



GRADE 3

LESSON PLAN AND ACTIVITIES

Written in accordance with the Language Arts,
Social Studies, and Science Standards

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Together we foster lifelong readers

COMPLEXITY

F&P Guided Reading Level O / Lexile Level 660L

INSTRUCTIONAL FOCUS:

Staircase of Complexity / Reading Rigor



TEXT TYPE

Informational Text: Science

INSTRUCTIONAL FOCUS:

Balancing Informational and Literary Text



OBJECTIVES

- Infer and predict the topic of a book.
- Set a purpose for reading.
- Use text and graphic features to clarify comprehension.
- Draw conclusions from a text.
- Compare and contrast.
- Use context clues to identify the meaning of unfamiliar words.

- Identify and use antonyms and synonyms to understand text.
- Explore word relationships and use words learned through reading.
- Build a simple device and explain how it works.
- Connect ideas in the text and real-life situations.
- Write an explanatory text.

MATERIALS

- index cards
- craft materials: sticks, pipe cleaners, string, small wheels, etc.
- *Diagrama de Venn, Tabla de cuatro columnas*
(Graphic Organizers #6 and #32)*

SUMMARY

Playing on a seesaw, using an elevator, going up a ramp, or riding a bicycle are activities we do often. However, we would not enjoy these activities without the simple machines that make them possible. A lever, a pulley, an inclined plane, and the wheel are some of the inventions that have given rise to a wide assortment of machines and devices that make our lives easier.

STANDARDS

SLAR CCSS RI 3.1, RI 3.2, RI 3.3, RI 3.4, RI 3.7, RI 3.8, RI 3.10, RF 3.3.c, RF 3.4, W 3.2, W 3.4, W 3.5, W 3.7, W 3.8, W 3.10, SL 3.1, SL 3.2, SL 3.3, SL 3.4, SL 3.6, L 3.1, L 3.2, L 3.3, L 3.5.b, L 3.6

Math CCSS 3.NBT, 3.OA

SLAR TEKS 3.2.A, 3.2.B, 3.2.C, 3.3.A, 3.4.C, 3.11.A, 3.12.A, 3.13.A, 3.13.B, 3.13.D, 3.15.A, 3.15.B, 3.17.B, 3.17.C, 3.17.D, 3.20.A, 3.22.B, 3.22.C, 3.23.C, 3.23.D, 3.24.A, 3.24.D, 3.24.E, 3.24.K, 3.26.B, 3.27.A, 3.29.A, 3.29.B, 3.30.A, 3.31.A

Math TEKS 3.1.C, 3.4.K

Science TEKS 3.5, 3.6.A-C

NGSS 3-PS2-1, 3-PS2-2, 3-5-ETS1

* To download the Spanish Graphic Organizers in this lesson go to: santillanausa.com/spanishliteracy



VOCABULARY

INSTRUCTIONAL FOCUS:
Academic Vocabulary

- aligerar** – hacer que algo sea menos pesado / to lighten
- cima** – la parte más alta de un terreno o de una construcción / peak
- duplicar** – multiplicar por dos algo / to double
- escarpado(a)** – que tiene mucha pendiente, empinado / steep
- extraer** – sacar / to extract
- fijo(a)** – que no se mueve, inmóvil / fixed
- gradual** – que se desarrolla poco a poco / gradual
- móvil** – que puede moverse o ser movido / mobile
- ranura** – pequeña abertura o hueco / opening
- zambullirse** – meterse bajo el agua de golpe / to plunge

Advanced Vocabulary

- ángulo agudo** – ángulo que mide menos de 90 grados / acute angle
- eje** – barra que atraviesa un cuerpo que gira / shaft
- equilibrio** – posición estable / balance
- fricción** – roce o rozamiento / friction
- palanca** – barra para levantar un peso / lever
- polea** – rueda que sirve para levantar pesos sin esfuerzo / pulley
- rampa** – plano inclinado para subir y bajar / ramp
- resistencia** – oposición a una fuerza / resistance

