

**Academia Santa Rosa de Lima
Bayamón, Puerto Rico
Science Syllabus 2023-2024
4th Grade Bilingual**



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**4th Grade Science
Overview
2023 – 2024**

I. Description

This document is designed to provide parents/guardians/community an overview of the curriculum taught in the fifth grade science classroom. This document supports families in understanding the learning goals for the course, and how students will demonstrate what they know and are able to do. The units objectives describe ways in which students are expected to engage in the content. The unit objective weave the other knowledge and skills together so that students may be successful problem solvers and use knowledge learned efficiently and effectively in daily life.

The course enhances and expands the student’s abilities and skills in the following areas:

- integrated for Science, Technology, Engineering and Mathematics (STEM)
- analysis
- critical thinking
- problem solving
- collaborative team building

II. Course timeline

Grading Period 1

Unit 11: Matter and mechanics

Unit overview: In this unit, students will compare and contrast that matter by its observable, measurable, and testable physical properties. Using descriptive investigations, students will understand that physical properties can be measured using a variety of tools, such as rulers, balances, and thermometers. In this unit, students will compare and contrast that matter by its observable, measurable, and testable physical properties. Using descriptive investigations, students will understand that physical properties can be measured using a variety of tools, such as rulers, balances, and thermometers.

Unit 00: Let's investigate science

Unit overview: Students will be able to describe how scientists use a classification system to group living organisms

Lesson	Objectives	Date
01: <i>Matter</i>	At the end of the lesson, the student will: <ul style="list-style-type: none">▪ Describe the conditions of the term matter▪ Compare and contrast homogeneous and heterogeneous mixtures▪ Identify water as the only substance that can be found in nature in the three states of matter▪ Classify different examples of physical and chemical change▪ Identify what is matter and what is not.<ul style="list-style-type: none">• Determine the buoyancy of matter in water▪ Distinguish between what is matter and what is not▪ Determine the method of separation of mixtures that is best for different types of mixture▪ Compare and contrast the three states of matter▪ Calculate the density of different examples of matter according to their	August

<p>05: <i>Classifying living things</i></p>	<p>mass and volume</p> <ul style="list-style-type: none"> ▪ Identify the different changes in states of matter <p>At the end of the lesson, the student will:</p> <ul style="list-style-type: none"> ▪ Explain the ways in which living things are classified ▪ Mention and describe the characteristics of living things 	<p style="text-align: center;">September</p>
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Grading Period 1		
Unit 10: Ecosystem and the conservation of our environment		
<p>Unit overview: In this unit, students will learn that living organisms within an ecosystem interact with one another and with their environment. Students will study how producers need sunlight, water, and carbon dioxide to produce their own food. Consumers depend on other organisms for food to survive. In this unit students will complete their studies about producers and consumers. In addition, students will learn how the flow of energy in an ecosystem begins with the Sun and is transferred from organism to organism in chains and food webs. Students will study how environmental changes caused by natural disasters such as wildfires and droughts affect the food chains and food webs in an ecosystem. Based on evidence, students will learn how to predict possible effects that these environmental change will have on ecosystems.</p>		
Lesson	Objectives	Date
<p>01: <i>The environment around us</i></p>	<p>At the end of the lesson, the student will:</p> <ul style="list-style-type: none"> ▪ Define ecosystem. ▪ Identify biotic and abiotic elements in different ecosystems. ▪ Define what ecology is. ▪ Show and explain what the elements of an ecosystem are. ▪ Define forest. ▪ Explain why forests are a valuable natural resource 	<p style="text-align: center;">September/October</p>

Grading Period2

Unit 10: Ecosystem and the conservation of our environment (continuation)

Unit 08: Let's explore our natural resources

Unit overview: Natural Resources introduce students to the variety of substances that exist naturally in the world. Students will discover how humans use these resources for various purposes. They will also learn how to categorize resources in two different ways.

