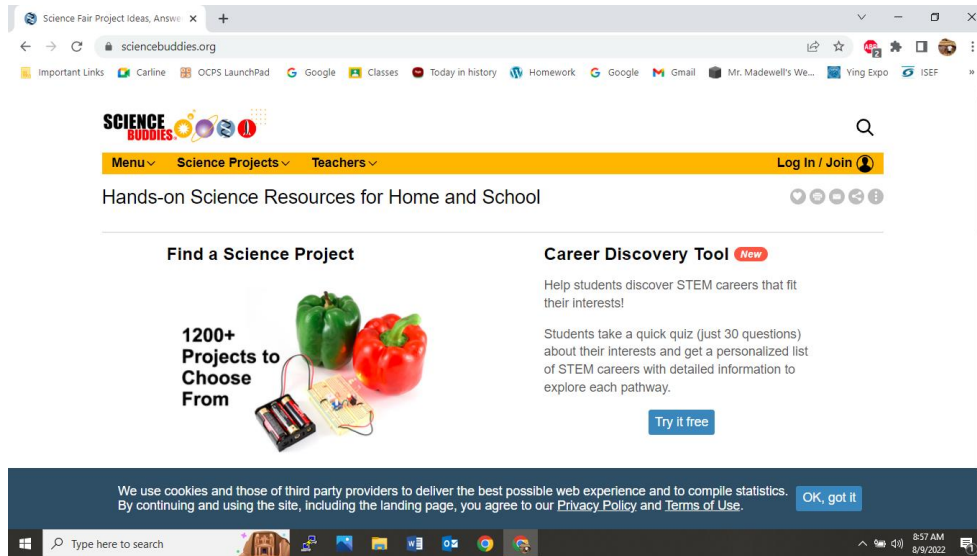
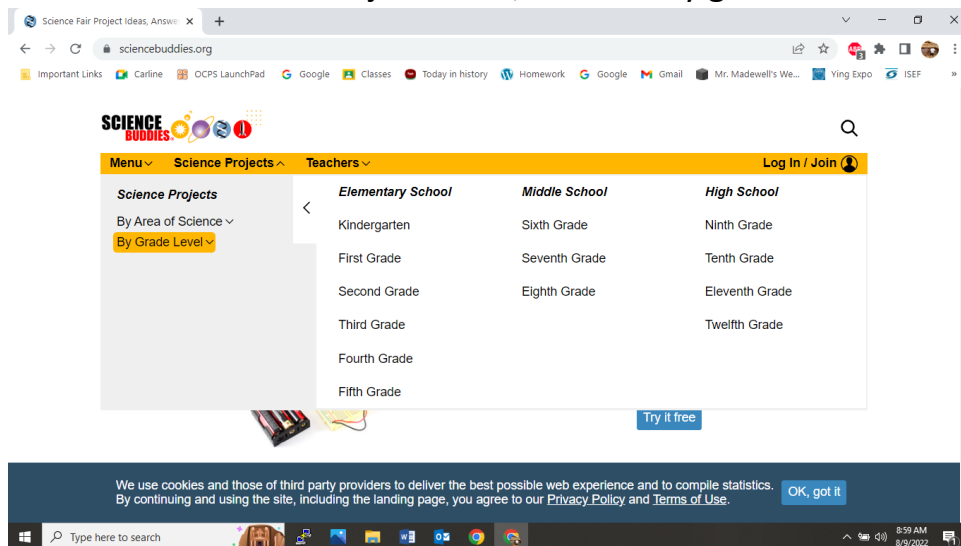


How to use Science Buddies in 10 easy steps!

1. Log onto sciencebuddies.org



2. Under the "Science Projects" tab, choose "by grade level".



If you are new to science fair, you might want to look at projects under your current grade level. If you have done science fair before, I suggest you choose a higher grade level than your current grade level.

3. Select a grade level and answer the three questions and submit.

The screenshot shows the Science Buddies website with a questionnaire overlay titled "Please answer a few questions for us!". The questionnaire has three sections:

- Who are you?**
 - ☒ Student
 - ☐ Parent
 - ☐ Teacher
 - ☐ Other adult
- Which grade levels are of most interest to you?**
 - ☐ Grades K-5
 - ☒ Grades 6-8
 - ☐ Grades 9-12
 - ☐ College
 - ☐ Post-college
- What is your objective?**
 - ☐ Educating others
 - ☐ Exploring science for fun
 - ☒ Project assigned in school
 - ☐ Other

The background shows the "Eighth Grade Science Projects" page with a search bar and a "Log In / Join" button.

