


AFTER MATHS TEACHERS GUIDE BOOK D

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 lessons 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 just reserved 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 can 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 D is designed specifically for students in grade four. However, the activities can be used with advanced mathematics students in grade three, as well as with students who require mathematics skills reinforcement in grade five.

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.

Author: Christopher Forest

Editor: Dale Lyle

Designer: Jamie Ruh

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N: Numeration
 NT: Number Theory
 M: Measurement

G: Geometry
 PA: Prealgebra
 DI: Data Interpretation

LR: Logical Reasoning

Answers

PLACES EVERYBODY (SB page 2)

Group One: 915
 Group Two: 348
 Group Three: 726

NAME THAT DIGIT! (SB page 3)

Missing Digit: The player will always be able to identify the missing digit.

Figure Me Out: 8

SKILL BUILDERS 1 (SB page 4)

Language of Numbers:

- 3
- 10
- 12
- 20
- 365
- 1
- 0
- 5

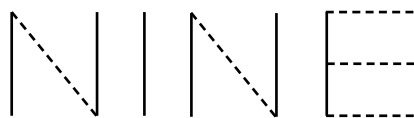
Common Numbers:

Group 1: All the numbers are between 20 and 30; all the numbers have a 2 in the tens place.

Group 2: All the numbers are multiples of 3; the sum of the digits in each number is a multiple of 3.

Group 3: All the numbers are primes.

When 6 + 5 Equals 9:



MIGHTY MATCH (SB page 5)

- | | |
|--------|---------|
| 1. 935 | 9. 425 |
| 2. 600 | 10. 318 |
| 3. 198 | 11. 200 |
| 4. 913 | 12. 779 |
| 5. 575 | 13. 907 |
| 6. 734 | 14. 567 |
| 7. 892 | 15. 642 |
| 8. 271 | |

BUILDING NUMBERS (SB page 6)

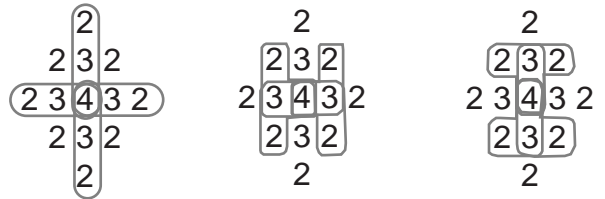
Same and Different:

Answers will vary. Sample answers:

Similarities—Both numbers are even; both numbers have four digits; both numbers have a 1 in the tens place; both numbers contain a 2.

Differences—The number on the right begins with an odd digit; the number on the left is smaller than the number on the right; the numbers have different digits in the thousands, hundreds, and ones places.

Any Which Way: There are twelve ways to read 234. See illustration:



NUMBER SENSE (SB page 7)

Answers will vary but should follow the sample given.

TOUGH TWENTIES (SB page 8)

Out of the Box:

Some answers will vary. Sample answers:

- $11 + 11 - 1 - 1 = 20$
- $22 - 2 = 20$
- $(3 \times 3) + (3 \times 3) + (3 \div 3) + (3 \div 3) = 20$
- $(4 \times 4) + 4 = 20$
- $5 + 5 + 5 + 5 = 20$
- $6 + 6 + 6 + (6 \div 6) + (6 \div 6) = 20$
- $7 + 7 + 7 - (7 \div 7) = 20$
- $(8 \div 8) + 8 + (8 \div 8) = 20$
- $9 + 9 + (9 \div 9) + (9 \div 9) = 20$
- $10 + 10 = 20$

Into the Box:

The symbols are the numerals 1, 2, 3, 4, 5, 6, and 7 shown alongside their mirror reflections. The next symbol, therefore, is the double 8, as shown at the far right below:



THE I'S HAVE IT (SB page 9)

- The left side (22) is greater than the right side (15).
- The right side (19) is greater than the left side (14).
- The left side (30) is greater than the right side (16).
- The left side (88) is greater than the right side (57).

SKILL BUILDERS 2 (SB page 10)

The Missing Number:

The number is 5. The pattern is that the sum of the numbers in each row and column is 10.

Bee Eye Dee Eff Eye:

$$\begin{array}{r} 1. \quad 757 \quad 1,515 \\ \quad + 758 \quad - 858 \\ \hline \quad 1,515 \quad 657 \end{array}$$

2. $b = 8; d = 7; f = 1; i = 5; l = 6$

Lunch Time: First—Andrea, Second—Katie, Third—Kyle, Fourth—Tim, Fifth—Diego

SUBTRACTION MAGIC (SB page 11)

Quite a Trick:

The sum of the first and last digits is always 9.

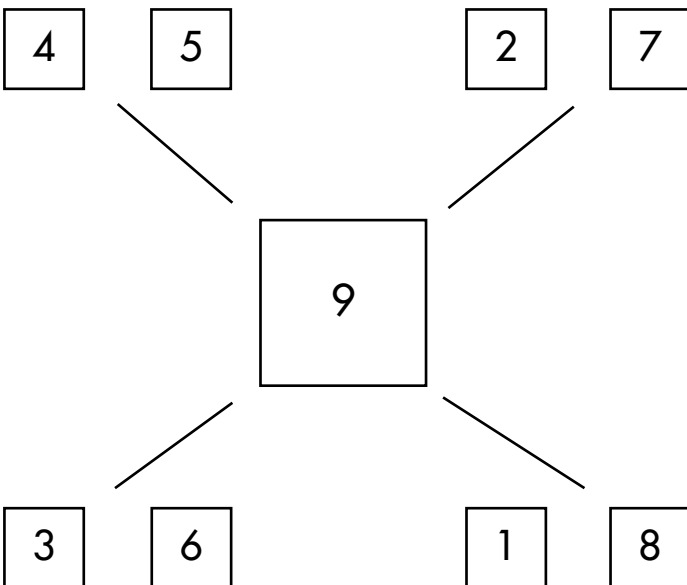
Calculator Creativity:

- a. 514 = his
- b. 1 = I
- c. 335 = see
- d. 7,108 = boil
- e. 993 = egg

The hidden sentence is: I see his egg boil.

CARD CAPERS (SB page 12)

Card Connections:



Fifty-two Put Down: Game results will vary.

DO YOU FOLLOW? (SB page 13)

1. 6
2. 9
3. 59
4. 56
5. 14
6. 28
7. 56
8. 42
9. 14
10. 44
11. 31
12. 93
13. 100
14. 10
15. 6

The Answer Number is 6.

FOR THE CHILL OF IT (SB page 14)

Thermometer temperatures:

1. 27°C
2. 26°C
3. 28°C
4. 32°C
5. 29°C
6. 33°C
7. 35°C
8. 37°C
9. 40°C

Each thermometer should be shaded to the point of the temperature.

- a. highest: 40°C
- b. lowest: 26°C

ANT TRACKS (SB page 15)

Of Course:

Course	Start Time	Finish Time	Total Time
1	4:15	4:20	5 min
2	12:00	12:08	8 min
3	8:50	9:05	15 min
4	5:25	5:45	20 min
5	3:30	4:15	45 min
6	1:15	2:35	1 hr 20 min
7	9:35	11:45	2 hr 10 min