

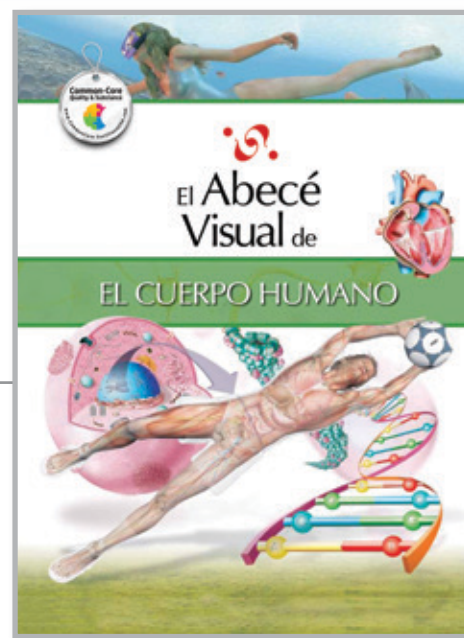


Lesson Plan and Activities Written in accordance with the Language Arts, Social Studies, and Science Standards

El Abecé Visual del cuerpo humano

Author: **JULIA POMIÉS**

Illustrator: **PABLO SOVERÓN**



COMPLEXITY

F&P Guided Reading Level W / Lexile Level 910L

TEXT TYPE

Informational Text: Science

OBJECTIVES

- Recognize an informational text.
- Read and understand a science text.
- Draw conclusions.
- Make generalizations.
- Understand and explain an author's word choices.
- Identify formal language.
- Summarize explanations.
- Identify the text's message or main idea.
- Use word structure to determine the meaning of unfamiliar words.
- Explore word relationships and use words learned through reading.
- Connect the ideas in the text to real-life situations.
- Write to explain.

INSTRUCTIONAL FOCUS:

Staircase of Complexity / Reading Rigor

INSTRUCTIONAL FOCUS:

Balancing Informational and Literary Text



Together we foster lifelong readers

MATERIALS

➔ *Tabla de cuatro columnas*
(Graphic Organizer #32)*

➔ pencils, paper, markers, crayons, scissors,
tape, sticky notes

SUMMARY

From small cells to large systems, the human body is a machine of enormous complexity—a true marvel worth exploring. Apparently simple actions, such as riding a bike, laughing, drinking water, smelling a flower, or holding a pencil, involve a network of complex interrelationships within our body and between our body and the environment.

STANDARDS

SLAR CCSS RI.4.1, RI.4.2, RI.4.3, RI.4.4, RI.4.7, RI.4.9, RI.4.10, RF.4.3.a, RF.4.3.b, RF.4.4.a, W.4.2, W.4.4, W.4.5, W.4.6, W.4.7, W.4.8, W.4.9, W.4.10, SL.4.1.c, SL.4.1.d, SL.4.2, SL.4.4, SL.4.5, SL.4.6, L.4.1.h, L.4.2.g, L.4.3.a, L.4.3.c, L.4.4, L.4.6

SLAR TEKS 4.1.A, 4.2.A, 4.2.B, 4.2.E, 4.11.A, 4.11.D, 4.13.B, 4.15, 4.18.A, 4.20.C, 4.22.C, 4.22.D, 4.23.B, 4.24.A.(ii), 4.24.A.(iii), 4.24.C, 4.24.D, 4.24.E, 4.26.A, 4.27.A, 4.28.A, 4.29.A

Science TEKS 4.10.B-C

NGSS 4-LS1-1, 4-LS1-2

VOCABULARY

INSTRUCTIONAL FOCUS:
Academic Vocabulary

aportar – *proporcionar algo* / to provide
homogéneo – *uniforme* / homogeneous
indispensable – *extremadamente necesario, imprescindible* / essential
intervenir – *tomar parte en algo* / to take part
periférico – *que está en las afueras o alrededor de algo* / peripheral
posibilitar – *hacer posible* / to make possible
predisposición – *tendencia o inclinación especial a algo* / predisposition
prolongar – *extenderse* / to extend
protuberancia – *parte que sobresale de algo, abultamiento* / protuberance, bulge
reiteradamente – *que se repite* / repeatedly
vincular – *relacionar* / to link

