A Complete Guide to ...

Number

Utilising the objectives as written in

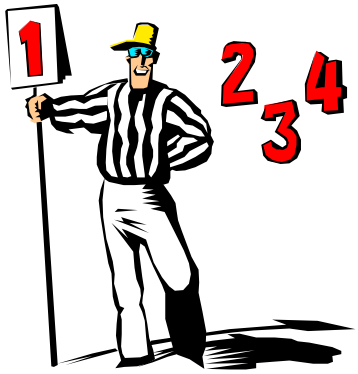
MATHEMATICS in the New Zealand CURRICULUM

for

Level 3

This resource contains:

- ☑ Table of contents
- ☑ Teaching notes
- ☑ In class activity sheets involving
  - ▫ worked examples
  - ▫ basic skills
  - ▫ word problems
  - ▫ problem solving
  - ▫ group work
- ☑ Homework / Assessment activity sheets
- ☑ Answers



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Author: A. W. Stark

AWS Publications Ltd
Formerly *AWS* Teacher Resources

L3MN

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Note from the author:

This resource ...

*A Complete Guide to Number

is one of a series of **FIVE** resources written utilising the objectives as stated in

Mathematics in the New Zealand Curriculum for Level 3.

With my experiences as a specialist mathematics teacher, I enjoyed mathematics as a subject, but I am aware that not all teachers feel the same way about mathematics. It can be a difficult subject to teach, especially if you are unsure of the content or curriculum and if resources are limited.

This series of resources has been written with you in mind. I am sure you will find this resource easy to use and of benefit to you and your class.

Resources in this series:

A Complete Guide to Number** written utilising the objectives as stated in ***Mathematics in the New Zealand Curriculum for Level 3.	**Resource Code: L3MN**
A Complete Guide to Measurement written utilising the objectives as stated in ***Mathematics in the New Zealand Curriculum for Level 3.***	**Resource Code: L3MM**
A Complete Guide to Geometry written utilising the objectives as stated in ***Mathematics in the New Zealand Curriculum for Level 3.***	**Resource Code: L3MG**
A Complete Guide to Algebra written utilising the objectives as stated in ***Mathematics in the New Zealand Curriculum for Level 3.***	**Resource Code: L3MA**
A Complete Guide to Statistics written utilising the objectives as stated in ***Mathematics in the New Zealand Curriculum for Level 3.***	**Resource Code: L3MS**

For more information about these and other resources, please contact ...

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Acknowledgement:

I would like to thank the staff and pupils of **Mairehau Primary School, Christchurch** for their assistance in making these resources possible.

This resource has been divided into EIGHT sections as listed below.

Although there are no page numbers, the sections follow in sequential order as listed.

Note: **'In-class' Worksheets Masters** are lesson by lesson reuseable worksheets that can be photocopied or copied on to an OHP.

Homework / **Assessment Worksheets Masters** can be used as homework to reinforce work covered in class or they can be used for pupil assessment.

Section	
1	**List of Measurement Objectives: Table of 'In-class' Worksheets / Objectives covered**
2	**Table of Contents: 'In-class' Worksheets**
3	**'In-class' Worksheets Masters**
4	**Teaching Notes / Answers for 'In-class' Worksheets**
5	**Table of Contents: Homework / Assessment Worksheets**
6	**Homework / Assessment Worksheets Masters**
7	**Answers for Homework / Assessment Worksheets**
8	**Worksheet tracking sheets for teachers to record pupil names / worksheets covered**

1 Number

The following are the objectives for **Number**, **Level 3**, as written in the **MATHEMATICS** *in the New Zealand Curriculum* document, first published 1992. ***[REFER PAGE 40]***

Exploring number

Within a range of meaningful contexts, students should be able to:

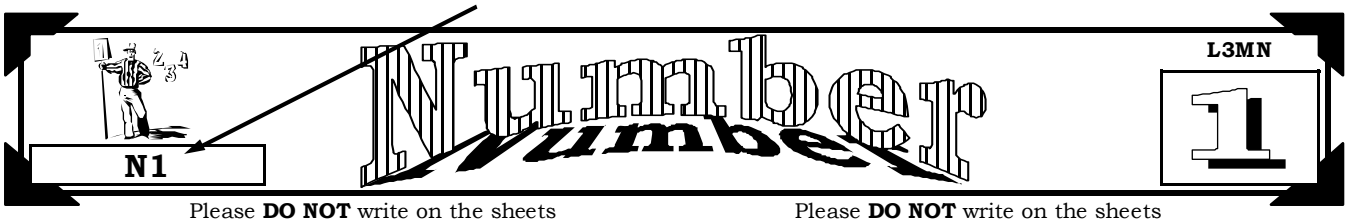
- **N1** explain the meaning of digits in any whole number;
- **N2** explain the meaning of the digits in decimal numbers with up to 3 decimal places;
- **N3** order decimals with up to 3 decimal places.

Exploring computation and estimation

Within a range of meaningful contexts, students should be able to:

- **N4** make sensible estimates and check the reasonableness of answers;
- **N5** recall the basic multiplication facts;
- **N6** write and solve problems which involve whole numbers and decimals and which require a choice of one or more of the four arithmetic operations;
- **N7** solve practical problems which require finding fractions of whole number and decimal amounts.

At the top of each **'In-class' worksheet** and **Homework / Assessment worksheet**, the Number objective(s) being covered has been indicated. *EXAMPLE:* **N1** means objective 1, **N2** means objective 2, etc.



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The **Mathematical Processes Skills: Problem Solving**, **Developing Logic & Reasoning,** **Communicating Mathematical Ideas,** are learned and assessed within the context of the more specific knowledge and skills of number, measurement, geometry, algebra and statistics. The following are the **Mathematical Processes Objectives** for **Level 3**.

Problem Solving Achievement Objectives ***[Refer page 24]***

- **MP1** pose questions for mathematical exploration;
- **MP2** effectively plan mathematical exploration;
- **MP3** devise and use problem-solving strategies to explore situations mathematically;
- **MP6** use equipment appropriately when exploring mathematical ideas.

Developing Logic and Reasoning Achievement Objectives ***[Refer page 26]***

- **MP8** classify objects, numbers and ideas;
- **MP9** interpret information and results in context;
- **MP14** use words and symbols to describe and continue patterns.

Communicating Mathematical Ideas Achievement Objectives ***[Refer page 28]***

- **MP15** use their own language and mathematical language and diagrams to explain mathematical ideas;
- **MP16** devise and follow a set of instructions to carry out a mathematical activity;
- **MP18** record, in an organised way, and talk about the results of mathematical exploration.

Note:
The codes **MP1**, **MP2**, etc. have been created by numbering the **Mathematical Processes Achievement Objectives** in order as listed in the **MATHEMATICS** *in the New Zealand Curriculum* document. The numbering gaps occur as not all objectives are covered at **Level 3**. ***[REFER TO PAGES 23 - 29 OF THE CURRICULUM DOCUMENT]***

‘In-class’ Number Worksheets
Table of Worksheet Number / Objectives Covered

See the opposite page for details of each objective.

	Number Objectives							Mathematical Processes Objectives								
Worksheet Number	N 1	N 2	N 3	N 4	N 5	N 6	N 7	MP 1	MP 2	MP 3	MP 6	MP 8	MP 9	MP 14	MP 15	MP 16	MP 18
1	✖							✖									
2	✖									✖			✖				
3		✖						✖									
4		✖								✖			✖				
5			✖							✖			✖				
6			✖							✖			✖		✖		
7				✖						✖			✖				
8					✖			✖									
9						✖				✖			✖				
10						✖				✖			✖				
11			✖			✖		✖		✖			✖				
12				✖		✖		✖		✖			✖				
13				✖		✖		✖		✖			✖				
14							✖	✖		✖			✖				
15							✖	✖		✖			✖			✖	
16							✖	✖		✖			✖			✖	
17							✖	✖		✖			✖				

Table of Contents for the 'In-class' Worksheet Masters for Number, Level 3

Worksheet Number	Topic	Number Objective(s)
1	Reading and writing whole numbers	N1
2	Place value in whole numbers / Adding and subtracting whole numbers	N1
3	Reading and writing decimal numbers	N2
4	Place value and decimals / Adding and subtracting decimal numbers	N2
5	Ordering decimal numbers	N3
6	Creating decimal numbers / Renaming numbers using decimals	N3
7	Estimation involving money	N4
8	Basic multiplication facts	N5
9	Adding and subtracting whole numbers	N6
10	Multiplying and dividing whole numbers	N6
11	Adding and subtracting decimals	N3 / N6
12	Multiplying and dividing decimals	N4 / N6
13	Problems involving money	N4 / N6
14	Introduction to fractions	N7
15	Working with fractions (numerators = 1)	N7
16	More fractions (numerators > 1)	N7
17	Fractions, decimals and money	N7
	Teaching Notes / Answers	

Reading and writing whole numbers:

"Mum, are there two or three zeros in one thousand and four?" asked Alf.
"Only two," said his mother.

5048

How would Alf write this number?

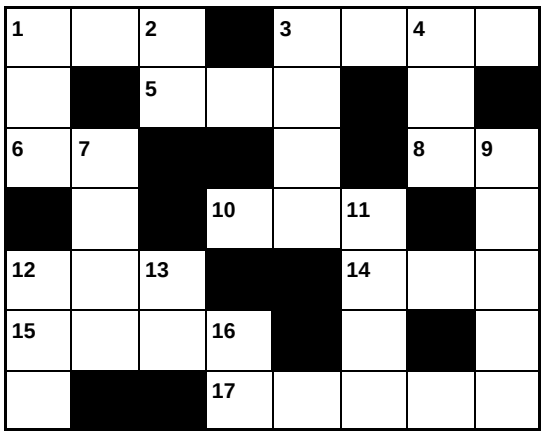
Answer: 1004

"Can you now write 2352 in words?" asked Alf's mother.

"Easy," said Alf, as he writes, '*two thousand, three hundred and fifty two*' *"There!"*

Task 1

1. **Copy** this 'number cross' into the squares of your maths book.
2. Use the clues for **across** and **down** to complete the number cross by writing these number words as numerals.



Clues across

1. six hundred and fifty-two
3. five thousand, three hundred and forty-nine
5. nine hundred and seventy-two
6. eighty-five
8. twenty-eight
10. one hundred and seventy-four
12. seven hundred and twenty-four
14. one hundred and sixty-five
15. four thousand, four hundred and seven
17. thirty thousand and fifty-two

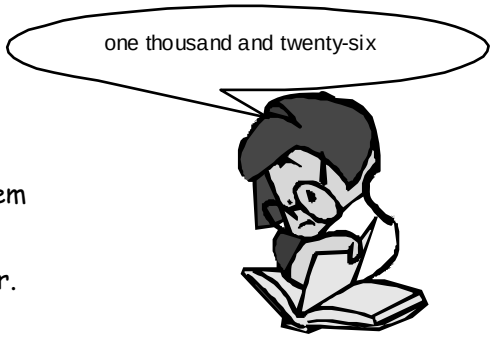
Clues down

1. six hundred and eight
2. twenty-nine
3. five thousand, two hundred and seven
4. four hundred and sixty-two
7. five thousand and twenty-four
9. eighty-one thousand, five hundred and forty-two
11. four thousand one hundred and seventy
12. seven hundred and forty-one
13. forty
16. seventy-three

Write these numbers in words.

3.	81	4.	513	5.	706	6.	2050
7.	6008	8.	8654	9.	12050	10.	13009
11.	15469	12.	90006	13.	102000	14.	115062

Task 2



For this task, work in small groups of 3 or 4 pupils.
Each pupil writes out 10 large numbers.
Example: 15026

Each pupil calls out his / her numbers and the other pupils write them down.

When each pupil has had a turn, check your answers with each other.

How many did you get right?

Place value in whole numbers:

When 'digits' are written side by side a number is created. The order and position of a digit in a number affects its value. Each position of a digit in a number has a particular **place value**.

Example: What is the value of the digit **'9'** in each of these numbers?
8**9**52 and 71**9**6

Answer: The digit **'9'** in 8952 stands for 900.
The digit **'9'** in 7196 stands for 90.

Some of the **place values** for whole numbers are shown in this chart below.

100000	10000	1000	100	10	1
hundred thousands	ten thousands	thousands	hundreds	tens	ones (units)

Task 3

What is the **place value** of the digit that is **high-lighted** and what does it mean?
Example: In 25**6**9, the **6** has a place value of ten and it means 60.

1.	25**6**9	2.	1**3**96	3.	86**9**	4.	1**2**695
5.	**5**63	6.	1**4**5620	7.	3652**8**	8.	**6**91598
9.	1**5**469	10.	69236**9**	11.	**2**6987	12.	3659**9**4
13.	561**0**4	14.	**3**06902	15.	23613**3**4	16.	3**1**4166

Adding and subtracting whole numbers:

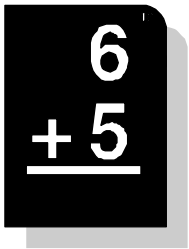
Jillian was asked to add up these whole numbers, 345, 23, 9, 123, 1004 & 65. So that she does not make a mistake, she writes the numbers one under each other, lining up the digits with the same place value.

Example:

```
  345
   23
    9
 1004
+ 65
------
 1446
```

When Jillian does a subtraction problem, she also lines up the digits with the same place value.
Example: 856 – 524 would be written as ...

```
  856
- 524
-----
  332
```



Task 4

Rewrite each of the problems as above, lining up the digits before you work out the answers.

1.	215 + 27 = ?	2.	9 + 502 + 69 = ?	3.	512 – 98 = ?
4.	26 + 2368 = ?	5.	6325 – 84 = ?	6.	865 + 7 + 1025 = ?
7.	156200 + 5411 = ?	8.	25 + 538 + 6 + 8695 = ?	9.	18569 – 6048 = ?
10.	125 + 25 + 1025 + 9 = ?	11.	23658 – 6847 = ?	12.	6532 + 56 + 7 + 125 = ?
13.	36 + 9 + 1005 + 536 = ?	14.	963 + 452100 + 56 = ?	15.	3690 + 50 + 687 + 8 = ?
16.	63900 – 695 = ?	17.	3 + 9853 + 65 + 357 = ?	18.	36985 – 6841 = ?
19.	36 + 123 + 8 + 3697 = ?	20.	200000 – 5629 = ?	21.	60000 – 1365 = ?

Reading and writing decimal numbers:

12.052

"How do you say this number, 32.45?" asked Geoff.
"Is it thirty-two point forty-five or thirty-two point four five?," asked Paul.

What do you think is the correct way to say 32.45?

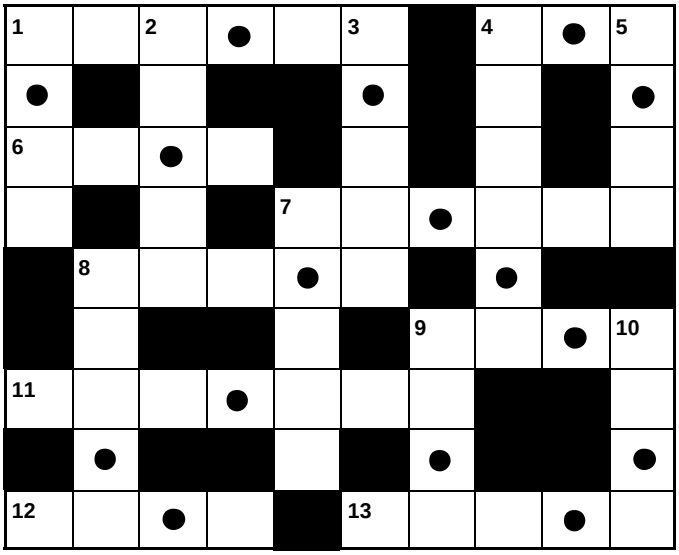
Answer: Thirty-two point four five

"Can you now write 305.108 in words?" asked Geoff.

