

# 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 turn a 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:

- Rubber Bands for Energy:** What's

### Cash Prizes for Students' Astronomy Projects!

*You and your students can both win!*



Enter your students' astronomy science projects in the **Science Buddies - Lick Observatory Astronomy Contest** and you and your students could win up to \$300 in cash--*each*! Every entry also automatically qualifies for one of six \$50 random drawing prizes. Top winners will have the chance to become published authors. 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 spicy, too sweet, or too bitter? Can you

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 students 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)
- **[The Biomechanics of Pitching](#)**: a single baseball pitch breaks down

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](#)

## Open Their Eyes to Careers in Science

Talking to your students about careers that involve science and engineering helps them **make connections between coursework and the future**. Ask them: What *inspires* you? What *excites* you? What do you want to *do* with your life?

Then turn to our [Science Careers](#) section to help them learn more:

- What science jobs are in demand?
- 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

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)

to conserve energy.

## 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](#)



## Help Students find the Perfect Project for *Them*

Our [Topic Selection Wizard](#) can help guide students to science projects that fit their areas of interest *and* meet science fair requirements. Give it a try today!



## Encourage Students to Share Summer Science Camp Stories!

***We want to hear first-hand stories about great summer science programs.***

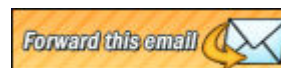
Science Buddies is developing a **Science Camp resource**, but we need student (or parent) summer science camp success stories! If you have a student that attended an exciting and fun science camp over the summer, [let us know!](#)

## Keep in Touch

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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