Advanced Vocabulary

conducto – *canal o tubo por donde fluye una sustancia* / channel

dilatación – *aumento de tamaño* / dilation
estímulo – *elemento externo que activa a un cuerpo u órgano y causa una reacción* / stimulus
excreción – *expulsar desechos* / excretion
filamento – *en forma de hilo* / filament
membrana – *tejido que forma una lámina muy delgada que cubre la superficie de algo* / membrane
nódulo – *masa redondeada* / nodule
núcleo – *parte central de algo* / nucleus
orificio – *agujero o abertura pequeña* / orifice
óseo – *relacionado con los huesos* / bone
segregar – *producir las glándulas del cuerpo una sustancia* / to secrete
toxina – *sustancia venenosa o dañina producida con un ser vivo* / toxin

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



VOCABULARY DEVELOPMENT

- Introduce vocabulary by providing a description 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 each word.
- Make sure students understand all the vocabulary needed to complete the activities (e.g., *conclusión, contexto, inferir, formal, generalización, predecir, prefijo, visualizar*) and instruction words, such as *cita, clasifica, comparte, completa, describe, explica, infiere, justifica, organiza, predice, presenta, resume, revisa*.
- Ask students to take turns explaining in their own words to a partner what each word means. Monitor and correct their explanations as necessary. Encourage them to use context clues and illustrations from the book as they come up with their own definitions.
- Have student pairs classify the vocabulary terms based on the part of speech. Distribute the four-column chart (Graphic Organizer #32) and have them label the columns, *Nombre, Adjetivo, Verbo, Adverbio*. Once student pairs have classified the vocabulary words, ask them to try to fill in as much of the chart as they can. Model an example: *aportar (verbo) – aportación (nombre) – aportado (adjetivo)*.
- Remind students that analyzing the structure of a word will help them figure out its meaning. Point out the prefix *pre-* in *predisposición* and explain that it means “before/prior to.” Introduce *inter-* (between), *ex-* (outside), and *sub-* (under). Then have students explain the meaning of *exhalar* (p. 26), *exponer* (p. 59), *subunidad* (p. 9). Explain that most scientific vocabulary has Greek or Latin origins. Point out *homo-* (same) and *-géneo* (producing) in *homogéneo* and *peri-* (around) in *periférico*. Introduce *endo-* (inside), *inter-* (between), *hiper-* (excessive), *micro-* (very small), *neuro-* (nerve), *-scopia* (exploration), *semi-* (half), and *termo-* (heat). Then have students determine the meaning of *endoscopia* (p. 59), *intervertebral* (p. 14), *hipertensión* (p. 61), *microvellosidad* (p. 8), *neurotransmisor* (p. 35), *semicircular* (p. 43).
- Point out words that may cause students spelling difficulties. For example: *bazo* (spleen) on page 53; and *vaso* (blood vessel) on page 53; *callo* (callus) on page 16 and *cayó* (fell down); *sebo* (fat) on page 25 and *cebo* (bait); *vello* (hair) on page 25 and *bello* (beautiful). Then have students write sentences with these words.
- Distribute index cards and have students create a glossary of terms. Ask them to write their own definitions for the vocabulary terms and add a sample sentence for each word. Then, as they read, have them add terms to their glossaries. To limit the length of their glossaries, give students very restrictive criteria for including words (e.g., words that are essential for understanding an explanation, words that can be used in other contexts).