"Easy," said Paul, as he wrote *'three hundred and five point one zero eight'* *"There!"*

Task 5

1. **Copy** this 'number cross' into the squares of your maths book.
2. Use the clues for **across** and **down** to complete the number cross by writing these decimal number words as numerals.



Clues across

1. three hundred and fifty-nine point seven one
4. three point seven
6. sixty point four
7. fifteen point five nine two
8. two hundred and seventy-five point three
9. ninety-four point three
11. four hundred and ninety-two point three zero three
12. twenty-five point nine
13. three hundred and forty point nine

Clues down

1. three point six seven
2. ninety-one point zero seven
3. one point nine five three
4. three thousand and five point four
5. seven point one two
7. one point zero three five
8. two hundred and sixty-nine point five
9. ninety-three point four
10. thirty-one point nine

Write these decimal numbers in words.

3.	23.9	4.	502.7	5.	25.04	6.	138.509
7.	164.26	8.	240.079	9.	125.009	10.	1050.080
11.	1546.693	12.	10456.62	13.	12365.304	14.	100256.007

Task 6

For this task, work in small groups of 3 or 4 pupils.
Each pupil writes out 10 decimal numbers. *Example:* 231.604

Each pupil calls out his / her numbers and the other pupils write them down.

When each pupil has had a turn, check your answers with each other. How many did you get right?

Place value and decimals:

As we have seen, the 'digits' in a whole number all have a place value.
Numbers involving decimals also have particular place values.

Example: What is the value of the digit **'9'** in each of these numbers?
20.**9**5 and 7.1**9**6

Answer: The digit **'9'** in 20.95 stands for 9 tenths.
The digit **'9'** in 7.196 stands for 9 hundredths.

Some of the **place values** for numbers involving decimals are shown in this chart below.

100 hundreds	**10** tens	**1** ones (units)	●	$\frac{1}{10}$ tenths	$\frac{1}{100}$ hundredths	$\frac{1}{1000}$ thousandths

Task 7

What is the **place value** of the digit that is **high-lighted** and what does it mean?
Example: In 2.5**6**9, the **6** has a place value of hundredths and it means 6 hundredths.

1.	2.5**6**9	2.	49.91**3**	3.	36.**4**86	4.	369.1**6**6
5.	3.95**7**	6.	27**2**8.23	7.	3.65**9**	8.	96.5**0**8
9.	36.**2**89	10.	692.36**9**	11.	**2**86.214	12.	78.5**9**4
13.	471.**0**4	14.	5**7**8.45	15.	2781.**3**47	16.	3**1**.166

Adding and subtracting decimal numbers:

Jillian was asked to add up these decimal numbers, 1.23, 15.6, 0.365 & 125.7. So that she does not make a mistake, she writes the numbers one under each other, lining up the digits with the same place value. The decimal points will also be in line. Adding zeros after the decimal point can be helpful.

Example:

```
  1.230
 15.600
  0.365
125.700
------
142.895
```

When Jillian does a subtraction problem, she also lines up the digits with the same place value and the decimal points.

Example: 15.9 – 2.36 would be written as ...

```
 15.90
- 2.36
------
 13.54
```

Where is the decimal point for the number 154? Answer: After the number 4, so the number 154 could be written as 154.0

Task 8

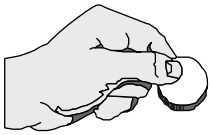
Rewrite each of the problems as above, lining up the decimal points before you work out the answers.

1.	25.9 + 53.7 = ?	2.	102.3 + 5.3 + 15.8 = ?	3.	56.9 – 8.7 = ?
4.	2.68 + 14.38 = ?	5.	257.68 – 63.57 = ?	6.	12.56 + 9.3 + 4.35 = ?
7.	126.56 + 15.68 = ?	8.	5.32 + 9.7 + 15.96 = ?	9.	562.65 – 46.8 = ?
10.	1.368 + 6.8 + 24 = ?	11.	125.5 – 25.31 = ?	12.	5.23 + 12 + 8.6 + 2.354 = ?
13.	8.4 + 9.23 + 124 + 0.9 = ?	14.	0.125 + 125.6 + 5.37 = ?	15.	36.901 + 0.08 + 9.7 + 8 = ?
16.	45.625 – 9.45 = ?	17.	15 + 1.068 + 1.6 + 4.68 = ?	18.	369.85 – 256.7 = ?

Ordering decimal numbers:

Jack measured four lengths of string. They measured 5.23m, 5.27m, 5.28m & 5.21m. Order these lengths of string, from shortest to longest.

Answer: 5.21m, 5.23m, 5.27m & 5.28m



Jenny weighed five coins. They weighed 1.037g, 1.046g, 1.057g, 1.032g, 1.049g & 1.051g Order these weights from heaviest to lightest.

Answer: 1.057g, 1.051g, 1.049g, 1.046g, 1.037 & 1.032g

Task 9

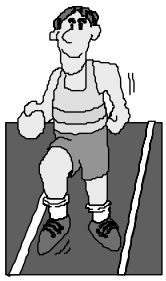
Order these decimals from smallest to largest.

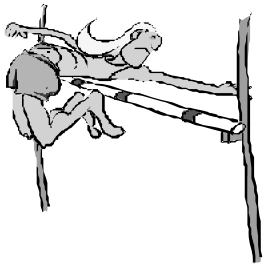
1. 2.6, 5.7, 1.9, 8.4, 7.3, 4.9, 6.7, 7.7
2. 1.2, 2.4, 1.6, 2.0, 1.8, 0.9, 2.1, 1.9
3. 5.7, 5.8, 5.3, 5.6, 5.4, 5.9, 5.1
4. 1.08, 1.07, 1.02, 1.06, 1.01, 1.05, 1.09
5. 2.34, 2.45, 2.16, 2.75, 2.47, 2.27, 2.54
6. 12.56, 13.75, 11.98, 12.84, 13.24, 12.67
7. 1.126, 1.352, 1.245, 1.342, 1.049, 1.276, 1.165
8. 9.532, 9.842, 9.325, 9.348, 9.428, 9.468

The results of a 100m race is shown in this table.

9. What was Shane's time?
10. Name the runners who came 1st, 2nd and 3rd.
11. Order these times from fastest to slowest time.
12. What was the difference between the fastest and slowest time?

Runner	Time (seconds)
David	13.6
Andrew	13.7
Rangi	12.6
John	13.9
Quentin	12.9
Shane	13.0
Bevan	13.4
Sam	14.1





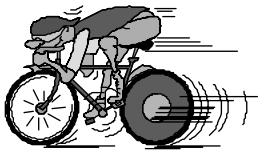
Karen competed in a high jump competition. She was allowed six jumps and these were her results, 1.53m, 1.27m, 1.61m, 1.42m, 1.35m & 1.50m.

13. What was the height of her worst jump?
14. What was the height of her 5th jump?
15. Place her jump heights in order of highest to lowest jump.
16. What was the difference between her best and worst jump?

In a tomato growing competition, pupils were allowed to enter three tomatoes. Each tomato was weighed and the results are shown in this table.

17. What was the weight of the heaviest tomato?
18. What was the weight of the lightest tomato?
19. List all the tomato weights in order from lightest to heaviest.
20. For each pupil, add up their three tomato weights.
21. List your four totals in order of largest to smallest.

Name	1	2	3
Miri	15.3g	14.7g	12.9g
James	14.8g	13.2g	15.0g
Fred	13.6g	13.9g	14.9g
Kim	16.2g	11.5g	13.4g



In a cycling race, the following times were recorded for the 1 kilometre distance.

1min 5.6sec, 1min 7.2sec, 1min 6.4sec, 1min 7.0sec, 1min 5.9sec, 1min 6.7sec

22. List these times in order from slowest to fastest.

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Creating decimal numbers:

Using the five digits in this box and a decimal point, create the largest number closest to 30.

2	4	5	7	9		∘

Answer: 29.754

Using the same digits and decimal point, create five numbers between 50 and 40, starting with the largest number first. Each number is to have two decimal places.

Answer: 49.75, 49.72, 49.57, 49.52, 49.27, etc.

Task 10

Using the digits and decimal point in the box make ...

2	6	7	5	0		∘

1. the 3-digit number closest to 60.
2. the 4-digit even number closest to 70.
3. the 4-digit even number closest to 250.
4. the 2-digit odd number closest to 8.
5. the 3-digit odd number closest to 30.
6. the 4-digit number closest to 7.
7. the 5-digit number closest to 50.
8. the 5-digit even number closest to 2.
9. the 5-digit odd number closest to 1.
10. Using all digits, make the first 5 numbers between 25 and 30. Start with the smallest number first.

Renaming numbers using decimals:

A good example of renaming whole numbers as decimals is when using money.
Example: $2.00 could be renamed as $0.50 + $0.50 + $0.50 + $0.20 + $ 0.20 + $0.10

Renaming whole numbers is not difficult.
Example: 12 could be renamed as 0 + 12, 10 + 2, 14 – 2, 24 ÷ 2, 4 × 3 or 6 × 2 etc.

Renaming a number using decimals requires more effort.
Example: 12 could be renamed as 9.8 + 2.2, 15.8 – 3.8, 2.5 × 4.8 or 38.4 ÷ 3.2 etc.

Using a calculator can make this task less difficult.

Task 11

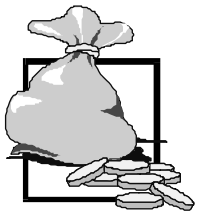
Rewrite each of these money values, **three** different ways**,** using $2.00, $1.00, 50 cent, 20 cent, 10 cent or 5 cent coins. *Example:* $7.00 = 3 x $2.00 + $1.00 coins

1.	50 cents	2.	80 cents	3.	$1.00	4.	$1.50
5.	$2.00	6.	$2.40	7.	$3.00	8.	$3.60
9.	$4.80	10.	$5.00	11.	$6.00	12.	$10.00

Rename each number **four times** as decimal numbers, using the four operations (+, –, × and ÷).
Use a calculator if needed. *Example:* 1 = 0.6 + 0.4, 1 = 1.52 – 0.52, 1 = 2.0 × 0.5, 1 =2.64 ÷ 2.64

13.	2	14.	4	15.	5	16.	7
17.	8	18.	10	19.	12	20.	15
21.	20	22.	25	23.	50	24.	100

Estimation involving money:



Linda went shopping and bought items worth $1.95, $8.95, $5.25 and $19.95.

How could you estimate how much she spent, without having to add up the actual price of each item?

Answer: Round the price of each item to the nearest dollar.
The prices would be $2.00, $9.00, $5.00 and $20.00. Add these totals to get an estimate. The estimate total is $36.00. To check if this is a reasonable answer, the exact prices can be added together.
The exact cost is $36.10, so the estimate was very good.

For larger money values, the amounts could be rounded to the nearest $10.00 or $100.00.
Example: $26.95 rounds to $30.00, $52.60 rounds to $50.00
$140.50 rounds to $100, $275.80 rounds to $300.00

Task 12

Round these money amounts to the nearest **$1.00**.

1.	$5.85	2.	$14.25	3.	$19.80	4.	$16.40
5.	$25.75	6.	$36.14	7.	$89.35	8.	$109.85

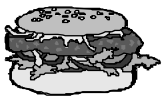
Round these money amounts to the nearest **$10.00**.

9.	$16.95	10.	$28.45	11.	$67.95	12.	$45.90
13.	$97.15	14.	$64.60	15.	$109.60	16.	$127.20

Round these money amounts to the nearest **$100.00**.

17.	$124.60	18.	$180.95	19.	$340.60	20.	$684.50
21.	$815.65	22.	$486.50	23.	$630.45	24.	$775.95

Sally and nine of her friends each had a hamburger for tea. The hamburger costs $2.95 each.



25. **Estimate** the total cost of buying these hamburgers.
26. Check how close your estimate was, by calculating the exact cost.

Adam bought some new clothes. They cost $9.95, $15.10, $19.95 and $10.40.
27. **Estimate** the total cost of these clothes.
28. Check how close your estimate was, by calculating the exact cost.

Judith has been saving money in her bank account. She has $78.20 saved in her account, but she takes out $25.80 to buy some Christmas presents.

29. **Estimate** how much money she has left in her account.
30. Check how close your estimate was, by calculating the exact bank balance.

At a school mufti day, $23.80, $18.90, $20.40, $19.75 and $20.85 was collected from five classes.
31. **Estimate** the total money raised from the mufti day.
32. Check how close your estimate was, by calculating the exact total of money raised.

Basic multiplication facts:

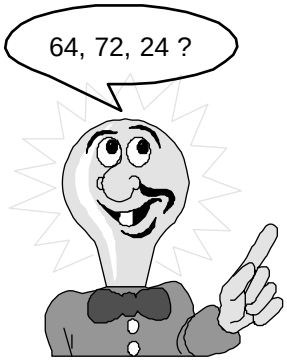
At the start of each day, Harry's class is asked 10 basic multiplication facts.

Example:

1. 3 × 6 = ...
2. 7 × 9 = ...
3. 8 × 3 = ...
4. 6 × 4 = ...
5. 10 × 7 = ...
6. 4 × 10 = ...
7. 11 × 12 = ...
8. 5 × 5 = ...
9. 12 × 8 = ...
10. 9 × 11 = ...

How long would it take you to do these questions?

Would you get them all correct?



Task 13

Below are several sets of '10 basic multiplication facts'.

Draw a table with the numbers 1 to 10 going down the side and the days 1 to 15 going across the top. Use this to record your answers. Now **complete** each set as quickly as you can.

Day 1

1. 5 × 6 = ...
2. 12 × 9 = ...
3. 9 × 3 = ...
4. 3 × 4 = ...
5. 7 × 7 = ...
6. 8 × 10 = ...
7. 6 × 12 = ...
8. 10 × 5 = ...
9. 4 × 8 = ...
10. 11 × 11 = ...

Day 2

1. 12 × 6 = ...
2. 9 × 9 = ...
3. 3 × 3 = ...
4. 7 × 4 = ...
5. 8 × 7 = ...
6. 6 × 10 = ...
7. 10 × 12 = ...
8. 4 × 5 = ...
9. 11 × 8 = ...
10. 5 × 11 = ...

Day 3

1. 9 × 6 = ...
2. 3 × 9 = ...
3. 7 × 3 = ...
4. 8 × 4 = ...
5. 6 × 7 = ...
6. 10 × 10 = ...
7. 4 × 12 = ...
8. 11 × 5 = ...
9. 5 × 8 = ...
10. 12 × 11 = ...

Day 4

1. 3 × 6 = ...
2. 7 × 9 = ...
3. 8 × 3 = ...
4. 6 × 4 = ...
5. 10 × 7 = ...
6. 4 × 10 = ...
7. 11 × 12 = ...
8. 5 × 5 = ...
9. 12 × 8 = ...
10. 9 × 11 = ...

Day 5

1. 7 × 6 = ...
2. 8 × 9 = ...
3. 6 × 3 = ...
4. 10 × 4 = ...
5. 4 × 7 = ...
6. 11 × 10 = ...
7. 5 × 12 = ...
8. 12 × 5 = ...
9. 9 × 8 = ...
10. 3 × 11 = ...

Day 6

1. 8 × 6 = ...
2. 6 × 9 = ...
3. 10 × 3 = ...
4. 4 × 4 = ...
5. 11 × 7 = ...
6. 5 × 10 = ...
7. 12 × 12 = ...
8. 9 × 5 = ...
9. 3 × 8 = ...
10. 7 × 11 = ...

Day 7

1. 6 × 6 = ...
2. 10 × 9 = ...
3. 4 × 3 = ...
4. 11 × 4 = ...
5. 5 × 7 = ...
6. 12 × 10 = ...
7. 9 × 12 = ...
8. 3 × 5 = ...
9. 7 × 8 = ...
10. 8 × 11 = ...

