Little Leonardo's™ Fascinating World of Math introduces kids to many of the basic concepts of mathematics, including their connection with so many things in our everyday lives. Whether you aspire to be a scientist, an engineer, or an architect, math concepts are an important foundation for kids to learn, and hopefully to have fun with. Included are a glossary of terms and brief biographies of famous mathematicians.

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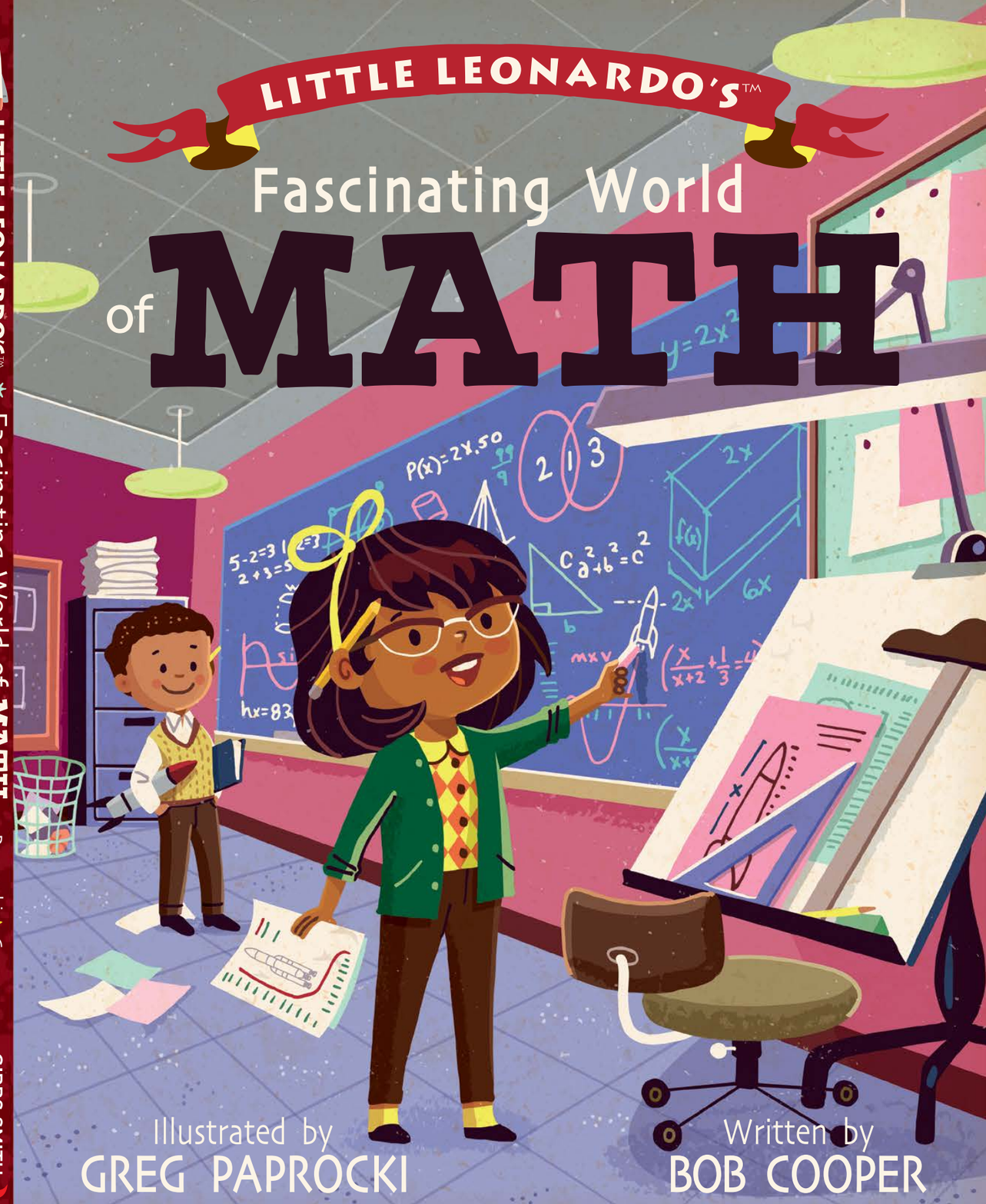
LITTLE LEONARDO'S™

Fascinating World of MATH



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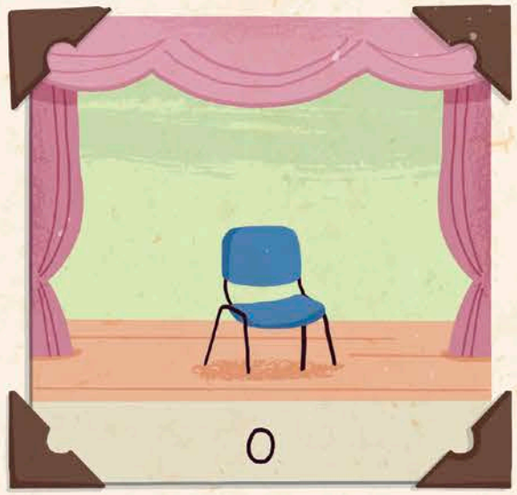
MATHEMATICS provides the basic building blocks for science, engineering, technology, and some of the arts.

