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Dear Student,

Welcome to *AfterMaths*<sup>™</sup>, a program that allows you to explore mathematics. Inside this book are 36 activities. In these activities, you will play maths games, conduct experiments, solve problems, and perform 'maths magic.'

*AfterMaths* is designed to allow you to work alone, with a partner, or in a small group. You will try a variety of activities. By doing these activities, you will develop your maths skills and look at maths in new ways. You also will find that maths is part of your everyday life.

Some activities use skills that you already know. Other activities add to known skills. Still other activities provide challenges. The goal is always to have fun and to learn at the same time.

A famous man named Galileo once said that mathematics is the alphabet in which the universe was created. So, enjoy the activities and begin learning that 'alphabet.'

You may want to have materials such as the following on hand: pencils and erasers, scratch paper, a calculator and a ruler.

This *AfterMaths* book was prepared for students by Christopher Forest.

Designed by Jamie Ruh.

**HAWKER BROWNLOW**  
**E D U C A T I O N**

ISBN 1 86401 648 5

Code #3704

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# 'DECIMATION'

1. Here are the top ten finishers in the qualifying heat of a 200-metre race. Unfortunately, the computerised printout cannot be read. Use the clues in parentheses to determine each runner's time. The first runner's time is listed for you.

**Diego Sanchez:**

Diego finished at 23.71 seconds.

**Gary Plumb:** (Gary's time was 0.32 seconds greater than Diego's time.)

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**Ty Jefferson:** (Ty had the same whole-number unit of time as Gary. Ty's decimal unit of time was twice that of Gary's.)

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**Martin Grandoni:** (Martin finished 0.46 seconds faster than Ty.)

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**Allan Ashburn:** (Allan finished with the same whole-number unit of time as Ty and Gary. His decimal unit of time was equal to one third of Martin's decimal unit of time.)

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**Hakim Manolo:** (Hakim finished 0.02 seconds faster than Allan.)

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**Liam O'Donnell:** (Liam finished with the same whole-number unit of time as Diego. His decimal unit of time was twice as much as Hakim's decimal unit of time plus 0.11.)

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**Jourdan Amain:** (Jourdan finished 0.12 seconds faster than Liam.)

---

**Nathan Birnbaum:** (Nathan finished 0.1 second after Jourdan.)

---

**Abel Benton:** (Abel finished 0.36 seconds faster than Nathan.)

---

2. Below, write each runner's name next to his finishing position in the qualifying heat. The first one has been done for you.

### Qualifying-Heat Finishers

First Place: \_\_\_\_\_ Abel \_\_\_\_\_

Sixth Place: \_\_\_\_\_

Second Place: \_\_\_\_\_

Seventh Place: \_\_\_\_\_

Third Place: \_\_\_\_\_

Eighth Place: \_\_\_\_\_

Fourth Place: \_\_\_\_\_

Ninth Place: \_\_\_\_\_

Fifth Place: \_\_\_\_\_

Tenth Place: \_\_\_\_\_

3. In part 1 above, put a tick next to the name of each of the top six finishers; those runners will go on to the final race!

# EVENS, ODDS, AND ENDS

## That's Odd

What do the odd numbers in each box have in common?

<b>33</b>	<b>69</b>	<b>129</b>
<b>27</b>	<b>3</b>	<b>51</b>

BOX ONE

<b>9</b>	<b>19</b>	<b>11</b>	<b>21</b>
<b>15</b>	<b>17</b>	<b>23</b>	<b>13</b>

BOX TWO

<b>49</b>	<b>81</b>	<b>121</b>
<b>9</b>	<b>25</b>	<b>1</b>

BOX THREE

1. BOX ONE: \_\_\_\_\_
2. BOX TWO: \_\_\_\_\_
3. BOX THREE: \_\_\_\_\_

## We're Even

For each item, determine what three consecutive even numbers less than 50 are addends that produce the sum shown on the right.

1. \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = 132
2. \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = 96
3. \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = 78
4. \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = 60
5. \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = 42
6. \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = 24

## Name That Number

Write the number described in each paragraph.