Day 8

1. 10 × 6 = ...
2. 4 × 9 = ...
3. 11 × 3 = ...
4. 5 × 4 = ...
5. 12 × 7 = ...
6. 9 × 10 = ...
7. 3 × 12 = ...
8. 7 × 5 = ...
9. 8 × 8 = ...
10. 6 × 11 = ...

Day 9

1. 4 × 6 = ...
2. 11 × 9 = ...
3. 5 × 3 = ...
4. 12 × 4 = ...
5. 9 × 7 = ...
6. 3 × 10 = ...
7. 7 × 12 = ...
8. 8 × 5 = ...
9. 6 × 8 = ...
10. 10 × 11 = ...

Day 10

1. 11 × 6 = ...
2. 5 × 9 = ...
3. 12 × 3 = ...
4. 9 × 4 = ...
5. 3 × 7 = ...
6. 7 × 10 = ...
7. 8 × 12 = ...
8. 6 × 5 = ...
9. 10 × 8 = ...
10. 4 × 11 = ...

Day 11

1. 11 × 9 = ...
2. 4 × 3 = ...
3. 10 × 12 = ...
4. 6 × 7 = ...
5. 8 × 4 = ...
6. 7 × 10 = ...
7. 3 × 8 = ...
8. 9 × 11 = ...
9. 12 × 6 = ...
10. 5 × 5 = ...

Day 12

1. 4 × 9 = ...
2. 10 × 3 = ...
3. 6 × 12 = ...
4. 8 × 7 = ...
5. 7 × 4 = ...
6. 3 × 10 = ...
7. 9 × 8 = ...
8. 12 × 11 = ...
9. 5 × 6 = ...
10. 11 × 5 = ...

Day 13

1. 10 × 9 = ...
2. 6 × 3 = ...
3. 8 × 12 = ...
4. 7 × 7 = ...
5. 3 × 4 = ...
6. 9 × 10 = ...
7. 12 × 8 = ...
8. 5 × 11 = ...
9. 11 × 6 = ...
10. 4 × 5 = ...

Day 14

1. 6 × 9 = ...
2. 8 × 3 = ...
3. 7 × 12 = ...
4. 3 × 7 = ...
5. 9 × 4 = ...
6. 12 × 10 = ...
7. 5 × 8 = ...
8. 11 × 11 = ...
9. 4 × 6 = ...
10. 10 × 5 = ...

Day 15

1. 8 × 9 = ...
2. 7 × 3 = ...
3. 3 × 12 = ...
4. 9 × 7 = ...
5. 12 × 4 = ...
6. 5 × 10 = ...
7. 11 × 8 = ...
8. 4 × 11 = ...
9. 10 × 6 = ...
10. 6 × 5 = ...

Task 14

Work in groups of 3 or 4.

Create your own set of '10 basic multiplication facts'. Make sure you know the answers to your questions.

Each pupil has a turn at asking his / her set of 10 questions, for the other pupils in the group to answer.

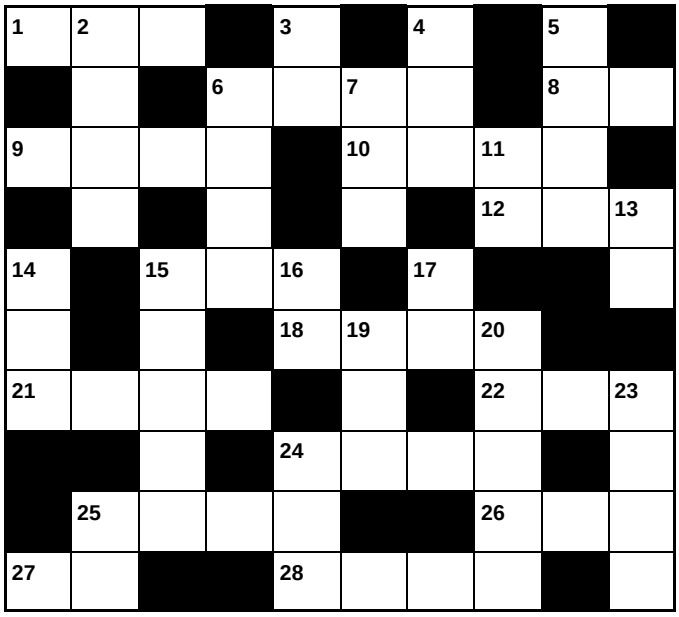
When each pupil has asked his /her questions, mark the answers. How did you get on?

Adding and subtracting whole numbers:

Being able to add and subtract numbers confidently is an important skill. How confident are you?

Task 15

1. **Copy** this 'number cross' into the squares of your maths book.
2. Use the clues for **across** and **down** to complete the number cross by writing your answers in the spaces. **Rewrite** the questions, lining up the digits, to help you work them out.



Clues across

1. 165 + 256 = ?
6. 278 + 354 + 410 = ?
8. 113 – 94 = ?
9. 658 + 79 + 786 = ?
10. 4185 – 461 = ?
12. 652 – 295 = ?
15. 17 + 13 + 23 + 9 + 19 + 24 = ?
18. 1257 + 986 + 678 = ?
21. 10000 – 3676 = ?
22. 142 + 98 + 7 + 67 + 160 = ?
24. 5000 – 2243 = ?
25. 2000 – 439 = ?
26. 56 + 127 + 29 + 102 + 42 = ?
27. 4560 – 4488 = ?
28. 3108 + 1614 =?

Clues down

2. 5236 – 2480 = ?
3. 5123 – 5053 = ?
4. 12 + 11 + 9 + 23 + 72 = ?
5. 1269 + 876 = ?
6. 97 + 146 + 872 + 7 + 218 = ?
7. 1000 – 563 = ?
11. 410 – 387 = ?
13. 8 + 7 + 6 + 9 + 11 + 13 + 7 + 11 = ?
14. 1251 – 1005 = ?
15. 6348 + 526 + 68 + 6303 = ?
16. 2143 – 2091 = ?
17. 8 + 12 + 35 + 9 + 28 = ?
19. 1200 – 263 = ?
20. 16000 – 1268 = ?
23. 976 + 1347 + 1844 = ?
24. 531 – 317 = ?
25. 341 – 329 = ?

James likes collecting cards from potato chip packets. So far he has collected 15, 13, 9 and 17 cards during the past four weeks.

3. How many cards does James have so far?
4. If James would like to collect 100 cards, how many more cards does he need to collect?

At Mairehau Primary School there are ten classes.
The number of pupils in each class is shown in this table.

Room	Number of pupils
1	17
2	23
3	27
4	25
5	31
6	29
7	25
8	21
9	26
10	30

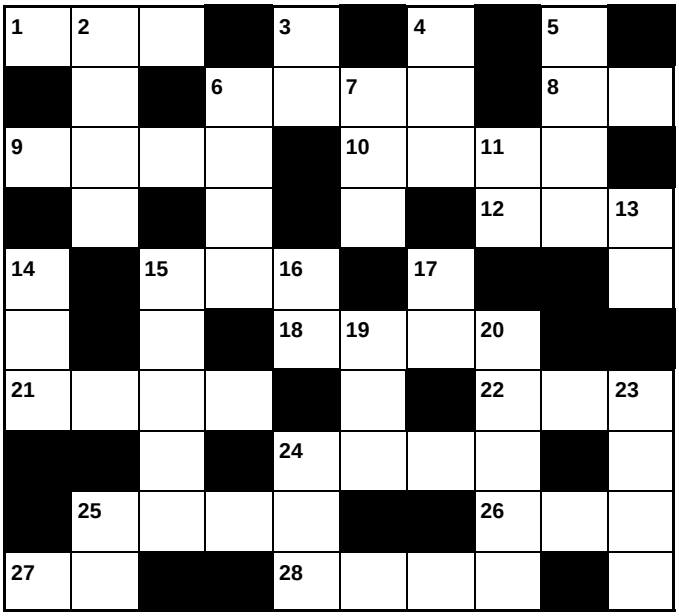
5. Which class has the greatest number of pupils?
6. Which class has the least number of pupils?
7. How many pupils altogether in Rooms 1, 2, 3 and 4?
8. How many more pupils are in Room 6 than Room 1?
9. If 7 pupils were away sick from Room 7 on Monday, how many pupils were at school in Room 7 on Monday?
10. Rooms 7, 8, 9 and 10 are going on a class trip. How many pupils are going on this trip?
11. How many pupils are at Mairehau Primary School?

Multiplying and dividing whole numbers:

Being able to multiply and divide numbers confidently is an important skill. How confident are you?

Task 16

1. **Copy** this 'number cross' into the squares of your maths book.
2. Use the clues for **across** and **down** to complete the number cross by writing your answers in the spaces. **Rewrite** the questions, lining up the digits, to help you work them out.



Clues across

1. 40 × 3 = ?
6. 210 × 5 = ?
8. 368 ÷ 4 = ?
9. 210 × 6 = ?
10. 821 × 4 = ?
12. 1152 ÷ 6 = ?
15. 771 ÷ 3 = ?
18. 756 × 3 = ?
21. 364 × 8 = ?
22. 462 ÷ 3 = ?
24. 894 × 4 = ?
25. 1002 × 7 = ?
26. 1296 ÷ 6 = ?
27. 552 ÷ 8 = ?
28. 904 × 6 =?

Clues down

2. 706 × 4 = ?
3. 490 ÷ 7 = ?
4. 1812 ÷ 6 = ?
5. 707 × 7 = ?
6. 219 × 5 = ?
7. 3180 ÷ 6 = ?
11. 648 ÷ 8 = ?
13. 348 ÷ 12 = ?
14. 68 × 9 = ?
15. 4824 × 5 = ?
16. 648 ÷ 9 = ?
17. 392 ÷ 7 = ?
19. 1650 ÷ 6 = ?
20. 40812 × 2 = ?
23. 546 × 8 = ?
24. 1035 ÷ 3 = ?
25. 790 ÷ 10 = ?

At a country school, seven buses are used to transport pupils to and from school.

3. If each bus can carry 32 pupils, how many pupils can be carried by all seven buses?

A local movie theatre holds 480 people.

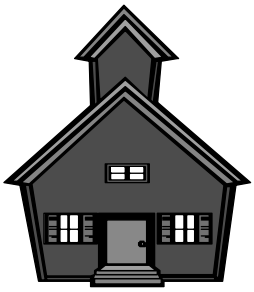
4. If there are 20 equal rows of seats, how many seats are there in each row?
5. If 72 people go to the movies, how many full rows of seats would they take up?

In the spring time. carrots are sold in bunches of 12 carrots, tied up with string.

6. How many carrots are there in 30 bunches of carrots?
7. How many bunches of carrots could be made from 192 carrots?
8. If the bunches of carrots sell for $1.50 each, what would it cost to buy 7 bunches of carrots?

A new school is to be built. There will be 180 pupils going to this new school.

9. How many classrooms are needed, if each class is to have 20 pupils?
10. In each classroom there are 18 windows and 2 doors.
    What is the total number of windows and doors for all classrooms?
11. 75 more pupils will be coming to the school next year.
    How many more classrooms will need to be built in time for next year?

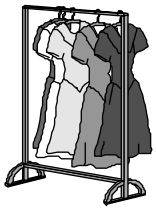


 Please **DO NOT** write on the sheets

Adding and subtracting decimals:

Being able to add and subtract decimal numbers confidently is an important skill. How confident are you?

Task 17



Material for making dresses comes in a 25 metre roll. During the past week, Mrs Fidow sold 3.4m, 2.1m, 4.6m and 1.8m of this material.

1. How much material did Mrs Fidow sell during the week?
2. What length of material is left on the roll?

As a holiday job, Karen picks strawberries. She fills a container with strawberries which is then weighed. She fills six containers which weighed 345g, 360g, 327g, 354g, 347g and 340g.

3. If the container weighs 58 grams, what is the weight of strawberries in each container?

The table below shows the results of three throwing events, shot put, discus and javelin, for 5 competitors.

	shot put throw (m)	discus throw (m)	javelin throw (m)	Combined total (m)
Andrew	11.2	32.6	58.4	?
Geoff	10.6	35.3	52.9	?
Mark	14.3	38.3	60.4	?
Jason	13.7	37.6	57.6	?
John	12.4	36.8	56.7	?

4. Who were the first three place-getters in each of the three throwing events?

The overall winner is the competitor whose combined total for all three throwing events is the greatest.

5. **Add** each competitors 3 throws to come up with a 'combined total'.
6. **List** the competitors in order from 1st to 5th.

Below is a table showing the results of four mountain bike races. The times are in seconds.

	Rider A	Rider B	Rider C	Rider D	Rider E	Rider F	Rider G	Rider H
Race 1	56.86	64.36	55.71	60.45	63.23	59.24	54.95	61.34
Race 2	84.35	81.67	82.67	80.09	83.65	81.91	86.49	85.23
Race 3	43.72	45.81	44.16	43.84	42.95	44.06	43.23	44.14
Race 4	76.03	75.87	73.27	74.64	73.86	74.11	75.34	76.32

7. How many competitors took part in each race?
8. Name the winner of each race.
9. **List** the competitors for each race in order from fastest to slowest.
10. The winning rider is the rider with the lowest total time for the four races.
    Add up the four times for each rider, then **list** the riders in order from 1st to 8th.
11. What is the difference in time between the fastest and slowest rider's combined times?

Task 18

Make up 5 word problems of your own **involving adding and subtracting of decimals**.

Exchange your questions with 3 or 4 other pupils in your class.
Remember, you must be able to answer your own questions.

Multiplying and dividing decimals:

Being able to multiply and divide decimal numbers confidently is an important skill. How confident are you?

Example:

$$\begin{array}{r} 52.3 \\ \times\ 8 \\ \hline 4184 \\ \hline \end{array}$$

"That can't be right!" said Jane. *"Where does the decimal point go?"*

How do you work out where to place the decimal point when multiplying decimals?

Answer: Estimate the answer. 52.3 × 8 is almost the same as 50 × 8 = 400.
Therefore the decimal point in 4184 would go between the 8 and 4, 52.3 × 8 = 418.4 ,

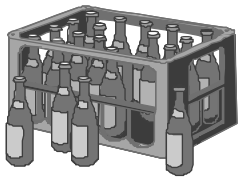
or count the number of digits to the right of the decimal point in the question, then place the decimal point after the same number of digits in the answer, starting from the right.
Therefore, one decimal point. 52.3 × 8 = 418.4

Task 19

Rewrite each question as whole numbers to **find** an **estimated answer** and then **calculate** the **exact answer**. Remember to work out the correct place for the decimal point.

1. $\begin{array}{r} 48.3 \\ \times\ 9 \\ \hline \\ \hline \end{array}$
2. $\begin{array}{r} 12.75 \\ \times\ 8 \\ \hline \\ \hline \end{array}$
3. $\begin{array}{r} 106.3 \\ \times\ 7 \\ \hline \\ \hline \end{array}$
4. $\begin{array}{r} 1.948 \\ \times\ 9 \\ \hline \\ \hline \end{array}$
5. $\begin{array}{r} 673.14 \\ \times\ 8 \\ \hline \\ \hline \end{array}$

6. The school cross country race is 3 laps around a large park. If each lap is 1.9km, how long is the race?
7. **Estimate** how many laps need to be run, if a race is 9.5km. Explain how you worked out your answer.



8. A carton holds 20 bottles of soft drink. If each soft drink bottle contains 1.5 litres, what volume of soft drink is in a carton?
9. If Mr Richards buys 60 litres of soft drink, how many cartons must he have bought? Explain how you worked out this problem.

Four families bought a large sack of wheat that weighed 25kg.

10. **Estimate** the weight of wheat, to the nearest kg, that each family will get if the wheat is shared equally.
11. **Calculate** the exact weight each family will get.

Jenny had six attempts at the long jump.
The jumps were 4.68m, 4.32m, 4.72m, 4.61m, 4.56m and 4.77m.

