2nd Grade Unit 1: I Am A Scientist

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Unit Overview

The student will use scientific process standards to acquire and demonstrate an understanding of the concepts in this unit.

This unit reviews the roles and responsibilities of scientists when conducting classroom and outdoor investigations. Students are expected to follow home and school safety procedures and use environmentally appropriate and responsible practices.

- Students will set up Science Notebooks.
- Students will learn the safe practices scientists use such as wearing safety goggles, washing hands, and using materials appropriately.
- Students will sign a safety contract.
- Students will learn classroom routines that support conservation, including where and how to dispose of and recycle paper, plastics, and metals.
- Students will develop scientific language through shared discussion.
- Students will develop communication skills through scientific discussions in whole group, small group, and partners.

In first grade, students were introduced to these roles and responsibilities.

In second grade, students must review these safety procedures before conducting any scientific investigation.

El estudiante usará estándares de procesos científicos para adquirir y demostrar comprensión de los conceptos en esta unidad.

Esta unidad introduce a los estudiantes las funciones y responsabilidades de los científicos cuando conducen investigaciones en el salón de clase y al aire libre. Se espera que los estudiantes sigan los procedimientos de seguridad en el hogar y en la escuela. También, usar prácticas ambientalmente apropiadas y responsables.

- Los estudiantes crearán cuadernos científicos.
- Los estudiantes aprenderán las prácticas seguras que usan los científicos tales como el uso de lentes de seguridad contra las salpicaduras químicas, lavado de manos y el uso apropiado de materiales.
- Los estudiantes firmarán un contrato de seguridad.
- Los estudiantes aprenderán rutinas de la clase que apoyen la conservación incluyendo cómo y dónde se puede desechar y reciclar papel, plástico y metales.
- Los estudiantes desarrollarán lenguaje científico a través de conversaciones analiticas compartidas.
- Los estudiantes desarrollarán destrezas de comunicación a través de conversaciones científicas en grupo completo, grupo pequeño y parejas.

En primer grado, los estudiantes fueron introducidos a estas funciones y responsabilidades.

En segundo grado, los estudiantes tendrán que repasar estos procedimientos antes de llevar a cabo una investigacion cientifica.

Suggested Pacing

9 Total Days (7 Instructional Days, 2 Flex Days)

- Days 1 - 7: Roles and Responsibilities of Scientists (2.1AB, 2.3C)
- Days 8 - 9: Flex Days

Academic Vocabulary

ESL Support: Concept Overview

2.1AB

safe / seguro
safety / seguridad
safe practices / prácticas de seguridad
investigate / investigar
Investigation / investigación
reuse / reutilización

2.3C

science / ciencias
scientist / científico

Before You Begin

- **Check the Materials List**
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Day	TEKS	Lesson Focus	Lessons and Activities Teacher Notes
1	2.1A 2.1B 2.3C	Describe the importance of safe practices. Identify what a scientist is and explore what different scientists do.	**Engage:** 1. Ask students to describe their idea of a scientist. Include what scientists look like and do. Create a graphic organizer or anchor chart to collect students' ideas. 2. Students formulate an explanation for how scientists do their work using the "Doing Science" probe from Uncovering Student Ideas in Science Vol. 3 by Page Keeley (p. 93-100). **Materials:** Uncovering Student Ideas in Science Vol. 3, p. 93 (display or print)

2	2.3C	Explore scientists and describe what they do.	**Explore:** 1. Show images and/or video of different types of scientists from history and today. Include resources from Science Kids - *Science Jobs and Careers* http://www.sciencekids.co.nz/sciencefacts/careers.html and DragonflyTV Real Scientists and references to new discoveries such as Ajay Bhatt, co-inventor of the USB. **Suggested scientists include:** **Matter and Energy:** Ben Franklin, Thomas Edison **Force, Motion, and Energy:** Albert Einstein, Isaac Newton **Earth Science:** Sue Hendrickson, Florence Bascom **Space Science:** Mae Jemison, Galileo **Organisms and Environment:** George Washington Carver, Jane Goodall **Technology Innovations:** Ajay Bhatt, Steve Jobs 2. Students work in groups to identify different topics that scientists study. 3. Compare the findings/accomplishments of current and historical scientists. Ask and discuss: ● *Are all of these people considered scientists? Yes.* ● *What does each of the different scientists study?* ● *Are we scientists? Yes.* ● *What do we do that makes us all scientists? Answers will vary*. **Materials:** websites above
3	2.3C	Explore different scientists as a class and add to graphic organizer.	**Explain:** 1. Create a class graphic organizer to begin recording different types of scientists and what they study. Continue adding to the list throughout the year. 2. Begin setting up science notebooks. Refer to the recommendations in the Everyday Tools for Science (previously Getting Started Guide) and this PowerPoint / Spanish. 3. Introduce vocabulary a scientist might use when conducting investigations, such as prediction, question, plan, observations, and explanations. 4. Students begin developing explanations for these terms in their science notebooks. 5. Begin creating a word wall using the terms and student explanations. **Materials:** chart paper, science notebooks
4	2.1AB	Explain the importance of safe practices. What can you do to be safe during classroom and outdoor	**Explain:** 1. Ask students: ● *Why is it important for scientists to use safe practices while they work?* ● *What are safe practices we will want to use during our investigations?*