VOCABULARY DEVELOPMENT

- ▶ Introduce vocabulary by providing a description, explanation, or example of all the words presented in the vocabulary section and any additional vocabulary you may wish to discuss prior to the reading activities. Consider using pictures, sketches, and/or pantomime to explain the meaning of a word. You may also tell a story to integrate some of the terms.
- ▶ Make sure students understand all the vocabulary needed to complete the activities (e.g., *analogía*, *antónimo*, *conclusión*, *sinónimo*) and instruction words, such as *apoya*, *compara*, *contrasta*, *describe*, *explica*, *presenta*.
- ▶ Ask students to explain what each word means in their own words. Then, have them create flash cards. Distribute index cards and have students write these headings, leaving space for their answers, on each card: *Palabra*, *Mi definición*, *Oración (ejemplo)*. Then ask student pairs to test each other using these flash cards.
- ▶ Explain that an antonym is a word that means the opposite of another word. Then point out as examples the words *fijo* and *móvil* in the vocabulary list. Ask students to work with a partner to look for an antonym in the text for the following words (answers are in parentheses): *aumentar* (*disminuir*, p. 18); *bajar* (*subir*, p. 25); *fácil* (*difícil*, p. 24); *lentitud* (*rapidez*, p. 34); *pesada* (*ligera*, p. 10).
- ▶ To expand students' word knowledge, go over the concept of synonyms (i.e., words that have very similar meanings) and point out the word *extraer* in the vocabulary list. Explain that *extraer* and *sacar* are synonyms. Then have students work with a partner to determine which vocabulary words are synonyms of *hueco*, *empinado*, *inmóvil*, and *progresivo*.
- ▶ On the board, list the words *escarpado*, *extraer*, *fijo*, and *ranura*. Then have students use their knowledge of antonyms and synonyms to answer the following analogies: *Recto es a torcido lo que móvil es a... (fijo)*. *Pequeño es a grande lo que plano es a... (escarpado)*. *Pelota es a bola lo que hueco es a... (ranura)*. *Caminar es a andar lo que sacar es a... (extraer)*. ✓
- ▶ Form two teams and play "Password." Give a word from the vocabulary list to be guessed (the "password") to one of the players. He or she then gives a one-phrase clue to a partner from the same team who must attempt to guess the word. Alternate between the two teams.

► READING

PRE-READING

- ▶ Discuss with students some toys and simple machines they use often or are familiar with. Ask: *¿Han jugado en un subibaja? ¿Cómo funciona?* (Have you played on a seesaw? How does it work?) *¿Les gusta andar en bicicleta? ¿Qué hace que la bicicleta ruede?* (Do you like to ride a bicycle? What makes the bicycle ride?) *Fíjense en mi mesa. ¿Cómo podría moverla?* (Look at my table. How could I move it?)
- ▶ Read the title and the author's name. Then have students view the illustrations and help them "read" the illustrations. Ask: *¿De qué creen que trata el libro?* (What do you think the book is about?)
- ▶ Have students set a purpose for reading. Ask: *¿Qué esperan aprender al leer este libro?* (What do you expect to learn by reading this book?)

READING

- ▶ Familiarize students with the text and graphic features of this book (e.g., numbered instructions, dialogues, diagrams and labels, information boxes, use of comic strips). Explain that in an informational text, the author gives many facts to support the information. Elicit that the text and graphic features of this book will help them comprehend the information.
- ▶ Do a read-aloud of pages 4–9 to familiarize students with the text and to model pronunciation and intonation. Read through the text the first time for flow. After a second reading, ask: *¿Cuál es el problema con la piedra?* (What is the problem with the rock?) *¿Cómo intentan resolver el problema?* (How do they try to solve the problem?) *¿Con qué herramienta logran mover la piedra?* (What tool do they use to move the rock?) *¿Cuáles son los tres pasos que siguen para mover la piedra?* (What are the three steps they follow to move the rock?)
- ▶ Divide the class into pairs and have students do a partner read-aloud of the rest of the section about the lever (pp. 10–11). Then come together as a class and discuss how a lever (*palanca*) works, its uses, and examples of machines or objects that use levers.
- ▶ Have pairs of students read the rest of the sections: pulleys on pages 12–19, ramps on pages 20–27, wheels on pages 28–35. Come together as a class after students finish reading each section to discuss the details and summarize the information.
- ▶ In order to help students organize the information, provide them with four-column charts (Graphic Organizer #31) and ask them to label the columns *Palanca*, *Polea*, *Plano inclinado*, *Rueda*. Have students reread the *Principios de...* boxes on pages 10, 18, 26, and 34. Then, ask students to fill in their charts, briefly explaining how these simple machines work and how they help us. Students should also include an example for each simple machine. Encourage students to accompany their explanations with a diagram or illustration. Finally, have students discuss their charts in small groups.
- ▶ To bring the text together, you may wish to conduct a read-aloud of the *Nota del profesor* on pages 36–37. This text summarizes the information presented in the book. Pause frequently to monitor students' understanding and to clarify questions they might have. Encourage them to use their charts for clarification and reinforcement.