12. **Add** together all of Jenny's six jumps, then **divide** your total by 6 to find the 'average' length of her jumps.

Task 20

Make up 5 word problems of your own **involving multiplying and dividing decimals**.

Exchange your questions with 3 or 4 other pupils in your class.
Remember, you must be able to answer your own questions.

Problems involving money:

Example: Mr Murray buys a class set of new books. There are 20 pupils in Mr Murray's class. If each book costs $3.95, what is an **estimated cost** of the books?

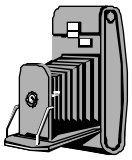
Calculate the **exact cost** of these new books.

Answer: $3.95 is about $4.00, therefore an estimated cost is $4.00 × 20 = $80.00.
The exact cost is $3.95 × 20 = $79.00

Task 21

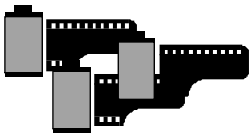
Round each money value to the **nearest $10, $100** or **$1000** to **find** an **estimated answer** and then **calculate** the **exact answer**. Remember to work out the correct place for the decimal point.

1.	$11.75 × 7	2.	$20.40 × 8	3.	$99.95 × 7	4.	$272.50 × 9	5.	$1025.60 × 8
6.	$5.85 × 40	7.	$56.60 × 12	8.	$512.09 × 25	9.	$985.50 × 32	10.	$1985.75 × 46



The cost of developing films is $9.90 for each roll.

11. **Estimate** the cost of developing 4 rolls of film.
12. **Calculate** the exact cost of developing 4 rolls of film.



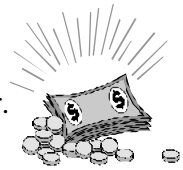
Mrs Jones bought 5 kilograms of meat for a school camp. The meat cost her $59.75.

13. **Estimate** the cost per kilogram of the meat.
14. **Calculate** the exact cost per kilogram of the meat.

A local school bought 5 new soccer balls for $14.95 each and 3 new rugby balls for $20.95 each.

15. **Estimate** the cost of buying the 5 soccer balls and 3 rugby balls.
16. **Calculate** the exact cost of buying the 5 soccer balls and 3 rugby balls.

Sally has $98.60 in her savings account. During the next month she added $14.80, $20.50 and $9.80 to her account, but withdraw $24.95.



17. **Estimate** the new total of her account after the money has been put in and taken out.
18. **Calculate** the exact total of her account.

James had a birthday party with six of his friends. They all had 1 fish and a scoop of chips. The total cost was $13.65

19. **Estimate** the cost of buying 1 fish and a scoop of chips.
20. **Calculate** the exact cost of buying 1 fish and a scoop of chips.

Task 22

Make up 5 word problems of your own **involving +, –, ÷ and × of money.**

Exchange your questions with 3 or 4 other pupils in your class.
Remember, you must be able to answer your own questions.

Introduction to fractions:

A **fraction** is part of a whole. In the box are some examples of fractions, but what exactly do they mean?

$\frac{1}{2}$ $\frac{3}{5}$

$\frac{4}{7}$ $\frac{1}{10}$

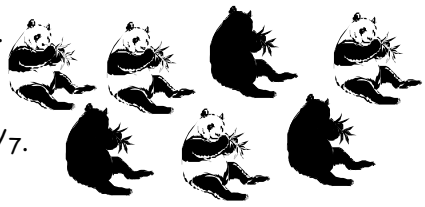
Answer: $\frac{1}{2}$ means 1 out of 2. $\frac{3}{5}$ means 3 out of 5.

$\frac{4}{7}$ means 4 out of 7. $\frac{1}{10}$ means 1 out of 10.

How do you say these fractions above?

Answer: one half, three fifths, four sevenths, one tenth

Here are some diagrams of a panda bear, some of which are shaded black.



How many diagrams are there? What fraction is shaded black?

Answer: 7 diagrams, 3 shaded. Written as a fraction, that would be $^3/_7$.

Task 23

What do these **fractions mean** and **write in words**, how you would say each fraction.

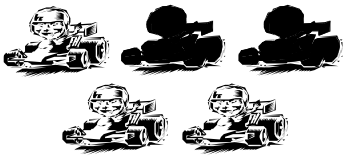
1. $\frac{1}{3}$ 2. $\frac{1}{6}$ 3. $\frac{1}{4}$ 4. $\frac{1}{8}$ 5. $\frac{3}{4}$

6. $\frac{3}{7}$ 7. $\frac{5}{6}$ 8. $\frac{7}{8}$ 9. $\frac{2}{3}$ 10. $\frac{3}{10}$

Write these fraction as **numbers**.

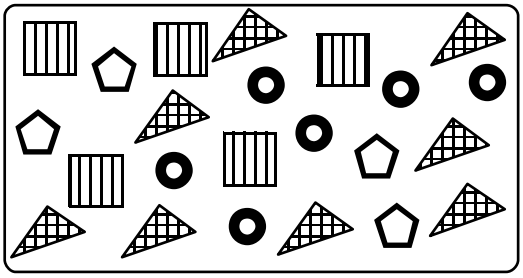
11. one fifth
12. three eighths
13. five sevenths
14. six tenths
15. four sixths
16. two thirds
17. seven eighths
18. three quarters
19. four tenths
20. three sevenths

Look at each group of diagrams. What fraction of each group is shaded?

21. 

22. 

23. 



This box contains some mathematical shapes.

24. How many mathematical shapes inside this box?
25. What fraction of the shapes are squares?
26. What fraction of the shapes are circles?
27. What fraction of the shapes are triangles?
28. What fraction of the shapes are pentagons?

Using the squares in your maths book, **draw diagrams** to show you understand these fractions.

29. $\frac{3}{5}$ 30. $\frac{5}{9}$ 31. $\frac{7}{10}$ 32. $\frac{5}{12}$ 33. $\frac{9}{9}$

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Working with fractions:

We know that the fraction '½' means 1 out of 2 and we say '*one half*', but how do you find $\frac{1}{2}$ of any number?

Example: Find $\frac{1}{2}$ of 20. Is there an easy way to work this out?

Answer: As the fraction is $\frac{1}{2}$, divide the number by 2. 20 ÷ 2 = 10, so $\frac{1}{2}$ of 20 is 10.

Look at these fractions. $\frac{1}{3}$ $\frac{1}{4}$ $\frac{1}{5}$ $\frac{1}{9}$ $\frac{1}{12}$ $\frac{1}{20}$ $\frac{1}{50}$

What do they all have in common?

Answer: These fractions all have the 'number 1' as the 'top' number.

To find $^1/_2$ of a number, divide the number by 2. To find $^1/_3$ of a number divide the number by 3.

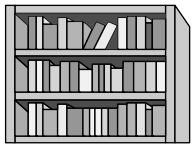
How would you find $^1/_5$, $^1/_8$, $^1/_{10}$ or $^1/_{50}$ of any number? *Example:* Find $^1/_5$ of 20 etc.

Answer: Divide the number by the 'bottom' numbers 5, 8, 10 or 50.

Task 24

Find the following fraction of these whole numbers.

1. Find $^1/_4$ of 20
2. Find $^1/_3$ of 30
3. Find $^1/_5$ of 25
4. Find $^1/_6$ of 48
5. Find $^1/_4$ of 48
6. Find $^1/_8$ of 40
7. Find $^1/_3$ of 36
8. Find $^1/_9$ of 27
9. Find $^1/_{10}$ of 20
10. Find $^1/_7$ of 42
11. Find $^1/_{11}$ of 66
12. Find $^1/_{12}$ of 72

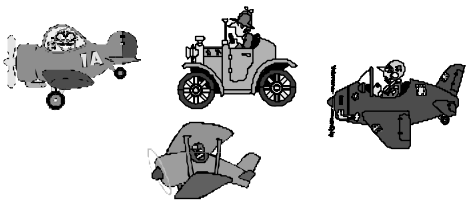


In Miri's class there are 24 pupils.

13. If $^1/_3$ of the class go to the library, how many pupils is this?

Linda goes on a 36km mountain bike ride.

14. If she has travelled $^1/_4$ the distance so far, how far has she gone?



David likes collecting model boats, cars, planes and trains.
He has a total of 72 models in his collection.

15. If $^1/_6$ of the models are planes, how many planes does he have?
16. If $^1/_4$ of the models are cars, how many cars does he have?

During the month of February (28 days) Gavin recorded the temperature at 3:00 p.m. each day.

17. On $^1/_7$ of the days the temperature was below 10°C. How many days was this?
18. On $^1/_4$ of the days the temperature was above 20°C. How many days was this?

Task 25

Make up 5 word problems of your own **involving fractions of whole numbers.**

Exchange your questions with 3 or 4 other pupils in your class.
Remember, you must be able to answer your own questions.

Please **DO NOT** write on the sheets Please **DO NOT** write on the sheets

More fractions:

If the fraction '¼' means 1 out of 4 and we say '*one quarter*', what does '¾' mean and how do you work out '¾' of a number?

Answer: '¾' means *'three quarters'* (a *quarter* is the same as a *fourth*)
There are two steps involved to find '¾' of a number.
Step 1: **Divide** the number by the 'bottom' number of the fraction.
Step 2: **Multiply** your answer by the 'top' number of the fraction.

Example: Find '¾' of 20. Divide 20 by 4. (20 ÷ 4 = 5)
Multiply 5 by 3 (5 × 3 = 15)

Answer: '¾' of 20 is 15

$\frac{3}{4}$ ← **Multiply by the 'top' number of the fraction.**
← **Divide by the 'bottom' number of the fraction.**

What numbers would you 'divide by' and 'multiply by', if you were using the following fractions?

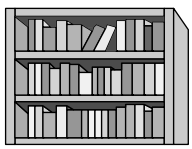
$^{2}/_{5}$, $^{5}/_{8}$, $^{7}/_{10}$ and $^{23}/_{50}$

Answer: ÷ 5 & × 2, ÷ 8 & × 5, ÷ 10 & × 7, ÷ 50 & × 23

Task 26

Find the following fraction of these whole numbers.

1. Find $^{3}/_{4}$ of 20
2. Find $^{2}/_{5}$ of 30
3. Find $^{4}/_{5}$ of 25
4. Find $^{5}/_{6}$ of 48
5. Find $^{3}/_{8}$ of 48
6. Find $^{5}/_{8}$ of 40
7. Find $^{2}/_{3}$ of 36
8. Find $^{5}/_{9}$ of 27
9. Find $^{3}/_{10}$ of 20
10. Find $^{4}/_{7}$ of 42
11. Find $^{4}/_{11}$ of 66
12. Find $^{7}/_{12}$ of 72



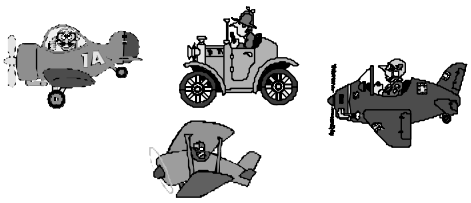
In Miri's class there are 27 pupils.

13. If $^{2}/_{3}$ of the class go to the library, how many pupils is this?

Linda goes on a 36km mountain bike ride.

14. If she has travelled $^{3}/_{4}$ the distance so far, how far has she gone?

David likes collecting model boats, cars, planes and trains.
He has a total of 72 models in his collection.



15. If $^{2}/_{9}$ of the models are boats, how many planes does he have?
16. If $^{5}/_{9}$ of the models are trains, how many cars does he have?

During the month of November (30 days) Gavin recorded the temperature at 3:00 p.m. each day.

17. On $^{1}/_{5}$ of the days the temperature was below 15°C. How many days was this?
18. On $^{3}/_{5}$ of the days the temperature was above 20°C. How many days was this?

Task 27

Make up 5 word problems of your own **involving fractions of whole numbers.**

Exchange your questions with 3 or 4 other pupils in your class.
Remember, you must be able to answer your own questions.

Fractions, decimals and money:

Finding a fraction of a decimal or of money is no different from finding a fraction of a whole number.

Example: Find $^1/_2$ of 48.6cm

Answer: As the fraction is $^1/_2$, divide the number by 2.
48.6 cm ÷ 2 = 24.3 cm

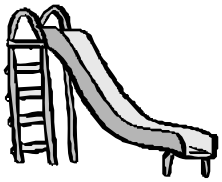
Example: Find $^3/_4$ of $24.80

Answer: As the fraction is $^3/_4$, divide the number by 4, then multiply your answer by 3.
$24.80 ÷ 4 = $6.20, $6.20 × 3 = $18.60

Task 28

Find the following fraction of these whole numbers.

1. Find $^1/_4$ of 16.4 cm
2. Find $^1/_3$ of 36.12 mm
3. Find $^1/_5$ of 20.5 km
4. Find $^2/_3$ of $12.90
5. Find $^3/_4$ of $16.48
6. Find $^1/_8$ of 6.48 kg
7. Find $^3/_5$ of $32.00
8. Find $^4/_9$ of $27.09
9. Find $^7/_{10}$ of $2.50
10. Find $^4/_7$ of 50.4 mL
11. Find $^7/_{11}$ of $57.20
12. Find $^5/_{12}$ of 26.4 km



At a local school $6000 was raised from a school fair.

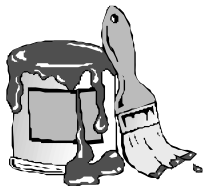
13. If $^3/_4$ of this money is to go towards some new play ground equipment, how much money is that?

The school cross-country race is 1200m. After $^2/_3$ of the distance was run, Jim moved into 1st place.

14. How far had the race gone, when Jim moved into 1st place and went on to win the race?
15. For how many metres did Jim lead in the race?

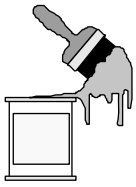
Three sisters, Karen, Jane and Gail all have some money. Karen has $12.50, Jane has $10.40 and Gail has $13.70. They are going to buy their mother a birthday present.

16. How much money do they have altogether?
17. If they decide to spent $^2/_3$ of this money on the present, how much do they spend?
18. How much money is left over?



Michelle is going to paint a fence that is 24.60 metres long.

19. During the morning she paints $^3/_5$ of the fence.
    How many metres of the fence has Michelle painted so far?
20. What fraction of the fence has yet to be painted?



Task 29

Make up 5 word problems of your own **involving fractions of decimals and money.**

Exchange your questions with 3 or 4 other pupils in your class.
Remember, you must be able to answer your own questions.

'In-class' Worksheet

Teaching Notes & Answers

How to use this section:
Teaching notes are enclosed in a box with a 'push-pin' at the top left corner. The teaching notes precede the answers for each worksheet / task. The teaching notes have been included to provide assistance and background information about each topic or unit of work.

Worksheet 1

Introduction:

The topic of Number is concerned with exploring number, gaining an understanding of the meaning of place value of the 'digits' written as whole numbers and decimals, ordering numbers, writing and solving word problems involving the four basic operations, plus simple problems involving fractions of whole numbers and decimals.

The importance of gaining a good understanding of the 'basic number facts', the ability to add, subtract, divide and multiply with confidence, should not be underestimated, as all strands of mathematics involve some, if not all, of the four basic skills.

Reading and writing whole numbers:

The purpose of having a number system is to provide uniformity when reading and writing whole numbers.

Task 1 is designed to give practice at reading whole numbers written as words. Having to copy the number cross provides pupils with a problem solving task in itself. A second part of this task is, given whole numbers as digits, to write the whole numbers in words.

Task 2 provides pupils with an opportunity to work co-operatively in small groups, as pupils create their own questions involving the reading and writing of whole numbers.

Task 1

1. & 2.