Understanding math begins with our NUMBER SYSTEM.
We use a DECIMAL system, which means it
includes ten different NUMERALS: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.



The simplest use of numbers is to COUNT how much there is of something. The numeral 0 (ZERO) means there's nothing. The other numerals, from 1 to 9, represent increasingly larger amounts.

By combining these we can make numbers larger
than 9—starting with 10, 11, and 12 . . . and *much* larger numbers
like 50, 100, 762, 91,854, or 3,659,012,877.

Understanding numbers and what they are used for helps us understand our world.

ARITHMETIC is one thing we do with numbers every day. The basic operations of arithmetic are addition, subtraction, multiplication, and division.

Helping with grocery shopping, you can use ADDITION to add the prices of items to make sure you have enough money for everything.

We use FRACTIONS to count *part* of something—an amount that's *more* than nothing (0) but *less* than one whole thing (1). If you're really hungry and eat 3 of the 8 pieces of pizza, the fraction $\frac{3}{8}$ shows how much of the pizza you ate.

Numbers mentioned so far have been zero and numbers *more than zero*. Numbers that are more than zero are called POSITIVE NUMBERS.

Positive numbers are like riding up in an elevator from the ground floor of a building to the upper floors. As you go up, the floor numbers increase: 1, 2, 3, and so on.

If the building also has underground levels, you can ride the elevator down past the ground floor. Think of these numbers as NEGATIVE NUMBERS (*less than zero*). We write these as −1, −2, and say "minus one" and "minus two."

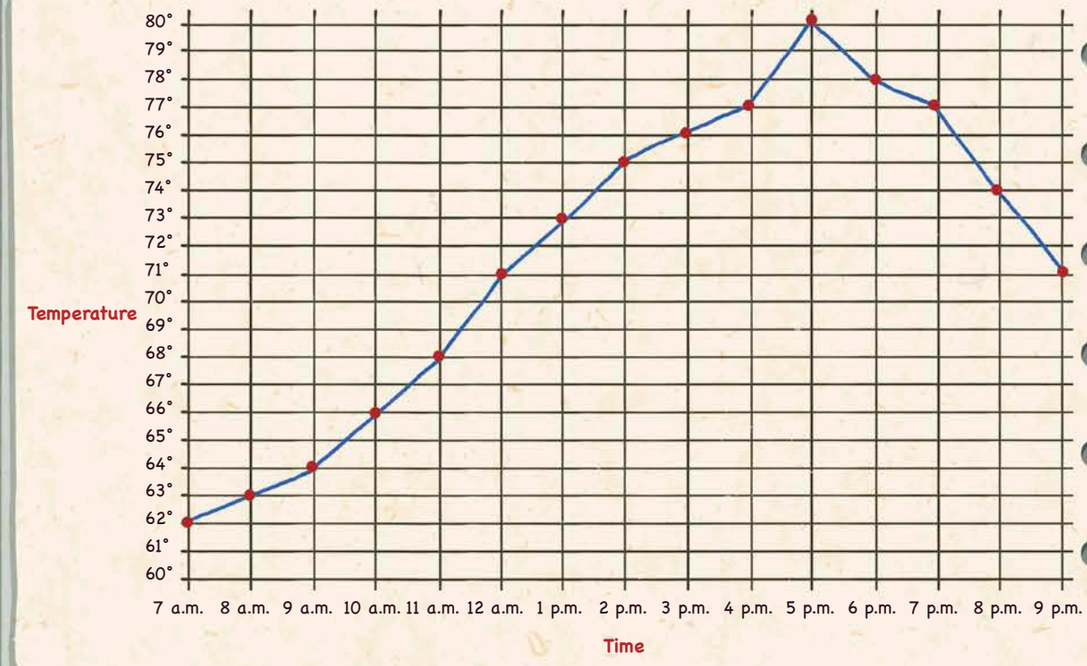
A number line is a way to look at a group of numbers as a picture. It's a basic GRAPH. Graphs can use lines, shapes, and even colors to make numbers easier to understand.

Graphs are good for showing how things change over time, like the weather. You could use a thermometer to measure and write down the temperature every hour during the day.

Time	Temperature
7 a.m.	62°
8 a.m.	63°
9 a.m.	64°
10 a.m.	66°
11 a.m.	68°
12 p.m.	71°
1 p.m.	73°
2 p.m.	75°
3 p.m.	76°
4 p.m.	77°
5 p.m.	80°
6 p.m.	78°
7 p.m.	77°
8 p.m.	74°
9 p.m.	71°

A list of numbers doesn't tell as good a story as a graph.

We can create a simple graph by putting two different number lines together: one that shows the TIME of day going from left to right, and one that shows the TEMPERATURE going up and down.



By drawing a dot for each temperature in our list and connecting them all, our graph looks a little like a mountain, with its peak at 5:00 p.m., when the temperature is the hottest.