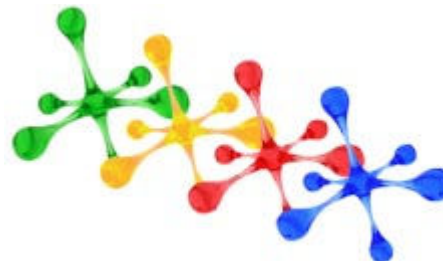
Project Ideas Roundup

October 2010

Playing with Polymers

Stretch it, bend it, break it, watch it run...

If you've ever played with a plastic egg of Silly Putty, then you've experimented with a "polymer." **Polymers** are **long chains of molecules strung together**, and each polymer takes on unique properties and behaviors defined by its molecules. Some polymers are **stretchy**. Some are **sticky**. Some are **hard**. And while many commonly-used polymers are synthetic, there are many naturally occurring polymers, like cellulose, starch, proteins, silk, chitin, and rubber.



Sometimes polymers are developed to find a way to make something lighter or stronger or more inexpensively. In fact, Silly Putty came about as a scientific accident during a quest to find a synthetic (and cheaper) substitute for rubber! You can explore the construction and behavior of polymers--and make your own--in [Bouncy Polymer Chemistry](#). (Difficulty: 2)

For more research on everyday polymers, try these abbreviated science project ideas:

- [Polymer Absorbance: A Swell Project](#)
- [Polymer Permeability: Which Plastic Wrap Prevents Evaporation Best?](#)
- [Polymer Permeability: Which Plastic Wrap Prevents Oxidation Best?](#)

Survey Says

Special considerations for survey-based projects



"Which one do you like better?" is not a question you'll see in a science textbook, but that doesn't mean it can't be scientific!

Unlike projects that involve hands-on work in a lab environment where changes or reactions are observed, tracked, compared, and analyzed, a **survey-based science project** revolves around the collection and analysis of data collected from a group of volunteers.

Be careful though. Survey-based science projects can't *simply* compare products. For example, while making a few dozen cookies with different kinds of chocolate chips or chip alternatives and asking your friends to taste-test might win some smiles, you'll need to find an angle on the project that ties it to an underlying scientific principle for it to be appropriate for a science fair. (Our [How Do You Make the 'Best' Cookie?](#) project idea is a good example of how to highlight the science behind a survey-based project!)

Here are a few survey-based projects from

What's in Your Future?

Every project idea on the Science Buddies website has links to information on science careers. If you have a favorite project, or if you find an interesting project on the site, take a look at the careers at the end of the project idea. You might just find your future!

If you are interested in seeing a list of careers in science, technology, engineering, and math, browse through our [Science Careers](#) page.

These careers were recently added:

- [Climate Change Analyst](#)
- [Neurologist](#)
- [Speech-Language Pathologist](#)
- [Architect](#)

We will continue to add new career profiles during the coming months, so check back to see what is new or [email us](#) to let us know which career profiles you would like to see.

Blogged: Science News

- [Preliminary release of the genome](#)

Here are a few survey-based projects from the Science Buddies project ideas directory:

- Once you've actually picked up a particularly intriguing item when you're shopping, is it harder to resist buying it? Investigate *human behavior* in the [Hands-on Shopping: More Likely to Buy if You Can Give It a Try?](#) project. (Difficulty: 5)
- Does pinching your nose shut when you take a bite mess up your ability to taste? In [The Nose Knows Smell But How About Taste?](#) *human biology* project, put the relationship between smell and taste to the test. (Difficulty: 5-8)
- When you last pulled a set of batteries out of a remote, did you throw them in the trash? "Electronic waste" is a growing *environmental science* problem. In [Uh-oh! What Do We Do With Our E-waste?](#), gather your own data sample as you observe what people do with their old electronics--*and why it matters*. (Difficulty: 6-7)

Surveys can be fun and scientifically sound! [On the blog](#), we've got advice for successfully working on a survey-based science project, links to important survey project resources, and a longer list of projects ideas.

Warming Up with the Greenhouse Effect

Build your own greenhouse



When sunlight passes through Earth's atmosphere, it doesn't always easily escape back into space. Varying levels of water vapor or carbon dioxide (CO₂) can trap sunlight, creating *radiant heat*, which makes it feel warmer than it really is. Build your own greenhouse in the [Is it Getting Hot in Here?](#) project to observe firsthand how heat gets trapped. (Difficulty: 5)

Investigating Stereotypes

A different spin on video game science...



Who plays video games? What does a "gamer" look like? What kind of student is a "gamer"? *Are you a gamer?*

Whether you know the ins and outs of

[sequence for the cacao plant](#)

- [A wrong turn for the Titanic?](#)

Science Buddies Quick Clicks

- [Science Project Directory](#)
- [Topic Selection Wizard](#)
- [Project Guide](#)
- [Scientific Method](#)
- [Ask an Expert Forums](#)



Science on the 'Mall'

Join in as science and engineering take center stage

The first [USA Science & Engineering Festival](#) is this month! Hosted by Lockheed Martin, the Festival will be held in Washington D.C., October 10-24, with a **free two-day Expo** on the National Mall October 23 and 24.

With over 1,500 hands-on science activities and 75 stage performances, the Festival promises to be exciting!



Newly Released Science Project Ideas

The following Project Ideas were recently added to the Science Buddies library:

Difficulty: 1-5

- [Shimmy, Shimmy Soda Pop: Develop Your Own Soda Pop Recipe](#)

Difficulty: 5-7

- [The Chemistry of Clean: Make Your Own Soap to Study Soap Synthesis](#)

games like Mario, Sonic, Zelda, and Final Fantasy or not, you probably have an image in your head of what a "gamer" is--a stereotype. Stereotypes are ways people sort others into groups, but that doesn't mean stereotypes are always accurate! In the [Gamers: Myth or Man?](#) video and computer game science project, students devise and conduct a survey to determine whether or not the stereotype of a "gamer" matches up to the demographics of gamers in their survey group. (Difficulty: 7-8)

What Makes a Good Science Question?



Our [Science Fair Project Question](#) resource contains excellent information designed to help students as they think about and select a question on which to base a science project. We've got examples of questions to avoid and a checklist to help evaluate the potential of a question. ***This is a resource to bookmark and share!***

- [Use Super-strong Magnets to Make a Simple Motor](#)
- [Wily Waves: Build an Oscillating Water Column to Extract Energy from Ocean Waves](#)

Difficulty: 7-9

- [Magnetic Levitation: Experiments with 'Anti-magnets'](#)
- [Create Your Own Chemistry Color-analysis Tools](#)
- [Minds of Their Own: A Chemical Reaction that Changes, then Changes Back!](#)

Turn Space Science into \$pending Money



A contest for students curious about craters, baffled by black holes, or pensive about planets

Stay tuned for official guidelines for this year's **Science Buddies Astronomy Science Project Contest!**

Did You Go to Science Camp?

We want your summer science camp stories!

Science Buddies is developing a **Science Camp resource** for the Science Buddies website, but we need your science camp stories! If you attended an inspiring and fun science camp over the summer, [let us know!](#)

Find the Perfect Science Project for You!



Our [Topic Selection Wizard](#) can help you find a science project that really fits your areas of interest *and* meets science fair requirements. Give it a try today!

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We post regular updates and announcements on the [Science Buddies at Facebook](#) page. Adding us to your "like" list at Facebook is an easy way to find out about new projects, giveaways, and other Science Buddies news. No Facebook? You can also follow us at [Twitter](#) or on our [blog](#).

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