

Ages 10+

Remedial Maths Series: Number

**For students requiring assistance
with number concepts.**

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Teachers' Notes

Mathematics education encompasses a wide range of topics and concepts, many of which are only briefly dealt with in the classroom due to time constraints. It is important that these fundamental concepts are understood before students move onto the next mastery level.

Students often fail to grasp all concepts and are unable to catch up to the level at which the rest of the class are working. It is here that the real difficulty for these students begins as they will sometimes withdraw from activities and miss further valuable concepts, simply because they had not mastered the prerequisite skills.

Remediation for many students is frequently associated with a reduced self esteem as students are aware that they are working behind the rest of the class, especially when text books and worksheets for lower grades are used to help them to catch up.

This remediation series is designed to provide KS2-3 students with the necessary skills and knowledge of mathematical concepts required for their year level and can be used both in the classroom and as a "take-home" package for extra consolidation of concepts.

The reading and style is appropriate to the age of the student, even though many of the remedial activities are focused on previous stages of the maths syllabus. It is hoped that this series will boost the students' self esteem as they realise that they are able to successfully complete the maths activities in the book. In addition, students will not feel as if they are doing "baby" work as is the case when maths sheets for 8 year olds are given to 12 year old students.

For best results the series should be used to complement a remedial maths programme for a small group or for individual students who need to catch up. Many of the worksheets explain the mathematical concepts and provide examples however, it is assumed that this is not the student's first experience with the concept. Each book in the series follows the same format and is directed at upper primary groups, yet is appropriate for the secondary school if required.

The Challenge questions and word problems at the bottom of some pages test the child's knowledge of the mathematical concept for that particular page. The challenge is usually presented as a word problem in a real world context so as to highlight the need for the skill.

This book explains the basic concepts of number, exploring in detail the processes of addition, subtraction, multiplication and division. Decimals are explored in detail as well as the relationship between decimals and percentages. The activities are sequenced in line with the standard syllabus structure, covering a number of stages as opposed to activities restricted to one year level. The activities are basically designed to provide students with the opportunity to catch up on much needed mathematical skills.

Mental Maths

ADDITION

Set 1.

$37 + 9 = \dots\dots\dots 43 + 2 = \dots\dots\dots 54 + 3 = \dots\dots\dots 42 + 8 = \dots\dots\dots 23 + 4 = \dots\dots\dots$

$337 + 9 = \dots\dots\dots 743 + 2 = \dots\dots\dots 954 + 3 = \dots\dots\dots 442 + 8 = \dots\dots\dots 623 + 4 = \dots\dots\dots$

Set 2.

$58 + 7 = \dots\dots\dots 43 + 2 = \dots\dots\dots 66 + 3 = \dots\dots\dots 56 + 9 = \dots\dots\dots 33 + 8 = \dots\dots\dots$

$897 + 9 = \dots\dots\dots 475 + 8 = \dots\dots\dots 754 + 3 = \dots\dots\dots 342 + 6 = \dots\dots\dots 976 + 4 = \dots\dots\dots$

Set 3.

$57 + 6 = \dots\dots\dots 43 + 0 = \dots\dots\dots 45 + 7 = \dots\dots\dots 92 + 8 = \dots\dots\dots 68 + 7 = \dots\dots\dots$

$336 + 2 = \dots\dots\dots 756 + 8 = \dots\dots\dots 227 + 6 = \dots\dots\dots 682 + 2 = \dots\dots\dots 396 + 6 = \dots\dots\dots$

Set 4.

$43 + 5 = \dots\dots\dots 24 + 9 = \dots\dots\dots 58 + 5 = \dots\dots\dots 49 + 4 = \dots\dots\dots 47 + 4 = \dots\dots\dots$

$137 + 9 = \dots\dots\dots 867 + 2 = \dots\dots\dots 245 + 2 = \dots\dots\dots 977 + 8 = \dots\dots\dots 625 + 5 = \dots\dots\dots$

SUBTRACTION

Set 1.

$43 - 2 = \dots\dots\dots 54 - 3 = \dots\dots\dots 42 - 8 = \dots\dots\dots 57 - 6 = \dots\dots\dots 43 - 0 = \dots\dots\dots$

$545 - 7 = \dots\dots\dots 692 - 8 = \dots\dots\dots 568 - 7 = \dots\dots\dots 742 - 8 = \dots\dots\dots 923 - 4 = \dots\dots\dots$

Set 2.

$42 - 5 = \dots\dots\dots 43 - 2 = \dots\dots\dots 57 - 9 = \dots\dots\dots 58 - 7 = \dots\dots\dots 43 - 9 = \dots\dots\dots$

$866 - 3 = \dots\dots\dots 556 - 9 = \dots\dots\dots 323 - 8 = \dots\dots\dots 256 - 8 = \dots\dots\dots 127 - 6 = \dots\dots\dots$

Set 3.

$82 - 2 = \dots\dots\dots 96 - 6 = \dots\dots\dots 97 - 9 = \dots\dots\dots 75 - 8 = \dots\dots\dots 64 - 3 = \dots\dots\dots$

$142 - 6 = \dots\dots\dots 576 - 4 = \dots\dots\dots 337 - 9 = \dots\dots\dots 223 - 4 = \dots\dots\dots 536 - 2 = \dots\dots\dots$

Set 4.

$43 - 5 = \dots\dots\dots 24 - 9 = \dots\dots\dots 58 - 5 = \dots\dots\dots 49 - 4 = \dots\dots\dots 47 - 4 = \dots\dots\dots$

$336 - 9 = \dots\dots\dots 687 - 2 = \dots\dots\dots 846 - 2 = \dots\dots\dots 696 - 8 = \dots\dots\dots 529 - 5 = \dots\dots\dots$

MULTIPLICATION

$3 \times 6 = \dots\dots\dots 4 \times 6 = \dots\dots\dots 2 \times 8 = \dots\dots\dots 8 \times 5 = \dots\dots\dots 6 \times 9 = \dots\dots\dots 9 \times 5 = \dots\dots\dots$

$7 \times 5 = \dots\dots\dots 2 \times 4 = \dots\dots\dots 3 \times 9 = \dots\dots\dots 4 \times 9 = \dots\dots\dots 3 \times 7 = \dots\dots\dots 4 \times 5 = \dots\dots\dots$

DIVISION

$7 \overline{)21} \quad 3 \overline{)27} \quad 6 \overline{)18} \quad 4 \overline{)36} \quad 5 \overline{)35} \quad 9 \overline{)54}$

$2 \overline{)12} \quad 1 \overline{)10} \quad 8 \overline{)64} \quad 5 \overline{)20} \quad 3 \overline{)15} \quad 7 \overline{)42}$

Place Value 1

Our counting system is based on groups of ten and is known as a decimal system.

In this system ten ones make ten;
 ten tens make one hundred;
 ten hundreds make one thousand.

In the table we can see how the same digit can represent a different amount. Where there is no number zeros are used to hold the place.

Thousands	Hundreds	Tens	Ones		
9	0	0	0	shows nine thousands	= 9000
	9	0	0	shows nine hundreds	= 900
		9	0	shows nine tens	= 90
			9	shows nine ones	= 9

1. What is the place value of the underlined digits in each number below.

e.g. 2764 = thousands 3678 = 7645 = 9078 = 5766 =

2. What is the face value of the underlined digits below?

e.g. 2873 = 800 2983 = 8765 = 5788 = 4565 =

3. Write these numbers in expanded form. The first one has been done for you.

a. 2389 = 2000 + 300 + 80 + 90 b. 3947 =

c. 3876 = d. 7764 =

4. Write these numbers in digit form.

Five thousand, three hundred and seventy-six =

Seven thousand, eight hundred and thirty-nine =

Eight thousand and sixty-four =

Nine thousand, two hundred and six =

Three thousand and seventeen =

5. Circle the number representing the tens in each amount below.

£529.00 65 m 72 min 145 km 2535 mm £34.00

6. Circle the number representing the hundreds in each amount below.

£200.00 163 m 180 min 735 km 9465 mm 625 mL

7. What is the value of 8 in each number below?

e.g. 82 - 80 18 835 28 8652

Exploring the relation of digit placement to value in the base ten system for whole numbers up to 1000.

