Science fair projects with food (that nobody eats)

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Fourteen science fair projects that test food from the kitchen (apples, eggs, raisins, celery, bread, milk) with nobody eating or tasting it, with grades and costs.

The best food science fair projects test what happens to the food, not what anyone thinks of it: how brown a cut apple goes, how much salt it takes to float an egg, how far coloured water climbs a stick of celery. Fourteen of Peabody's projects test a food from the kitchen. They run from 1st grade to 8th, most take one sitting, none costs more than about three dollars, and in every one the food is thrown away after the last try.

I put the food projects on one page on Peabody, each with the question, the If-Then-Because hypothesis, the steps, a results table and a board plan. Here's the list, the one rule that matters most, and how to keep a kitchen project clean.

The one rule: nobody eats it, nobody tastes it

A taste test sounds like the obvious food project. It isn't allowed at most fairs without paperwork, because it uses people as the thing being tested. The UNM STEM-H Center's K–5 science fair rules (the PDF revised 11 August 2022, read 31 October 2026) say every project with human subjects needs approval from a review board before it starts, with signed consent from everyone taking part. A family with a fair in three weeks usually doesn't have time for that.

So every food project on Peabody asks what the food does: goes brown, floats, softens, sprouts, swirls. The safety strip on each one says "Test food is not for eating", and it means it: food that's been dipped, soaked, salted or left out is thrown away.

Fourteen food projects

- Project: Do raisins dance longer in fizzy water? · Grades: 1st–4th · Testing: 40 min · Cost: about $2 · The food: raisins
- Project: Do green onions regrow best in water or soil? · Grades: 1st–5th · Testing: 7 days · Cost: about $2 · The food: green onion roots
- Project: Does whole milk swirl farther than skim milk? · Grades: 2nd–6th · Testing: 40 min · Cost: about $2 · The food: skim, 2% and whole milk
- Project: Which liquid dissolves a hard candy fastest? · Grades: 2nd–6th · Testing: 60 min · Cost: about $2 · The food: hard candies
- Project: What keeps a cut apple from going brown? · Grades: 2nd–6th · Testing: 90 min · Cost: about $1 · The food: apple slices

- Project: Does a paper bag make a banana ripen faster? · Grades: 2nd–6th · Testing: 4 days · Cost: about $3 · The food: bananas
- Project: Do potatoes sprout faster in the light or dark? · Grades: 2nd–6th · Testing: 14 days · Cost: free · The food: potatoes
- Project: Do leaves help celery pull up coloured water? · Grades: 3rd–8th · Testing: 40 min plus 4 hours · Cost: about $2 · The food: celery stalks
- Project: How much salt does it take to float an egg? · Grades: 3rd–7th · Testing: 45 min · Cost: free · The food: a raw egg
- Project: Which padding keeps a dropped egg from cracking? · Grades: 3rd–8th · Testing: 60 min · Cost: about $3 · The food: raw eggs
- Project: What softens an eggshell fastest? · Grades: 3rd–7th · Testing: 3 days · Cost: about $3 · The food: eggs in vinegar, lemon juice and water
- Project: Which bread turns the brownest in the toaster? · Grades: 4th–8th · Testing: 50 min · Cost: about $3 · The food: white, whole wheat and sweet bread
- Project: Which kitchen liquids change red cabbage water? · Grades: 4th–8th · Testing: 60 min · Cost: about $3 · The food: red cabbage
- Project: Do the heaviest liquids always sink to the bottom? · Grades: 4th–8th · Testing: 75 min · Cost: about $2 · The food: honey, corn syrup and milk

The candy and sugar projects have their own post: science fair projects with candy.

How each one turns food into a number

A judge wants numbers, and food doesn't come with a scale printed on it. These projects get numbers three ways:

- Count it. Raisins rising to the top in two minutes; brown spots on a banana on day four.
- Measure it. Centimetres of colour up the celery; how high the top of the egg sits in the glass; how far the colour spreads across the milk in one minute; millimetres of potato sprout.
- Score it on a scale you write first. The apple, the toast and the eggshell use a 0 to 5 score. Colour the scale before you start (on the apple's page, 0 is white and 5 is dark brown), and score every slice against it, so the score means the same thing at the end as at the beginning. The red cabbage uses a colour number from 1 to 5 the same way.

Keeping a food project clean

1. Put a tray down first. Milk, egg and cabbage water all spread.
2. Wash hands after a raw egg, every time, and wipe the counter.
3. A grown-up does the sharp and hot parts. Cutting the apple and the celery and chopping the cabbage are grown-up steps on the project page. The red cabbage needs hot water, which a grown-up pours, and the toast uses a toaster, which a grown-up works.

4. Label every cup with masking tape before anything goes in.
5. Throw the food away after the last try, and keep tested food away from little brothers and sisters.

What to bring on fair day

Not the food. The same UNM rules say no liquids and no human or animal food on the display table, and many school sheets agree. Bring photos of the slices, the eggs or the cups at each check, your results table and your logbook. A photo of the 0 to 5 scale next to the slices makes the scoring easy for a judge to follow. The board plan shows where they go.

Try tonight

Ask a grown-up to cut an apple into eight slices the same size. Colour a brown scale on a strip of paper (0 is white, 5 is dark brown). Fill three cups with plain water, water with a spoon of salt, and lemon juice, dip two slices in each for one minute, and leave two dry. Label each pair, and after an hour score every slice against your scale. Do it again on two more days with a new apple, and that's What keeps a cut apple from going brown?, and it fits 2nd to 6th grade.

Questions grown-ups ask

Can my child do a taste test if they only taste it themselves?

It still uses a person as the thing being tested, and the rule sets we read treat it that way. Ask the teacher before planning one; most families find a "what happens to the food" project is quicker and keeps clear of forms.

Are there food projects for 1st grade?

Two: the dancing raisins and the green onions. The raisins are small enough for a toddler to choke on, so keep them out of reach.

Which is cheapest?

The egg in salt water and the potato sprouts cost nothing in most kitchens.

Peabody (peabody.kids) is free through the end of 2026, with no ads and no sign-up, and nothing a child taps on the science fair pages is sent anywhere. The library has stories by reading level for after the counter's wiped.

Free at peabody.kids/blog/science-fair-projects-with-food