5 Module 11

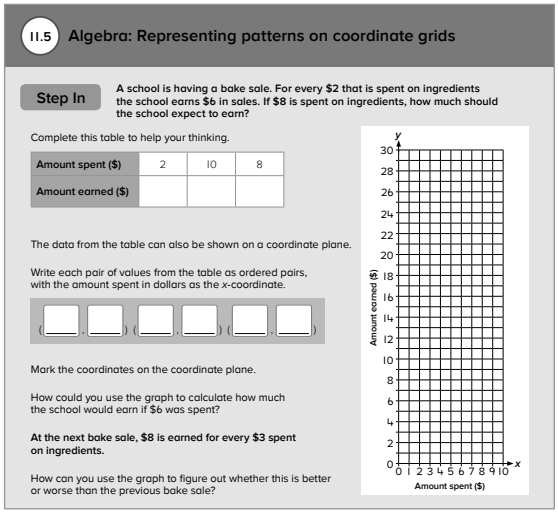
ORIGO STEPPING STONES 2.0

Core Focus

- Algebra: Exploring the coordinate plane
- Multiplication: Using the double-and-halve strategy to multiply dollars and cents
- Measurement: Solving word problems involving perimeter, area, and volume

Algebra

- Students begin by learning about the **coordinate plane** — a rectangular grid on which they graph **ordered pairs** (*x*, *y*) of numbers.
- Students find patterns among pairs of numbers and use them to solve problems. These lessons focus on additive and multiplicative patterns and are important preparation for future algebra study.



11.5 Algebra: Representing patterns on coordinate grids

Step In

A school is having a bake sale. For every $2 that is spent on ingredients the school earns $6 in sales. If $8 is spent on ingredients, how much should the school expect to earn?

Complete this table to help your thinking.

Amount spent ($)	2	10	8
Amount earned ($)			

The data from the table can also be shown on a coordinate plane.

Write each pair of values from the table as ordered pairs, with the amount spent in dollars as the *x*-coordinate.

(____ , ____) (____ , ____) (____ , ____)

Mark the coordinates on the coordinate plane.

How could you use the graph to calculate how much the school would earn if $6 was spent?

At the next bake sale, $8 is earned for every $3 spent on ingredients.

How can you use the graph to figure out whether this is better or worse than the previous bake sale?

Amount earned ($)

Amount spent ($)

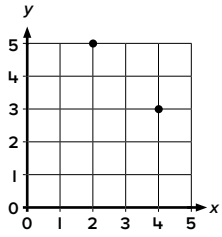
In this lesson, students identify relationships between numerical patterns and graph the ordered pairs of related numbers.

Ideas for Home

- Many road or city maps use ordered pairs to name locations (often a letter and a number). Practice finding locations by first searching horizontally and then vertically.

Glossary

- A **coordinate plane** is a rectangular grid which has a horizontal axis called the *x*-axis and a vertical axis called the *y*-axis. The origin is where the axes meet.



- An **ordered pair** is two numbers that describe a specific point on a coordinate plane. These numbers are called coordinates. Marking ordered pairs on a coordinate plane is called graphing or plotting.

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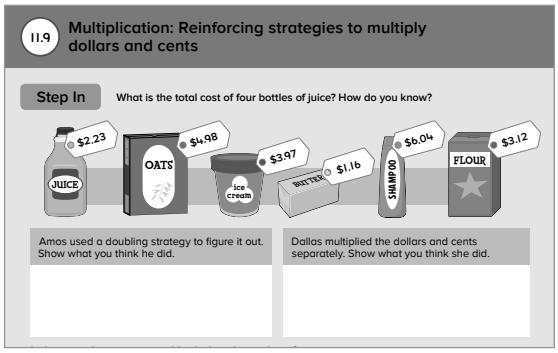
Multiplication

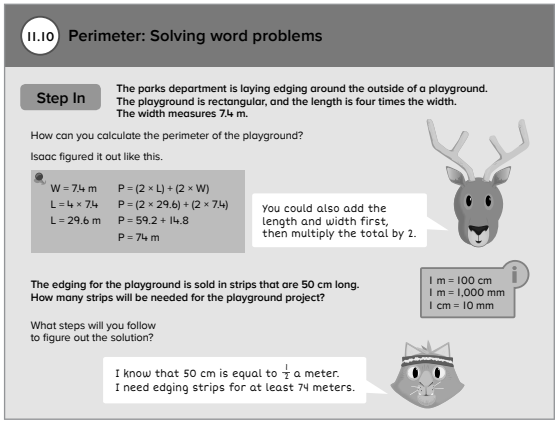
- Students use the double-and-halve strategy to multiply dollars and cents in real-world situations and use a nearby number to calculate the total cost when they are multiplying dollars and cents.



In this lesson, students use strategies to multiply dollars and cents.

Measurement

- Problem solving is vital for developing skills and concepts in all areas of mathematics. Students are introduced to steps and strategies that help organize their mathematical working and develop critical and creative thought to solve problems.
- The problems involve both whole numbers and decimal fractions and reinforce the multiplication studied in the first lessons of the module.



Ideas for Home

- Encourage your child to use problem-solving strategies such as acting math out (using real-world objects or mathematical ones such as base-10 blocks, cubes, or number lines); drawing a picture or diagram; making a table or a graph; solving a simpler situation (e.g. instead of 345 + 99, do 45 + 9); or working backwards. Discuss these strategies when solving problems in the real world, such as measuring food for recipes, comparing prices while shopping, or playing puzzle games.