Spring Mathematics Workbook — Grade 4

Spring Mathematics — Second Semester — Complete Course Practice

Cuaderno de Matemáticas de Primavera — 4.º grado

Primavera — Segundo Semestre — Práctica completa del curso

Elementary Series / Serie de Primaria

Elementary Courses for Florida & Puerto Rico / Cursos de primaria de Florida y Puerto Rico

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How to Use This Workbook

(En español: Cómo usar este cuaderno)

Welcome to the **Spring Mathematics Workbook — Grade 4 (Second Semester)**! This workbook is designed to guide fourth-grade students through essential second-semester mathematical concepts. Joined by our friendly guide, **Patico the Little Duck** (Patico el Pato), students will explore math through engaging contexts inspired by Florida and Puerto Rico during the spring season—from local farmers markets and flower gardens to community fairs and serene lagoons.

Workbook Structure / Estructura del cuaderno:

- **6 Comprehensive Units:** Covering multi-digit operations, fractions, decimals, measurement conversions, geometry, multi-step word problems, and number patterns.
- **Spring Mini-Lessons & Functional Visuals:** Each lesson begins with clear explanations and functional schematic diagrams (including area grids, number lines, conversion charts, flow charts, and data tables) to support visual learning without revealing solutions.
- **2 Step-by-Step Worked Examples:** Detailed, numbered problem-solving demonstrations provided in every unit.
- **Guided & Independent Practice:** 4 open-response guided practice items followed by 6 independent practice items per unit to build problem-solving confidence.
- **Unit Mini-Quizzes:** 4 multiple-choice assessment questions per unit to measure mastery.
- **Cumulative Final Exam:** A comprehensive 20-question final exam covering all six spring units.
- **Bilingual Glossary:** A 30-word vocabulary reference at the end of the book.
- **Complete Answer Key:** Step-by-step explanations for all worked examples, practice problems, and mini-quizzes.

Course Map

(En español: Mapa del curso)

1. **Unit 1: Multi-Digit Multiplication and Division** / Unidad 1: Multiplicación y división de varios dígitos

2. **Unit 2: Equivalent and Compared Fractions** / Unidad 2: Fracciones equivalentes y comparación

3. **Unit 3: Decimals and Adding Fractions** / Unidad 3: Decimales y suma de fracciones

4. **Unit 4: Measurement Conversions and Line Plots** / Unidad 4: Conversiones de medición y gráficas de línea

5. **Unit 5: Angles and Geometry** / Unidad 5: Ángulos y geometría

6. **Unit 6: Multi-Step Problems and Patterns** / Unidad 6: Problemas de varios pasos y patrones

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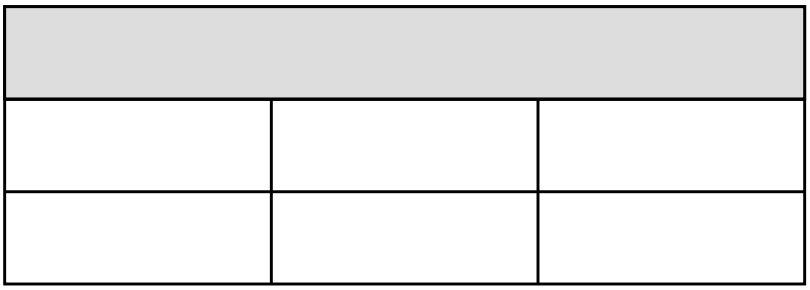
Starter Mini-Lesson

(En español: Mini-lección de arranque)



Welcome to the second semester! Patico the Little Duck is excited to dive into spring math. During the first semester, you mastered single-digit multiplication and basic fraction concepts. This semester, we will expand those skills to tackle 2-digit by 2-digit multiplication, division with remainders, fraction addition with common denominators, decimals, unit conversions, and geometric angles!

Patico says: "Spring is a time for growth! Let us build upon what we learned in the fall and take on new mathematical challenges together!"

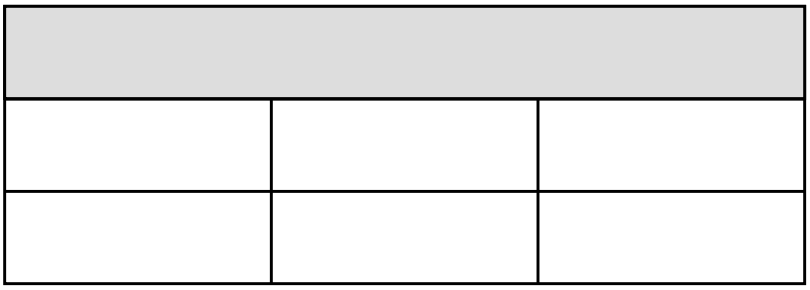
Starter activity:

Calculate the following multi-step review problem: Multiply 15 × 10, then add 45 to your result. Write your answer on the line.

UNIT 1: Multi-Digit Multiplication and Division

(En español: Unidad 1: Multiplicación y división de varios dígitos)

Mini-Lesson



1. Area Model for Multiplication

To multiply two 2-digit numbers, such as 23 × 14, break each factor into tens and ones using expanded form: 23 = 20 + 3 and 14 = 10 + 4. Draw a 2 × 2 grid and multiply each section to find four sub-products:

- Top-left box: 20 × 10 = 200
- Top-right box: 20 × 4 = 80
- Bottom-left box: 3 × 10 = 30
- Bottom-right box: 3 × 4 = 12

Finally, add all four sub-products together: 200 + 80 + 30 + 12 = 322.

2. Division with Remainders

When dividing a number that cannot be split into equal whole parts, the leftover portion is called the **remainder**. For example, to solve 145 ÷ 4:

1. Divide 14 tens by 4: 4 × 3 = 12, leaving 2 tens.
2. Bring down 5 to make 25 ones. Divide 25 by 4: 4 × 6 = 24, leaving 1.
3. The quotient is 36 with a remainder of 1, written as 36 R 1.

3. Estimating to Check Answers

To check if a calculation is reasonable, round factors to the nearest ten before calculating. For 28 × 12, round to 30 × 10 = 300. If your exact calculated product is close to 300, your answer is reasonable.

Patico notes: "Always double-check your remainders! A remainder must always be smaller than the divisor."