


AFTER MATHS TEACHERS GUIDE BOOK C

Dear Teacher,

Welcome to *AfterMaths*[™]. This program is designed to engage students in using a variety of maths skills that will be important to them as developmental learners and as thinkers in the years ahead. Students will use critical thinking, problem solving, and computation skills as they complete the thirty-six activities in the student book.

The activities in the *AfterMaths* student book are based on seven concepts. These concepts are numeration, number theory, measurement, geometry, prealgebra, data interpretation, and logical reasoning. A list of activities and the skills covered appears on the following page.

The activities in the *AfterMaths* student book may be applied in various ways. They may be used to supplement and reinforce classroom lessons. They may be used to extend or enrich daily lessons. Or, they may be used to provide challenges to students who enjoy experimenting with maths. The activities are designed for students to work on their own, in pairs, or in small groups at their own pace.

The activities provide a variety of experiences for students, including writing, computing, experimenting, completing small projects, conducting research, and playing games. An icon  marks challenging creative-thinking items. Students will become aware that mathematics is not reserved just for the classroom; it is a vital part of the world around them.

Try to preview all thirty-six activities in the student book before assigning particular activities. Students may complete the activities in any order that fits your needs. Note that some maths experiments require the use of basic hands-on materials such as calculators, number cubes, playing cards, dominoes, and rulers.

AfterMaths, Book C is designed specifically for students in grade three. However, the activities can be used with advanced mathematics students in grade two, as well as with students who require mathematics skills reinforcement in grade four.

Enjoy the activities. Encourage students to do as many as possible. Galileo once said that mathematics is the alphabet in which the universe was created. So, let's begin to learn that alphabet.

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N: Numeration	G: Geometry	LR: Logical Reasoning
NT: Number Theory	PA: Prealgebra	
M: Measurement	DI: Data Interpretation	

Answers

PICK A NUMBER (SB page 2)

Making Numbers:

1. 85,321
2. 12,358
3. $583 - 21 = 562$
4. Sample answers: $325 + 18 = 343$; $318 + 25 = 343$; $315 + 28 = 343$
5. Sample answers: $15 + 3 + 28 = 46$; $18 + 25 + 3 = 46$; $13 + 28 + 5 = 46$

Magic Number: The magic number is always 9.

THE WINNING NUMBER (SB page 3)

Raffle Ticket One: 6430

Raffle Ticket Two: 6594

Raffle Ticket Three: 6533

Winning Number: 6525 Jonathan did not win.

SKILL BUILDERS 1 (SB page 4)

Something Unusual:

- a. 936
- b. 963
- c. 945

The three problems are unusual because in each problem, the digits in the addends and the sum represent all nine one-digit numbers.

Roman Ruins:

- a. $III + III = VI$ (1)
- b. $X + I = XI$
- c. $V + V = X$ (1)

Numbers That Fit:

- a. 80
- b. 101
- c. 6
- d. 20,000
- e. 4

EVEN'S OR ODDS (SB page 5)

Solve Them:

1.
 - a. $9 = 1 + 3 + 5$
 - b. $15 = 3 + 5 + 7$
 - c. $21 = 5 + 7 + 9$
 - d. $27 = 7 + 9 + 11$
 - e. $33 = 9 + 11 + 13$
2. Pattern: each sum increases by 6
 Bi Bi: Words and meanings will vary. Sample: *biped*, an animal having two legs

Mystery Number: 3

INVENT A NUMBER (SB page 6)

Symbols, names, uses, and problems will vary.

NUMBER ROLL (SB page 7)

1. Numbers, totals, and comparisons will vary.
2. Totals and comparisons will vary.

SIMPLE SQUARES (SB page 8)

Square One:

2	7	6
9	5	1
4	3	8

Square Two:

8	18	4
6	10	14
16	2	12

THE NUMBERS' TALK (SB page 9)

1.
 - a. 338 = BEE
 - b. 993 = EGG
 - c. 34 = HE
 - d. 907 = LOG
 - e. 3045 = SHOE
 - f. 335 = SEE
 - g. 514 = HIS
 - h. 3200 = OOZE
 - i. 733 = EEL
 - j. 908 = BOG
2. Students problems will vary.

SKILL BUILDERS 2 (SB page 10)

Carnival Toss: Sample answers: 4 sponges in 2-point hole, 1 sponge in 4-point hole, and 1 sponge in 18-point hole; or 4 sponges in 4-point hole, 1 sponge in 12-point hole, 1 sponge in 2-point hole

Triangle Mystery:

1. You multiply the number at the bottom left of the triangle by the number at the top to get the number at the right.
2. The missing number is 3.
3. Sample numbers: 3, 7, 21; 6, 2, 12; 9, 1, 1; 2, 4, 8

Alpha Problems:

$$\begin{array}{r} \text{AN} \quad 40 \\ + \text{1N} \quad + 50 \\ \hline \text{UN} \quad 90 \end{array} \qquad \begin{array}{r} \text{1N} \quad 50 \\ + \text{UN} \quad + 90 \\ \hline \text{TAN} \quad 140 \end{array}$$

A:4, N:0, I:5, U:9, T:1

TWO-DIGIT 'ARITHMAGIC' (SB page 11)

TRICK ONE: The answer is always 13.

TRICK TWO: The answer is always 60.

THINKING CAP (SB page 12)

A Whale Tale: There are three whales. See illustration:



Happy Birthday to Lee: It's summer. Lee lives in the Northern Hemisphere.

SET 'EM UP (SB page 13)

Answers and facts will vary. Sample facts:

Number One (213): $1 + 2 + 3 = 3 + 2 + 1$, $3 - 2 = 1$,
 $2 + 1 = 3$, $1 + 2 = 3$, $33 = 22 + 11$

Number Two (628): $22 + 66 = 88$, $8 - 2 = 6$, $6 + 2 = 8$

Number Three (725): $75 - 2 = 75 - 2$, $5 + 2 = 7$,
 $7 - 5 = 2$

MONEY, MONEY, MONEY (SB page 14)

A.

1. 50¢, $2 \times 5¢$
 2. $3 \times 20¢$
 3. 50¢, 20¢, 10¢
 4. 20¢, $2 \times 5¢$
 5. $3 \times 10¢$
 6. \$1, 50¢, 20¢
 7. $3 \times 50¢$
 8. \$2, $2 \times 50¢$
 9. 50¢, 10¢, 5¢
 10. $2 \times 50¢$, 10¢
- B. $5 \times 5¢$, $7 \times 10¢$, $5 \times 20¢$, $11 \times 50¢$, $1 \times \$1$, $1 \times \$2$

AT THE TONE . . . (SB page 15)

Mystic Whaling Museum:

- ④ Play: *Life on a Whaling Ship* . . . 11:00–11:30
- ① Slide Show: 'The True Tale Behind *Moby Dick*' . . . 9:30–10:00
- ③ Visit the Ship . . . 10:30–11:00
- ⑥ Movie: *Whales of the Ocean* . . . 12:00–12:30
- ⑤ Visit the Whaling Museum . . . 11:30–12:00
- ② Talk: 'A History of Whaling' . . . 10:00–10:30

SKILL BUILDERS 3 (SB page 16)

Measurement Match:

1. b
2. c
3. a
4. d

An Age-Old Problem: Anisa's mother could be 6 years younger than Anisa's grandmother if the grandmother were Anisa's father's mother, not Anisa's mother's mother.

Outside Fun

Temperatures:

10°C—winter

18°C—spring or autumn

26°C—spring or autumn

35°C—summer

Outside sports will vary.

MAPPING IT OUT (SB page 17)

Settlement 1: Desisto

Settlement 2: Hotspot

Settlement 3: Holbrook

Settlement 4: Windpipe