Place Value 2

The table below shows the place value of numbers beyond the thousands.
Write this number in the spaces below so that the digits are in the right columns.
Seven million, four hundred and fifty-six thousand, three hundred and twenty-two.

M	H. Th	T. Th	Th	H	T	O
1 000 000	100 000	10 000	1000	100	10	1
.....

1. Show these numbers on the table below

	1 000 000	100 000	10 000	1000	100	10	1
5 498 765							
2 098 634							
4 200 049							
187 685							
280 097							
35 497							

2. Write the following numbers in expanded form. The first one has been done for you.

3 487 978 = (3 x 1 000 000) + (4 x 100 000) + (8 x 10 000) + (7 x 1000) + (9 x 100)
+ (7 x 10) + (8 x 1).

2 876 543 =

7 653 012 =

3. Write the *place value* and the *face value* for the underlined numbers below.

3 425 643 = ten thousands = 20 000 3 298 765 = =

5 364 243 = = 2 509 345 = =

Challenge:

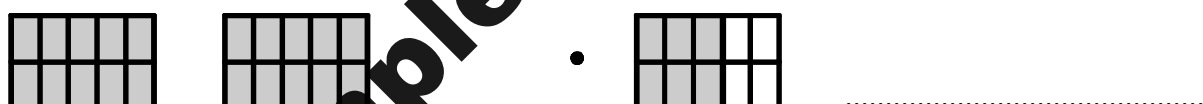
Write this number in digits: Six million, two hundred thousand and fourteen hundred.

Decimals: Place Value 1

A decimal represents part of a whole. A decimal point separates the whole number and the fraction left over. For example the shaded blocks below show three wholes and one half of a block. We write this as 3.5. The 3 represents the complete blocks and the .5 represents the half block.



Look at the shaded areas below and write the decimal amount next to each one.



The left over amount is represented as tenths, hundredths and thousandths of one unit. Look at this example. Express the amount as a fraction.

25.6 =

We can say that the amount left over is equal to six tenths. This is shown in the table below.

Hundreds	Tens	Ones	.	1/tenth	1/hundredth	1/thousandth
	2	5	.	6		

1. Record the following decimal amounts into the table. 36.7 23.5 12.52 525.3 0.755

Hundreds	Tens	Ones	.	1/tenth	1/hundredth	1/thousandth

2. Write the place value represented by the underlined number.

- a. 156.2 e. 56.38
- c. 68.2 f. 236.87
- d. 56.87 g. 2.36

Word Problems

1. Tiffany spent £1.30 at the lolly shop and Jacinta spent £6.55.

What was the total amount spent?

2. Jake had 364 pounds saved in the bank. He also had £28.75 in his pocket and £3.80 in his car. How much

money did he have altogether?

3. Brad ran 6.23 km on Sunday afternoon and then 5.79 km on Monday. On Tuesday he jogged a distance of 24.4 km. What

was the total distance he ran over the three days?

4. Alison and Matt were comparing prices for computers and printers. They were shown three separate deals. The first deal included a printer costing £989 and a computer costing £2899. The second deal involved a second hand printer at £755 and a computer marked at £2995 and the third deal had a printer for £905 and a computer for £2795.

Which is the least expensive package?

5. Chrissie and Shane were painting the lounge room. They used 395 mL of paint on the first coat and then another 278 mL touching up the corners. They then coated the walls another time and used up 455 mL.

How much paint did they use altogether?

6. Donelle read six books during the week with the following amounts of pages - 354, 633, 23, 855, 125, 122. How many pages did she read altogether?

7. Tarlie grows sunflowers in her garden. Last year she counted 276 flowers and this year she counted 452 flowers.

What is the total amount of sunflowers she has grown?