INSTRUCTIONAL FOCUS:

Text-based Answers / Critical Analysis





DIFFERENTIATED INSTRUCTION

Below-level Students

- Read the text aloud several times. Then have students repeat chorally after you.
- Allow students to answer with short phrases or incomplete sentences.
- Have above-level students read with below-level students to act as mentors/tutors.
- Ask these or similar questions: *¿Qué usan los ascensores para alzar la carga: una palanca o una polea?* (What do elevators use to lift heavy loads: a lever or a pulley?) *¿Qué usaron los egipcios para construir las pirámides?* (What did the Egyptians use to build the pyramids?) *¿Qué necesita un auto para moverse?* (What does an automobile need to move?)

At-level Students

- Read the text aloud with students. Then have students read the text with a partner.
- Encourage students to make inferences and predictions based on the text, using short sentences.
- Ask questions such as: *Explica cómo funciona una polea fija. Da un ejemplo.* (Explain how a fixed pulley works. Provide an example.) *¿Cómo habrían sido las tumbas egipcias si los egipcios no hubieran tenido un plano inclinado?* *¿Por qué crees eso?* (What would the Egyptian tombs be like had the Egyptians not had an inclined plane? Why do you think that?) *Da dos ejemplos de cómo sería nuestra vida diaria sin la rueda.* (Provide two examples of what our daily lives would be like without the wheel.)

Above-level Students

- Read the text aloud to and with students. Then have students read the text independently.
- Encourage students to analyze and evaluate the text, using complete and elaborate answers.
- Ask questions such as: *Da un ejemplo de un aparato que use dos tipos de poleas. ¿Qué ventaja tiene este aparato sobre los que solo usan un tipo de polea?* (Provide an example of a device that uses two types of pulleys. What is this device's advantage over other devices that only use one type of pulley?) *¿Cuál de las cuatro máquinas simples te parece más útil? Usa el texto para apoyar tu opinión.* (Which one of the four simple machines do you think is more useful? Use the text to support your opinion.)

Post-Reading

- ▶ Explain that authors do not always clearly state every idea in a text. The reader has to piece together the information and make inferences to draw conclusions about the author's intended idea(s). Ask: *¿Cómo nos ayudan las cuatro máquinas simples presentadas en el libro?* (How do the four simple machines introduced in the book help us?) *Predigan qué ocurriría si una o dos de estas máquinas no existiera.* (Predict what would happen if one or two of these machines did not exist.) *¿Podemos concluir que estas máquinas nos hacen la vida más fácil?* (Can we conclude that these machines make our lives easier?) ✓
- ▶ Distribute a Venn diagram (Graphic Organizer #6) to pairs of students and have them compare and contrast two of the simple machines presented in the book. Encourage students to use their charts from the Reading section to help them complete the diagram. Then have pairs share their diagrams with another pair and discuss how each machine is similar and different. ✓
- ▶ Revisit the question *¿Qué esperan aprender al leer este libro?* (What do you expect to learn by reading this book?) from the Pre-Reading section, and ask: *¿Qué aprendieron al leer este libro?* (What did you learn by reading this book?) *¿Cuál es el mensaje o idea principal del libro?* (What is the book's main message or idea?)



► CONNECTION WITH CONTENT AREAS: SCIENCE, MATH

INSTRUCTIONAL FOCUS:

Building Knowledge in the Content Areas



- ▶ Divide the class into four groups and assign one of these simple machines to each group: *palanca, polea, plano inclinado, rueda*. Distribute craft materials and ask groups to think of a simple device they can build to demonstrate how their simple machine works. In addition to the examples provided in the text, have students research other devices that also use the simple machines introduced in the book. Then allow groups time to plan and build their devices. Finally, have each group present their device to the class and explain and demonstrate how it works. As students report to the class, have them use complete sentences and the domain-specific vocabulary they have learned. 
- ▶ Have students keep a journal for a week. They should take note of all the devices that are part of their daily lives. Then, based on their journals, ask students to create a list of those devices which use the simple machines introduced in the book. For example: *el ascensor de la escuela* ➔ *polea; mi bicicleta* ➔ *rueda; la rampa de acceso a la escuela* ➔ *plano inclinado*. Then invite students to report to the class. Take a class poll to see which simple machine is the most widely used.
- ▶ Ask students to use the information on page 20 to answer this question: *¿Cuánto pesa una pirámide?* (How much does a pyramid weigh?) Have students show all their calculations. They should be able to determine that the solution to the problem requires multiplication: 2,000,000 stones x 2.5 tons = 5,000,000 tons. Have students discuss their calculations with a classmate.

► WRITING

INSTRUCTIONAL FOCUS:

Writing from Sources / Research Strand



Have students use their charts and diagrams, the information in the book, and their personal experience to write an explanatory text in which they explain how one of the simple machines introduced in the book works. This is a multi-step writing assignment. Students should first create an outline and then write a first draft, which they will submit for peer review. You may wish to provide students with sentence starters and vocabulary flash cards as they complete this activity. Guide and assist students through the writing process. As students revise and edit their work, have them pay attention to the conventions of Spanish grammar and punctuation. 