Lesson	Objectives	Date
03: <i>Energy flow in ecosystem</i>	At the end of the lesson, the student will: <ul style="list-style-type: none">▪ Classify different organisms as producers, consumers or decomposers.▪ Analyze and explain the importance of maintaining the balance of ecosystems.▪ Identify the ways in which people can help maintain the balance of ecosystems.▪ Evaluate the role of decomposers in ecosystems.▪ Describe the different types of ecosystems.▪ Represent the flow of energy in an ecosystem with a food chain.▪ Identify the producer and the different types of consumers in a food chain.	October/November
04: <i>Use of natural resources</i>	On successful completion of this lesson, students will be able to: <ul style="list-style-type: none">▪ Distinguish between renewable and nonrenewable natural resources▪ Examples of renewable and nonrenewable resources from around their community.▪ Explain the relationship between human beings and natural resources.▪ Evaluate their use of natural resources.	November/December

	<ul style="list-style-type: none"> ▪ Explain how they can help in the conservation of natural resources. ▪ Identify the renewable resources that are used in the production of energy in Puerto Rico. ▪ Describe the problems that the misuse of natural resources can cause. 	
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Grading Period 3		
Unit 09: The Oceans		
<p>Unit overview: Oceans of the World introduces students to the five oceans across the Earth. Students will discover facts about each one, including the animals that live in them. They will also be able to identify where each one is located throughout the world. In this unit students will learn about the marine elements of our natural environment and the importance of the water cycle. Students should be able to identify aquatic and marine features of our environment such as lakes, streams, rivers, oceans and seas. From this lesson plan they should be able to understand the effects of the water cycle - heating and cooling of water and understand the importance of conserving water.</p>		
Lesson	Objectives	Date
<p>01: <i>Water everywhere</i></p>	<p>At the end of the lesson, the student will:</p> <ul style="list-style-type: none"> ▪ Describe the water cycle. ▪ Distinguish the processes of evaporation, condensation, precipitation, and solidification. ▪ Distinguish between oceans and seas. ▪ Explain what causes waves and ocean currents. ▪ Describe what the surface of the bottom of the ocean is like. ▪ Explain how scientists obtain information about the bottom of the ocean. ▪ Mention and describe the different areas or sections that have been identified at the bottom of the ocean. 	<p>January</p>

<p>02: The oceans and its wonders</p>	<p>At the end of the lesson, the student will:</p> <ul style="list-style-type: none"> ▪ Describe life in the oceans ▪ Give examples of sea organisms ▪ Demonstrate how life is distributed in the oceans ▪ Define what a coastal zone is. ▪ Describe life in the depths of the ocean ▪ Reflect on the importance of the oceans in terms of commerce, tourism, and economy ▪ Recognize oceans as a natural resource. ▪ Mention the benefits we receive from the oceans 	<p>February/March</p>
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<p>Grading Period 4</p> <p>Unit 09: The oceans (continuation)</p> <p>Unit 06: Light and heat</p> <p>Unit overview: Students learn about the definition of heat as a form of energy and how it exists in everyday life. They learn about the three types of heat transfer—conduction, convection and radiation—as well as the connection between heat and insulation. Understanding heat transfer is essential knowledge for the engineering of mechanical, chemical and biological systems.</p>		
Lesson	Objectives	Date
<p>03: <i>Contamination everyone's problem</i></p>	<p>At the end of the lesson, the student will:</p> <ul style="list-style-type: none"> ▪ Identify the sources of contamination that affect the ocean ▪ Describe the causes of an oil spill ▪ List the consequences of the contamination of the ocean for sea life ▪ Comprehend how the contamination that happens on the earth reaches the oceans ▪ Design a strategy for cleaning up an oil spill in a diorama ▪ Describe how solid waste left on beaches and deforestation affects 	<p>March/April</p>

<p>03: It's hot outside</p>	<p>organisms</p> <ul style="list-style-type: none"> ▪ Show how they can contribute to help reduce environmental contamination in coastal zones <p>At the end of the lesson, the student will:</p> <ul style="list-style-type: none"> ▪ Define what heat is ▪ Identify the sources receivers of heat by using different examples ▪ Demonstrate and define the processes of heat transmission: conduction, convection, and radiation ▪ Differentiate between a cold blooded animal and a warm blooded animal ▪ List some of the uses for heat in medicine, the home, and industry ▪ Identify, in different examples, the fuel, the oxidizing agent, and the initial temperature ▪ Recognize the application of solar energy ▪ Recognize the importance of the Sun as source of energy for Earth. 	<p style="text-align: center;">April/May</p>
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This record is subject to change according to the needs of the students, given learning experiences and other factors that may arise.

