Dates: **September 4 – November 14, 2025**	Subject: **Science**
Grades: **K-8 SA, K-5 AA**	

Science and Engineering Practices	These practices describe behaviors that scientists engage in as they investigate and build models and theories about the natural world and the key set of engineering practices that engineers use as they design and build models and systems. The National Research Council uses the term practices instead of a term like "skills" to emphasize that engaging in scientific investigation requires not only skill but also knowledge that is specific to each practice. (https://ngss.nsta.org/PracticesFull.aspx) • Asking Questions & Defining Problems • Developing and Using Models • Planning & Carrying Out Investigations • Analyzing and Interpreting Data • Using Mathematics & Computational Thinking • Constructing Explanations & Designing Solutions • Engaging in Argument from Evidence • Obtaining, Evaluating, and Communicating Information
Crosscutting Concepts	Crosscutting concepts have application across all domains of science. As such, they are a way of linking the different domains of science. They include patterns; cause and effect; scale, proportion, and quantity; systems and system models; energy and matter; structure and function; and stability and change. The *Framework for K-12 Science Education* emphasizes that these concepts need to be made explicit for students because they provide an organizational schema for interrelating knowledge from various science fields into a coherent and scientifically based view of the world. (https://ngss.nsta.org/CrosscuttingConceptsFull.aspx) • Patterns • Cause & Effect • Scale, Proportion, & Quantity • Systems & System Models • Energy & Matter • Structure & Function • Stability & Change
Science Learning Community Key Ideas	❑ Get to know your **students' strengths and interests** through science inquiry by doing mini science investigations. ❑ Consider **safety** by using appropriate tools and equipment and reviewing safety procedures with the students. ❑ Discuss how scientists **use observational skills** to learn about their world, record what they observe, try to figure things out, and share their findings. ❑ **Share experiences** in different ways: indoors/outdoors, whole group/small group/partners, at different school locations, through show & tell, music, dance, sports, art, etc. ❑ Get students involved and engaged in **asking questions** about their observations

Culminating Task (Including DOK terms in bold)	*How Can We Build a Science Learning Community?* In this 9-week unit, referencing The Multiple Means Learning (MML) approach and using Preferred Mode of Communication (PMC), students will begin the year with a short study on the nature of science. Students will learn about the importance of science and how scientists study the natural world. Important routines and safety procedures can be taught within this context. ● **Build** a classroom community that values every student and celebrates science. ● **Create** a safe and accessible physical environment, which encourages curiosity and communication. ● **Establish** procedures and routines for successful science learning. Culminating Task Ideas: *(These are suggestions for how to display the culminating task. They may also serve as a springboard for you to come up with your own idea)* ● Create a science safety poster ● Draw a scientist "doing science" ● Create a job posting for a STEM career
Duration of Unit	45 teaching days
Assessments to Be Used	Measures to assess progress may include portfolios, quizzes/tests, notebooks, journals, experiments, student work samples/ portfolios, rubrics, self-evaluations, presentations, teacher observations, teacher-made materials, homework assignments, and culminating tasks.
Materials (including virtual platforms) addressing standards and objectives for this unit	Teacher made materials Science Word Wall; Core Vocabulary Words Anchor Charts Manipulatives Classroom libraries Mosaic Curriculum Books Sora Internet; Online Videos Google Classroom Google Docs/Slides/Forms Rethink The Central Science Website offers additional information and resources that are offered city-wide to New York City public schools.
Key Terms/Vocabulary	Scientist, observe, measure, lab, compare, tools, explore, construction, methods, structure, microscope, balance, thermometer, lab coat, beaker, magnifier, goggles, safety, laboratory, curious, predict, inquiry, conclusion, hypothesis, label Additional vocabulary from books chosen for unit: Sight words:
Key Student Learning Objectives (IEP Goals: Demonstrating Knowledge of Students)	FOR YOUR USE—IDENTIFYING SPECIFIC STUDENT SKILLS THAT YOU WISH TO ADDRESS

Pacing Calendar for the Instructional Unit

Pacing Calendar can be adapted as needed to meet your students' specific needs

*****Refer to curriculum for details:**
https://docs.google.com/presentation/d/18A1dwRBkf2g2hPEnJmgNlma52yILDzte2oL67PLye6A/edit#slide=id.g23deff6c2b5_0_119

Topic & Schedule	FOCUS QUESTION	LESSONS	Vocabulary
Community Understanding Science & What Scientists Do **9/4/25-9/26/25** Week 1 - 3	What does a scientist do?	Scientists–who they are and what they do (Nearpod Activity)	Scientist, observe, measure, lab, compare
		Draw a Scientist Activity: *students draw an image of a scientist from their perspective.*	tools
		Building Structures: Hands-on engineering activities	Explore, construction, methods, structure
Safety How Scientists Work **9/29/25-10/22/25** Week 4 - 6	What tools do scientists use?	Scientific Tools and Safety: Flocabulary Video	Microscope, balance, thermometer, lab coat, beaker, magnifier, goggles
		Using Science Tools: Nearpod Game	safety
		Nearpod activity including video and questions about lab safety	laboratory
Inquiry Working Like a Scientist **10/23/24-11/14/25** Week 7 - 9	How do scientists find answers?	Games, videos and activities that support inquiry	curious
		Nearpod activity about how scientists find answers about the world	Predict, inquiry, conclusion, hypothesis
		Variety of science notebooking activities	label