Informal Assessment

You may wish to assess a student's progress as he or she completes comprehension and production activities. Suggested activities are identified with the icon.



Nombre _____

Vocabulario

A Une la palabra con su sinónimo.

- | | |
|----------------|----------------|
| 1. gradual | a. roce |
| 2. resistencia | b. inmóvil |
| 3. fricción | c. progresivo |
| 4. equilibrio | d. oposición |
| 5. fijo | e. estabilidad |

B Reemplaza lo que está en negrita con una palabra del recuadro y escribe la nueva oración.

duplicar cima zambullirse aligerar

1. Las carretillas usan palancas para **hacer más ligera** la carga.

Las carretillas usan palancas para aligerar la carga.

2. Los egipcios subieron las piedras hasta la **parte más alta** de las pirámides.

Los egipcios subieron las piedras hasta la cima de las pirámides.

3. Las poleas pueden **multiplicar por dos** la fuerza aplicada.

Las poleas pueden duplicar la fuerza aplicada.

4. No es necesario **lanzarse al agua** para salvar al hipopótamo.

No es necesario zambullirse para salvar al hipopótamo.

C Completa las siguientes analogías.

ranura

extraer

escarpado

1. Entrar es a salir lo que meter es a extraer.

2. Casa es a hogar lo que hueco es a ranura.

3. Enorme es a gigante lo que empinado es a escarpado.



Nombre _____

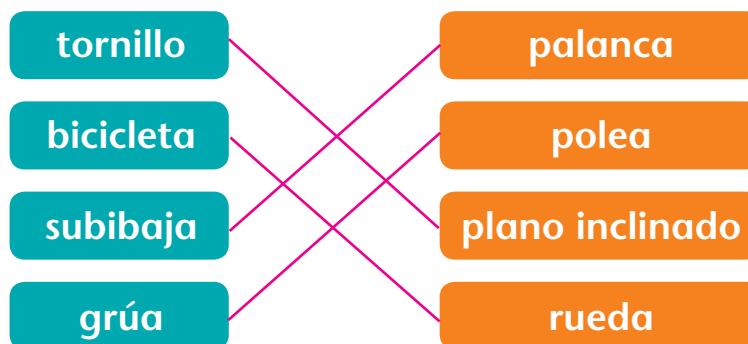
Comprensión lectora

A Completa las oraciones con la frase correcta.

- ayuda al subir una pendiente
- permite mover un gran peso
- disminuye la fricción
- cambia la dirección de la fuerza

1. La rueda disminuye la fricción.
2. La polea fija cambia la dirección de la fuerza.
3. El plano inclinado ayuda al subir una pendiente.
4. La palanca permite mover un gran peso.

B Une el objeto con la máquina simple correcta.



C Marca con una X la oración que expresa mejor la conclusión que podemos sacar de la lectura.

- 1. La polea es más importante y más útil que la palanca.
- 2. Las máquinas simples han hecho nuestra vida más fácil y cómoda.
- 3. Sin el plano inclinado, los egipcios no hubieran podido construir las pirámides.
- 4. La rueda es un invento extraordinario.



Nombre _____

Vocabulario

A Une la palabra con su sinónimo.

- | | |
|----------------|----------------|
| 1. gradual | a. roce |
| 2. resistencia | b. inmóvil |
| 3. fricción | c. progresivo |
| 4. equilibrio | d. oposición |
| 5. fijo | e. estabilidad |

B Reemplaza lo que está en negrita con una palabra del recuadro y escribe la nueva oración.

duplicar cima zambullirse aligerar

1. Las carretillas usan palancas para **hacer más ligera** la carga.

2. Los egipcios subieron las piedras hasta la **parte más alta** de las pirámides.

3. Las poleas pueden **multiplicar por dos** la fuerza aplicada.

4. No es necesario **lanzarse al agua** para salvar al hipopótamo.

C Completa las siguientes analogías.

ranura

extraer

escarpado

1. Entrar es a salir lo que meter es a _____.

2. Casa es a hogar lo que hueco es a _____.

3. Enorme es a gigante lo que empinado es a _____.



Nombre _____

Comprensión lectora

A Completa las oraciones con la frase correcta.

- ayuda al subir una pendiente
- permite mover un gran peso
- disminuye la fricción
- cambia la dirección de la fuerza

1. La rueda _____.
2. La polea fija _____.
3. El plano inclinado _____.
4. La palanca _____.

B Une el objeto con la máquina simple correcta.

tornillo

palanca

bicicleta

polea

subibaja

plano inclinado

grúa

rueda

C Marca con una X la oración que expresa mejor la conclusión que podemos sacar de la lectura.

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