# How to Get Started on a Science Fair Project

So you want to enter your school's science fair? Or perhaps the whole class is required to complete individual science fair projects? Creating your own science fair project can be a lot of fun and rewarding! By the end of it, you might even find the inner scientist in you. Here is how you can get started.

## Choose a Project Idea

Science fairs will tend to cover, but are not always limited to these science topics: *Life Science*, *Earth Science*, or *Physical Science*. No matter what type of science project you choose to present, make sure that it is interesting to learn about and that it's a fun experience for both the people viewing it, and yourself!

*Life Science* is about everything related to living organisms, from plants and animals to humans and human health. This type of project is likely popular due to the amount of students who are interested in life and health, or who have the desire to help find a cure for a disease that has affected them or one of their family members. Projects usually range from the more basic questions about plants and sunlight to the more complex problems in our society. Some students may even try to find the secrets to improved memory or a cure for a disease such as cancer.

*Earth and Environmental Science* is about exactly what it claims to study, earth and our environment. Students may be drawn towards this type of project because they feel the need to do something about the amount of pollution and global warming that our planet is suffering from. Projects could range from an invention to improve energy efficiency, a way to reduce greenhouse gas, or a new way to reduce waste. Students could also focus on the way Earth is affected by things such as acid rain, weather in general, or even how Earth interacts with other planets in our solar system.

*Physical Science* tends to be both more advanced and more general at the same time. Rather than focusing on finding a cure for a disease, as a students may do with a life science project,

the aim of a physical science project may be to simply figure out the temperature that a specific substance can freeze or boil at. This is also the type of project that teachers may be more likely to assign to a class.

***Engineering Science/Physics*** focuses on the areas of applied physics, which includes a wide variety of topics. It includes, but is not limited to, optics, nanotechnology, mechanical and electrical engineering, and energy. This type of project combines both problem solving skills and engineering skills in order to create something to solve a specific problem. Projects are usually more focused. Students may want to explore new ways to save or collect energy, or even new ways to alter, build on to, and reuse old technology to eliminate waste.

***Behavioural and Social Sciences*** is the investigation and analysis of the behaviour of both humans and animals using either controlled or naturalistic observations.The data that is collected is used to study the decision processes and communication strategies within and between the test subjects in a social system. Students who have a strong interested in psychology who may be interested in doing projects based on how humans interact will likely enjoy doing a science fair project like this.

***Math and Computer Sciences*** is, as it implies, the study of computers and their applications. While computers can be used for graphics and game designs, students may be interested in exploring their uses further, exploring projects that involve interactions between humans and computers, or finding a way to make computers useful and accessible to everybody.

For a list of project ideas, visit Science Buddies website: [http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml](http://www.sciencebuddies.org/science-fair-projects/project_ideas.shtml)

## Choose a Project Type

Now that you are more familiar with the different categories of science fair topics, it's time to decide how you want to go about designing your science fair project. There are two main ways you can create your science fair project, *investigation* and *invention*.  By keeping in mind which type of project you are designing, it will be easier to follow through with your goals and make researching and organising data more smoothly.

***Investigation -*** An investigation project is where the student formulates a question and solves it through research and experiments. Students who are curious about how or why something occurs in the world may want to investigate something specific. In an investigation project, students will be likely to consider these questions: "What happened?", "What changed?" and,

"What stayed the same?" Several tests will be designed to help analyze these questions and prove or challenge the student's hypothesis.

Another way to investigate a question or topic is to collect and analyze data through natural and controlled methods of observation. By closely studying the situation or patterns revolving around the object of interest, students can reveal proof or evidence that may contribute to their discovery. Students can either observe the connections between cause and effect, or undergo theoretical research of scientific data.

Click here for a detailed list of steps to follow for the investigation type project (provide link - investigation type method).

***Inventions -*** Students who are creative and prefer a hands-on type of project may find the invention method more exciting to approach. Inventions require a student to think beyond what they know and design an innovative solution to a specific problem. Perhaps you already have something in mind that you've always thought may make your life easier. This is the time to do so! Ask yourself these questions: "What is the problem?", "Why is this a problem?" and "How can I fix it?" Brainstorm some solutions, and then start developing your invention. After the invention is built, test it and evaluate how useful your invention is. Some ideas may include improving existing or developing new devices, models, techniques or approaches in technology, engineering, or computers.

Click here for a detailed list of steps to follow for the invention-type project (provide link - invention type method).