Activity 2: Turning an idea or question into a science project

If you're a student, make sure you receive permission from your parent first, before working on this activity guide with a mentor.

Introduction

Does your student have a great idea? That's the first step! Now, how do you turn that idea into a science project that follows the scientific method? This activity guide and accompanying worksheet should help you do just that.

Time needed: 30 mins

If you have more time, you could run the full Google Science Fair lesson plans with a group of students. They break down a way of introducing the competition, or any science fair, into the classroom. They have been created for different age groups to use in any class.
https://www.googlesciencefair.com/en/resources

Objective: Turn an idea into a project

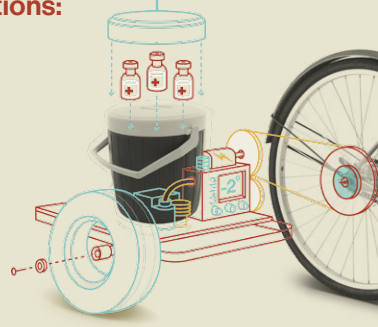
Having a great idea is the key first step, but it's experimentation that puts ideas to the test. By experimenting, your students can further explore their ideas and eventually find answers to their question.

Worksheet: Five ways to turn your questions into a scientific experiment

Results: After completing this activity guide, the student should be able to answer these questions:

- What's your question/what problem are you helping to solve?
- Who does this project help
- What do you think the answer/outcome will be
- How could you test this?
- Why would you do it this way? What are the other options for testing your idea?

After completing the worksheets in this activity guide, your student should have all the information that's needed for the Google Science Fair project site template.



Key points to remember:

Does your student's project include a test?

When considering science projects, it's difficult to accept theories or ideas without testing to see how the idea would work. A student's science project doesn't have to be a fully-working model – we know that many students don't have access to resources necessary to create a full prototype or test in the environment they would hope their invention to operate within. Instead they can create a small prototype using homemade items, or proof of concept – test their idea on a smaller scale.

Everything is better with science.

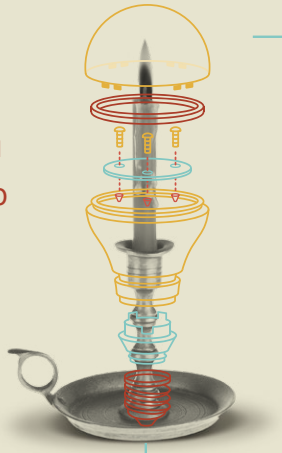
Google Science Fair

Health and safety are extremely important!
The Google Science Fair rules have been put in place to keep entrants and everyone around them safe. We take these very seriously and will have to disqualify any projects that break the rules. For more details on what is and isn't allowed, see the rules.

What more can I do to help?

If your student has a great idea but needs equipment that's not offered in your school, you could help to put them in contact with a local lab or organization working in the area.

- Research the area of science to see what's available locally
- Help to write a letter to or telephone the lab of local scientists (also many universities have profiles with direct email addresses listed as a way to contact them).



Advice from someone who's been there

"While the student is thinking, and talking aloud, the mentor should just start making a list of everything needed for a experiment. Working this way together makes experimenting easy and fun."

-Google Science Fair 2015 Inspiring Educator Award recipient, Aydan Meydan

Offer advice and support throughout the process – it can be stressful! Review their project and challenge them on it – make sure that they can confidently talk about their work.

Don't forget that it's great to support students and see them grow, but they should carry out this project themselves. They may need help with processes – figuring out which are best and knowing how best to carry them out – but they stand to gain and learn the most by doing as much as they can on their own.