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Maths the Write Way, Level 8, was written by Brian E. Enright, Robert Gyles, Maxine Leonescu and Fred I. Remer.

HAWKER BROWNLOW
E D U C A T I O N

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★ TO THE STUDENT ★

To solve maths problems, you usually follow a set of rules. You can probably remember the rules easily, but do you know why the rules were made in the first place? *How* you solve problems is what this program is about. Instead of just finding answers, you will think about the strategies you use to solve problems. You will also discover why rules are important.

The focus of ***Maths the Write Way*** is communication. Writing, speaking, explaining or drawing while learning about maths can help you better understand what you are learning. When you share ideas with others, you strengthen what you already know and you find out about different ways of thinking. All of these activities will give you a more complete understanding of maths concepts.

You will use the following effective strategies as you complete the activities in ***Maths the Write Way***.

- ★ Write your own problems
- ★ Communicate orally
- ★ Identify key words, and explain their importance
- ★ Create your own game, puzzle, picture, poem or rap
- ★ Summarise your work
- ★ Investigate to find other ways to solve a problem
- ★ Make predictions and draw conclusions
- ★ Work with a group to share ideas and solve problems

Each lesson in ***Maths the Write Way*** includes four Investigations, two Extensions, and four Assessments. There are many hints to help you solve the problems. Whenever possible, discuss your ideas with classmates and with your teacher. It is important that you think about how you solve a problem, not just about the final solution.

You should be familiar with most of the skills and concepts presented in this book. However, when you work on the activities, you will likely discover new ideas that you have not thought about before. We hope you enjoy the program and learn about maths the 'write' way.

Brian E. Enright
Robert Gyles
Maxine Leonescu
Fred I. Remer

★ INVESTIGATION 1 ★

Step 1: Read the following:

The United States of America is one of the largest countries in the world, in terms of both area and population. The area of the United States is about 5,796,000 square kilometres and its population is about 250,000,000. This diverse population includes millions of people who were born in foreign countries. Estimates indicate that about 6,264,000 of the United States population were born in Mexico, about 718,000 in El Salvador, and about 4,003,000 in the Philippines.

Step 2: Express all numbers above using scientific notation. Then write an explanation of how to write a number using scientific notation.

Hint: Think about the relationship between place value and exponents in scientific notation.

Solution:

★ INVESTIGATION 2 ★

Step 1: Read the following information.

Because of the world's dependency on energy, countries stockpile energy sources into reserves. The chart below gives an indication of about how many barrels of crude oil were placed in reserves in the mid-1990s.

<u>Region of the World</u>	<u>Crude Oil in Barrels</u>	<u>Rounded to Nearest Billion</u>
N. America	72,100,000,000	72,000,000,000
Central & S. America	77,700,000,000	78,000,000,000
W. Europe	38,500,000,000	39,000,000,000
E. Europe/ former USSR	183,000,000,000	183,000,000,000
Middle East	595,400,000,000	595,000,000,000
Africa	73,900,000,000	74,000,000,000
Far East	53,300,000,000	53,000,000,000

Step 2: Using the chart, write a general rule that will show how to round all numbers to the nearest 1,000,000,000.

Hint: Compare the rounded numbers to the original numbers.

Solution:

Part B

★ INVESTIGATION 3 ★

Step 1: In a cross-country automobile race, drivers receive a map of the route, including the expected number of kilometres to travel each day. On day 1, one driver completed $\frac{7}{8}$ of the expected mileage. A second driver completed 89% of the expected mileage. Use grid paper to find a way of proving which driver travelled the greater distance on day 1.

Step 2: Write a statement to describe what your grid model shows.

Hint: How many total squares should there be in your grid?

Solution:

★ INVESTIGATION 4 ★

Mrs Barbara's class competed in a readathon. The goal for a 6-month period was for each student to read about 30 books.

Step 1: Look carefully at the information below.

Sample Population for Class Readathon— Amount of 6-Month Goal Completed

	Sept.	Oct.	Nov.
Jennifer	25%	25%	25%
Michael	0.1	0.1	0.1
Lakesha	5%	10%	15%
Jamal	0.1	0.2	0.3

Step 2: Based upon your interpretation of this information, do you think Mrs Barbara's class will reach the goal? Write about your ideas and conclusions. Make sure to include data to support your answers. Share your results with your group members.

Hint: First express all values in like terms.

Solution:
