Science fair projects with plants that fit in two weeks

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Five plant science fair projects, from celery done in an afternoon to beans and grass that grow for fourteen days, with a day-by-day logbook and a graph.

The best plant science fair projects change one thing a plant gets (water, light, depth in the soil) and count or measure what it does over days: how many beans sprout, how far a stem leans toward the window, how tall grass grows under coloured light. Five of the forty projects on Peabody use a living plant. Four take ten to fourteen days of testing, and one, celery in coloured water, is done in an afternoon. They're the projects where a dated logbook really shows, because the work happens day by day.

I built the science fair pages on Peabody with plants as the only living things in any project. There are no animals and nothing grown on purpose from germs or spores: the school rule sets I read keep those for older students, with paperwork and a teacher's approval. Here are the five, how to fit them into two weeks, and how to run one.

The five

- Project: Do leaves help celery pull up coloured water? · Grades: 3rd–8th · Testing: 1 day · Cost: about $2 · What you count or measure: how far the colour climbs in four hours (cm)
- Project: How much water do bean seeds need to sprout? · Grades: 2nd–6th · Testing: 10 days · Cost: free · What you count or measure: beans sprouted, out of five
- Project: Do plants bend toward the window? · Grades: 1st–5th · Testing: 12 days · Cost: free · What you count or measure: how far the top of the plant leans (cm)
- Project: Does planting a seed deeper make it slower to come up? · Grades: 3rd–8th · Testing: 14 days · Cost: about $1 · What you count or measure: days until the shoot pokes through
- Project: Does grass grow best under red, blue or green light? · Grades: 4th–8th · Testing: 14 days · Cost: about $3 · What you count or measure: height of the tallest blade after 14 days (mm)

Between them they cover 1st grade to 8th. The beans are dried beans from the grocery bag (pinto, lima or kidney). Four of the five belong to Peabody's "growing and weather" family (the celery is filed with mixing); the outside and plants page has those plus the weather ones, like the rain gauge and the shadow through the day.

Fitting it into two weeks

Peabody's countdown adds three days to every project's testing: one to gather things and print the sheets, one to find the means and write the conclusion, and one for the board. So:

- Celery (1 day of testing): fits a weekend. Stand the stalks in coloured water, wait four hours, measure.
- Beans in bags (10 days): about thirteen days in all, so it fits two weeks with a day to spare.
- Plants bending to the light (12 days): about fifteen days in all. The first five or so are just growing the beans to about 5 cm tall, so start them the day you decide.
- Seed depth and grass under coloured light (14 days each): about seventeen days in all. With exactly two weeks, these are a stretch; start today, and tell the teacher if the last count lands close to the fair.

If the fair is closer than that, the one weekend page lists the projects that test in two days or less, and the two weeks page puts the long ones first.

What a fair expects, by age

- 1st to 3rd grade: one thing changed and one thing counted or seen (how many beans sprouted, which plants lean). Three tries at each level; a simple bar graph; what happened in your child's words.
- 4th to 6th grade: units in the table header (cm, mm, days) and a mean for every level. A logbook with a dated line each day shows a judge the work happened over time.
- 7th and 8th grade: a second variable. Three of the five reach 8th grade, and each has one: the celery in a sunny window and in a dark cupboard, the seeds planted in sand and in potting soil, the grass on a sunny shelf and on a shady one.

How to run a plant project

1. Write the hypothesis on day one, before anything is planted. "If I change ___, then ___ will ___, because ___." The hypothesis sheet has the first two blanks filled in.
2. Open the logbook the same day. Every day: what I did, what I saw, what I think. Even the days when nothing happens. Draw what you see.
3. Three of everything. Each level gets three cups or three bags or three stalks, and those are the three trials. Every Peabody project has at least three.
4. Keep the rest the same. The same kind of bean, the same soil, the same water each day, the same room or windowsill.
5. On the last day, fill in the results table. Find the middle number, or from 4th grade the mean, for each level.
6. Draw the graph. Most of these are bar graphs (one bar for each amount of water, each colour, each spot); the seed depth is a line, because depth is a number that grows.

7. Lay out the board. A 36 × 48 inch tri-fold with six sections in order: Question, Hypothesis, Materials, Steps, Results, Conclusion. Photos from the logbook days make the best pictures.

Safety, in code

Every project on Peabody passes a check in the code before it can be shown: no flames, no chemicals beyond the kitchen, no animals, no cultures, nothing off the fair's safe-list. For plants, that means washing hands after the soil and the beans, and a grown-up does any cutting with a knife (the celery) or a hole in a box (the plants bending). Your school's sheet wins.

Try tonight

Fold a paper towel into each of twelve zip bags. Label three "none", three "a little", three "medium" and three "lots". Put five dried beans in each bag, on top of the towel. Give each its own water: nothing, 1 teaspoon, 1 tablespoon or 3 tablespoons. Zip them almost shut and tape them to a wall in a warm room, out of direct sun. Every day, add the same water and count the sprouted beans; on day ten, write the final counts. That's How much water do bean seeds need to sprout?, started tonight with a bag of beans from the cupboard. If it's not the right fit, Pick my project asks four questions and hands over one.

Questions grown-ups ask

Can my child bring the plants to the fair?

Check your school's sheet first. Peabody's fair-day checklist says to bring photos or drawings of the test and to keep living things off the table. The logbook and the photos show the growth day by day, which one cup on the table can't.

What if nothing sprouts?

Then that's what happened, and it goes in the table. The seed depth project says to write "not up" beside any bean that hasn't appeared by day 14. A result that surprises you, written up honestly with the numbers, is a good conclusion.

Can we use a pet instead, to test what it eats?

Peabody has no animal projects. The rule sets I read keep live animals away from the fair, and projects that test animals need forms and a teacher's review. Plants ask the same kind of question: change what it gets, and measure what it does.

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 about seeds and gardens, and plenty more, for reading while the beans sprout.