Science Learning Community		
Suggested strategies for visual supports		
VOCABULARY	**COMMUNICATION**	**VISUAL PROMPTS**
● Word Walls ● Posters ● Diagrams ● Models ● Working Models ● Visual Dictionary ● Glossary ● Flip Book ● Student Artifacts ● Science Notebooks & Notebooking ● Graphic Organizers ● Photographs	● Daily Schedule (agenda) ● Choice Boards ● Picture Symbols, photographs, images ● Objects ● Devices ● Yes/No, Agree/Disagree, Key phrase symbols ● Turn and Talk ● Visual scripts ● Share ● First-Then boards ● Visual step-by-step instructions	● Visual Schedules; Task Sequence, Instruction Strips ● Timetables ● Labels ● Color Coding ● Identifying Groupings ● Labeling Designated Areas ● Visual Classroom Rules ● Safety signs

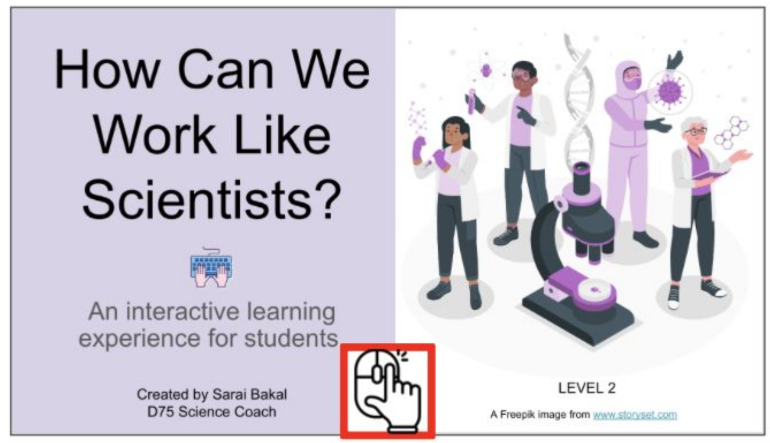
Sample Google Pear Deck Lessons

(make a copy to edit)

How Can We Work Like Scientists?

LEVEL 1

LEVEL 2



SCIENCE
WEEKLY PLAN

Class:

	Monday ___ / ___ / ___	**Tuesday** ___ / ___ / ___	**Wednesday** ___ / ___ / ___	**Thursday** ___ / ___ / ___	**Friday** ___ / ___ / ___
Science Objective					
Literature/Activity					
Assessment					
Materials Needed					
Differentiation					

**** Reproduce this template as needed and use to plan weekly instruction for each class

SCIENCE RUBRIC

Criteria	Developing	Progressing	Meet Expectation	Exceeding Expectation
	1	2	3	4
Problem and hypothesis	The problem is not stated, and research is unclear. Hypothesis is not stated using PMC.	The problem is somewhat addressed and somewhat researched. Hypothesis is unclear using PMC.	Problem is addressed and researched. Hypothesis is stated using PMC.	Problem is meaningful, and well researched. Hypothesis is clearly stated using PMC.
Experimental Design/Procedures and Materials	Procedure is not stated. Steps of procedure are unclear. Most materials are listed. Safety issues were not addressed.	Procedure is somewhat appropriate. Steps of procedure are somewhat listed. Most materials are listed. Safety issues were not addressed.	Procedure is appropriate. Steps of procedure are mostly listed. Most materials are listed. Safety issues were not addressed.	Procedure is appropriate, thorough. Steps of procedure are listed and mostly sequential, most materials are listed. Safety issues may have been addressed.
Data Collection	Use of the Metric System. No use of number trials/sample size. Little or no use of photos/ charts/graphs to display data.	Use of the Metric System. Minimal number of trials/sample size. Little use of photos/ charts/graphs to display data.	Use of the Metric System. Adequate number of trials/sample size. Fair use of photos/ charts/graphs to display data.	Use of the Metric System. Adequate number of trials/sample size. Some use of photos/charts/graphs to display data.
Analysis of Data	Conclusions are not supported by the data. No sources of error have been considered. Explanation is not attempted for how or why the hypothesis was supported or rejected. Reflection of what was learned and how it could be made better is not made using PMC.	Conclusions are not supported by the data. A few sources of error have been considered. Explanation is attempted for how or why the hypothesis was supported or rejected. Reflection of what was learned and how it could be made better is poor using PMC.	Conclusions are not clearly supported by the data. Some sources of error have been considered. Explanation is attempted for how or why the hypothesis was supported or rejected. Reflection of what was learned and how it could be made better is made using PMC.	Conclusions are supported by the data. Some sources of error have been considered. Explanation is made for how or why the hypothesis was supported or rejected. Reflection of what was learned and how it could be made better is made using PMC.
Presentation	The student does not participate even with prompting and support and background knowledge is unclear using PMC.	The student somewhat participates with moderate promoting and support and speaks using moderate grammar. The student is able to present background knowledge in a somewhat clear manner using PMC.	The student participates with minimal prompting and support and speaks clearly, using good grammar and is able to present background knowledge in a somewhat clear manner using PMC.	The student fully participates with no support and speaks clearly, using good grammar and is able to present background knowledge in a clear manner using PMC.
Knowledge and Understanding	Can somewhat identify the states of matter (solids and liquids) and is unclear when providing examples and descriptions of characteristics. Can draw the particle structure of matter, with adult assistance. Students cannot identify one change of state between matter, such as melting (solid to liquid).	Can somewhat identify the states of matter (solids and liquids) and provide less than five examples and descriptions of characteristics. Can draw the particle structure of matter, with minimal assistance. Student can identify one change of state between matter, such as melting (solid to liquid).	Can identify the states of matter (solids and liquids) and provide five examples and descriptions of the characteristics for these. Can accurately draw the structure of particles for solids and liquids.	Can identify the three states of matter and give ten or more descriptions of the characteristics (hard, strong, soft weak) and examples (ice and water) of solids and liquids.