4. For demonstration, I selected 8th grade and find 700 projects!

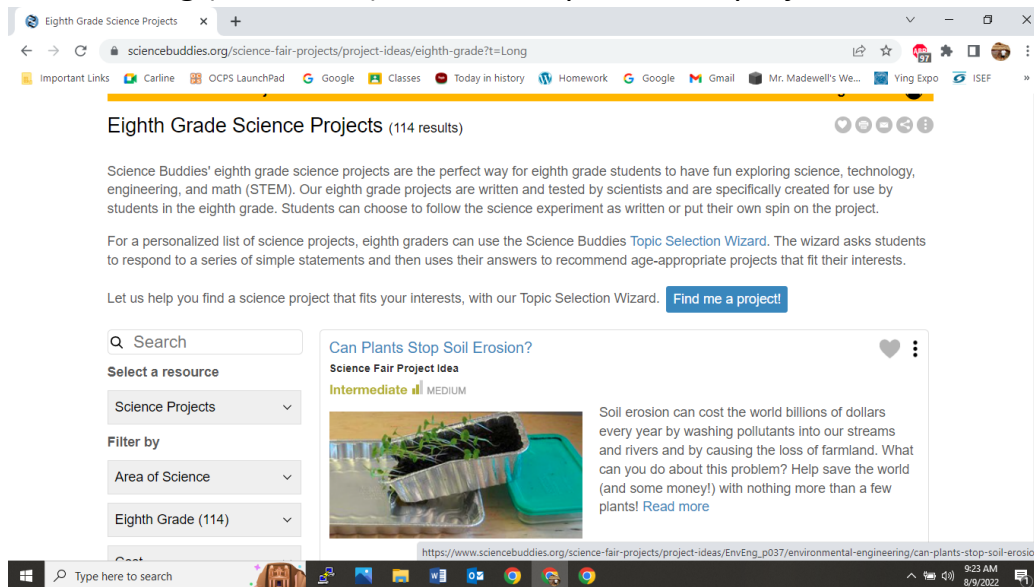
The screenshot shows the Science Buddies website with search results for "Eighth Grade Science Projects (700 results)". The page includes a search bar, a "Find me a project!" button, and a list of project ideas. One project is highlighted:

- Transform Drinks Into Semi-Solid Juice Balls That Pop in Your Mouth**
 - Science Fair Project Idea
 - Intermediate | HARD
 - Kit Available
 - Forget drinking your juice. Instead, try snacking on it! Use the steps and recipes in this food science project to transform drinks into semi-solid balls that pop in your mouth. The technique is called spherification and it is part of a larger food science trend called molecular gastronomy—but we just call it yummy science! [Read more](#)

The left sidebar shows filters for "Area of Science", "Eighth Grade (700)", and "Cost".

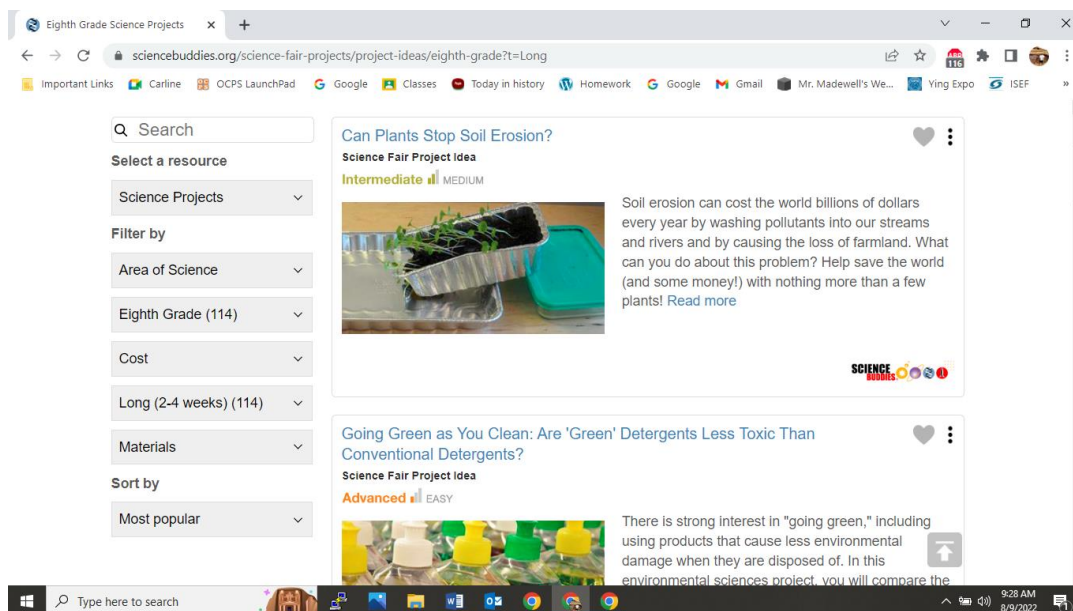
On the left side you can “filter” your choices. You can select a specific area of interest, you can set a cost limit, you can set a time constraint on your project. I suggest you avoid short and very short term projects. Science Fair projects should take you weeks to do, not days!

