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# SCIENCE BUDDIES



## Project Ideas Roundup

June 2010

### Campground Science

Glittering stars overhead. The sounds of crickets and frogs. The flash of lightning bugs. The lack of cell phone signals. Ahhh... the great outdoors. Whether you like to rough it in a tent or prefer the comforts of cabin camping, summer might find you packing up your gear and heading for the woods.

Time off the main road presents many opportunities for scientific discovery. With a bit of advance planning, you can turn your campsite into an outdoor laboratory. On the Science Buddies blog, we've collected a [set of projects that put principles of outdoor science in the palm of your hand](#)--or onto a graham cracker! (Who can resist the science of s'mores?)



### Par for the Course



Spending too much time in the rough? Before you head out for your next round of 18, grab a bucket of balls and tee up some sports science with these golf-related projects. A few savvy calculations and some time at the driving range might help you shave strokes off your score!

- [Tee Time: How Fast is Your Golf Swing?](#) (Difficulty: 6-7)
- [Tee Time: How Does Tee Height Affect Driving Distance?](#) (Difficulty: 6-8)
- [A Cure for Hooks and Slices? Asymmetric Dimple Patterns and Golf Ball Flight](#) (Difficulty: 7-8)
- [Are More Expensive Golf Balls Worth It?](#) (Difficulty: 7-8)



### Trash to Treasure Competition

*PBS' Design Squad is offering kids at home a chance to get in on the action!*

The 2010 Trash to Treasure Competition challenges kids to take everyday discarded or recycled materials and re-engineer them into functional products. Three grand-prize winners will win a trip to Boston to see their designs built, and will also appear on the Design Squad TV show and website. 25 finalists will also be featured on the series website.

Enter online at [pbs.org/designsquad](http://pbs.org/designsquad) until September 5, 2010.

### Student Science Video Competition: "Why is Science Cool?"

Love science? Feel at home behind a video camera? Want to spread the wonder of amoebae, DNA, aeronautics, tree molds, or wind power? Was your science project blockbuster material?

- [Golf Clubs, Loft Angle, and Distance](#) (Difficulty: 7-8)

## Keep Summer Fruits Fresh

Deliciously juicy, perfectly sweet, not too hard, and not too soft...the pure delight of eating summer fruits! But have you ever brought them home from the store or farmer's market, where they looked so delectable, only to find that a few days later they were already mushy or beginning to mold?

Get a head start on summer fruit season by trying these simple science projects to find out how to make your fruits last the longest.

- [How Does Packaging Affect the Ripening of Fruit?](#): Test different types of fruit packaging, such as plastic baskets and brown paper bags, to see which keeps fruit the freshest. (Difficulty: 2)
- [Save Those Spoiling Strawberries!](#): Investigate thermotherapy (heat therapy) to determine the right combination of temperature and time to prevent your strawberries from molding. (Difficulty: 3-5)

## Frisbee: Hands-On Aerodynamics



Frisbee offers outdoor fun for all ages, but the ultimate combination of distance and accuracy is all about aerodynamics. As you adjust your starting point, the incline of your throw, or the angle of your follow-through, you're putting principles of flight into action--all with the flick of a wrist.

Did you know that a flying ring flies farther than a solid disc? Explore lift and drag as you learn more about the science behind

Spend some time in the director's chair this summer as you create your own video entry for the **USA Science & Engineering Festival's Kavli Science Video Contest**.

Winners will receive cash prizes for their school, as well as software or electronics prizes, and a trip to the USA Science & Engineering Festival Expo in Washington, DC. The submission deadline is July 15, 2010. For more information, visit: <http://tinyurl.com/35hulzq>.



*Think edgy. Think surprising. Think science. Then hit "record" and see what happens!*

## Science on the Big Screen

*WhizKids movie opens in theaters this summer*

An inside look at the world of advanced science competitions, the **WhizKids** documentary follows three high school

students as they prepare for and compete in the Intel Science Talent Search. The movie will be shown at Silverdocs in Washington D.C. this summer and will open in both New York and Los Angeles in June. For more information, visit [whizkidsmovie.com](http://whizkidsmovie.com).



## Newly Released Science Project Ideas

Looking for something new?