8. Billy had 657 jellybeans in a jar. He gave some to Samantha, and he now has 534 left.

How many jellybeans did he give to Samantha?

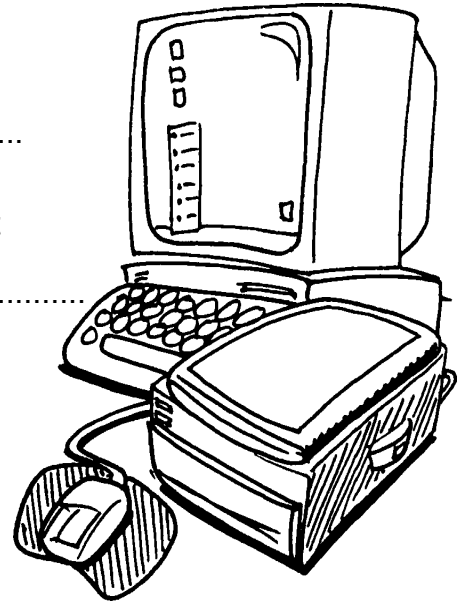
9. Kyle weighed 97.54 kg. After taking up exercise he lost 13.85 kg.

What is his current weight?

10. Amanda and Taylor spent most of the weekend doing assignments. On Saturday they worked for 5 hours and 15 minutes. On Sunday morning they worked 3 hours and 10 minutes and in the evening they spent another 3 hours and 35 minutes studying.

What was the total amount of time they spent studying?

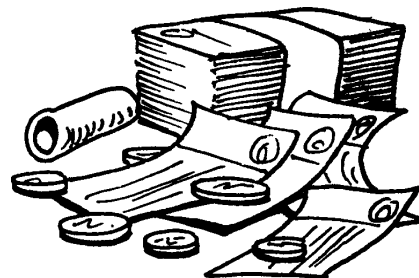
11. In a game of cricket, Michael scored 143 runs, Kimberly scored 167 runs and Megan scored 25 runs. What was their combined score?



Money

The decimal system is used for measurement units and money. Our pounds and pence are based on units of 1, 10 and 100. Complete the following to get a better understanding of how the decimal system is used to write amounts of money.

- How many pence in £1?
- How many pence in £5?
- How many 10 p pieces are needed to make £1?
- How many pounds are there in 100 p?



5. **46 pence is equal to 0.46 of £1. It is written as £0.46. Write these amounts below in numbers:**

- | | |
|---------------------------------|---------------------------------|
| a. 3 pounds and 45 pence | b. 9 pounds and 59 pence |
| c. 67 pounds and 6 pence | d. 12 pounds and 23 pence |
| e. 14 pounds and 5 pence | f. 45 pounds and 50 pence |
| g. 143 pounds and 3 pence | h. 20 pounds and 20 pence |

6. **Express these amounts in pounds.**

- | | | |
|---------------------|---------------------|---------------------|
| a. 3573 pence | b. 2894 pence | c. 2090 pence |
| d. 354 pence | e. 2001 pence | f. 15 pence |
| g. 16 pence | h. 235 pence | i. 5 pence |

7. **Express these decimal amounts as pounds and pence. The first one has been done for you.**

- | | | | |
|---------------|-----------------|----------------|-----------------|
| 45.3 = £45.30 | a. 21.2 | b. 367.5 | c. 354.2 |
| d. 34 | e. 245.08 | f. 32.32 | g. 200.06 |

8. **Round these amounts to the nearest pound.**

- | | | | |
|------------------------|-------------------|-------------------|-------------------|
| £54.35 ≈ <u>£54.00</u> | a. £23.27 ≈ | b. £98.87 ≈ | c. £35.68 ≈ |
| d. £87.02 ≈ | e. £3.89 ≈ | f. £20.05 ≈ | g. £62.55 ≈ |
| h. £3234.45 ≈ | i. £0.96 ≈ | j. £1.05 ≈ | k. £57.62 ≈ |

Challenge:

Bindi has 30.2 pounds and Sean has £30.20. Who has the most money?