

# Title: Science Fair Logbook\_2026

Name: Ara Akinsanmi, Grade 8, Renert School

DATE	ACTION	RESOURCES USED	OTHER NOTES
Wednesday September 24	Generated ideas and questions for research.	<ul style="list-style-type: none"><li>● <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC8723777/">https://pmc.ncbi.nlm.nih.gov/articles/PMC8723777/</a></li><li>● <a href="https://diabetes.org/about-diabetes/genetics-diabetes">https://diabetes.org/about-diabetes/genetics-diabetes</a></li><li>● <a href="https://www.sciencebuddies.org/science-fair-projects/science-projects/genetic-engineering?utm_source=chatgpt.com">https://www.sciencebuddies.org/science-fair-projects/science-projects/genetic-engineering?utm_source=chatgpt.com</a></li></ul>	Current questions: <ul style="list-style-type: none"><li>● How to prevent hereditary diabetes?</li><li>● How can gene therapy improve hereditary diseases?</li></ul>
Friday September 26	Researched topic to further develop research question.	<ul style="list-style-type: none"><li>● <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC8723777/">https://pmc.ncbi.nlm.nih.gov/articles/PMC8723777/</a></li></ul>	

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Thursday October 2	Developed project title. Explored non-viral plasmid vectors, RNA therapies, CRISPR-Cas9.	<ul style="list-style-type: none"><li>• <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC4347098/">https://pmc.ncbi.nlm.nih.gov/articles/PMC4347098/</a></li><li>• <a href="https://www.blazma.com/blogs/146?lang=en">https://www.blazma.com/blogs/146?lang=en</a></li><li>• <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC6302727/">https://pmc.ncbi.nlm.nih.gov/articles/PMC6302727/</a></li><li>• <a href="https://patienteducation.asgct.org/gene-therapy-101/vectors-101">https://patienteducation.asgct.org/gene-therapy-101/vectors-101</a></li></ul>	
Friday October 3	Background researched RNA therapies.	<ul style="list-style-type: none"><li>• <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC12033450/#sec2-14791641251334726">https://pmc.ncbi.nlm.nih.gov/articles/PMC12033450/#sec2-14791641251334726</a></li><li>• <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC5815912">https://pmc.ncbi.nlm.nih.gov/articles/PMC5815912</a></li></ul>	

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Thursday October 9	Finished background research on Non-Viral Plasmid Vectors, RNA Therapies, CRISPR-Cas9	<ul style="list-style-type: none"><li>● Check citations under each type of gene therapy in research document</li></ul>	<ul style="list-style-type: none"><li>● What actually makes gene therapy to be inaccurate?</li><li>● Concluded that CRISPR-Cas9 is most suitable for the project</li></ul>
Friday October 10	Created a research proposal composed of my background research, impact, and my next steps.		<ul style="list-style-type: none"><li>● <a href="https://www.canva.com/design/DAG1dC68B5M/9zxpFTgaoPgNzikkX5nfGQ/edit">https://www.canva.com/design/DAG1dC68B5M/9zxpFTgaoPgNzikkX5nfGQ/edit</a></li></ul>

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October 16	Filled gaps in research (Precision strategies / mutation type) Finalized Project Proposal	<ul style="list-style-type: none"><li>•</li></ul>	
October 22	Implemented feedback from mentor for Renert Research Proposal		
October 23	Rehearsed Renert Research Proposal		
October 24	Presented Research Proposal and planned the month		

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January 23	Reviewed project and drafted a schedule		
January 29	Met with mentor and finalized my project + plan		
January 31	Started research paper + homework from mentor	<b>“Genome engineering and disease modeling via programmable nucleases for insulin gene therapy; promises of CRISPR/Cas9 technology” Paper</b>	
February 2	Researched + continued hw		
February 3	Finishes and summarized research paper		

