

# Science Fair Logbook 2023-2024

Date	What I am doing	When I can/ will be done	Resources/Materials
October 5, 2023	Today I have finalized my top three science fair ideas: A paper dining set that grows, how alginate can help substitute excess use of water in farming, and the most effective method of preventing soil erosion on a model scale farm.	Tomorrow, I will have the idea for my science fair.	<p>-What is soil erosion?  <a href="https://www.nrdc.org/stories/soil-erosion-101">https://www.nrdc.org/stories/soil-erosion-101</a>  <a href="https://www.wikihow.com/Prevent-Soil-Erosion">https://www.wikihow.com/Prevent-Soil-Erosion</a>            Google Scholar  <a href="https://link.springer.com/chapter/10.1007/978-981-10-6910-9_2">https://link.springer.com/chapter/10.1007/978-981-10-6910-9_2</a>            For alginate farming  <a href="https://botanicalpaperworks.com/#:~:text=Seed%20paper%20is%20a%20special.germinate%20and%20grow%20into%20plants.">https://botanicalpaperworks.com/#:~:text=Seed%20paper%20is%20a%20special.germinate%20and%20grow%20into%20plants.</a>            For paper dining set +            YouTube video sponsored by Lifepak Colombia that introduces their idea of "seed paper"</p>
October 6, 2023	After much careful deliberation and opinions from family members, I have chosen to do the project regarding the	Early to mid-January	<p><a href="https://docs.google.com/document/d/168CDsRnz-DgxHybFL0b8NhIpgUQiqSwzG6kxbxOggqaA/edit">https://docs.google.com/document/d/168CDsRnz-DgxHybFL0b8NhIpgUQiqSwzG6kxbxOggqaA/edit</a>            The start of my</p>

	prevention of soil erosion on a model scale farm. The project itself is very easily applicable to real world science and also interests me! (I would love to build a model of a farm on a small scale as a challenge)		background research ;)
October 23 - 29	Mrs. Turner would like me to submit a proposal to get the idea approved. I have begun some background research to support the questions she is asking in the proposal, and I have finally submitted it by the 29th.	DONE	None.
November 3, 2023	<p>Mrs. Turner has approved my science fair idea! Today I will be working on the materials list so we can buy the necessary materials.</p> <p>After carefully searching, some of the materials must be bought online.</p>	Should have all materials by month-end.	<p><a href="https://www.amazon.com/Basket-Grass-Aspen-Shavings-Decoration/dp/B0CGLMVPTQ/ref=sr_1_2?keywords=wood%2Bexcelsior&amp;qid=1700953540&amp;sr=8-2&amp;th=1">https://www.amazon.com/Basket-Grass-Aspen-Shavings-Decoration/dp/B0CGLMVPTQ/ref=sr_1_2?keywords=wood%2Bexcelsior&amp;qid=1700953540&amp;sr=8-2&amp;th=1</a></p> <p>I used Amazon and looked at Home Depot, Micheals, Rona, and other hardware stores.</p>


November 4-5th, 2023	Today I will work on my background research document. (Looking for experts as well)	Done by month-end.	N/A	
November 11, 2023	My family and I have conversed and decided that the plant that I should grow to test on is chia. It is very tolerable in the winter and can be grown indoors. On the dining table we have a foil tray with damp soil and the chia seeds planted, fingers crossed they will grow!	1-2 weeks and they should be ready!	Nothing.	
November 17, 2023	The chia seeds have sprouted! They are very small, but I think that they will definitely grow healthily.	1-2 weeks and they should be ready!	Zilch.	
November 18-25th, 2023	Worked on research towards experts and also finding better materials. I think that by next weekend I can start the procedure write-up! Went to the library to look at better materials and also to check details for the Nutrien field trip. Mrs.	Done, but field trip is on December 5th, 2023	Amazon, Home Depot, Micheals.	

	<p>Turner has said that on the field trip I may have some opportunities to talk to experts or even learn on my own about soil erosion and how to prevent it.</p>			
<p>December 3, 2023</p>	<p>Today I have brainstormed how to test my three farm designs. I have sought to use a standing MAINSTAYS fan for the erosion by wind test, and my lab assistant (dad) has helped create a makeshift rain shower. I used an empty 2 liter pop bottle and poked miniscule holes into the bottom of it to use as "rain". I tested on my control farm without any soil erosion prevention methods. The wind test showed some erosion with many particles of soil eroding onto the cookie tray behind. I noted that because the layer of topsoil was quite dry before unleashing the wind, soil erosion took place.</p>	<p>DONE</p>		