6	5	2	■	5	3	4	9
0	■	9	7	2	■	6	■
8	5	■	■	0	■	2	8
■	0	■	1	7	4	■	1
7	2	4	■	■	1	6	5
4	4	0	7	■	7	■	4
1	■	■	3	0	0	5	2

3. eighty-one 4. five hundred and thirteen
5. seven hundred and six 6. two thousand and fifty
7. six thousand and eight 8. eight thousand, six hundred and fifty-four
9. twelve thousand and fifty 10. thirteen thousand and nine
11. fifteen thousand, four hundred and sixty-nine
12. ninety thousand and six 13. one hundred and two thousand
14. one hundred and fifteen thousand and sixty-two

Worksheet 2

Place value in whole numbers:

The position of a 'digit' in a number affects its place value. In order to be able to add or subtract whole numbers successfully, an understanding of place value is important.

Task 3 is designed togive practice at naming place values for high-lighted digits in whole numbers and stating the value of the digit. *Example:* 3**4**5, the 4 stands for 'tens' and means 40.

Task 4 is designed to give pupils practice at adding and subtracting whole numbers. When the whole

numbers contain different numbers of digits and the addition and subtraction problems are written across the page, to avoid making simple mistakes, pupils are encouraged to rewrite the problems going 'down' the page, lining up the digits with the same place value.

Task 3

1. 6, place value ten, means 60
2. 3, place value hundreds, means 300
3. 9, place value units, means 9
4. 2, place value thousands, means 2000
5. 5, place value hundreds, means 500
6. 4, place value ten thousands, means 40000
7. 2, place value tens, means 20
8. 6, place value hundred thousands, means 600000
9. 5, place value thousands, means 5000
10. 9, place value units, means 9
11. 2, place value ten thousands, means 20000
12. 9, place value tens, means 90
13. 0, place value tens, means 0
14. 3, place value hundred thousands, means 300000
15. 3, place value tens, means 30
16. 1, place value ten thousands, means 10000

Task 4

1.	215 + 27 242	2.	9 502 + 69 580	3.	512 - 98 414	4.	26 + 2368 2394	5.	6325 - 84 6241	6.	865 7 + 1025 1897
7.	156200 + 5411 161611	8.	25 538 6 + 8695 9264	9.	18569 - 6048 12521	10.	125 25 1025 + 9 1184	11.	23658 - 6847 16811	12.	6532 56 7 + 125 6720
13.	36 9 1005 + 536 1586	14.	963 452100 + 56 453119	15.	3690 50 687 + 8 4435	16.	63900 - 695 63205	17.	3 9853 65 + 357 10278	18.	36985 - 6841 30144
19.	36 123 8 + 3697 3864	20.	200000 - 5629 194371	21.	60000 - 1365 58635						

Worksheet 3

Reading and writing decimals:

Where a group of digits are written with a point between digits, it is known as a decimal number. All whole numbers could be written as decimals, with a decimal point after the last digit at the right followed by zeros. However, if there are no digits to the right of the decimal point, the number is usually written as a whole number without the decimal point and zeros.

Task 5 is designed to give practice at reading decimal numbers written as words. Having to copy the number cross provides pupils with a problem solving task in itself. A second part of this task is, given decimal numbers as digits, to write the decimal numbers in words. Remember that digits to the right of the decimal point are said or written as individual numbers. *Example:* 5.62 is five point six two, NOT five point sixty-two.

Task 6 provides pupils with an opportunity to work co-operatively in small groups, as pupils create their own questions involving the reading and writing of decimal numbers.

Task 5

1. & 2.

3	5	9	○	7	1	■	3	○	7
○	■	1	■	■	○	■	0	■	○
6	0	○	4	■	9	■	0	■	1
7	■	0	■	1	5	○	5	9	2
■	2	7	5	○	3	■	○	■	■
■	6	■	■	0	■	9	4	○	3
4	9	2	○	3	0	3	■	■	1
■	○	■	■	5	■	○	■	■	○
2	5	○	9	■	3	4	0	○	9

3. twenty-three point nine
4. five hundred and two point seven
5. twenty-five point zero four
6. one hundred and thirty-eight point five zero nine
7. one hundred and sixty-four point two six
8. two hundred and forty point zero seven nine
9. one hundred and twenty-five point zero zero nine
10. one thousand and fifty point zero eight zero
11. one thousand, five hundred and forty-six point six nine three
12. ten thousand, four hundred and fifty-six point six two
13. twelve thousand, three hundred and sixty five point three zero four
14. one hundred thousand, two hundred and fifty-six point zero zero seven

Worksheet 4

Place value in decimal numbers:

As with whole numbers, the position of a 'digit' in a decimal number will affect its place value. All digits to the left of the decimal point are greater than one and have the same place values as whole numbers. All digits to the right of the decimal point are less than one. The further to the right, the smaller the place number. In order to be able to add or subtract decimal numbers successfully, an understanding of place value is important.

Task 7 is designed to give practice at naming place values for high-lighted digits in decimal numbers and stating the value of the digit. *Example:* 3.**4**5, the 4 stands for 'tenths' and means 4 tenths.

Task 8 is designed to give practice at adding and subtracting decimal numbers. Numbers should be written vertically down the page, lining up the decimal points. Adding 0's may help in lining up digits.

Task 7

1. 6, place value hundredths, means 6 hundredths
2. 3, place value thousandths, means 3 thousandths
3. 4, place value tenths, means 4 tenths
4. 6, place value hundredths, means 6 hundredths
5. 7, place value thousandths, means 7 thousandths
6. 2, place value tens, means 20
7. 9, place value thousandths, means 9 thousandths
8. 0, place value hundredths, means 0 hundredths
9. 2, place value tenths, means 2 tenths
10. 9, place value thousandths, means 9 thousandths
11. 2, place value hundreds, means 200
12. 9, place value hundredths, means 9 hundredths
13. 0, place value tenths, means 0 tenths
14. 7, place value tens, means 70
15. 3, place value tenths, means 3 tenths
16. 1, place value units, means 1

Task 8

1. 25.9 + 53.7 = 79.6
2. 102.3 + 5.3 + 15.8 = 123.4
3. 56.9 − 8.7 = 48.2
4. 2.68 + 14.38 = 17.06
5. 257.68 − 63.57 = 194.11
6. 12.56 + 9.30 + 4.35 = 26.21
7. 126.56 + 15.68 = 142.24
8. 5.32 + 9.70 + 15.96 = 30.98
9. 562.65 − 46.8 = 515.85
10. 1.368 + 6.800 + 24.000 = 32.168
11. 125.50 − 25.31 = 100.19
12. 5.230 + 12.000 + 8.600 + 2.354 = 28.184

13.	14.	15.	16.	17.	18.
8.40	0.125	36.901	45.625	15.000	369.85
9.23	125.600	0.080	- 9.450	1.068	- 256.70
124.00	+ 5.370	9.700	36.175	1.600	113.15
+ 0.90	131.095	+ 8.000		+ 4.680	
142.53		54.681		22.348	

Worksheet 5

Ordering decimals:

Ordering decimal numbers is very much like placing words in alphabetical order. If the digits after the decimal point are the same, then the next digit is looked at. *Example:* 1.62, 1.69

Task 9 is designed to give practice at ordering decimal numbers, including word problems involving decimal numbers.

Task 9

1. 1.9, 2.6, 4.9, 5.7, 6.7, 7.3, 7.3, 8.4
2. 0.9, 1.2, 1.6, 1.8, 1.9, 2.0, 2.1, 2.4
3. 5.1, 5.3, 5.4, 5.6, 5.7, 5.8, 5.9
4. 1.01, 1.02, 1.05, 1.06, 1.07, 1.08, 1.09
5. 2.16, 2.27, 2.34, 2.45, 2.47, 2.54, 2.75
6. 11.98, 12.56, 12.67, 12.84, 13.24, 13.75
7. 1.049, 1.126, 1.165, 1.245, 1.276, 1.342, 1.352
8. 9.325, 9.348, 9.428, 9.468, 9.532, 9.842
9. 13.0 seconds
10. Rangi, Quentin, Shane
11. 12.6, 12.9, 13.0, 13.4, 13.6, 13.7, 13.9, 14.1
12. 1.5 sec
13. 1.27m
14. 1.35m
15. 1.61m, 1.53m, 1.50m, 1.42m, 1.35m, 1.27m
16. 0.34m or 34cm
17. 16.2g
18. 11.5g
19. 11.5g, 12.9g, 13.2g, 13.4g, 13.6g, 13.9g, 14.7g, 14.8g, 14.9g, 15.0g, 15.3g, 16.2g
20. Miri 42.9g, James 43.0g, Fred 42.4g, Kim 41.1g
21. 43.0g, 42.9g, 42.4g, 41.1g
22. 1min 7.2sec, 1min 7.0sec, 1min 6.7sec, 1min 6.4sec, 1min 5.9sec, 1min 5.6sec

Worksheet 6

Creating decimal numbers:

Creating decimal numbers, given certain conditions, can be a challenge and a good problem solving exercise. This will help to reinforce the ordering of decimal numbers in a fun way.
Example: Create a 4 digit number closest to 60 using the digits 5, 6, 0, 1, 9 and a decimal point. The decimal point can go anywhere and the number can be either larger or smaller than the nominated number. Answer: 60.159.

Task 10 is designed to give practice at creating decimal numbers, given certain conditions. Note, there will be only one correct answer and it will be above or below the number requested.

Renaming numbers using decimals:

Renaming money using different coins is very much the same as renaming whole numbers using decimals except the coins are restricted to coins in use today. To rename whole numbers using decimals and the four basic operations will provide an opportunity for pupils to develop good problem solving skills.

Example: Rename 4 as decimal numbers.

4 – 2.4 = 1.7, therefore 1.7 + 2.4 = 4	(addition)
7.53 – 4 = 3.53, therefore 7.53 – 3.53 = 4	(subtraction)
4 ÷ 2.5 = 1.6, therefore 2.5 × 1.6 = 4	(multiplication)
20.4 ÷ 4 = 5.1, therefore 20.4 ÷ 5.1 = 4	(division)

Task 11 is designed to give practice at renaming money totals and whole numbers. There will be an infinite number of answers to questions 13 to 24.

Task 10

1. 60.2
2. 70.26
3. 250.6
4. 7.5
5. 27.5
6. 7.025
7. 50.267
8. 2.0567
9. 0.765
10. 25.067, 25.076, 25.607, 25.670, 25.706

Task 11

Possible answers for questions 1 to 12, but there with be other possibilities.

1. 50c = 20c + 20c + 10c, 50c = 20c + 20c + 5c + 5c, 50c = 10c + 10c + 10c + 10c + 10c
2. 80c = 50c + 20c + 10c, 80c = 20c + 20c + 20c + 20c, 80c = 50c + 10c + 10c + 10c
3. $1.00 = 50c + 50c, $1.00 = 50c + 20c + 20c + 10c, $1.00 = 10 × 10c
4. $1.50 = $1.00 + 50c, $1.50 = 50c + 50c + 50c, $1.50 = 15 × 10c
5. $2.00 = $1.00 + $1.00, $2.00 = $1.00 + 50c + 50c, $2.00 = 20 × 10c
6. $2.40 = $2.00 + 20c + 20c, $2.40 = $1.00 + $1.00 + 20c + 20c, $2.40 = 24 × 10c
7. $3.00 = 3 × $1.00, $3.00 = 6 × 50c, $3.00 = 15 × 20c
8. $3.60 = 3 × $1.00 + 50c + 10c, $3.60 = 18 × 20c, $3.60 = 36 × 10c
9. $4.80 = 4 × $1.00 + 4 × 20c, $4.80 = 24 × 20c, $4.80 = 48 × 10c
10. $5.00 = 5 × $1.00, $5.00 = 10 × 50c, $5.00 = 25 × 20c
11. $6.00 = 6 × $1.00, $6.00 = 30 × 20c, $6.00 = 60 × 10c
12. $10.00 = 5 × $2.00, $10.00 = 10 × $1.00, $10.00 = 20 × 50c

Worksheet 7

Estimation involving money:

How often do you see prices advertised as $9.95 or $19.95. Prices such as these can easily be rounded to the nearest whole number, thus making adding up several prices much easier. When prices are rounded up or down the resulting total is an **estimate**.

Task 12 is designed to give practice at estimating money, by rounding to the nearest $1.00, $10.00 or $100.00. *Example:* $4.35 round to $4.00, $4.85 rounds to $5.00. Estimate answers for word problems first, then calculate the exact answer calculated, to check if the estimate answer is reasonable. There will be more than one way to estimate answers. Look for the quickest and easiest way.

Task 12

1. $6 2. $14 3. $20 4. $16 5. $26 6. $36 7. $89 8. $110 9. $20 10. $30
11. $70 12. $50 13. $100 14. $60 15. $110 16. $130 17. $100 18. $200 19. $300
20. $700 21. $800 22. $500 23. $600 24. $800
25. $3 × 10 = $30 26. $2.95 × 10 = $29.50 27. $10 + $15 + $20 + $10 = $55 28. $55.40
29. $78 – $26 = $52 30. $52.80 31. $20 + $20 + $20 + $20 + $20 = $100 32. $103.70

Worksheet 8

Basic multiplication facts:

Success and enjoyment in mathematics relies on pupils knowing there basic number facts, especially the multiplication facts. If pupils can learn the multiplication facts and have instance recall, then they will perform mathematical tasks with confidence. Daily revision is highly recommended.

Tasks 13 & 14 are designed to give practice at learning the multiplication facts, plus an opportunity to work together in small groups to assist each other to improve their knowledge of the multiplication facts.

Task 13

Day 1: 30, 108, 27, 12, 49, 80, 72, 50, 32, 121
Day 2: 72, 81, 9, 28, 56, 60, 120, 20, 88, 55
Day 3: 54, 27, 21, 32, 42, 100, 48, 55, 40, 132
Day 4: 18, 63, 24, 24, 70, 40, 132, 25, 96, 99
Day 5: 42, 72, 18, 40, 28, 110, 60, 60, 72, 33
Day 6: 48, 54, 30, 16, 77, 50, 144, 45, 24, 77
Day 7: 36, 90, 12, 44, 35, 120, 108, 15, 56, 88
Day 8: 60, 36, 33, 20, 84, 90, 36, 35, 64, 66
Day 9: 24, 99, 15, 48, 63, 30, 84, 40, 48, 110
Day 10: 66, 45, 36, 36, 21, 70, 96, 30, 80, 44
Day 11: 99, 12, 120, 42, 32, 70, 24, 99, 72, 25
Day 12: 36, 30, 72, 56, 28, 30, 72, 132, 30, 55
Day 13: 90, 18, 96, 49, 12, 90, 96, 55, 66, 20
Day 14: 54, 24, 84, 21, 36, 120, 40, 121, 24, 50
Day 15: 72, 21, 36, 63, 48, 50, 88, 44, 60, 30

Worksheet 9

Adding and subtracting whole numbers:

Success and enjoyment in mathematics relies on pupils being able to add and subtract quickly and confidently. Copying and completing the number cross provides an opportunity to enhance pupil skills.

Tasks 15 is designed to give practice at basic addition and subtraction, plus experience at solving word problems.

Task 15

1. & 2.

4	2	1		7		1		2	
	7		1	0	4	2		1	9
1	5	2	3		3	7	2	4	
	6		4		7		3	5	7
2		1	0	5		9			2
4		3		2	9	2	1		
6	3	2	4				4	7	4
		4		2	7	5	7		1
	1	5	6	1			3	5	6
7	2			4	7	2	2		7

3. 54 cards 4. 46 cards
5. Room 5 6. Room 1 7. 92 pupils 8. 12 pupils
9. 18 pupils 10. 102 pupils 11. 254 pupils

Worksheet 10

Multiplying and dividing whole numbers:

Success and enjoyment in mathematics relies on pupils being able to multiply and divide quickly and confidently. Copying and completing the number cross provides an opportunity to enhance pupil skills.

Tasks 16 is designed to give practice at basic multiplication and division, plus experience at solving word problems.

Task 16

1. & 2.

