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INTRODUCTION

Mathematics surrounds us in our everyday lives: at the supermarket checkout, at the bank and in our cars. One of the often overlooked strengths of maths is how it can be used to develop cultural literacy (such as knowing what Greenwich Mean Time is, or understanding the structure of haiku). While it's true that maths is everywhere, it is even truer that a firm grasp of analytical concepts will broaden our view of the world and the people in it.

Secrets to Maths Motivation

The perennial question asked by students ('Why do I need to learn maths?') is best answered through real-world examples of topics that are informative and exciting. Getting students interested in maths involves allowing them to explore maths at a level they can relate to.

The Ten-Minute Philosophy

A student's comfort level with maths is directly related to the amount of time spent practising maths and the variety of problems encountered. The exercises in this book were created to maximise the quality of practice time while offering a wide range of interesting subjects. Students will develop and strengthen the skills needed to successfully face the challenges of more advanced maths topics. These skills include:

- logical thinking
- analysing data
- graphing
- map reading

- estimating
- measuring
- problem-solving
- geometry

- addition and subtraction
- multiplication and division
- ratio and percentages
- perimeter and area

The Lessons

Each lesson starts with background information that introduces the topic and defines the use of the subject. Step-by-step instructions explain each lesson's process. This format allows students to quickly grasp the concept being taught while giving them the opportunity to hone their problem-solving skills.

Beyond Ten Minutes

An extension activity follows most ten-minute lessons. These longer activities enable students to reinforce the skills developed in the shorter lesson.

The extensions will enhance the students' cultural knowledge through the use of analytical skills. Whether done as in-class assignments or homework projects, the extensions are powerful tools that aid students in acquiring a well-rounded education.

Bonus Section

The Resource section contains a content-rich Mathematician's Toolbox. This reproducible student guide contains the following
essential tools:

- Mathematician's Glossary: a listing of terms and jargon encountered throughout the various maths disciplines (arithmetic, geometry, trigonometry and more).
- Conversion Tables: metric system equivalents, volume to weight conversions, Celsius and Fahrenheit formulas and more.
- General Formulas: standard geometric shapes, areas and more.

The **Web Extensions** segment of the Resource section contains valuable World Wide Web addresses (URLs) that connect the lessons and activities to the Internet. These URLs provide excellent reinforcement of the lessons in this book, and can be used as starting points for Internet projects.

A **Maths Skills Index** identifies which areas of maths (subtraction, addition, graphing, multiplication, etc.) are used in the lessons.

Where to Begin

The lessons in *Ten-Minute Real World Maths* are designed to be used independently, except where noted. Focus on activities that complement the maths skills being taught in your classroom, or explore specific topics of interest to your students.

IN THE BUDGET

Budgets are useful tools for determining how money is spent. A total sum of money is divided into smaller amounts that will be used for specific needs.

**MATERIALS:**
Paper, pencil

DIRECTIONS:
1. While explaining the concept of a budget to the class, be sure to tell the students that families, schools, cities, states and governments use budgets to plan spending.
2. Write the following on the board:

Annual Police Force Budget			
Total Money to spend	% of total for salaries	% of total for training	% of total for cars
750 000	50%	30%	20%

3. Have the students calculate the amount of money the police force will spend on salaries (750 000 x .5 = 375 000 dollars), training (225 000 dollars) and cars (150 000 dollars).

EXTENSION:
Strengthen students' budgetary understanding by having them complete the Budgeting Basics activity on the following page. Students can present their completed budgets to the class.
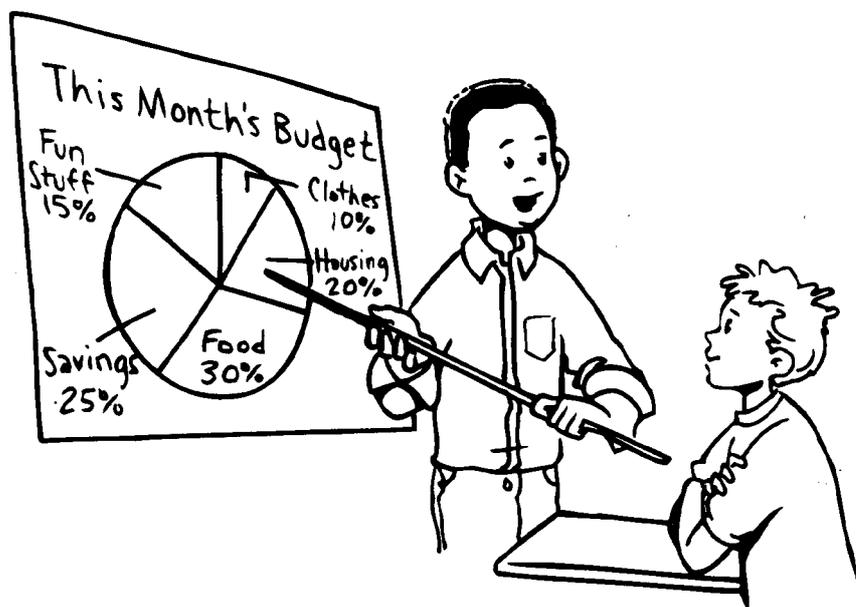
Budgeting Basics