5. I chose long (2-4 weeks) and came up with 114 project ideas.



You can still use the filter on the left side to select a specific area of science you like, set your cost limits, see if the materials needed are readily available or need to be ordered (some projects have kits you can purchase).

6. As you scroll through the projects you will notice that they are listed as Intermediate or Advanced, Easy, Medium and Hard. You should avoid Beginner projects, even if you have never done a science fair project before!



7. Scroll through the projects and look for one that seems interesting to you. When you find one, click on the title to open the project details.

The screenshot shows a web browser window with the URL sciencebuddies.org/science-fair-projects/project-ideas/EnvEng_p037/environmental-engineering/can-plants-stop-soil-erosion. The page features the Science Buddies logo at the top left and a navigation bar with 'Menu', 'Science Projects', and 'Teachers'. A 'Log In / Join' button is on the right. Below the navigation bar, the title 'Can Plants Stop Soil Erosion?' is displayed. The 'Abstract' section states: 'Soil erosion can cost the world *billions* of dollars every year by washing pollutants into our streams and rivers and by causing the loss of farmland. What can you do about this problem? Help save the world (and some money!) with nothing more than a few plants!'. The 'Summary' section lists 'AREAS OF SCIENCE' as Environmental Engineering, Geology, Plant Biology, and Environmental Science. It also indicates a 'DIFFICULTY' level of 'Intermediate' with a 'MEDIUM' icon. A small image of a seedling in a container is visible on the right side of the page.

Scroll down through the details and read all about the project. The abstract is a very brief overview of what the project is about. Further down you will find the “objective”, or the problem, if you will. Next is the Introduction, or the background information about the project.

The screenshot shows the same web browser window, but scrolled down to the 'Objective' and 'Introduction' sections. The 'Objective' section states: 'Find out if plants can reduce the amount of soil that is eroded from a hill due to rainfall.' The 'Introduction' section provides background information: 'You are surrounded by soil every time you step outside. It seems like the world has plenty of it, so why would we need to worry about conserving it? It turns out that **soil erosion**, or the washing away of soil by forces like wind and water, is actually a big problem. It can cause loss of farmland as soil in fields washes away, like in Figure 1. It can pollute waterways by washing pesticides and fertilizers into them. It can even cause damage to human life and property by contributing to mudslides and landslides. The total economic cost of soil erosion in the United States alone was estimated at about 38 *billion* dollars each year, and \$400 billion for the whole world (Lang, 2006). So, soil erosion is definitely a problem; how can you help solve it?'. Below the text is a photograph of a field with a path showing significant soil erosion, where the soil has been washed away, leaving a deep, exposed channel.

8. Further down you will find very detailed, step-by-step experimental procedures. In many cases, there are pictures as well!

Can Plants Stop Soil Erosion? | Sc x +

sciencebuddies.org/science-fair-projects/project-ideas/EnvEng_p037/environmental-engineering/can-plants-stop-soil-erosion

Important Links Carline OCPS LaunchPad Google Classes Today in history Homework Google Gmail Mr. Madewell's We... Ying Expo ISEF

Experimental Procedure

Preparing Your Plants

1) Fill each of the six bread pans with soil, as shown in Figure 3. Leave a little bit of space at the top, so the soil is not flowing over the edges.




Figure 3. A bread pan filled with soil.

2) Plant radish seeds in three of the bread pans, slightly closer together than the package directions say to. For example, if the package says to plant the seeds 1 inch apart, you could plant them 1/2 inch apart. You can do this because you do not need the radish plants to be

Type here to search

9:39 AM 8/9/2022

If while you are reading you decide you don't like the idea or are not really interested, stop and go back to the other projects. But, if you think you really like this idea and are really interested, you come to the tricky part! You see, you can't just copy this project and procedures and turn it in as "your own" project. That is PLAGIARISM! Scroll down to "Variations"! Here you will find a list of ideas on how you can take this project and make it your own. Some projects have lots of variations and some don't have any! Regardless, you must vary the project listed here to make it YOUR project.

9. So, take a look at the variations and see if one of them might work for you, or come up with your own!

The screenshot shows a web browser window with the URL [sciencebuddies.org/science-fair-projects/project-ideas/EnvEng_p037/environmental-engineering/can-plants-stop-soil-erosion](https://www.sciencebuddies.org/science-fair-projects/project-ideas/EnvEng_p037/environmental-engineering/can-plants-stop-soil-erosion). The page is titled "Can Plants Stop Soil Erosion?" and features a "Variations" section with a list of ideas for modifying the experiment. Below this is a "Careers" section with a link to "Soil and Water Conservationist" marked as "In Demand". The browser's taskbar at the bottom shows the time as 9:40 AM on 8/9/2022.

Variations

- Try the experiment with different types of plants, or let the radish seeds grow for longer. Are some plants better at reducing soil erosion than others?
- Try the experiment with different types of soil. Are some types of soil more susceptible to erosion than others?
- Try the experiment with mushrooms instead of plants. Can mushrooms help reduce soil erosion?
- Do a larger-scale version of the experiment using larger containers, like plastic storage bins.
- If possible, try doing the experiment outside on an actual hillside. You may need garden tools and help from an adult to do this. Clear any existing vegetation (like grass) from two equally sized patches of soil on a hillside. Leave one patch of bare dirt, and plant seeds in the other patch. Figure out a way to measure soil erosion; for example, by digging holes downhill from each patch of soil and placing a bucket or large bin in the hole to catch the eroded soil.
- Use a video camera to record your experiments. Look up the different types of soil erosion due to water (sheet, rill, gully, and splash—see the references in the [Bibliography](#)). What type of erosion do you see during your experiment?
- Do your results change depending on whether the soil is dry at the beginning of your experiment, or if it is already saturated?

Careers

If you like this project, you might enjoy exploring these related careers:

[Soil and Water Conservationist](#) In Demand

10. Be sure to copy the citation at the bottom of the webpage. Paste it into your bibliography and that's it!

The screenshot shows the bottom portion of the same webpage. It includes a note about the algorithm, a "Cite This Page" section with general citation information, and specific citation examples for MLA and APA styles. At the bottom is a "Please Give Us Feedback!" section with a form to rate the project idea and a question about whether the user will do a similar project. The browser's taskbar at the bottom shows the time as 9:55 AM on 8/9/2022.

Note: A computerized matching algorithm suggests the above articles. It's not as smart as you are, and it may occasionally give humorous, ridiculous, or even annoying results! [Learn more about the News Feed](#)

Cite This Page

General citation information is provided here. Be sure to check the formatting, including capitalization, for the method you are using and update your citation, as needed.

MLA Style

Finio, Ben. "Can Plants Stop Soil Erosion?" *Science Buddies*, 20 Nov. 2020, https://www.sciencebuddies.org/science-fair-projects/project-ideas/EnvEng_p037/environmental-engineering/can-plants-stop-soil-erosion. Accessed 9 Aug. 2022.

APA Style

Finio, B. (2020, November 20). *Can Plants Stop Soil Erosion?* Retrieved from https://www.sciencebuddies.org/science-fair-projects/project-ideas/EnvEng_p037/environmental-engineering/can-plants-stop-soil-erosion

Please Give Us Feedback!

Please rate the overall *quality* of this Project Idea

Do you think that you will do a project similar to this one?

☐ Excellent ☐ Yes

☐ Very Good ☐ Maybe