	Had I watered the chia plants 5 minutes prior, wind erosion may not have taken place. I water the plants 3 - 5 times a day ~ In the morning at 7 am, on weekends at 10 am and 12 pm, when I come back from school at 3:00, and before sleep and when the sun usually sets at 7:30. The experiment took place at 4:00 PM today.			
December 5, 2023	Today me and my class went on a field trip to the Nutrien Agriculture building. I got the contacts of 2 experts at the Nutrien center, and will ask questions for more expert insight.	December end.	Vanessa Stiffarm ( <a href="mailto:vstiffarm@calgarystampede.com">vstiffarm@calgarystampede.com</a> )  <a href="http://www.nutrien.com/sustainability/strategy/sustainable-acres">www.nutrien.com/sustainability/strategy/sustainable-acres</a> for further background info (this is not a specific person, rather a web article)	
December 8, 2023	Today I will be preparing for the future experiment by building fiber logs. The fiber logs are composed of jute matting and wood excelsior rolled tightly into a log shape. There will be 4 logs bordering	End of today.	Petland (Shawnessy)	

	<p>the perimeter of the model farm, two 20 centimeter logs and 2 30 centimeter logs. The smaller 20 cm logs will cover the width while the longer two will cover the length. The measurement of the farm tray is about 20 x30 cm. The logs will protect the border of the farm preventing excess runoff, they may not completely prevent soil erosion though. Because I am doing this on a small scale, I needed to make sure that the materials used were also quite small. I am also taking a look at my ECB which has been adjusted to be coir fiber laid in a thin, breathable spread. The coir fiber, bought from Petland, is all natural. No tests will be run today, however I may build another model scale farm. (The control farm was completely wrecked after putting up against wind, rain and</p>			
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	<p>the flood simulator!)          Today I will also be contacting the experts from the Nutrien field trip this past Tuesday. I hope to receive insight on future impacts of soil erosion as another piece of why the prevention of soil erosion is important.</p>			
December 14, 2023	<p>Today in the classroom I have worked on contacting more experts. I have also created a respective plan and data document. The data document will be for when the experiment takes place after Christmas.</p>	Done	none	

<p>December 16, 2023</p>	<p>Today I have officially built model scale farms. Here is an image of the final product:</p>  <p>I have also written the methodology for setting up the experiment on a separate document.</p>			
<p>December 29, 2023</p>	<p>Today I am beginning the work on my slideshow (5-8 slides). I will also be refining the procedure and as requested make a draft for the experiment.</p>	<p>End of day.</p>	<p>None</p>	
<p>Jan 2, 2024</p>	<p>Happy New Year! Today is the day I run the trials for all 3 tests, wind, rain, and flood. The data has been compiled into a google document. I was quite surprised to see how well the fiber logs fard considering they are usually used on slopes! The “winner”,</p>	<p>End of day.</p>	<p><a href="https://docs.google.com/document/d/1FmWibCulpXG71JE-DRe4qofTtoV2gVVfYHBed5GiuhY/edit">https://docs.google.com/document/d/1FmWibCulpXG71JE-DRe4qofTtoV2gVVfYHBed5GiuhY/edit</a> Data doc</p>	



	<p>or best performing model farm was the ECB, proving my hypothesis correct. One thing I would improve next time is the timing of the experiment. Me and my lab partner (dad) were very cold in the garage, so if I were to perform such an experiment again, I would do it in better weather.</p>			
Jan 5, 2024	<p>Today, I will be creating the draft with all information on a document. This is so in the future I will be able to copy and paste refined information onto slides with ease.</p>	1-2 days	<a href="https://docs.google.com/document/d/1JOB35eYNwaBPXcy-plnur3KK_sMQltGkDV8tPw_v9-E/e/dit">https://docs.google.com/document/d/1JOB35eYNwaBPXcy-plnur3KK_sMQltGkDV8tPw_v9-E/e/dit</a>	Draft doc
Jan 6, 2024	<p>Today I finished the draft document! I can now easily use the information to make graphs, paste text onto the slideshow, and make a script.</p>	DONE	<a href="https://docs.google.com/document/d/1JOB35eYNwaBPXcy-plnur3KK_sMQltGkDV8tPw_v9-E/e/dit">https://docs.google.com/document/d/1JOB35eYNwaBPXcy-plnur3KK_sMQltGkDV8tPw_v9-E/e/dit</a>	Draft doc
Jan 7, 2024	<p>I worked on making the title, background research, hypothesis, variables, purpose,</p>	DONE	<a href="https://docs.google.com/presentation/d/11Z1mloSvJmw_eOyZRSq0rQzzejah9gZWEzdlvQvDc">https://docs.google.com/presentation/d/11Z1mloSvJmw_eOyZRSq0rQzzejah9gZWEzdlvQvDc</a>	

	material and procedure(s) slides today.		<a href="https://www.google.com/presentation/edit#slide=id.g2aa479e2ac6_0_10">GQ/edit#slide=id.g2aa479e2ac6_0_10</a> Slides	
Jan 10, 2024	Today is presentation day.	DONE	<a href="https://www.google.com/presentation/edit#slide=id.g2aa479e2ac6_0_10">GQ/edit#slide=id.g2aa479e2ac6_0_10</a> Slides	