III. Reference books and teaching materials

- Module: Digital Edusystem Platform
- Curriculum Framework: Science Program
- Content Standards: Science
- Printed material
- Educational Links
- Technology equipment (computer, radio, projector)

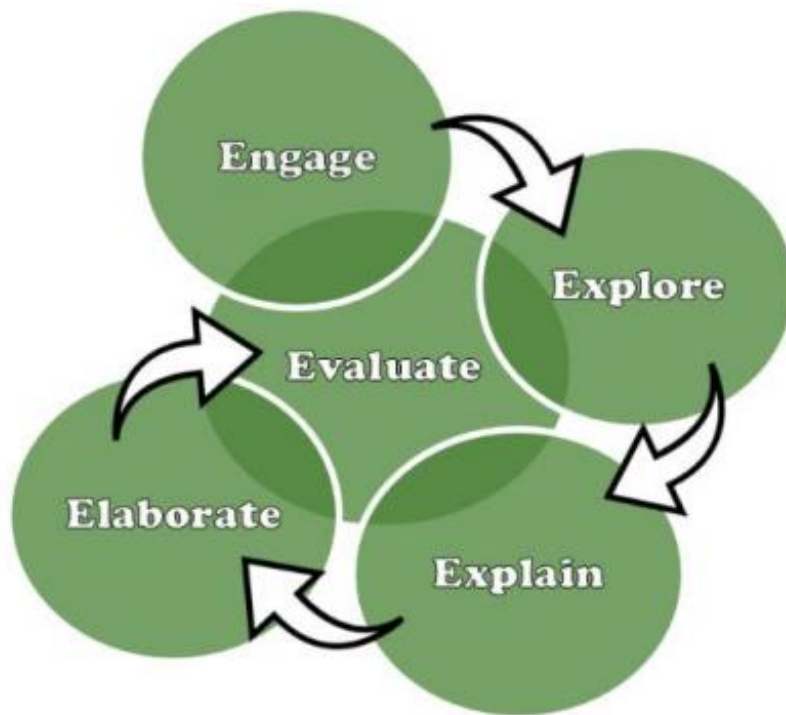
Note: Test dates, test fees, and the order presented may be subject to change, according to student needs.

IV. Late Work Policy

Students will lose 5 points daily for missing assignments. Students may lose up to 15 points for missing assignments. If the assignment is never received, up to three days without an excuse, the student will receive a zero score (0 point).

V. Instructional model

The structure, guidelines or model in which students engage in a particular content that ensures understanding of that content.



- It is based on the constructivist learning theory, which states that learners build or construct new ideas based on their experiences.
- It represents a recursive cycle of cognitive stages in inquiry-based learning.
- Stages are intended to be completed sequentially; however, you may revisit a stage more than once during the 5E process.

- Typically, not all five stages would be experienced in a single classroom period, but all five would certainly be embedded in a series of lessons that would develop a particular concept, lasting days or weeks.
- It is used to develop conceptual understanding over time with each stage building on the previous stage.

VI. Course requirement

- Know the criteria and the evaluation process on which your academic work will be graded.
- Bring the required materials to the classroom.
- Attend the Academy regularly and on time.
- Attend with complete and clean school uniform according to the student handbook.
- Bring written excuses when absent.
- Perform their academic duties responsibly.
- Make up assignments and evaluations covered in class when absent.
- Keep the classroom clean and their work area organized.
- Take care of classroom materials and equipment.
- Use appropriate and respectful language.
- Bring notices, permission slips, or other materials signed by their parent and/or guardian (forged signatures are prohibited).

VII. Consequences hierarchy

1. Verbal Warning by Teacher
2. Student/Teacher Conference
3. Friendly Discipline Referral
4. Parent Phone Call
5. Parent/Teacher Conference
6. Official Discipline Referral

***Exception:** There are circumstances in which the teacher may write a direct referral without parent contact. These include fighting, cursing, and/or disrespect to teacher.*

VIII. Special Notice

Institutional Norms (*Should not be altered*)

- Evaluations are reported to students five days in advanced.

- No evaluations given on Mondays.
- The teacher will have a period of ten working days to report the grades obtained to the students.
- No assignments given for weekends, or after a long rest period.
- The number of exams per day can't exceed two per day.

This Syllabus may be subject to change according to different situations that arise during the school year.



**Academia Santa Rosa de Lima
Bayamón, Puerto Rico
Science 4th Syllabus 2023-2024**

Syllabus Confirmation Sheet

Student Name: _____

Date: _____ Grade: _____ Group: _____

Here by I certify that I have received and read the Science Class Syllabus for the
2023-2024 school year.

Parent Name

Parent Signature

Parent or guardian email

Please return this document signed first week of class.