		investigations? ¿Qué puedes hacer para seguir las prácticas de seguridad durante las investigaciones en el salón de clase y al aire libre? What are some ways to dispose of natural resources in our classroom? ¿Cuáles son algunas maneras de deshechar de los recursos naturales en nuestra clase?	2. Give groups of students a card containing a picture or description of a safety situation such as, "You have spilled something during an investigation." 3. Students present their situation by giving a demonstration or acting out the scenario. Students may use science tools and other materials for their demonstrations. The class then discusses the safe practices students should use in each situation. 4. Take pictures of each group to post in the room along with lab safety rules. Students may collaborate to create a class safety procedures poster using their group's picture. 5. Pass out and review Safety contracts / Spanish. Students attach contracts to the inside cover of their science notebooks. **Materials:** safety situation cards (1 per group), poster/paper, science safety contracts (1 per student)
5	2.1AB, 2.4A	Explore the lab and science tools.	**Explore/Explain:** 1. Explore Science Tools (day 1)- Give students the opportunity to explore the lab and science tools. Continue discussion of safe practices. 2. Students fill out the **Science Tools** / Spanish sheet as they explore materials in the lab. Students will explore 2 tools today. **Materials:** science tools sheet (1 per student), science tools listed in TEK 2.4A
6	2.1AB, 2.4A	Explore the lab and science tools.	**Explore/Explain:** 1. Explore Science Tools (day 2)- Students will explore 2 more science tools and fill out the science tools sheet from Day 1. During these 2 days, students will explore 4 tools. 2. Students can jigsaw their findings after exploration. **Materials:** science tool sheet from Explore Science Tools Day 1
7	2.1B	Discuss the importance of conservation and set classroom routines.	**Explore/Explain:** 1. Teach classroom routines that support conservation, including where and how to dispose of and recycle of paper, plastics, and metals. 2. Review science safety and routines. Glue Science Safety Contract (signed) into science notebooks. **Materials:** objects made of paper/plastic/metal, science safety contracts (signed)
8	Flex Day		Optional STEAM/ STEM Activity

9	Flex Day	 Rate this Unit Click the icon above to review ratings	Optional STEAM/ STEM Activity

Additional Resources	
Connections - Cross-Curricular Connections - PebbleGo: Science and Engineering Methods - PBS Kids DragonflyTV - Real Scientists - PBS Kids Cool Careers in Science - Science Kids: Science Jobs and Careers	**STEAM/STEM** Create a digital product about a scientist. Create posters about science safety routines. **Mentos Lab -** Predict, record and explain what happens when mentos is mixed with soda and other liquids.
Assessments **Grade 2 Assessment Item Bank/ Spanish**	

Cross- Curricular Connections				
Science	**Technology**	**Engineering**	**Arts**	**Math**
Properties of Matter 2.1AB Safety 2.3C What Scientist Do	**Technology Integrated Learning Exp.** **Creativity And Innovation** -Create digital product to share information about a	**Engineering Design Process** -Introduce Science and Engineering practices with Pebble Go. Have students work in groups to explore different sections and then collaborate to share what they learned.	**Visual Arts** -Create posters sharing science safety for investigations.	-Science and Math on Pebble Go shows how mathematics is used in Science.

	particular scientist's contributions to their field -Set up technological routines for communication about ideas (Padlet, Google Classroom, Google docs, etc)	-Do an instant design challenge to introduce the Engineering Design Process. Pause throughout to explain to students where they are in the process and what behaviors and conversations look like/ sound like at the different stages.		