READING

PRE-READING

- ▶ Explain that the human body is extremely complex, and that many actions that we take for granted are possible thanks to a complex chain of reactions and interactions. Discuss with students some of what they know about their bodies. Ask: *¿Han pensado en cómo es su cuerpo por dentro?* (Have you ever thought about what your body looks like in the inside?) *¿Cómo se lo imaginan?* (How do you imagine it?) *¿Qué órganos conocen?* (Which organs do you know?) *¿Cuáles son sus funciones?* (Which functions do they have?)
- ▶ Have students read the title and table of contents, and then give them a few moments to look at the illustrations. Then ask: *¿De qué creen que trata el libro?* (What do you think the book is about?) *¿Qué tipo de texto creen que es?* *¿Por qué?* (What type of text do you think this is? Why?)
- ▶ Have students set a purpose for reading. Ask: *¿Que esperan aprender al leer este libro?* (What do you expect to learn by reading this book?)

READING

- ▶ Discuss with students the organizational pattern and text structure of this book. Elicit that the book is divided into twenty-eight spreads. Each spread answers a different question about the human body. Images, definitions, and diagrams help clarify the explanations.
- ▶ Do a read aloud of the first spread on pages 6–7 to familiarize students with the text and to model pronunciation and intonation. Allow students time to observe the illustrations. Ask: *¿Cuáles son algunos de los sistemas que componen nuestro cuerpo?* (Which are some of the systems that make up our body?) *¿Cuáles son sus funciones?* (Which functions do they have?) *Expliquen la relación entre células, tejidos, órganos y sistemas. Den un ejemplo de cada uno.* (Explain the relationship between cells, tissues, organs, and systems. Provide an example of each one.) *¿Qué se puede inferir sobre el cuerpo humano?* (What can you infer about the human body?)
- ▶ For a second reading, assign different spreads to pairs of students. Provide them with sticky notes and have them make notes as they read. Students should note the topic, list important details, and any words or phrases whose meaning they cannot determine. After pairs finish rereading their spread, they should prepare to teach it to another pair. Use a group quiz to encourage students to work collaboratively and to assess comprehension. Some examples of questions include: *¿Cuál es la función de ese órgano o sistema?* (Which function does that organ or system has?) *¿Por qué es importante ese órgano o sistema?* (Why is that organ or system important?) *Den un ejemplo del texto que muestre su importancia.* (Provide an example from the text that shows its importance.) *Resuman el contenido en tres oraciones.* (Summarize the content in three sentences.)
- ▶ Explain that the context influences an author's word choices. Discuss with students that this is an informational text and the context is formal. Therefore, the author uses precise and scientific language in her descriptions and explanations. For example: *superior* and *inferior* on instead of *arriba* and *abajo* (p. 11); *contraerse* and *relajarse* instead of *encogerse* and *estirarse* (p. 31). Discuss how the use of precise language and formal vocabulary matches the context.
- ▶ Encourage students to visualize or create a mental picture of the different organs and systems that make up our body. For instance, explain to students that the heart is compared with a pump (p. 11). Encourage students to find an object or a mechanical system that helps them visualize an organ or system of the human body. For example: *cerebro* → *computadora*; *esqueleto* → *armazón de un edificio*.

INSTRUCTIONAL FOCUS:

Text-based Answers / Critical Analysis





DIFFERENTIATED INSTRUCTION

BELOW-LEVEL STUDENTS

- Ask students these or similar questions to check their comprehension. Allow them to answer with short phrases or incomplete sentences: *¿Por qué compara la autora al corazón con una bomba (p. 11)? (Why does the author compare the heart to a pump?) Den un ejemplo de algo que hacen tanto el corazón como una bomba. (Give an example of something that both the heart and a pump do.) Den tres ejemplos de cómo reacciona nuestro organismo cuando tenemos miedo (pp. 50–51). (Provide three examples of how our body reacts when we are afraid.)*

AT-LEVEL STUDENTS

- Encourage students to make inferences and predictions based on the text. They should be able to answer using short sentences. Ask: *Expliquen por qué necesitamos comer (pp. 26–27). Comenta qué pasaría si no comiéramos. (Explain why we need to eat. Discuss what would happen if we did not eat.) ¿Cuál es el mensaje de este libro? Den un ejemplo para apoyar su respuesta. (What is this book's message? Provide an example to support your answer.)*

