STANDARD 7 SELF-RATING: 4

Learners engage in self-directed STEM leaning guided by professional staff members who are effective facilitators of learning.

Pinecrest North Preparatory is committed to empowering students as self-directed learners in STEM, guided by educators who serve as effective facilitators of learning. Our instructional approach emphasizes student autonomy, self-reflection, and goal setting, ensuring that learners take an active role in their educational journey while developing confidence in their STEM skills and abilities.

Students are encouraged to self-assess their understanding and reflect on their confidence in STEM through structured activities and discussions. By engaging in post-activity reflections, students evaluate their strengths, areas for growth, and overall learning experiences. This process not only reinforces their comprehension but also fosters a sense of self-awareness and accountability in their learning.

Observing their peers also provides valuable insight into their confidence levels. Learners who actively participate, ask questions, and take risks are often the most confident, demonstrating their willingness to engage deeply with STEM concepts. Our teachers cultivate an environment where students feel comfortable experimenting, making mistakes, and learning through trial and error —an essential part of scientific and engineering thinking.

To nurture a growth mindset in STEM learning, our educators provide consistent feedback that is constructive, and progress focused. Teachers use:

- Positive Reinforcement: Encouraging words and affirmations that boost students' confidence and motivation.
- Rubrics and Performance Feedback: Students receive detailed feedback on their progress rather than solely focusing on performance, allowing them to understand their strengths and areas for improvement.
- Reflective Learning Opportunities: Learners are guided to assess their performance and build confidence through structured self-reflection.

To empower learners with a sense of ownership over their education, our STEM program provides students with choices in their learning experiences. Students are encouraged to:

- Select their preferred learning modalities (e.g., hands-on projects, technology-based learning, or collaborative work).
- Determine the strategies and approaches they wish to use in completing STEM tasks and projects.
- Engage in goal-setting exercises, helping them develop a sense of agency, motivation, and long-term commitment to their learning.

Our commitment to student autonomy and engagement is supported by various data sources and instructional evidence:

- Lessons, Projects, and Units Featuring Student-Directed Learning:
 - Project-based learning experiences where students select their approach to problem-solving.
 - Student-driven research projects that integrate inquiry, experimentation, and data analysis.
 - STEM challenges and competitions require independent planning and execution.
- Data Analysis Supporting Self-Directed Learning and Instructional Outcomes:
 - Student reflections and self-assessments demonstrating increased confidence and mastery of STEM concepts.
 - Performance data showing improved student outcomes over time due to self-directed learning strategies.
 - Data chats between students and teachers, where learners analyze their own progress, identify areas for improvement, and set personalized learning goals.

Our goal is to continue expanding opportunities for choice, self-assessment, and self-directed learning, ensuring students have an active role in shaping their educational experiences. Our aim is to develop independent thinkers who embrace challenges, take ownership of their learning, and confidently apply STEM knowledge in real-world settings.

STEM Challenges















Middle School Math - Ms. Picado **Recipe book-Multiply & Divide Fraction**





Ingredients for 	Wet or Dry?	Divide Wet Ingredients by 2 Divide Dry Ingredients by 1 ½	- Make the rec
powder	Dragy	3 × 4 3	for a tr
Balking Poust	r Dry	2-2 (5)	Jor a sin
Baking Sa	4 Dry	34-七 (3)	party of
espresso	Dry	t	24
Salt	Dry	キューシ	
vegetable	Wet	1.5 St	
failter	wet	+ = +	

C- B

STEM Process

Ask

Imagir

Plan

Creat Test

	NO, be cause a necipe that serves & people cannot
	serves 50 people. Yes, we can Lise the Recipe
	for 3 people, but there will be leftover.
	We can multiply the impredients by another
	number to make enough for 50 people, we can divide the ingredients by another number of the fraction to real
	of the receipt.
	Multiplication and Division.
	had out problems
	See recipe book for worked out problems.
	we use adjusted the ingredients to make more.
	yes, we object a line to ringredients
	Ves, we neduced the amount of the
	to make less.
VIC	We can multiply the original ingredients og
ve	a whole # on bigger fraction to move more. H
	Lila Fartion of Whole
	we can divide by a smaller factor of



Physical Science - Ms. Falabella Newton's Law of Motion











9th Grade - ELA Ms. Alfonso













Chess Club













STEN DAY











ESCAPE ROOM 7th Grade





Empire Autopsy 9th Grade











STEN WRITING 4th Grade

4th Grade - INTERDISCIPLINARY UNIT

Week of 02/24/25

Topic: Energy

Reading:

Standard: LAFS.4.RL.3.7 Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.

- · Objective: Students will read a set of texts based on energy sources and how energy can be transferred.
- Activity: Students will compare and contrast the three types of energy and determine how energy can remain the same throughout a transfer and how it can change.

Writing:

Standard: ELA.4. C.1.4 Write an expository text about a topic, using multiple sources, elaboration, and an organizational structure with transitions.

- Objective: Students will compose an expository paragraph evaluating a recently conducted science lab, identifying effective components, and suggesting improvements for future experiments.
- Activity: Students will write a reflection paragraph explaining how the Science lab is being conducted and how it can be improved when conducted the next time. They will explain what parts of the lab worked and should remain the same and what changes can be made to improve the experiment results.

Science:

Standard: SC.4.P.11.2 Identify common materials that conduct heat well or poorly

- Objective: Students will identify which light bulb, compact fluorescent or incandescent, will produce the most heat.
- <u>Activity:</u> After touching and seeing each light bulb, students will form a hypothesis, to determine which light bulb will produce the most heat. The teacher will place one light bulb in the lamp and turn it on for 1 minute. Students will hold a thermometer 6 inches away from the light bulb for one

minute and record the temperature. The teacher will change the bulb, turn it on for 1 minute and have students again hold the thermometer 6 inches away from the light bulb for 1 minute and record the time. Students will then check if their hypothesis was correct. They will discuss and record their observations as a group. Finally, they will write their conclusions and determine whether their hypothesis was correct.

Social Studies:

Standard: SS.4.A.1.1 Analyze primary and secondary resources to identify significant individuals and events throughout Florida history.

- Objective: Students will learn about Thomas Edison and his amazing inventions. They will learn about his life and his invention processes.
- <u>Activity:</u> Students will work in small groups to complete a Thomas Edison passage and complete the assignment through Google Classroom. As they read the text, students will be provided index cards and fill out vocabulary word flash cards. Everyone in the group will be assigned a role to complete this activity together.

Math

Standard: MA.4.M.1.1. Select and use appropriate tools to measure attributes of objects

- Objective: Students will learn how to take the temperature of a lightbulb and how to fill in the data into a graph.
- <u>Activity</u>: Students will convert various temperatures from Fahrenheit to Celsius using a virtual thermometer and jot down their data into their journals. Students will then come up to the Clear Touch and chma temperature from Fahrenheit to Celsius.





4th Grade Math Thermometer Lesson





