How to write a hypothesis for a science fair (the If-Then-Because template)

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The If-Then-Because hypothesis template for kids, with worked examples at 2nd, 4th and 7th grade, the mistakes judges see, and a free sheet to print.

A science fair hypothesis is one sentence that says what you think will happen when you change one thing, and why: "If I change ___, then ___ will ___, because ___." The first blank is the thing you change, the second is the thing you measure, the third is what you think will happen to it, and the fourth is your reason. A guess is a perfectly good reason. The test is what finds out whether it was right.

I built the science fair pages on Peabody so a child could get from "I have to do a science fair project" to a finished board without a grown-up having to know how it's done. Every project there comes with the hypothesis frame already half filled in: what you change and what you measure are written for you, and the last two blanks are left for the child. Here is how the frame works, with real examples, and the mistakes that cost points.

The template, blank by blank

If I change [the independent variable]: the one thing you change on purpose. The height of a ramp. The kind of paper towel. How much salt is in the water. Only one thing, or you won't know which change made the difference.

then [the dependent variable]: the thing you measure, with a unit. How far the car rolls, in centimetres. How many teaspoons of water the towel holds. How high the egg floats.

will [go up, go down or stay the same]: your prediction. Pick one.

because [your reason]: what you think is going on. "Because a steeper ramp makes the car go faster" is a fine reason for a 4th grader. "Because I saw it on a video" is not, because it says where you heard it, not why it might happen.

The same hypothesis at three grades

Take one project, Does a steeper ramp make a toy car go farther?, and watch the hypothesis grow up.

2nd grade. "If I make the ramp higher, then the car will go farther, because it goes faster." Short, one thing changed, one thing measured, a reason. That's all a 2nd grade judge needs.

4th grade. "If I change the height of the ramp from 1 book to 3 books, then the distance the car rolls will go up, because a higher ramp gives the car more speed at the bottom." Now the levels are named and the measure has a unit in the table.

7th grade. "If I raise the ramp from 10 to 30 cm, then the distance the car rolls will increase, because the car starts with more stored energy; but at the steepest ramp the car may bump the floor and lose some, so the increase may level off." A 7th grader can predict a shape, not just a direction, and test a second variable (the same ramp on carpet and on a hard floor).

Five mistakes judges see

1. A question, not a prediction. "Does a ramp make a car go farther?" is the question. The hypothesis answers it before you test.
2. Two things changing. "If I change the ramp and the car…" Keep it to one.
3. Nothing you can measure. "…then the car will be cooler." Cooler how? Pick something with a number.
4. No because. The because is where the thinking shows. A wrong because is fine; a missing one isn't.
5. Changing the hypothesis after the test. Write it first, date it in your logbook, and leave it alone. If it was wrong, say so in the conclusion. Judges like that.

What if the hypothesis turns out wrong?

Then you found something out. A hypothesis is a guess you test, and a wrong guess with honest numbers is good science. The conclusion says: "My hypothesis was not right. My numbers show ___. Next time I would test ___." Peabody's conclusion sheet has a box for "not right" on purpose.

Try tonight

Print the hypothesis sheet, blank, and pick something in the kitchen to wonder about: which paper towel soaks up the most, or what melts ice fastest. Fill in the four blanks together, with your child saying the because out loud first. Or let Pick my project choose one in four taps, and the frame comes half filled.

Questions grown-ups ask

How long should a science fair hypothesis be?

One sentence, two at most. If it needs a paragraph, it's probably trying to test more than one thing.

Should the hypothesis use "I think"?

It doesn't need to. "If… then… because…" already says it's a prediction. Some teachers prefer it written without "I think"; your child's teacher's sheet wins.

Does a hypothesis have to be right to win?

No. Judges score the question, the test, the data and the conclusion. A child who explains a wrong hypothesis with their own numbers usually scores better than one who hides it.

Peabody (peabody.kids) is free through the end of 2026, with no ads and no sign-up, and the science fair pages send nothing anywhere. The library has stories to read on the nights there's no project due.

Free at peabody.kids/blog/how-to-write-a-hypothesis-for-a-science-fair