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

Difficulty: 1-5

Frisbee fun with these projects:

- [Why Do Aerobie Flying Rings Go So Much Further Than Frisbees?](#) (Difficulty: 6)
- [The 'Ultimate' Science Fair Project: Flying Disk Aerodynamics](#) (Difficulty: 6-7)

## Tweet Feet

If your summer plans include time spent in nature--whether on the trail or picnicking lakeside--keep your eyes open for birds in the area. Noticing different kinds of birds' "feet" offers clues about lifestyles, habitats, and the ways bodies have adapted to surroundings.



If you've never seen the chartreuse legs and amazing feet of an American Coot, you're missing out! As you start to document birds that you come across in the [Can You Predict a Bird's Lifestyle Based on Its Feet?](#) science project, you'll see the wide range of feet that help with activities like climbing, swimming, running, perching, and grasping. (Difficulty: 3)

## Where the Wolves Are

*Using radio tracking data to explore travel patterns*



Summer break is prime vacation season for many people, but we aren't the only animals with seasonal travel patterns. In [Where, Oh Where, Do the Wild Wolves Wander?](#), you can investigate whether a wolf pack's movement changes based on the season. This interactive project allows you to access, map, and analyze radio collar tracking data of two wolves from a pack in Minnesota! (Difficulty: 5-7)

*(Science Buddies' zoology projects are sponsored by Abbott Fund.)*

## I Scream, You Scream, We All Scream for Sunscreen!

*Science savvy about UV rays*



Despite repeated health warnings and

- [Come One, Come All! Explore the Effect of Light on the Speed of the Amazing Rotating Radiometer!](#)
- [Crime Scene Chemistry: Determine the Identity of an Unknown Chemical Substance](#)
- [Jumping For Geodes: Can You Tell the Inside from the Outside?](#)
- [Perfect Plating: Which Food Presentation Technique is Best?\\*](#)
- [Polar Puzzle: Will Ice Melting at the North or South Poles Cause Sea Levels to Rise?](#)
- [Quick Draw McPaws: Teach A Computer Kitty How to Draw Shapes](#)
- [Shaking for Suds: Which Type of Water is the Hardest?](#)
- [Squirmy Wormy: Which Soil Type Do Earthworms Like Best?](#)
- [The Speed of Light: Explore Solar Energy with a Supercapacitor Car Motor!](#)

Difficulty: 5-7

- [Background Bop: Do Different Businesses Play Different Tempos in Background Music?\\*](#)
- [Investigate the 'Death' of an Orange: How is Rate of Heat Loss Based on the Surrounding Temperature?](#)
- [It's Written All Over Your Face: The Science of Facial Expressions](#)
- [Make a Greeting Card Come to Life](#)
- [Mixing Your Own Marshmallows: Finding the Right Ratio of Sugar to Corn Syrup](#)
- [Star light, Star bright: How Does Light Intensity Change with Distance?](#)
- [Steamy Standing Time: How Food Size Impacts Carryover Cooking](#)
- [Storytelling Alice: Once Upon a Time in a Computer-generated Land](#)
- [The Science Behind Tsunamis: Study the Effect of Water Depth on Wave Velocity](#)

advice, many people resist putting on sunscreen before heading outdoors. Examine the effects of the Sun's ultraviolet rays with these science projects, and you might have second thoughts about slathering on the protection!

- [Don't Get Burned! Measure the UV Index at Different Times of the Day](#): Find out when you need the most protection from UV rays. (Difficulty: 3-5)
- [Exploring DNA Damage: What Effect Do Ultraviolet Rays Have on Yeast Colony Growth?](#): Experiment with a strain of yeast that is super-sensitive to UV light to observe the lethal effects of UV light when DNA damage is not repaired. (Difficulty: 8)

Difficulty: 7-8

- [Don't Stand So Close To Me! An Investigation into Personal Space](#)
- [Presto! From Black to Clear with the Magic of Photochemistry](#)
- ['They're Not Sticking!' A Study of Gender Responses to Frustration](#)

### Difficulty Level

All Science Buddies projects are ranked in terms of "Difficulty Level." **This ranking does not correlate directly with grade level.** For more information, see our [Understanding Project "Difficulty" chart](#).

### Looking for a Perfect Project for You?

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



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