ABOVE-LEVEL STUDENTS

- Encourage students to analyze and evaluate the text. Ask them to give complete and elaborate answers: *Expliquen cómo se coordinan las funciones del cuerpo (pp. 36–37) (Explain how the different body functions are coordinated.) ¿Qué sucedería si uno de los dos sistemas (el endocrino o el nervioso) fallara? What would happen if one of the two systems, either the endocrine or the nervous system, failed?) Expliquen esta frase: “Los seres humanos somos un verdadero universo” (p. 11). ¿Qué se puede concluir sobre el cuerpo humano? (Explain this phrase: “Humans are a real universe”? What conclusion can you draw about the human body?)*

POST-READING

- ▶ Explain that authors do not always clearly state every idea in a text. The reader has to piece together the information and draw conclusions about the author's intended idea(s). Ask: *¿Cómo trabajan en conjunto los distintos órganos y sistemas de nuestro cuerpo? Den un ejemplo del texto. (How do the different organs and systems in our body work together? Provide an example from the text.) ¿A qué conclusión sobre el cuerpo humano han llegado después de leer este libro? Citen un ejemplo del texto que los ha llevado a esa conclusión. (What conclusion about the human body have you drawn after reading this book? Quote an example from the text that has led you to that conclusion.)*
- ▶ Explain that a generalization is a statement we make after comparing several pieces of evidence to see what they have in common. The generalization is true for all the pieces of evidence. For instance, a generalization we could make regarding our body's reaction to fear (pp. 50–51) is, *El miedo desencadena una reacción que afecta a todo el organismo. (Fear unleashes a reaction that affects the whole body.)* Have students choose two spreads and reread them. Then have them write a generalization for each spread. Invite students to share their generalizations. ✓
- ▶ Remind students that the author chose her words carefully. Ask students to think of a more informal and less precise term for each of these words the author used: *conducto* (p. 31), *descender* (p. 26), *intensidad* (p. 50), *nutrir* (p. 41), *penetrar* (p. 40), *segregar* (p. 50), *transpiración* (p. 48). Possible answers include *tubo*, *bajar*, *fuerza*, *alimentar*, *entrar*, *producir*, *sudor*. Then have students explain why the author's word choices work best in each case. ✓

CONNECTION WITH CONTENT AREAS: SCIENCE

INSTRUCTIONAL FOCUS:

Building Knowledge in the Content Areas

- ▶ Assign a different system (e.g., *sistema circulatorio, respiratorio, digestivo, nervioso, esquelético, muscular*) to student pairs, and have them create a formal presentation about their assigned system. If available in your classroom, encourage students to use technology (e.g., slide presentation, online images, interactive whiteboard) for their presentations. Encourage students to use the science vocabulary they have learned (*conducto, membrana, nódulo, orificio, segregar*, etc.) Assist students as they put together their presentations and allow them rehearsal time. Then, invite student pairs to present. If time allows, have a brief question-and-answer session at the end of each presentation. ✓
- ▶ Revisit the question you asked students in the Pre-reading section. Ask: *¿Que esperan aprender al leer este libro?* (What do you expect to learn by reading this book?) *¿Qué aprendieron al leer este libro?* (What did you learn by reading this book?) *¿Cuál es el mensaje o idea principal que nos da la autora? Citen del texto para justificar su respuesta.* (What is the main message or idea the author gives us? Quote from the text to justify your answer.)

WRITING

INSTRUCTIONAL FOCUS:

Writing from Sources / Research Strand

Have students write an explanatory essay about one of the systems of the human body, explaining how it works. This writing activity will take place in stages (prewriting activities, research and gathering of information, and writing) over the course of several days. As part of the prewriting activities, have students create an outline. Suggest this structure: I. Introduction establishing the topic and stating the main idea; II. Body—consisting of three paragraphs—including the explanations and supporting details; III. Conclusion summarizing the main points and restating the main idea. For their research, in addition to using their notes, presentation, and the text, have students consult other sources (e.g., an encyclopedia, a biology book, a reputable online source) to gather additional information and to verify the accuracy of the data they are including.

As students develop their first draft, encourage them to use academic and domain-specific vocabulary and to consider their word choices carefully. Remind students to avoid plagiarism by using quotation marks to enclose direct quotes. Require them to include a list of sources at the end of their essays. Guide students through the writing process by supporting them in planning their writing, developing a draft, revising and editing it, and producing their final work. 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.

- | | | |
|-------------------|------------------|------------------|
| 1. indispensable | _____ | a. repetidamente |
| 2. prolongarse | _____ | b. necesario |
| 4. reiteradamente | _____ | c. proporcionar |
| 5. aportar | _____ | e. extenderse |

B Completa las palabras con el prefijo griego correcto y escribe una definición. Después comprueba tu definición en un diccionario.



- homo géneo: uniforme
- hiper tensión: tensión arterial alta
- peri férico: en las afueras o alrededor
- endo scopia: exploración del interior del cuerpo

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



- Los riñones eliminan los líquidos **que sobran**. excedentes
Los riñones eliminan los líquidos excedentes.
- Algunas personas tienen **tendencia** a la hipertensión. predisposición
Algunas personas tienen predisposición a la hipertensión.
- Cuando un hueso se rompe se forma una **parte abultada** que sobresale. protuberancia
Cuando un hueso se rompe se forma una protuberancia que sobresale.
- El oído interno **hace posible** el equilibrio. posibilita
El oído interno posibilita el equilibrio.



Nombre _____

Comprensión lectora

A Contesta.

1. ¿Cuáles son los cuatro sistemas que participan en la nutrición?

Possible answer: Sistemas digestivo, respiratorio, circulatorio y urinario.

2. Explica brevemente por qué no nos mareamos al girar.

Possible answer: En el oído interno hay una especie de bolsita con un líquido que le informa al cerebro acerca de la posición y los movimientos de la cabeza.

3. ¿Cómo se defiende nuestro organismo de las infecciones? Menciona tres barreras.

Possible answer: La piel evita que entren gérmenes. Los ácidos del sistema digestivo también nos protegen. Por último, los glóbulos blancos destruyen los gérmenes.

B Escribe una generalización que pueda hacerse sobre la risa.

EVIDENCIA #1: La predisposición a sonreír puede mejorar nuestro estado de ánimo.

EVIDENCIA # 2: Las carcajadas estimulan la respiración.

EVIDENCIA # 3: El sistema digestivo recibe un masaje estimulante cuando nos reímos.

GENERALIZACIÓN:

Possible answer: Reírse es una actividad saludable.



Nombre _____

Vocabulario

A Une.

- | | |
|-------------------|------------------|
| 1. indispensable | a. repetidamente |
| 2. prolongarse | b. necesario |
| 4. reiteradamente | c. proporcionar |
| 5. aportar | e. extenderse |

B Completa las palabras con el prefijo griego correcto y escribe una definición. Después comprueba tu definición en un diccionario.

peri

homo

endo

hiper

1. _____ géneo: _____
2. _____ tensión: _____
3. _____ férico: _____
4. _____ scopia: _____

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

protuberancia

excedentes

posibilita

predisposición

1. Los riñones eliminan los líquidos **que sobran**. _____

2. Algunas personas tienen **tendencia** a la hipertensión. _____

3. Cuando un hueso se rompe se forma una **parte abultada** que sobresale. _____

4. El oído interno **hace posible** el equilibrio. _____



Nombre _____

Comprensión lectora

A Contesta.

1. ¿Cuáles son los cuatro sistemas que participan en la nutrición?

2. Explica brevemente por qué no nos mareamos al girar.

3. ¿Cómo se defiende nuestro organismo de las infecciones? Menciona tres barreras.

B Escribe una generalización que pueda hacerse sobre la risa.

EVIDENCIA #1: La predisposición a sonreír puede mejorar nuestro estado de ánimo.

EVIDENCIA # 2: Las carcajadas estimulan la respiración.

EVIDENCIA # 3: El sistema digestivo recibe un masaje estimulante cuando nos reímos.

GENERALIZACIÓN:
