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## The Science Behind Holiday Baking

As post-Halloween sugar highs ebb, and trick-or-treat stashes wane, the days of pre-packaged, ready-to-eat treats give way to the smells of freshly baked bread, pies, cakes, gingerbread, and a variety of other family favorites. With classroom potlucks, family dinners, and a string of potential holiday gatherings dotting the calendar in December, the kitchen may become an epicenter of activity.



From quick breads to perfect pastries to sugar substitutes and questions about core ingredients, we've got a [list of projects](#) on the [Science Buddies blog](#) that can help you turn the holiday kitchen into moments of scientific discovery and exploration.

### Fall Foliage

All over the world at this time of year, leaves have turned from green into deep oranges, reds, and golds. What's the science behind this spectacular change? Take a look at the following Science Buddies' fall foliage projects to find out!



- [What Color Are the Leaves Really Turning?](#)
- [Leaves and Light](#)
- [Make Your Own Markers](#)

### Is That Gold Really Gold?

Difficulty: 7 (Grades 8-10)

Have you ever considered that not all gold jewelry is *all-gold* jewelry? There's a simple way to test for yourself at home. In the Science Buddies project [Is the Gold in My Jewelry Real?](#), investigate whether exposing gold to bacteria can determine whether a piece of jewelry is composed of all gold, is just gold-plated, or is not gold at all.

*Special thanks to Veselin Dobrev of OSI Pharmaceuticals, Inc., who wrote this Project Idea.*



### Chance of Snow

December may have you bundling up to ward off colder weather, even as you wait for the first snow. Some hands-on experience analyzing information captured by a weather balloon can bring the forecast into focus. Learn more about atmospheric temperature and pressure with these Science Buddies Project Ideas:

- [How Does Atmospheric Temperature Affect the Water Content of Snow?](#)



### Staff Scientist's Pick of the Month



Science Buddies staff scientist Michelle Maranowski recently wrote a science fair project idea inspired by watching skateboarders in her city's downtown area. As she examined one of the most well-known board tricks, the Ollie, she discovered that skateboarding is more than just a hobby -- it's physics in motion!

Visit the [Science Buddies blog](#) to read Michelle's insights about the science of skateboarding tricks, or if you're ready to

- [Using Weather Balloon Data to Map Atmospheric Temperature](#)
- [Predicting the Weather](#)

## Hands-On Earth Science for Teachers

[Earthwatch](#), sponsored by the Northrop Grumman Foundation, is an innovative environmental education program for middle school math and science teachers. Hands-on expeditions focus on climate change or oceans preservation.

For related Science Buddies Project Ideas, visit these sections of our library:

- [Environmental Science](#)
- [Ocean Sciences](#)
- [Weather & Atmosphere](#)

## Robotics for First-Time Electronics Experimenters



Difficulty: 3-4 (Grades 4-6)

Learn about kinetic energy and solar power as you control the movements of a simple robotic toy in this Science Buddies Project Idea: [The Frightened Grasshopper: Explore Electronics & Solar Energy with a Solar-Powered Robot Bug.](#)

## Master the Cube



The Rubik's cube is classic hands-on fun, perfect for a snow day or downtime during winter break. The Rubik's cube frustrates many, but a bit of math can guide you to the right twists and turns. Once you've solved it for the first time, the race is on. Can you do it faster? Which strategy works best? Check out these Project Ideas:

- [Devising an Algorithm for Solving Rubik's Cube](#)
- [Making Patterns with Rubik's Cube](#)
- [What's the Fastest Way to Solve Rubik's Cube?](#)

hit the streets, check out her project, [Popping an Ollie.](#)

## Newly Released Science Fair Project Ideas



Looking for something new?

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

Difficulty: 2-3 (Grades 1-4)

- [Point Your Ponies: How Horses Keep Warm in the Wind](#)
- [Up, Up, and Away in Your Own Hot-air Balloon!](#)

Difficulty: 5-7 (Grades 6-9)

- [Pretty Packaging: Can Attractive Packaging Lead to Healthier Eating?](#)
- [How Sweet It Is--How Much Sugar is Really in That Soda?](#)
- [Are Childproof Containers Really Childproof?](#)
- [How Do You Take Your Tea? Make a Simple Electronic Device to Measure the Strength of Tea.](#)

Difficulty: 7-8 (Grades 8-10)

- [Decomposing Energy: Extracting Heat Energy from a Compost Pile](#)
- [Going Green as You Clean: Are 'Green' Detergents Less Toxic Than Conventional Detergents?](#)
- [Why Do Birds Fly in a V-formation?](#)

Difficulty: 9 (Grades 11-12)

- [Build Your Own Helio Tracker--A Self-powered Mechanical Sunflower that Turns with the Sun](#)

## 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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more. Stop by and check it out!

### What's Your Favorite?

Have a favorite [Science Buddies Project Idea](#)? We'd love to hear which projects you've tried and enjoyed. Stop by the [Science Buddies at Facebook](#) page and let us know! While you're there, mark yourself a "fan." It's an easy way to learn about new projects, drawings and giveaways, and other Science Buddies' news.



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