STEAM & Logic Workbook — Grades K–5

STEAM & Logic Workbook for Elementary School — Complete Course Practice

Cuaderno de STEAM y Lógica sin Pantallas — K a 5.º grado

Cuaderno de STEAM y Lógica sin Pantallas para Primaria — Práctica completa del curso

Elementary Series / Serie de Primaria

Elementary Courses for Florida & Puerto Rico / Cursos de primaria 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 **STEAM & Logic Workbook — Grades K–5** by MKLDesignsShop! Tingilillo the Owl (Tingilillo el búho) is here to guide you on a fun, screen-free journey into science, technology, engineering, art, and math.

This workbook includes:

- **6 Hands-On Units:** Unplugged activities focusing on patterns, sorting and classifying, step-by-step instructions, building and testing, puzzles and mazes, and simple machines.
- **Ink-Saving Coloring Edition:** All visuals are line drawings designed for coloring, saving printer ink while keeping learning creative.
- **Unit Mini-Lessons:** Short, easy-to-read explanations with warmth and clear steps.
- **2 Worked Examples Per Unit:** Step-by-step guidance showing how to solve problems, ending with clear answers.
- **Practice Sections:** 4 Guided Practice items for learning with guidance, and 6 Independent Practice items for solo work.
- **Unit Mini-Quizzes:** 4 multiple-choice items per unit to check understanding quickly.
- **Full Answer Key & Explanations:** Complete solutions at the end of the workbook.
- **Final Exam & Glossary:** A 20-item comprehensive assessment and a 30-term bilingual glossary.

(En español: ¡Bienvenido al cuaderno de trabajo de STEAM y Lógica para grados K–5! Tingilillo el búho te acompañará en un aprendizaje 100 % sin pantallas. El cuaderno incluye 6 unidades con mini-lecciones, dibujos de línea para colorear que ahorran tinta, 2 ejemplos resueltos por unidad, práctica guiada e independiente, mini-quizzes, un examen final de 20 preguntas, un glosario bilingüe de 30 términos y una clave de respuestas completa.)

Course Map

(En español: Mapa del curso)

- **Unit 1: Patterns Everywhere / Patrones en todas partes**

Learn repeating shape and color patterns, extend sequences, and count pattern elements.

- **Unit 2: Sorting and Classifying / Ordenar y clasificar**

Group items by size, shape, and color, count items in sets, and use simple Venn diagrams.

- **Unit 3: Step by Step / Paso a paso**

Follow ordered instructions (first, next, last), build step-by-step, and test sequence order.

- **Unit 4: Build and Test / Construir y probar**

Build towers and bridges with counted pieces, test if they hold, and improve the design.

- **Unit 5: Puzzles and Mazes / Rompecabezas y laberintos**

Complete pattern puzzles and follow mazes counting steps and turns.

- **Unit 6: Little Engineers / Pequeños ingenieros**

Simple machines: ramps, levers, and wheels that make moving things easier.

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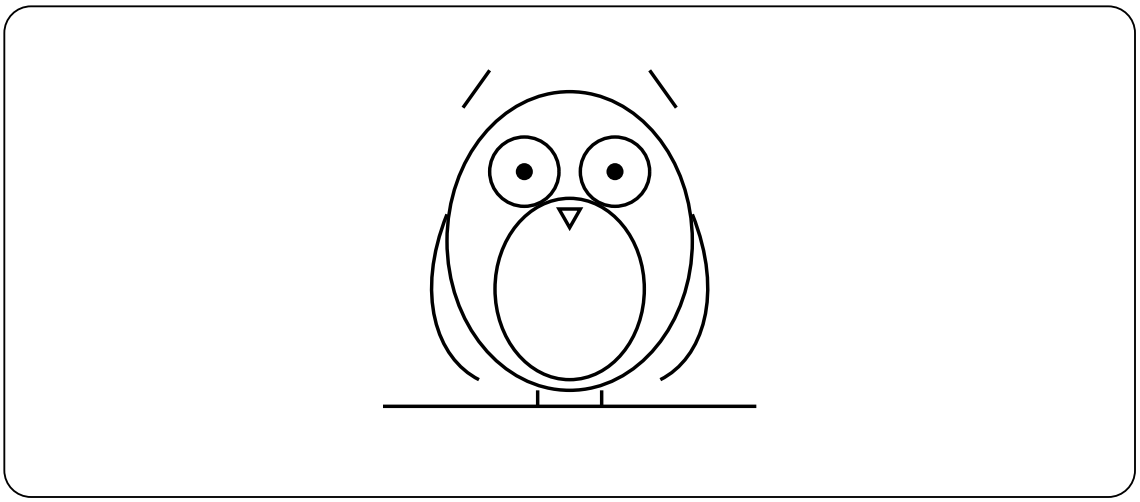
Starter Mini-Lesson

