Science fair hypothesis examples, grade by grade from K to 8th

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Nine science fair hypothesis examples, one for each grade from kindergarten to 8th, each from a real project, with what changes at each grade and the because to write.

A good science fair hypothesis at any grade names the one thing you'll change, the one thing you'll measure, which way you think it will go, and why: "If I change ___, then ___ will ___, because ___." What changes from kindergarten to 8th grade is how much goes in each blank. A kindergartner says "I think… because…" out loud. A 4th grader names the unit. A 7th or 8th grader says how much, not just which way, and plans a second test.

The hypothesis post explains the template blank by blank. This one is the examples: nine of them, one a grade, each from a project on Peabody. The change, the measure, the levels and the grades are the projects' own. The becauses are examples: your child's should be their own reason, and a guess is a fine one.

Kindergarten

Project: Which ice cube melts first: in the sun, in the shade or inside? (kindergarten). Measured in checks every 10 minutes until it's gone.

I think the ice cube in the sun will melt first, because I feel hot when I stand in the sun.

At this age it's spoken, and a grown-up writes it down in the child's words. "I think" is fine. The because comes from something they know from their own body.

1st grade

Project: Which boat shape carries the most pennies? (1st–5th grade). Shapes: flat raft, square box, round bowl.

If I change the shape of the boat, then the square box will carry the most pennies, because it has tall sides to keep the water out.

The first full If-then-because. It names a level (the square box) instead of a direction, which is right for a test where the levels are kinds of thing.

2nd grade

Project: Do beans grow best in soil, sand or cotton? (2nd–6th grade). Measured in cm on day 14.

If I change what the bean's roots grow in, then the bean in potting soil will grow the tallest, because soil has food for the plant and sand doesn't.

3rd grade

Project: Does a bigger parachute fall slower? (3rd–8th grade). Sizes: 20, 30 and 40 cm square. Measured in seconds.

If I change the size of the parachute, then the time it takes to fall will go up, because a bigger parachute has to push more air out of the way.

A 3rd grader's hypothesis says which way: up, down or the same. Notice "the time it takes to fall", not "it will be slower": it names the thing the stopwatch measures.

4th grade

Project: Does a longer string swing slower? (4th–8th grade). Lengths: 20, 40 and 60 cm. Measured in swings in 15 seconds.

If I change the length of the string from 20 cm to 60 cm, then the number of swings in 15 seconds will go down, because the weight has farther to go on each swing.

From 4th grade the levels and the unit go in. A judge can read this sentence and know the whole test.

5th grade

Project: Does slanted light spread wider? (5th–8th grade). Angles: 90, 60 and 30 degrees. Measured in grid squares lit.

If I change the angle the light hits the paper from 90 degrees to 30 degrees, then the number of squares the light covers will go up, because light that comes in at a slant lands on a longer patch, like a shadow at the end of the day.

6th grade

Project: Does planting a seed deeper make it slower to come up? (3rd–8th grade). Depths: 1, 3 and 6 cm. Measured in days until the shoot shows.

If I change how deep the bean is planted, then the number of days until the shoot pokes out will go up, because the shoot has farther to push using only the food stored in the bean.

A 6th grader's because uses a piece of science they looked up, here what a seed stores, in their own words.

7th grade

Project: How much does a rubber band stretch with each extra weight? (5th–8th grade). Weights: 10, 20, 30 and 40 pennies. Measured in cm.

If I change how many pennies hang on the band, then how far the rubber band stretches will go up by about the same amount for every 10 pennies, because each penny pulls with the same weight.

This is the jump from 7th grade on: not just "it will go up", but how it will go up. The graph will

show whether the line is straight.

8th grade

Project: Does a full bottle roll down a ramp faster? (5th–8th grade). Amounts: empty, a quarter, half and full. Measured in seconds.

> If I change how much water is in the bottle, then the time to roll down the ramp will be longest for the quarter-full bottle and shortest for the full one, because the water in a part-full bottle sloshes around and wastes some of the push. If I make the ramp steeper, the full bottle will still win.

Two hypotheses, one for each test. The second is the project's own "going further" test: the same four amounts down a steeper ramp, drawn as two lines on one graph.

What changes as they grow

- Grade: K · The hypothesis says: "I think… because…", spoken, written down by a grown-up
- Grade: 1st–3rd · The hypothesis says: If-then-because, with which way it goes or which level wins
- Grade: 4th–6th · The hypothesis says: The levels and the unit, and a because from something they read
- Grade: 7th–8th · The hypothesis says: How much, not only which way, and a second hypothesis for a second test

Try tonight

Pick a project with your child on Pick my project, print its hypothesis sheet, and let them fill in the last two blanks. Every project page has a nudge toward the because ("Think about…"), never the answer. For practice, try the Finish the hypothesis quiz, where every answer is one of three boxes.

Questions grown-ups ask

Does a hypothesis have to be right?

No. It has to be testable and written before the test. The conclusion examples show how to write up one that was wrong.

Can my child's because be a guess?

Yes, especially up to 3rd grade. "Because it's bigger" is a real reason a test can check.

What if my 7th grader's project is on the easy list?

Many Peabody projects run from 3rd or 4th grade to 8th. The older child does the same test with a sharper hypothesis, a mean for each level and the second variable.

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Free at peabody.kids/blog/science-fair-hypothesis-examples-by-grade