Imagine you have a job delivering newspapers and you get paid 10 dollars an hour.

1. How much do you get paid for working 40 hours in one week?

2. Using the answer from question 1, how much do you earn in one year if you work 52 weeks in that year?

3. Using the annual income calculated in question 2, determine how much you can spend for housing, food, clothes, savings and fun. The following are the percentages you will spend in each area:

Housing 20%   Food 30%   Clothes 10%
Savings 25%   Fun 15%
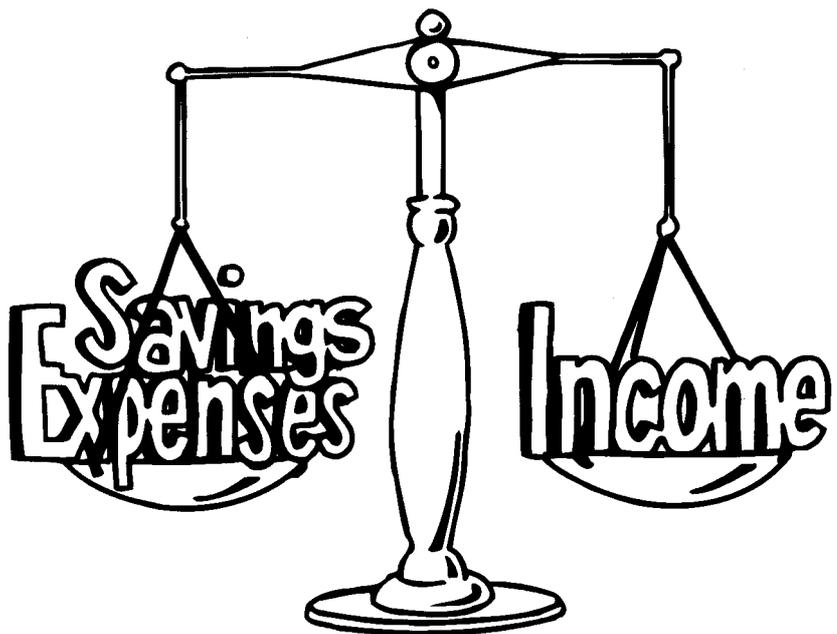
CHEQUE ACCOUNT MATHS

Setting up a cheque account, keeping the account balanced and monitoring cheque writing are important skills in today's world.

DIRECTIONS:
1. Explain to the students that a cheque account is a type of bank account that allows someone to make purchases by writing cheques instead of using money. This system helps people keep track of their spending.
2. Also, explain that cheques draw from money existing in a person's bank account, and that each person is responsible for keeping track of all cheques written for her or his account.
3. On the board, draw the page from the cheque register shown below.

Date	Cheque	Transaction	Withdrawal	Deposit	Balance
17/05		Salary		1263.54	1263.54
21/05	100	Phone Bill	32.00		
23/05	101	Electricity Bill	65.00		
30/05	102	Gas Bill	23.15		

4. Have students copy the register onto their papers, and perform the addition and subtraction needed to balance the cheque register. You might demonstrate the calculation on the board to help them get started.

EXTENSION:
Using the templates on the following pages, create a cheque system for the students. Start each student with the same balance. During the course of a week, issue 'bills' to the students for various things, such as classroom electricity, building maintenance and school supplies. Have the students write cheques for these bills, and keep the cheque register balanced. At the end of the week, collect the registers and review the students' work.