(En español: Mini-lección de arranque)



"Hoot! Hello, young scientist!" says Tingilillo the Owl. "Did you know that you do not need a computer screen to think like an engineer? Engineers observe shapes, arrange objects, follow steps in order, and build amazing things with their hands."

In this workbook, you will learn four main skills:

1. **Observe:** Look carefully at shapes, colors, and groups.
2. **Order:** Put items in a sequence (first, next, last).
3. **Build:** Use paper, blocks, and drawings to test your ideas.
4. **Check:** Count your pieces to make sure your solution is exact.

Starter activity:

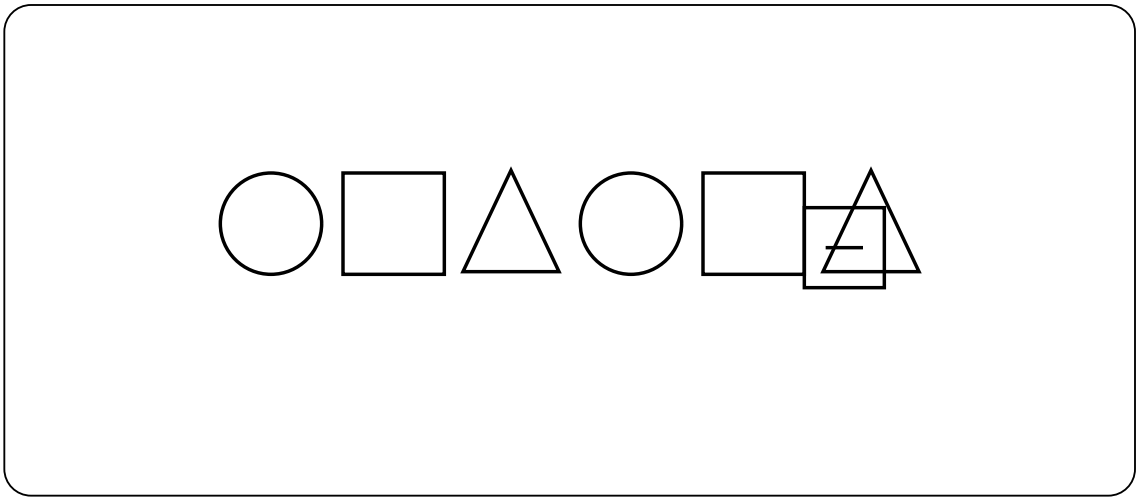
Look at your workspace. Pick 3 small objects (such as a paperclip, an eraser, and a crayon). Line them up from shortest to longest. Count how many objects you lined up in total.

(En español: Observa tu espacio de trabajo. Busca 3 objetos pequeños como un sujetapapeles, una borra y un crayón. Ordénalos del más corto al más largo. Cuenta cuántos objetos ordenaste en total.)

UNIT 1: Patterns Everywhere

(En español: Unidad 1: Patrones en todas partes)

Mini-Lesson



1. What is a Pattern?

A pattern is a repeating design or sequence that follows a set rule. When you see shapes or colors repeating in the same order, you can predict what comes next. Tingilillo the Owl says: "Look closely at what repeats to find the secret rule!"

2. Finding the Repeating Unit

The group of shapes or colors that repeats over and over is called the **core unit**. For example, in the pattern **Circle, Square, Circle, Square**, the core unit is **Circle, Square**.

3. Counting Pieces in a Pattern

To find the total number of items in a pattern, count each item one by one from left to right. If a core unit has 2 items and repeats 3 times, the pattern has 6 items in total (2 + 2 + 2 = 6).

Worked Examples

Example 1

Look at this pattern: **Red Star, Blue Star, Red Star, Blue Star, Red Star**.

1. Identify the repeating core unit: **Red Star, Blue Star**.

2. Identify the last shape shown: **Red Star**.