1. I am a four-digit number. My first digit is an odd number that is  $\frac{1}{9}$  the size of my last digit. My middle digits make up the smallest two-digit number divisible by 3. What number am I? \_\_\_\_\_
2. I am a five-digit number. My first digit is the largest single-digit even number. My last digit is the smallest one-digit number that evenly divides into my first digit. My middle three digits make up the number that represents 12 squared. What number am I? \_\_\_\_\_
3. I am a six-digit number. My first digit is  $\frac{1}{2}$  of my last digit. My last digit is a one-digit number divisible evenly by itself, 1, 2, and 3. My middle digits make up the amount represented by the number of cents in \$50, minus 25 cents. What number am I? \_\_\_\_\_

# THINK IT OVER

Read and solve the five word problems below. Be careful—they are tricky!

**1.** Matthew, Will, and Tim often eat lunch together at Chez Chow. Each orders either a Cluck-Luck Sandie or a Beef 'n' Leaf Burgah. The waiter has noticed a trend in their ordering.

- When Matthew orders a Cluck-Luck, Will orders a Beef 'n' Leaf.
- Either Matthew or Tim orders a Cluck-Luck; they never both order one.
- Will and Tim never both order a Beef 'n' Leaf.

What are the two order combinations that Matthew, Will, and Tim make?

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**2.** Two fathers and two sons went bass fishing. Each person caught a bass. The group caught a total of three fish. How could this be?

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**3.** In August, tour buses leave Melbourne twice each day to take visitors to the Cape York Peninsula. Buses also leave twice each day to return visitors to Melbourne from Cape York. It takes each bus five days to travel from Melbourne to Cape York and five days to return. All buses take the same highway to and from each place. If you were travelling on a bus to the Cape York Peninsula, you would pass how many buses on their way back to Melbourne?

(Notes: Melbourne and the Cape York Peninsula are in the same time zone. You leave Melbourne before any buses have returned from Cape York. The last bus returning to Melbourne has already left on the day that you arrive at Cape York.)

Number of buses passed: \_\_\_\_\_

**4.** Solve this riddle.

Sisters and brothers, I have none,  
But that man's father is my father's son.  
Who is "that man"?

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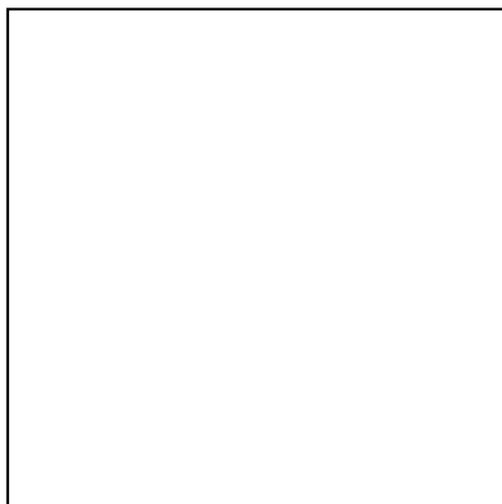
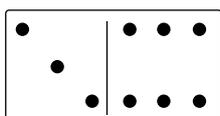
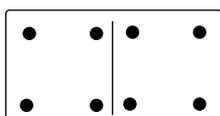
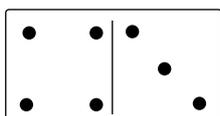
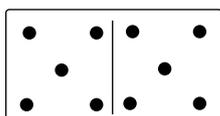
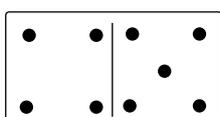
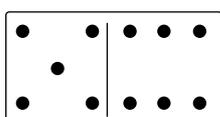
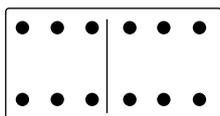
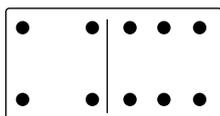
**5.** A bottle of juice costs 35¢. The juice costs 15¢ more than the deposit on the bottle. If you returned the empty bottle for a refund of the deposit, how much money should you get in return?

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# DOMINOES AND DEFINITIONS

## Dominoes

Arrange the following eight dominoes in a square so that the dots in each row, in each column, and in each diagonal add up to 19. Use actual dominoes if you like. Then draw your arrangement in the box below.



## Definitions

Use a dictionary. Write the definition of the prefix hex. Then write a definition of the three words that follow. On a separate piece of paper, draw a picture to illustrate the definition of each word.

hex: \_\_\_\_\_

hexagon: \_\_\_\_\_

hexapod: \_\_\_\_\_

hexameros: \_\_\_\_\_