1	2	0		7		3		4	
	8		1	0	5	0		9	2
1	2	6	0		3	2	8	4	
	4		9		0		1	9	2
6		2	5	7		5			9
1		4		2	2	6	8		
2	9	1	2		7		1	5	4
		2		3	5	7	6		3
	7	0	1	4			2	1	6
6	9			5	4	2	4		8

3. 224 pupils
4. 24 seats 5. 3 full rows
6. 360 carrots 7. 16 bunches 8. $10.50
9. 9 classrooms 10. 162 windows & 18 doors
11. 4 more classrooms

Worksheet 11

Adding and subtracting decimals:

Pupils deal with decimals in everyday situations, especially if money is involved. Provided pupils remember to line up the decimal point when adding or subtracting decimals, this task is no more difficult than working with whole numbers.

Tasks 17 is designed to give practice at interpreting and using data which involves adding or subtracting decimals, plus revision of ordering decimal numbers.

Task 18 provides pupils with an opportunity to work co-operatively in small groups, as pupils create their own questions involving the addition and subtraction of decimal numbers.

Task 17

1. 11.9m 2. 13.1m 3. 287g, 302g, 269g, 296g, 289g, 282g
4. shot put: Mark, Jason, John discus: Mark, Jason, John javelin: Mark, Andrew, Jason
5. Andrew 102.2m, Geoff 98.8m, Mark 113.0m, Jason 108.9m, John 105.9m
6. Mark, Jason, John, Andrew, Geoff
7. 8 competitors 8. Race 1: Rider G, Race 2: Rider D, Race 3: Rider E, Race 4: Rider C
9. Race 1: Riders G, C, A, F, D, H, E, B Race 2: D, B, F, C, E, A, H, G
   Race 3: Riders E, G, A, D, F, H, C, B Race 4: C, E, F, D, G, B, A, H
10. Rider A 260.96 seconds, Rider B 267.71 seconds, Rider C 255.81 seconds, Rider D 259.02 seconds
    Rider E 263.69 seconds, Rider F 259.32 seconds, Rider G 260.01 seconds, Rider H 267.03 seconds
    Riders in order, fastest to slowest: Riders C, D, F, G, A, E, H, B 11. 11.90 seconds

Worksheet 12

Multiplying and dividing decimals:

When multiplying or dividing by any number, being able to quickly work out an estimated answer can be helpful. When working with decimals, the estimate answer can be used to work out where the decimal point goes in the answer. To work out the exact position of the decimal point in the answer, count the digits to the right of the decimal point in the decimal numbers in the question. When the answer has been worked out, start counting off digits from the right; place the decimal point between the appropriate digits.

Tasks 19 is designed to give practice at estimating answers to assist when working out where the decimal points go in the answers. Pupils are then to calculate the exact answers to these decimal problems involving multiplication and division of decimals.

Task 20 provides pupils with an opportunity to work co-operatively in small groups, as pupils create their own questions involving the multiplication and division of decimal numbers.

Task 19

Estimated answers: (There will be different ways to work out the estimated answers)

1. 50 × 9 = 450 2. 13 × 8 = 104 3. 100 × 9 = 700 4. 2 × 9 = 18 5. 700 × 8 = 5600

Exact answers:

1.	2.	3.	4.	5.
48.3 × 9 = 434.7	12.75 × 8 = 102.00	106.3 × 7 = 744.1	1.948 × 9 = 17.532	673.14 × 8 = 5385.12

6. 5.7km 7. estimate answer 5 laps, total race distance of 9.5km is about 10km & each lap of 1.9 is about 2 km. Estimate answer would be 10km ÷ 2km = 5 laps.
8. 30L 9. Divide the total litres by the number of litres in one carton, 60 ÷ 30 = 2 cartons
10. 25kg ÷ 4 is approimately 6kg 11. 6.25kg 12. 27.66 ÷ 6 = 4.61m

Worksheet 13

Problems involving money:

Being able to estimate and calculate with accuracy problems involving money is an important skill.

Tasks 21 is designed to give practice at estimating answers for questions involving money, before calculating the exact answers. Also includes practice at long multiplication.

Task 22 provides pupils with an opportunity to work co-operatively in small groups, as pupils create their own questions involving the money problems.

Task 21

Estimated answers: (There will be different ways to work out the estimated answers)

1. \$10 × 9 = \$70 2. \$20 × 8 = \$160 3. \$100 × 7 = \$700 4. \$300 × 9 = \$2700
5. \$1000 × 8 = \$8000 6. \$6 × 40 = \$240 7. \$60 × 12 = \$720 8. \$500 × 25 = \$12500
9. \$1000 × 32 = \$32000 10. \$2000 × 46 = \$92000

Exact answers:

1.	\$11.75	2.	\$20.40	3.	\$99.95	4.	\$272.50	5.	\$1025.60
	× 7		× 8		× 7		× 9		× 8
	\$82.25		\$163.20		\$699.65		\$2452.50		\$8204.80
6.	\$5.85	7.	\$56.60	8.	\$512.09	9.	\$985.50	10.	\$1985.75
	× 40		× 12		× 25		× 32		× 46
	\$234.00		\$679.20		\$12802.25		\$31536.00		\$91344.50

11. \$10 × 4 = \$40 12. \$9.90 × 4 = \$39.60 13. \$60 ÷ 5 = \$12 14. \$59.75 ÷ 5 = \$11.95
15. \$15 × 5 = \$75 and \$20 × 3 = \$60, estimate total = \$135 16. \$74.75 + \$62.85 = \$137.60
17. \$100 + \$15 + \$20 + \$10 – \$25 = \$120 18. \$118.75 19. \$14 ÷ 7 = \$2 20. \$1.95

Worksheet 14

Introduction to fractions:

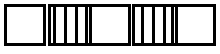
A fraction is part of a whole. Introducing fractions could be done by using physical examples within the classroom. *Example:* What fraction of the class are boys or girls? The use of coloured blocks, noting the fractions of each colour present, etc.

Tasks 23 is designed to give practice at understanding what a fraction means and how it is said and written, with the use of diagrams also.

Task 23

1. 1 out of 3, one third 2. 1 out of 6, one sixth 3. 1 out of 4, one quarter 4. 1 out of 8, one eighth
5. 3 out of 4, three quarters 6. 3 out of 7, three sevenths 7. 5 out of 6, five sixths
8. 7 out of 8, seven eighths 9. 2 out of 3, two thirds 10. 3 out of 10, three tenths
11. $^1/_5$ 12. $^3/_8$ 13. $^5/_7$ 14. $^6/_{10}$ 15. $^4/_6$ 16. $^2/_3$ 17. $^7/_8$ 18. $^3/_4$ 19. $^4/_{10}$ 20. $^3/_7$
21. $^2/_5$ 22. $^2/_8$ 23. $^3/_7$ 24. 23 shapes 25. $^5/_{23}$ 26. $^6/_{23}$ 27. $^8/_{23}$ 28. $^4/_{23}$

Possible diagrams for questions 29 to 33

29.  30.  31. 

32.  33. 

Worksheet 15, 16 & 17

Working with fractions / More fractions / Fractions, decimals and money:

Calculating a fraction of a whole number or decimal can be worked out using one or two simple steps.

If the fraction has a 'top' number (numerator) of 1 (one), then there is only one step involved.
Step 1: Divide the number by the 'bottom' number of the fraction (denominator).
Example: To find ¼ of a number, divide by 4.

If the fraction has a number greater than 1 as the 'top' number (numerator), then there are two steps.
Step 1: Divide the 'number' by the bottom number of the fraction (denominator).
Step 2: Multiply the answer forom step 1 by the 'top' number of the fraction (numerator).
Example: To find ¾ of a number, divide by 4 then multiply by 3.

Tasks 24 is designed to give practice at calculating fractions of whole number when the fractions have a numerator of 1, including word problems.

Task 25 provides pupils with an opportunity to work co-operatively in small groups, as pupils create their own questions involving the fractions of whole numbers, with numerators of 1.

Tasks 26 is designed to give practice at calculating fractions of whole number when the fractions have a numerator that is greater than 1, including word problems.

Task 27 provides pupils with an opportunity to work co-operatively in small groups, as pupils create their own questions involving the fractions of whole numbers, with numerators greater than 1.

Tasks 28 is designed to give practice at calculating fractions of decimals and money, using a variety of fractions, including word problems.

Task 29 provides pupils with an opportunity to work co-operatively in small groups, as pupils create their own questions involving the fractions of whole numbers.

Task 24

1. 5 2. 10 3. 5 4. 8 5. 12 6. 5 7. 12 8. 3 9. 2 10. 6 11. 6 12. 6
13. 8 pupils 14. 9km 15. 12 planes 16. 18 cars 17. 4 days 18. 7 days

Task 26

1. 15 2. 12 3. 20 4. 40 5. 18 6. 25 7. 24 8. 15 9. 6 10. 24 11. 24 12. 42
13. 18 pupils 14. 27km 15. 16 boats 16. 40 trains 17. 6 days 18. 18 days

Task 28

1. 4.1cm 2. 12.04mm 3. 4.1km 4. $8.60 5. $12.36 6. 0.81kg 7. $19.20 8. $12.04
9. $1.75 10. 28.8mL 11. $36.40 12. 11km
13. $4500 14. 800m 15. 400m 16. $36.60 17. $24.40 18. $ 12.20 19. 14.76m 20. $^{2}/_{5}$

Table of Contents for the Homework / Assessment Worksheet Masters for Number, Level 3

Worksheet Number	Topic	Number Objective(s)
1	Reading and writing whole numbers / Place value	N1
2	Reading and writing decimal numbers / Place value	N2
3	Ordering decimals / Renaming money & whole numbers as decimals	N3
4	Estimations & calculations involving money & decimals	N4
5	Basic multiplication facts	N5
6	Word problems involving whole numbers	N6
7	Word problems involving decimals / money	N6
8	Calculating fractions of whole numbers and decimals	N7
	Answers	

Number

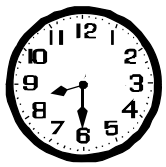
N1

Homework / Assessment Worksheet

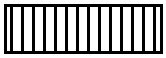
Name: **Class:** **Complete by:**

A: 10 'Quick Questions'

1. 206 + 861 = ...
2. 8789 – 6242 = ...
3. 241 × 6 = ...
4. 884 ÷ 4 = ...
5. $25.00 × 7 = ...
6. $6.35 × 2 = ...
7. What is the time on this clock? .....



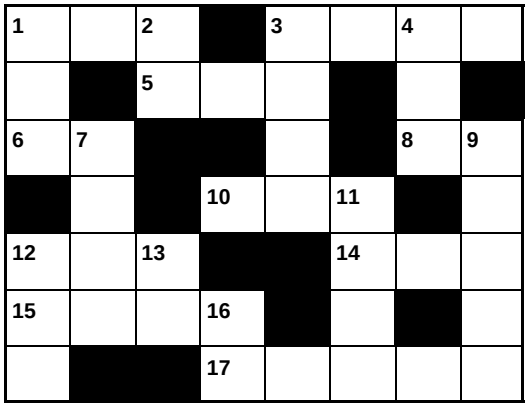
8. Name this shape .....



9. How many centimetres in 2 metres? .....
10. What would 9 books at $1.20 each cost? .....

B: Reading whole numbers

Use the clues across and down to complete this number cross by writing these number words as numerals.



Clues across

1. three hundred and forty-nine
3. four thousand and fifty-two
5. seven hundred and three
6. seventy-three
8. eighty-one
10. four hundred and thirty-six
12. one hundred and fifty-nine
14. three hundred and seventy
15. seven thousand, two hundred and thirty-five
17. twenty thousand, four hundred and three

Clues down

1. three hundred and seven
2. ninety-seven
3. four thousand, three hundred and three
4. five hundred and eighteen
7. three thousand and fifty-two
9. fourteen thousand and twenty-three
11. six thousand, three hundred and four
12. one hundred and seventy-nine
13. ninety-three
16. fifty-two

C: Writing whole numbers

Write these whole numbers as words in the spaces provided.

1. 57 .....
2. 86 .....
3. 458 .....
4. 806 .....
5. 1040 .....
6. 8607 .....
7. 85023 .....

D: Place value

What is the **place value** of the digit that is **high-lighted** and what does it mean?

1. 34**6**9
   place value is .....
   and means .....
2. 184**7**
   place value is .....
   and means .....
3. **9**836
   place value is .....
   and means .....
4. 34**0**9
   place value is .....
   and means .....
5. 4**3**91
   place value is .....
   and means .....
6. 4**6**9630
   place value is .....
   and means .....

Comments: .....

Please sign: Parent / Caregiver

.....

.....

AWS

Number 2

Homework / Assessment Worksheet

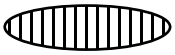
N2

Name: **Class:** **Complete by:**

A: 10 'Quick Questions'

1. 365 + 842 = ...
2. 2758 – 947 = ...
3. 314 × 7 = ...
4. 693 ÷ 3 = ...
5. $40.00 × 5 = ...
6. $8.14 × 3 = ...
7. What is the time on this clock? .....

8. Name this shape .....



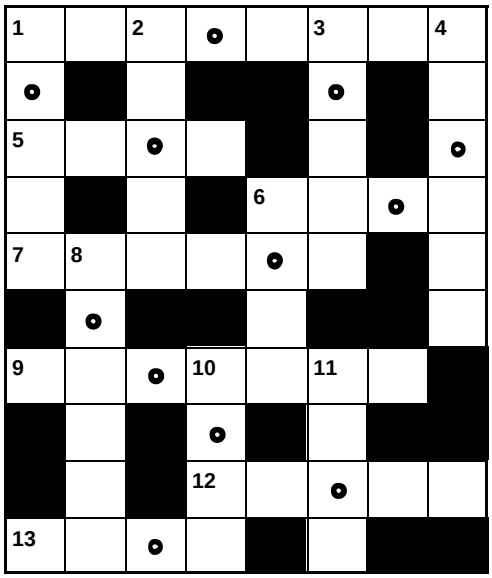
9. How many millimetres in 20 cm? .....
10. What would 7 books at $1.50 each cost? .....

B: Reading decimal numbers

Use the clues across and down to complete this number cross by writing these number words as numerals.

Clues across

1. one hundred and thirty-seven point four two five nine
5. sixty point five
6. thirty-four point one
7. two thousand, one hundred and fifty-nine point seven
9. twenty point five seven three four
12. twenty-nine point one eight
13. thirty-four point nine



Clues down

1. one point six three two
2. seventy-two point four five
3. two point one four seven
4. ninety-two point one seven three
6. three point nine seven
8. one point zero zero two four
10. five point two nine
11. thirty-one point nine

C: Writing decimal numbers

Write these decimal numbers as words in the spaces provided.

1. 60.9 .....
2. 74.9 .....
3. 56.09 .....
4. 86.901 .....
5. 0.085 .....
6. 36.247 .....
7. 905.369 .....

D: Place value

What is the **place value** of the digit that is **high-lighted** and what does it mean?

1. 4.5**6**9
   place value is .....
   and means .....
2. 23.4**7**
   place value is .....
   and means .....
3. 5.**9**86
   place value is .....
   and means .....
4. 34**8**.14
   place value is .....
   and means .....
5. 1.34**3**
   place value is .....
   and means .....
6. 3.4**6**9
   place value is .....
   and means .....

Comments: .....

Please sign: Parent / Caregiver

AWS

Number

L3MN

N3

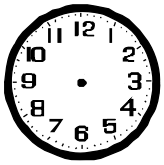
Homework / Assessment Worksheet

3

Name: **Class:** **Complete by:**

A: 10 'Quick Questions'

1. 1263 + 957 = ...
2. 500 – 327 = ...
3. 412 × 20 = ...
4. 640 ÷ 5 = ...
5. $25.10 + $61.95 + $1.40 = ...
6. $4.05 × 8 = ...
7. Draw quarter to 3 on this clock face



8. Find ½ of $18.00 .....
9. How many litres in 3kL? .....
10. What would 6 books at $4.20 each cost? .....

B: Ordering decimals

Order these decimals from smallest to largest.