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February 4	Read and summarized Genome Engineering using Programmable Nuclei for Insulin gene therapy paper.	<ul style="list-style-type: none"><li data-bbox="919 435 1535 959">• <a href="https://www.wjnet.com/1948-0210/full/v13/i6/485.htm?appgw_azwaf_jsc=a1lr5AyNxr2AhjjGk3OBOsY8iaFP5WbBsnUbb3TNPgSia0VFa51xGa5ZGhds swcLuhbdErOXo5rECrONI5IPleswM RUiXO30nVAGyKzFKUoMqqN8WR -pDTye4mq2LZ3eVAsZRiy9OjS4xIS bouaicgceeRD6Jb5K3yczJy0tBzOoaK lm0Rh8cqks70Dle5KB1v8-ahTmKqjF 0by1Q8I-aFho Afpzs2RqgNtTuUQM kblzvM7qZ-ZHU5HzgCYW0oduwW OcydgzIoDA6WsaFoD0agJUj830t36O RTdO-r6eYI9A5ilBoBs1aWrIRXMvE 0yvpuIISsDyCuCy1ukakA7rw">https://www.wjnet.com/1948-0210/full/v13/i6/485.htm?appgw_azwaf_jsc=a1lr5AyNxr2AhjjGk3OBOsY8iaFP5WbBsnUbb3TNPgSia0VFa51xGa5ZGhds swcLuhbdErOXo5rECrONI5IPleswM RUiXO30nVAGyKzFKUoMqqN8WR -pDTye4mq2LZ3eVAsZRiy9OjS4xIS bouaicgceeRD6Jb5K3yczJy0tBzOoaK lm0Rh8cqks70Dle5KB1v8-ahTmKqjF 0by1Q8I-aFho Afpzs2RqgNtTuUQM kblzvM7qZ-ZHU5HzgCYW0oduwW OcydgzIoDA6WsaFoD0agJUj830t36O RTdO-r6eYI9A5ilBoBs1aWrIRXMvE 0yvpuIISsDyCuCy1ukakA7rw</a></li></ul>	
February 5	Read and summarized CAS9 Protein Deliver Non-Integrating Lentiviral Vector of Gene Correction in Sickle Cells Disease paper	<ul style="list-style-type: none"><li data-bbox="919 1027 1535 1219">• <a href="https://www.cell.com/molecular-therapy-family/advances/fulltext/S2329-0501%2821%2900037-1">https://www.cell.com/molecular-therapy-family/advances/fulltext/S2329-0501%2821%2900037-1</a></li></ul>	

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February 6	Read and summarized <a href="#"><u>paper 2</u></a>	<a href="https://www.cell.com/molecular-therapy-family/advances/fulltext/S2329-0501%2821%2900037-1"><u>https://www.cell.com/molecular-therapy-family/advances/fulltext/S2329-0501%2821%2900037-1</u></a>	
February 10	Read and summarized <a href="#"><u>paper 2</u></a>	<a href="https://www.cell.com/molecular-therapy-family/advances/fulltext/S2329-0501%2821%2900037-1"><u>https://www.cell.com/molecular-therapy-family/advances/fulltext/S2329-0501%2821%2900037-1</u></a>	
February 13	Started draft for research paper 1 and 2		
February 15	Continued drafting research section of paper about CRISPR Cas9.		Question to answer: What is the impact of this project?

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February 18	Continued drafting research section of paper about CRISPR Cas9.	Paper 1 and 2	Impact of this project: conventional treatments fixes symptoms not root cause. CRISPR change susceptibility for future progeny.
February 19	Finished draft for research section of paper about CRISPR Cas9, and outlined paper 2 write-up	Paper 1 and 2	

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February 23	Finished draft for research section of paper about sickle cell	Paper 1 and 2	
February 25	Finished sickle cell and animal application sections in paper. Started researching conventional diabetes strategies.	Paper 2	
February 26	Planned the next week Met with mentor Researched traditional treatment		

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February 27	Began research on conventional treatment Researched CRISPR applications	<ul style="list-style-type: none"><li>• <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC12713542/">https://pmc.ncbi.nlm.nih.gov/articles/PMC12713542/</a></li></ul>	
March 1	Wrote method section in paper Continues researching conventional treatment Started my data table Put my current citations into APA format		

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March 2	Edited method section in paper. Concluded research on conventional treatment and finished research section in paper. Wrote conclusion.	<ul style="list-style-type: none"><li>● <a href="https://guidelines.diabetes.ca/cpg/chapter12#bib0010">https://guidelines.diabetes.ca/cpg/chapter12#bib0010</a></li><li>● <a href="https://www.mayoclinic.org/diseases-conditions/type-1-diabetes/diagnosis-treatment/drc-20353017">https://www.mayoclinic.org/diseases-conditions/type-1-diabetes/diagnosis-treatment/drc-20353017</a></li><li>● <a href="https://pmc.ncbi.nlm.nih.gov/articles/PMC6501476/">https://pmc.ncbi.nlm.nih.gov/articles/PMC6501476/</a></li></ul>	
March 3	Wrote section in research paper on conventional treatment. Inserted data into table.		