

SCIENCE BUDDIES



Project Ideas Roundup

November 2010

Sweet Science on the Table

From traditional side dishes to dessert, there's food science to explore as the Turkey Day feast is prepared.

For many families, Thanksgiving Day is marked by special foods--and endless leftovers. Turkey salad, anyone? Sweet potato pancakes? Pumpkin pie smoothie? If you're on kitchen duty this November, put your food science skills to use as you experiment with kitchen-based chemistry in projects like these:



- From Sauce to Solid: The Science of Cranberry Condiments:** Some like it runny. Some like it a bit wiggly. Some like it firmly gelled. As cranberries are cooked, they pop open, releasing *pectin*, which helps them stick together. At what point do they form a solid jelly? Serve up a side dish (or five) of cranberry sauce to find out! (Difficulty: 5-6)
- Choice Cheesecakes:** Did you know that cheesecake can be temperamental to cook? Put pumpkin cheesecake on the table instead of pumpkin pie as you test various baking methods to see which one produces the perfect cheesecake. (Difficulty: 4)
- Perfecting Pastries: The Role of Fats in Making a Delicious Pastry:** For the die-hard pie crowd, you want your crust to be flaky and tender. The fat you use makes a difference! Put your rolling pin to use as you test which fat makes the most mouthwatering crust. (Difficulty: 5)
- Perfect Plating: Which Food Presentation Technique is Best?***: Taste matters. But how your food *looks* on the plate also has a lot to do with what gets eaten and how people respond to your food dishes. In this independent project, explore the many factors that come together to make the "perfect" plate. (Difficulty: 4)

Rubber Band Science

Explore the sillier side of potential and kinetic energy.



Stretchy bands shaped like characters, objects, and words have swept the school scene in recent months. Whether they glitter or glow in the dark, these "silly bands" are, essentially, just rubber bands! And you can do a lot with a rubber band--a lot of science, in fact!

These projects can help you turn your collection of silly bands into a very cool science project. Try these projects with regular rubber bands, or tweak the ideas (and your hypotheses) to explore the sillier side:

Win Cash Prizes with an Astronomy Science Project!



Interested in doing a science fair project but stuck on what to work on? Try your hand at an astronomy project and enter it in our **Science Buddies - Lick Observatory Astronomy Contest**. Winners will receive up to \$300 in cash and the chance to become a published author! Every entry *also* automatically qualifies for one of six \$50 random drawing prizes. View [complete contest details](#).

A Powerful Palate

Are you a supertaster? Count your tongue's papillae to find out!



Do you often complain that things are too snicy, too sweet, or too bitter? Can you

- **[Rubber Bands for Energy](#)**: What's the relationship between how far you stretch a rubber band and how far it flies? (Difficulty: 3-6)
- **[Rubber Band Elasticity and Temperature](#)**: How does temperature affect the elasticity of a rubber band? Many materials expand when they're heated and contract when they're cooled. Find out if this is true for rubber bands. (Difficulty: 5)
- **[Effect of Temperature on Elasticity of Rubber Bands*](#)**: Take temperature exploration a step further as you investigate what happens to rubber bands that are exposed to extreme temperatures. (Difficulty: 5)
- **[Bombs Away! A Ping Pong Catapult](#)**: Use a rubber-band-powered catapult to explore ways to control the launch and flight distance of ping pong balls. What variables increase the accuracy and up the odds that you'll hit the target? (Difficulty: 4-5)

Boing!

Want to spin off in a new direction? Explore Hooke's law and compare the behavior of rubber bands to "springs" by substituting rubber bands in the [Make Your Own Spring Scale](#) project. (Difficulty: 6-7)

Up to Bat with Ballpark Science



Load the bases for a grand slam science project!

Baseball season is winding down for this year, but you can spend off-season working on an out-of-the-park science project with any of these great Sports Science project ideas:

- **[Baseball Bat Debate: What's Better, Wood or Aluminum?](#)**: Compare the hitting power and "sweet spots" of wood and aluminum baseball bats. (Difficulty: 6-9)
- **[The Physics of Cheating in Baseball](#)**: Determine whether "corked" baseball bats make a baseball travel farther than unaltered wooden bats do. (Difficulty: 5-7)

...detect even a trace of cumin or ginger or garlic? Does allspice do you in? Does even a pinch of salt drive you crazy? Maybe you're not just finicky...**maybe you're a supertaster!** It's true. Some people have more taste buds than others, so they taste things *to the extreme*. (On the opposite end of the spectrum, some of us are non-tasters.) The simple test in [Do You Love the Taste of Food?](#) helps you find out how sensitive your taste buds are. (Difficulty: 1-3)

Recent Discovery: The "Goldilocks" Exo-Planet

Steven Vogt, professor of astronomy and astrophysics at University of California Santa Cruz, and a member of the Science Buddies Advisory Board, was one of the team leaders involved in the recent discovery of **Gliese 851g**--a potentially habitable exo-planet. ([Read full story...](#))



Blogged: Science News

- [Emergency pH: A Vinegar-Based Effort to Save the Danube](#)
- [Nobel in Chemistry: Palladium as a Catalyst](#)
- [Nobel in Physics: The Wonders of Graphene](#)
- [Nobel in Physiology/Medicine: In Vitro Fertilization](#)
- [Survey Says: Survey-Based Science Projects](#)

A Career in Science?

What *inspires* you? What *excites* you? What do you want to *do* with your life? What jobs are in demand? You might be surprised at how many careers there are in the sciences.

- What do [cartographers and photogrammetrists](#) do?
- What's it really like to work in a [forensics](#) lab?
- What careers involve *saving the environment* or *developing new ways to conserve energy*?

We've got answers to these questions and many more in our [Science Careers](#) section!

- **[The Biomechanics of Pitching](#)**: a single baseball pitch breaks down into six phases. Do your own pitch testing to see how changes in the "stride" phase affect the speed of a pitch. (Difficulty: 4-6)

Tying it All Together

Last month we talked about **polymers** in the newsletter. **Rubber** is a **natural polymer**--a stretchy one! And **pectin** (in fruits like cranberries) is also a natural polymer--a sticky one!



Quick Links

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



We Can Help You Find the *Perfect* Science Project!



Answer the questions in our [Topic Selection Wizard](#) to see a list of science projects that fit your areas of interest *and* meet science fair requirements. If you're not sure what kind of project you want to do, give the Topic Selection Wizard a try. *You might find that there's a lot of science to be explored in your favorite hobbies or pastimes!*

Tell Us Your Science Camp Story!

Share your experience with a great summer science program.

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

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