1. 5.3, 6.1, 4.8, 3.9, 9.2, 7.8, 2.3, 9.1

   ....., ..., ..., ..., ..., ..., ..., ...
2. 6.8, 5.9, 7.2, 5.6, 5.2, 6.7, 6.0, 5.9

   ....., ..., ..., ..., ..., ..., ..., ...
3. 9.04, 9.07, 9.10, 9.08, 9.16, 9.03, 9.06, 9.11

   ....., ..., ..., ..., ..., ..., ..., ...
4. 15.24, 15.21, 15.29, 15.20, 15.27, 15.26, 15.24, 15.22

   ....., ..., ..., ..., ..., ..., ..., ...
5. 1.568, 1.560, 1.559, 1.567, 1.557, 1.563, 1.561, 1.555

   ....., ..., ..., ..., ..., ..., ..., ...

C: Word problems

This table shows the results of the 200m race at the South Island Championships. The times are given in seconds,

Runner	Time (s)
June	31.8
Mary	34.9
Miri	30.2
Claudia	33.6
Louise	32.8
Teresa	31.9
Rosanna	33.7
Julie	30.9

1. What was Louise's time? .....
2. Name the runners who came 1st, 2nd and 3rd.
   1st = ...
   2nd = ...
   3rd = ...
3. Order these times from the fastest to the slowest time.

   ....., ..., ..., ..., ..., ..., ..., ...
4. What is the difference in time between the fastest and slowest time? .....

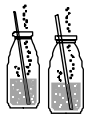
During one weekend, Jim went fishing with his family. They caught 6 fish and the weight of each fish is shown in the box.

2.35kg, 3.15kg, 2.57kg, 1.95kg, 3.62kg, 2.85kg

5. What was the weight of the heaviest fish? .....
6. What was the weight of the lightest fish? .....
7. List the weights of the fish in order of lightest to heaviest.

   ....., ..., ..., ..., ..., ...
8. What is the difference in weight between the lightest and heaviest fish? .....

Karen measured the volumes of six bottles of soft drink.



1.485L, 1.502L, 1.496L, 1.514L, 1.509L, 1.490L

9. List the volumes of the bottles in order of greatest to least.

   ....., ..., ..., ..., ..., ...

D: Renaming whole numbers & money

Using the decimals in the box, fill in the gaps as you **rename** each whole number as decimals.

1. 5 = 2.6 + ...
2. 12 = 14.2 – .....
3. 10 = 4 × .....
4. 9 = 18.9 ÷ .....

2.1, 2.4, 2.2, 2.5

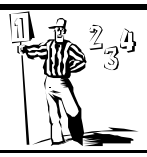
Rename each money value using $2.00, $1.00, 50c, 20c, 10c or 5c coins.

5. 70 cents .....
6. 90 cents .....
7. $1.25 .....
8. $1.60 .....
9. $1.75 .....

Comments: .....

Please sign: Parent / Caregiver

AWS



L3MN

Number

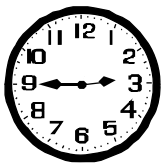
N4

Homework / Assessment Worksheet

Name: **Class:** **Complete by:**

A: 10 'Quick Questions'

1. 908 + 1425 = ...
2. 3642 – 856 = ...
3. 285 × 8 = ...
4. 1208 ÷ 4 = ...
5. $65.00 × 5 = ...
6. $9.56 × 3 = ...
7. What is the time on this clock? .....



8. Name this shape .....

9. How many metres in 200 cm? .....
10. What would 7 books at $2.30 each cost? .....

C: What will it cost?

$1.20 / bunch

$2.25 / kg

$7.95 / kg

$3.25 / kg

Mrs Hutton goes grocery shopping and buys ...

	Estimate
3 bunches of carrots	.....
2kg of bananas	.....
1kg of mushrooms	.....
2kg of broccoli	.....

1. Work out an **estimated cost** of these groceries

   $.....

2. Calculate the **exact cost** of these groceries.

   $.....

B: Estimations involving money

Round these money amounts to the nearest **$1.00**.

1. $5.25 = ... 2. $18.80 = ...
3. $21.75 = ... 4. $78.15 = ...

Round these money amounts to the nearest **$10.00**.

5. $9.35 = ... 6. $24.60 = ...
7. $114.20 = ... 8. $86.35 = ...

Round these money amounts to the nearest **$100.00**.

9. $125 = ... 10. $545 = ...
11. $780 = ... 12. $670 = ...

For each question, **estimate** an answer **by rounding**, then work out the **exact answer**. Show your working in the spaces below.

13. $6.95 + $5.20 + $14.80

Estimated answer	Exact answer
_____	_____
_____	_____
+	+
_____	_____

14. $29.85 + $20.46 + $69.87

Estimated answer	Exact answer
_____	_____
_____	_____
+	+
_____	_____

15. $985.65 – $254.25

Estimated answer	Exact answer
_____	_____
_____	_____
–	–
_____	_____

16. $946.85 – $686.20

Estimated answer	Exact answer
_____	_____
_____	_____
–	–
_____	_____

17. $98.67 × 8

Estimated answer	Exact answer
_____	_____
×	×
_____	_____

18. $705.68 × 9

Estimated answer	Exact answer
_____	_____
×	×
_____	_____

Rangi bought some new clothes.
They cost $12.95, $17.10, $8.95 and $15.40.

19. **Estimate** the total cost of these clothes.
    $..... + $..... + $..... + $..... = $.....
20. Check how close your estimate was, by calculating the exact cost. **Exact cost** = $.....

Rebecca has $145.20 in her bank account.
She takes out $39.75 to buy some CD's.

21. **Estimate** how much money she has left in her account.
    $..... – $..... = $.....
22. Check how close your estimate was, by calculating the exact cost. **Exact cost** = $.....

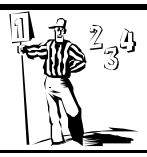
Comments: .....

.....

.....

Please sign:
Parent / Caregiver

AWS



L3MN

N5

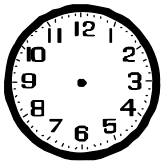
Numbers 5

Homework / Assessment Worksheet

Name: **Class:** **Complete by:**

A: 10 'Quick Questions'

1. 632 + 1258 = ...
2. 700 – 508 = ...
3. 376 × 30 = ...
4. 370 ÷ 5 = ...
5. $17.20 + $54.45 + $1.20 = ...
6. $5.35 × 7 = ...
7. Draw quarter past 7 on this clock face



8. Find ½ of $23.00 .....
9. How many kilometres in 4000m? .....
10. What would 6 books at $5.30 each cost? .....

C: Multiplication challenge

Complete these long multiplication problems.

1. 23819 × 364

2. 17564 × 598

B: Basic multiplication facts

Complete each set of basic multiplication facts as quickly as you can, without making too many mistakes.

Set 1

1. 5 × 6 = ...
2. 12 × 9 = ...
3. 9 × 3 = ...
4. 3 × 4 = ...
5. 7 × 7 = ...
6. 8 × 10 = ...
7. 6 × 12 = ...
8. 10 × 5 = ...
9. 4 × 8 = ...
10. 11 × 11 = ...

Set 2

1. 12 × 6 = ...
2. 9 × 9 = ...
3. 3 × 3 = ...
4. 7 × 4 = ...
5. 8 × 7 = ...
6. 6 × 10 = ...
7. 10 × 12 = ...
8. 4 × 5 = ...
9. 11 × 8 = ...
10. 5 × 11 = ...

Set 3

1. 9 × 6 = ...
2. 3 × 9 = ...
3. 7 × 3 = ...
4. 8 × 4 = ...
5. 6 × 7 = ...
6. 10 × 10 = ...
7. 4 × 12 = ...
8. 11 × 5 = ...
9. 5 × 8 = ...
10. 12 × 11 = ...

Set 4

1. 3 × 6 = ...
2. 7 × 9 = ...
3. 8 × 3 = ...
4. 6 × 4 = ...
5. 10 × 7 = ...
6. 4 × 10 = ...
7. 11 × 12 = ...
8. 5 × 5 = ...
9. 12 × 8 = ...
10. 9 × 11 = ...

Set 5

1. 7 × 6 = ...
2. 8 × 9 = ...
3. 6 × 3 = ...
4. 10 × 4 = ...
5. 4 × 7 = ...
6. 11 × 10 = ...
7. 5 × 12 = ...
8. 12 × 5 = ...
9. 9 × 8 = ...
10. 3 × 11 = ...

Set 6

1. 8 × 6 = ...
2. 6 × 9 = ...
3. 10 × 3 = ...
4. 4 × 4 = ...
5. 11 × 7 = ...
6. 5 × 10 = ...
7. 12 × 12 = ...
8. 9 × 5 = ...
9. 3 × 8 = ...
10. 7 × 11 = ...

Set 7

1. 6 × 6 = ...
2. 10 × 9 = ...
3. 4 × 3 = ...
4. 11 × 4 = ...
5. 5 × 7 = ...
6. 12 × 10 = ...
7. 9 × 12 = ...
8. 3 × 5 = ...
9. 7 × 8 = ...
10. 8 × 11 = ...

Set 8

1. 10 × 6 = ...
2. 4 × 9 = ...
3. 11 × 3 = ...
4. 5 × 4 = ...
5. 12 × 7 = ...
6. 9 × 10 = ...
7. 3 × 12 = ...
8. 7 × 5 = ...
9. 8 × 8 = ...
10. 6 × 11 = ...

Set 9

1. 4 × 6 = ...
2. 11 × 9 = ...
3. 5 × 3 = ...
4. 12 × 4 = ...
5. 9 × 7 = ...
6. 3 × 10 = ...
7. 7 × 12 = ...
8. 8 × 5 = ...
9. 6 × 8 = ...
10. 10 × 11 = ...

Set 10

1. 11 × 6 = ...
2. 5 × 9 = ...
3. 12 × 3 = ...
4. 9 × 4 = ...
5. 3 × 7 = ...
6. 7 × 10 = ...
7. 8 × 12 = ...
8. 6 × 5 = ...
9. 10 × 8 = ...
10. 4 × 11 = ...

Set 11

1. 11 × 9 = ...
2. 4 × 3 = ...
3. 10 × 12 = ...
4. 6 × 7 = ...
5. 8 × 4 = ...
6. 7 × 10 = ...
7. 3 × 8 = ...
8. 9 × 11 = ...
9. 12 × 6 = ...
10. 5 × 5 = ...

Set 12

1. 4 × 9 = ...
2. 10 × 3 = ...
3. 6 × 12 = ...
4. 8 × 7 = ...
5. 7 × 4 = ...
6. 3 × 10 = ...
7. 9 × 8 = ...
8. 12 × 11 = ...
9. 5 × 6 = ...
10. 11 × 5 = ...

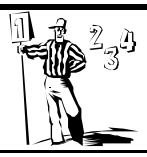
Comments: .....

Please sign:
Parent / Caregiver

.....

.....

AWS



L3MN

Numbeat

N6

Homework / Assessment Worksheet

Name: **Class:** **Complete by:**

A: 10 'Quick Questions'

1. 86.2 + 19.7 = ...
2. 3284 – 918 = ...
3. 456 × 5 = ...
4. 618 ÷ 6 = ...
5. $30.00 × 9 = ...
6. $6.85 × 3 = ...
7. What is the time on this clock? .....

8. Name this shape .....

9. How many centimetres in 300 mm? .....
10. What would 6 books at $1.80 each cost? .....

B: Word problems involving whole numbers

Jim bought five packets of jelly beans. This table shows the number of each colour of jelly bean in each packet.

	1	2	3	4	5
red	15	19	17	13	20
green	16	20	14	15	17
white	19	13	18	19	15
pink	20	19	23	20	18

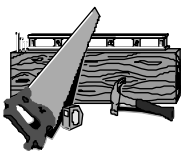
1. How many red jelly beans were in packet number 2? .....
2. Which packet had 13 white jelly beans? .....
3. How many jelly beans in each packet?
   Packet 1 = ..., Packet 2 = ..., Packet 3 = ...,
   Packet 4 = ..., Packet 5 = ...
4. How many of each colour of jelly bean was there?
   red = ..., green = ..., white = ..., pink = ...

David has collected 72 cards from packets of potato chips.

5. If he shares the cards amongst 3 friends, how many cards does each friend get? .....

Karen estimated that there were about 650 bees in one beehive.

6. How many bees would there be in 9 beehives? .....

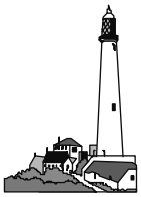


Mr George is building a picket fence. For each metre of fence, he needs 8 pickets.

7. If he buys 376 pickets, how many metres of fence can be built? .....
8. If he is to build 35 metres of fence, how many pickets will he need? .....

Two climbers are 1853 metres away from the top of a mountain. In the next 4 hours they climbed 234m, 176m, 205m and 194m.

9. How far away from the top of the mountain will they be, after this four hours of climbing? .....



A light-house light shines for 8 hours a day during spring and summer. During autumn and winter the light shines for 12 hours a day.

10. For how many hours is the light shining during one week in the spring or summer? .....
11. For how many hours is the light shining during one week in the autumn or winter? .....
12. For how many hours does the light shine during **all** of the spring and summer weeks? .....
    and for **all** of the autumn and winter weeks? .....

C: More word problems

Below is a table of results for four soccer teams, for the games they have played so far.

	Win	Draw	Loss
Team A	5	3	1
Team B	4	1	4
Team C	3	2	5
Team D	6	2	1

Teams score points as follows

Win = 3 points
Draw = 2 points
Loss = 1 point

1. Calculate the points each team has scored so far.

(Points for win + draw + loss = total)

Team A = ... + ... + ... = ...
Team B = ... + ... + ... = ...
Team C = ... + ... + ... = ...
Team D = ... + ... + ... = ...

Comments: .....

Please sign:
Parent / Caregiver

.....

.....

AWS

Numbers

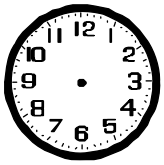
N6

Homework / Assessment Worksheet

Name: **Class:** **Complete by:**

A: 10 'Quick Questions'

1. 1623 + 824 = ...
2. 750 – 629 = ...
3. 549 × 20 = ...
4. 740 ÷ 5 = ...
5. $19.40 + $23.75 + $1.15 = ...
6. $3.15 × 8 = ...
7. Draw twenty-five past 9 on this clock face



8. Find ½ of $27.00 .....
9. How many metres in 5km? .....
10. What would 9 books at $2.10 each cost? .....

B: Word problems involving decimals / money

Mr Jones is going to build a wooden fence. To build the fence he needs 120 palings, that are each 1.8m high.

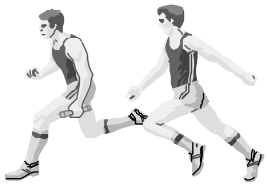
1. How many metres of wood does it take to make these 120 palings? .....
2. If the palings cost $1.10 each, how much will 120 palings cost? .....

Shane's big brother sat his high school exams last week. This table shows his results.

English	65.3%
Maths	75.8%
Science	53.7%
History	61.8%
Japanese	59.3%

3. What did he score for English? .....
4. In which subject did he score 61.8%? .....
5. What is the total score for all five subjects? .....

Four teams are involved in a relay race. Each team has three runners. The table shows how fast each runner ran their lap. The time is in seconds.



	1st runner	2nd runner	3rd runner
Team A	75.6	72.0	80.4
Team B	69.4	78.9	75.3
Team C	81.2	69.5	76.8
Team D	72.6	75.9	82.9

6. Which team was leading after the 1st runner? .....
7. What was the time for the 2nd runner in Team D? .....
8. Calculate the total time for each team.

