Science Workbook — Grade 7

Life Science Workbook for Middle School — Complete Course Practice

Cuaderno de Ciencias — 7.º grado

Cuaderno de ciencias de la vida para escuela intermedia — Práctica completa del curso

Middle School Series / Serie de Educación Intermedia

Middle School Courses for Florida & Puerto Rico / Cursos de escuela intermedia de Florida y Puerto Rico

White Ink-Saver Edition / Edición imprimible para ahorro de tinta

MKLDesignsShop

How to Use This Workbook

(En español: Cómo usar este cuaderno)

Welcome to the **Science Workbook — Grade 7 (Life Science)** by MKLDesignsShop! This workbook is designed for 7th-grade students following Florida NGSSS and Puerto Rico DEPR science standards. English is used as the primary language for all concepts, supported by Spanish subtitles (En español: ...) to build bilingual academic confidence.

Here is what you will find inside this workbook:

- **6 Core Units:** Covering foundational life science topics from cell structure to homeostasis.
- **Clear Mini-Lessons:** Concise explanations accompanied by functional visual diagrams to anchor key concepts.
- **2 Worked Examples Per Unit:** Step-by-step problem-solving models with complete written solutions.
- **Guided Practice (4 items per unit):** Focused questions to practice with structured steps.
- **Independent Practice (6 items per unit):** Open-ended questions to demonstrate mastery.
- **Unit Mini-Quizzes:** 4 multiple-choice items per unit to check understanding.
- **Final Exam (20 items):** Comprehensive test covering all units (included in the complete workbook).
- **Bilingual Glossary:** 30 key scientific terms defined in English and Spanish.
- **Complete Answer Key:** Detailed explanations for every example, practice question, and quiz item.

Meet your study guide, **Tingilillo the owl** (Tingilillo el búho)! Tingilillo will share warm tips and helpful reminders throughout your journey. "Hoo-hoo! Learning science is an exciting adventure. Take your time, read each diagram carefully, and let us explore life science together!"

Course Map

(En español: Mapa del curso)

Below is the complete sequence of units included in the 7th-Grade Life Science curriculum:

• **Unit 1:** Cells: The Building Blocks of Life / Unidad 1: Las células: los bloques de la vida

• **Unit 2:** Heredity and Reproduction / Unidad 2: Herencia y reproducción

• **Unit 3:** Evolution and Natural Selection / Unidad 3: Evolución y selección natural

• **Unit 4:** Ecology: Ecosystems and Energy Flow / Unidad 4: Ecología: ecosistemas y flujo de energía

• **Unit 5:** The Human Body and Staying Healthy / Unidad 5: El cuerpo humano y mantenerse saludable

• **Unit 6:** Diversity of Life and Classification / Unidad 6: Diversidad de la vida y clasificación

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Starter Mini-Lesson

(En español: Mini-lección de arranque)

Before beginning Unit 1, let us review how life scientists explore the natural world. Life science is the study of living organisms and their interactions. Scientists use careful observation, accurate evidence, and logical organization to understand how living things function.

Tingilillo the owl reminds us: "Always start by looking closely at evidence! In life science, we gather observations before making conclusions."

1. Scientific Observation and Evidence

An observation is information gathered directly using the senses or scientific tools. Evidence consists of facts and observations used to support a conclusion. Scientists do not guess; they rely on data collected from living systems.

2. Analyzing Biological Systems

Living organisms can be organized into structured levels, from microscopic units to complete organisms. Understanding these structures allows scientists to study how life maintains balance and survives in different environments.

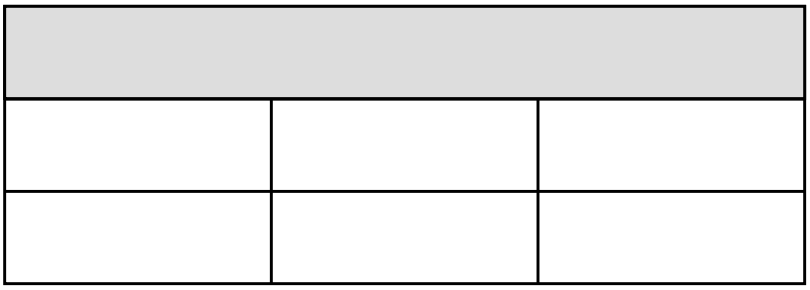
Starter activity:

Identify two living organisms in your local environment (such as a tree or a bird) and write down one physical observation about each organism that helps it survive in its environment.

UNIT 1: Cells: The Building Blocks of Life

(En español: Unidad 1: Las células: los bloques de la vida)

Mini-Lesson



1. Cell Theory

Cell theory is a fundamental concept in biology that describes the structural unit of all living things. It consists of three core principles:

1. All living organisms are composed of one or more cells.
2. The cell is the basic structural and functional unit of life.
3. All new cells arise from pre-existing cells through cell division.

2. Essential Organelles

Organelles are specialized internal structures inside cells that perform specific functions necessary for life:

- **Nucleus:** The control center of the cell that contains genetic instructions (DNA).
- **Cell Membrane:** A flexible outer layer that regulates what enters and leaves the cell.
- **Mitochondria:** The powerhouses of the cell that convert nutrients into cellular energy.
- **Chloroplast:** Organelles found in plant cells that absorb sunlight to produce sugar through photosynthesis.

3. Plant Cells vs. Animal Cells

Plant cells and animal cells share common structures like the nucleus, mitochondria, and cell membrane. However, plant cells have two unique structures:

- A rigid **cell wall** outside the membrane for support and protection.