Science fair projects with candy: dissolving, crystals and density

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Six science fair projects with candy and sugar: which liquid dissolves a hard candy, sugar crystals on a string, stirring, melting ice and a honey density tower.

The candy science fair project that works best is the simplest: drop the same hard candy into four different liquids, wait 30 minutes, and measure how wide each one is now. Hard candy is mostly sugar, so the sugar projects answer the same kind of question: does it dissolve faster warm, does stirring help, which grows crystals faster on a string. Six of Peabody's projects use candy or the sweet things in the cupboard, and four of the six cost nothing.

I gathered them on Peabody's candy and sugar page, each with the hypothesis frame, the steps, a results table and a board plan. Here they are, and the two things that make a candy project different from any other: it's sticky, and it looks like a snack.

Six candy and sugar projects

- Project: Which liquid dissolves a hard candy fastest? · Grades: 2nd–6th · Testing: 60 min · Cost: about $2 · What you measure: how wide the candy is after 30 minutes, in mm
- Project: Which grows crystals faster: salt or sugar? · Grades: 4th–8th · Testing: 5 days · Cost: free · What you measure: the longest crystal on the string, in mm
- Project: Does stirring make sugar dissolve faster? · Grades: 1st–5th · Testing: 40 min · Cost: free · What you measure: seconds until the sugar disappears
- Project: Does sugar dissolve faster in warm water? · Grades: 2nd–6th · Testing: 40 min · Cost: free · What you measure: seconds until a spoon of sugar disappears
- Project: What melts ice fastest: salt, sugar or sand? · Grades: 2nd–6th · Testing: 90 min · Cost: free · What you measure: minutes until the ice cube melts
- Project: Do the heaviest liquids always sink to the bottom? · Grades: 4th–8th · Testing: 75 min · Cost: about $2 · What you measure: grams for a quarter cup of each liquid

The hard candy test, step by step

You need thirteen hard candies, all the same kind, twelve clear cups the same size, and four liquids: tap water, warm tap water (never hot), vinegar and cooking oil.

1. Label the cups with tape: three for each liquid. Pour half a cup into each.
2. Measure across the middle of one candy in millimetres, and check the others look the same size. (Thirteen candies means one to spare.)
3. Slide one candy into each cup and start a timer when the last one is in. Don't stir, shake or bump the cups.

4. After 30 minutes, lift each candy out with a spoon onto a plate, and measure across the middle again. If it's gone, write 0.
5. Find the mean width for each liquid and draw a bar graph.

The project page explains why oil barely touches the candy and water does, in a few short sentences your child can retell to a judge. For 7th grade and up, the second test leaves candies in warm water for 10, 20 and 30 minutes and draws a line of width against time.

Crystals: the rock candy project

Rock candy is sugar crystals grown on a string, and that's exactly what the crystal project does, side by side with salt so there's something to compare. A grown-up pours hot water into nine jars and stirs salt into three and sugar into three, a spoon at a time, until no more disappears; the last three are plain water. A string hangs into each from a pencil, with a paper clip on the end. For five days your child measures the longest crystal on each string and writes it in the logbook. It's a slow project that photographs beautifully for the board. The crystals aren't for eating: they've been sitting out on a string for five days.

Two rules for candy projects

Nothing tested is for eating, and nobody tastes anything. A taste test turns a person into the thing being tested. The UNM STEM-H Center's K–5 rules (revised 11 August 2022, read 31 October 2026) say any project with human subjects needs a review board's approval before it starts, and signed consent. A "which candy tastes sweeter" project needs all of that. "Which liquid dissolves it fastest" needs none of it.

Keep the candy away from little ones. The American Academy of Pediatrics' HealthyChildren.org page on choking prevention (read 31 October 2026) lists "hard, gooey, or sticky candy" among the foods to keep from young children, and says to keep high-risk foods from children until they're 4 or older. Hard candies on a table at child height are exactly that risk, which is why Peabody's safety strip on the candy project says small parts. Count them out, count them back, and bin them.

Sticky, so set up first

- A tray or towel under everything. Sugar water dries tacky.
- A grown-up pours hot water in the crystal project. The candy project uses warm tap water only.
- Label cups before anything goes in. Twelve clear cups look identical by minute 20.
- Photos instead of cups on fair day. The UNM rules say no liquids and no human or animal food on the display, and many school sheets agree. Bring the strings of crystals in photos, not the jars.

Try tonight

The stirring project fits a 1st grader and costs nothing. Pour half a cup of tap water into a clear cup, add a teaspoon of sugar, and start a timer. For no stirring, just watch; for slow stirring, one circle every two seconds; for fast stirring, as fast as you can without splashing. Stop the timer when you can't see any sugar (write 300 if it's still there after five minutes). Three of each, in a different order each round. That's Does stirring make sugar dissolve faster?. The results table template shows how to lay out the nine numbers.

Questions grown-ups ask

Can we use gummy candy instead?

Peabody's candy project is written for hard candy, and the steps and the 30-minute check are set for it. Whatever candy you use, use one kind for every cup and say which on the materials list.

Is a candy project too easy for a judge?

Not if it's measured. A mean width for each liquid, a bar graph and a clear reason why the oil cup still has a whole candy in it is a real result.

Which candy project is quickest?

The two sugar dissolving projects take about 40 minutes each.

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 once the sticky cups are washed.

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