Team A	Team B	Team C	Team D
_____	_____	_____	_____
_____	_____	_____	_____
+	+	+	+
_____	_____	_____	_____

9. Which team came 1st ....., 2nd ..... and 3rd ..... ?

A large roll of newspaper contains 50 metres of paper.

10. If lengths of 12.7m, 8.9m and 11.5m were cut from this roll, how much newspaper is left? .....

Glasshouse tomatoes are sold in bags weighing 500g. Four tomatoes in one bag weigh 45.6g, 57.8g, 65.4g and 50.4g.

11. What weight of tomatoes is needed to be added to this bag so that it weighs 500g? .....

C: What number am I?

Complete each step to find the final decimal number.

1. Start with 12.8
   divide by 2 .....
   multiply by 6 .....
   add 15.8 [ ]
2. Start with 37.6
   subtract 12.8 .....
   divide by 4 .....
   add 19.9 [ ]
3. Start with 25.7
   add 14.9 .....
   subtract 12.7 .....
   divide by 3 [ ]
4. Start with 5.62
   multiply by 9 .....
   divide by 3 .....
   subtract 7.98 [ ]

Comments: .....

Please sign: Parent / Caregiver

AWS

Number

L3MN

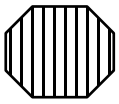
N7

Homework / Assessment Worksheet

8

Name: **Class:** **Complete by:**

A: 10 'Quick Questions'

1. 15.9 + 28.9 = ...
2. 820 – 793 = ...
3. 539 × 12 = ...
4. 240 ÷ 60 = ...
5. Name this shape  .....
6. $5.90 × 8 = ...
7. Write 15 minutes to 10 as digital time

   [:]
8. Find ½ of $7.30 .....
9. How many kilometres in 9000m? .....
10. What would 5 books at $6.35 each cost? .....

B: Understanding fractions

What do these fractions mean?

1. $\frac{3}{5}$ means ..... out of .....
2. $\frac{4}{7}$ means ..... out of .....
3. $\frac{5}{9}$ means ..... out of .....
4. $\frac{11}{12}$ means ..... out of .....

Write these words as **fractions**.

5. two thirds .....
6. four sixths .....
7. five sevenths .....
8. nine tenths .....

Write these fractions as **words**.

9. $^{7}/_{9}$ .....
10. $^{8}/_{13}$ .....

C: Creating fractions

What fraction of each group of shapes is shaded?

1.  .....
2.  .....
3. Draw a diagram to show the fraction $^{5}/_{11}$

D: Finding fractions of a whole

Find the following fractions of a whole.

1. $^{1}/_{2}$ of $13.00 = ...
2. $^{1}/_{4}$ of 16m = ...
3. $^{1}/_{8}$ of $24.00 = ...
4. $^{1}/_{9}$ of 27km = ...
5. $^{2}/_{3}$ of $36.00 = ...
6. $^{2}/_{5}$ of 100mm = ...
7. $^{5}/_{6}$ of 36.6L = ...

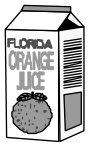
During one week it rains on $^{2}/_{7}$ of the days. 

8. On how many days was it wet? .....

During another week, the sun was shining for $^{5}/_{7}$ of the days. 

9. For how many days was the sun shining? .....

E: More fractions of a whole

A carton of fruit juice contains 720 mL. 

1. If Jeff drinks $^{1}/_{3}$ of the carton, how much juice has he drunk? .....

A truck and its load weighs 12.8 tonnes.

2. If the truck weighs $^{1}/_{4}$ of this weight, how heavy is the truck ? .....

Helen spends $36.00 on some Christmas presents. 

3. If $^{3}/_{4}$ of this money was spent on books, how much money did she spend on books? .....

In Rachelle's class there are 27 pupils.

4. If $^{2}/_{9}$ of the pupils like skiing, how many pupils like skiing? .....

Richard is running in a 6000m school cross country race. 

5. If after $^{4}/_{5}$ of the distance he takes the lead, how far away from the finish is he? .....

Comments: .....

.....

.....

Please sign: Parent / Caregiver

AWS

Homework / Assessment Worksheet

Answers

Worksheet 1

A:

1. 1067 2. 2547 3. 1446 4. 221 5. $175 6. $12.70 7. ½ past 8 8. rectangle 9. 200cm 10. $10.80

B:

3	4	9	■	4	0	5	2
0	■	7	0	3	■	1	■
7	3	■	■	0	■	8	1
■	0	■	4	3	6	■	4
1	5	9	■	■	3	7	0
7	2	3	5	■	0	■	2
9	■	■	2	0	4	0	3

C:

1. fifty-seven 2. eighty-six 3. four hundred and fifty-eight
4. eight hundred and six 5. one thousand and forty
6. eight thousand, six hundred and seven
7. eighty-five thousand and twenty-three

D:

1. place value is tens and means 60
2. place value is units and means 7
3. place value is thousands and means 9000
4. place value is tens and means 0
5. place value is hundreds and means 300
6. place value is ten thousands and means 60000

Worksheet 2

A:

1. 1207 2. 1811 3. 2198 4. 231 5. $200 6. $24.42 7. ½ past 2 8. oval or ellipse 9. 200mm 10. $10.50

B:

1	3	7	●	4	2	5	9
●	■	2	■	■	●	■	2
6	0	●	5	■	1	■	●
3	■	4	■	3	4	●	1
2	1	5	9	●	7	■	7
■	●	■	■	9	■	■	3
2	0	●	5	7	3	4	■
■	0	■	●	■	1	■	■
■	2	■	2	9	●	1	8
3	4	●	9	■	9	■	■

C:

1. sixty point nine 2. seventy-four point nine
3. fifty-six point zero nine 4. eighty-six point nine zero one
5. zero point zero eight five 6. thirty-six point two four seven
7. nine hundred and five point three six nine

D:

1. place value is hundredths and means 6 hundredths ($^6/_{100}$)
2. place value is hundredths and means 7 hundredths ($^7/_{100}$)
3. place value is tenths and means 9 tenths ($^9/_{10}$)
4. place value is units and means 8
5. place value is thousandths and means 3 thousandths ($^3/_{1000}$)
6. place value is hundredths and means 6 hundredths ($^6/_{100}$)

Worksheet 3

A:

1. 2220 2. 173 3. 8240 4. 128 5. $88.45 6. $32.40 7.
8. $9.00 9. 3000L 10. $25.20

B:

1. 2.3, 3.9, 4.8, 5.3, 6.1, 7.8, 9.1, 9.2 2. 5.2, 5.6, 5.9, 5.9, 6.0, 6.7, 6.8, 7.2
3. 9.03, 9.04, 9.06, 9.07, 9.08, 9.10, 9.11, 9.16 4. 15.20, 15.21, 15.22, 15.24, 15.24, 15.26, 15.27, 15.29
5. 1.555, 1.557, 1.559, 1.560, 1.561, 1.563, 1.567, 1.568

C:

1. 32.8 seconds 2. Miri, Julie, June 3. 30.2, 30.9, 31.8, 31.9, 32.8, 33.6, 33.7, 34.9 4. 4.7 seconds
5. 3.62kg 6. 1.95kg 7. 1.95, 2.35, 2.57, 2.85, 3.15, 3.62kg 8. 1.67kg
9. 1.514, 1.509, 1.502, 1.496, 1.490, 1.485L

D:

1. 2.4 2. 2.2 3. 2.5 4. 2.1 For questions 5 to 9, there are many correct answers

Worksheet 4

A:

1. 2333 2. 2786 3. 2280 4. 302 5. $325.00 6. $28.68 7. ¼ to 3 or 2:45 8. pentagon
9. 2 metres 10. $16.10

B:

1. $5 2. $19 3. $22 4. $78 5. $10 6. $20 7. $110 8. $90 9. $100 10. $500
11. $800 12. $700
13. estimate answer: $7 + $5 + $15 = $27, actual answer: $26.95
14. estimate answer: $30 + $20 + $70 = $120, actual answer: $120.18
15. estimate answer: $1000 – $300 = $700, actual answer: $731.40
16. estimate answer: $1000 – $700 = $300, actual answer: $260.65
17. estimate answer: $100 × 8 = $800, actual answer: $789.36
18. estimate answer: $700 × 9 = $6300, actual answer: $6351.12
19 estimate answer: $13 + $17 + $9 + $15 = $54 20. actual answer: $54.40
21. estimate answer: $145 – $40 = $105 22. actual answer: $105.45

C:

1. estimated cost: $3 + $4 + $8 + $6 = $21 2. actual cost: $22.55

Worksheet 5

A:

1. 1890 2. 192 3. 11280 4. 74 5. $72.85 6. $37.45 7. 
8. $11.50 9. 4km 10. $31.80

B:

Set 1

1. 5 × 6 = 30
2. 12 × 9 = 108
3. 9 × 3 = 27
4. 3 × 4 = 12
5. 7 × 7 = 49
6. 8 × 10 = 80
7. 6 × 12 = 72
8. 10 × 5 = 50
9. 4 × 8 = 32
10. 11 × 11 = 121

Set 2

1. 12 × 6 = 72
2. 9 × 9 = 81
3. 3 × 3 = 9
4. 7 × 4 = 28
5. 8 × 7 = 56
6. 6 × 10 = 60
7. 10 × 12 = 120
8. 4 × 5 = 20
9. 11 × 8 = 88
10. 5 × 11 = 55

Set 3

1. 9 × 6 = 54.
2. 3 × 9 = 27
3. 7 × 3 = 21
4. 8 × 4 = 32
5. 6 × 7 = 42
6. 10 × 10 = 100
7. 4 × 12 = 48
8. 11 × 5 = 55
9. 5 × 8 = 40
10. 12 × 11 = 132

Set 4

1. 3 × 6 = 18
2. 7 × 9 = 63
3. 8 × 3 = 24
4. 6 × 4 = 24
5. 10 × 7 = 70
6. 4 × 10 = 40
7. 11 × 12 = 120.
8. 5 × 5 = 25
9. 12 × 8 = 96
10. 9 × 11 = 99

Set 5

1. 7 × 6 = 42
2. 8 × 9 = 72
3. 6 × 3 = 18
4. 10 × 4 = 40
5. 4 × 7 = 28
6. 11 × 10 = 110
7. 5 × 12 = 60
8. 12 × 5 = 60
9. 9 × 8 = 72
10. 3 × 11 = 33

Set 6

1. 8 × 6 = 48
2. 6 × 9 = 54
3. 10 × 3 = 30
4. 4 × 4 = 16
5. 11 × 7 = 77
6. 5 × 10 = 50
7. 12 × 12 = 144
8. 9 × 5 = 45
9. 3 × 8 = 24
10. 7 × 11 = 77

Set 7

1. 6 × 6 = 36
2. 10 × 9 = 90
3. 4 × 3 = 12
4. 11 × 4 = 44
5. 5 × 7 = 35
6. 12 × 10 = 120
7. 9 × 12 = 108
8. 3 × 5 = 15
9. 7 × 8 = 56
10. 8 × 11 = 88

Set 8

1. 10 × 6 = 60.
2. 4 × 9 = 36
3. 11 × 3 = 33
4. 5 × 4 = 20
5. 12 × 7 = 84
6. 9 × 10 = 90
7. 3 × 12 = 36
8. 7 × 5 = 35
9. 8 × 8 = 64
10. 6 × 11 = 66

Set 9

1. 4 × 6 = 24
2. 11 × 9 = 99
3. 5 × 3 = 15
4. 12 × 4 = 48
5. 9 × 7 = 63
6. 3 × 10 = 30
7. 7 × 12 = 84
8. 8 × 5 = 40
9. 6 × 8 = 48
10. 10 × 11 = 110

Set 10

1. 11 × 6 = 66
2. 5 × 9 = 45
3. 12 × 3 = 36
4. 9 × 4 = 36
5. 3 × 7 = 21
6. 7 × 10 = 70
7. 8 × 12 = 96
8. 6 × 5 = 30
9. 10 × 8 = 80
10. 4 × 11 = 44

Set 11

1. 11 × 9 = 99
2. 4 × 3 = 12
3. 10 × 12 = 120
4. 6 × 7 = 42
5. 8 × 4 = 32
6. 7 × 10 = 70
7. 3 × 8 = 24
8. 9 × 11 = 99
9. 12 × 6 = 72
10. 5 × 5 = 25

Set 12

1. 4 × 9 = 36
2. 10 × 3 = 30
3. 6 × 12 = 72
4. 8 × 7 = 56
5. 7 × 4 = 28
6. 3 × 10 = 30
7. 9 × 8 = 72
8. 12 × 11 = 132
9. 5 × 6 = 30
10. 11 × 5 = 55

C:

1.
```
  23819
× 364
 95276
1429140
7145700
8670116
```

2.
```
  17564
× 598
 140512
1580760
8782000
10503272
```

Worksheet 6

A:

1. 105.9 2. 2366 3. 2280 4. 103 5. $270.00 6. $20.55 7. 20 to 10 or 9:40 8. hexagon
9. 30cm 10. $10.80

B:

1. 19 red 2. packet 2 3. packet 1 = 70, packet 2 = 71, packet 3 = 72, packet 4 = 67, packet 5 = 70
4. red = 84, green = 82, white = 84, pink = 100 5. 24 cards 6. 5850 bees 7. 47 metres 8. 280 pickets
9. 1044 metres 10. 8 × 7hrs = 56hrs 11. 12 × 7hrs = 84hrs
12. 56hrs × 26 = 1456hrs, 84 × 26 = 2184hrs

C:

1. Team A = 15 + 6 + 1 = 22, Team B = 12 + 2 + 4 = 18, Team C = 9 + 4 + 5 = 18, Team D = 18 + 4 + 1 = 23

Worksheet 7

A:

1. 2447 2. 121 3. 10980 4. 148 5. $44.30 6. $25.20 7. 
8. $13.50 9. 5000m 10. $18.90

B:

1. 216 metres 2. $132 3. 65.3% 4. history 5. 315.9 6. Team B 7. 75.9 seconds
8. Team A = 228.0 seconds, Team B = 223.6 seconds, Team C = 227.5 seconds, Team D = 231.4 seconds
9. 1st = Team B, 2nd = Team C, 3rd = Team A 10. 16.9 metres 11. 280.8 grams

C:

1. 54.2 2. 26.1 3. 9.3 4. 8.88

Worksheet 8

A:

1. 44.8 2. 27 3. 6468 4. 4 5. octagon 6. $47.20 7. 9:45 8. $3.65 9. 9km 10. $31.75

B:

1. 3 out of 5 2. 4 out of 7 3. 5 out of 9 4. 11 out of 12 5. $^{2}/_{3}$ 6. $^{4}/_{6}$ 7. $^{5}/_{7}$ 8. $^{9}/_{10}$
9. seven nineths 10. eight thirteenths

C:

1. $^{4}/_{9}$ 2. $^{7}/_{13}$ 3. ○○○○○○●●●●● (any diagram with 5 out of 11 shaded)

D:

1. $6.50 2. 4m 3. $3.00 4. 3km 5. $24.00 6. 40mm 7. 30.5L 8. 2 day 9. 5 days

E:

1. 240mL 2. 3.2 tonne 3. $27.00 4. 6 pupils 5. 1200m

Tracking Sheet: 'In-class' Activity Sheets

Number

Worksheet	Objectives	Name														Comments
17	N7															
16	N7															
15	N7															
14	N7															
13	N4 / N6															
12	N4 / N6															
11	N3 / N6															
10	N6															
9	N6															
8	N5															
7	N4															
6	N3															
5	N3															
4	N2															
3	N2															
2	N1															
1	N1															

Tracking Sheet: Homework / Assessment Worksheets

Number

Worksheet	Objectives	Name														Comments
8	N7															
7	N6															
6	N6															
5	N5															
4	N4															
3	N3															
2	N2															
1	N1															