



Maths

Number and Place Value

Need a coherently planned sequence of lessons to complement this resource?

Assessment Statements
By the end of this unit;

children working towards the expected level will be able to:

- read and write numbers up to 100 000;
- identify the value of each digit in a number up to 100 000 using place value grids and counters;
- recognise concrete and visual representations of numbers with one decimal place;
- order numbers up to 100 000;
- compare numbers up to 100 000 using the greater than and less than symbols;
- round numbers to the nearest 10, 100, 1000, 10 000 or 100 000 using a number line; calculate intervals across zero using a number line;
- compare and order negative numbers using a number line;
- identify negative numbers in context;
- recognise some powers of 10 within sequences;
- read Roman numerals up to 500 (D) using a symbol chart;
- identify years written in Roman numerals using a symbol chart;

children working at the expected level will be able to:

- read and write most numbers up to 1 000 000;
- identify the value of most digits in a number up to 1 000 000;
- use concrete, visual and abstract representations to help identify numbers with two decimal places;
- order most numbers up to 1 000 000;
- compare most numbers up to 1 000 000 greater than and less than symbols;
- round numbers up to 1 000 000 to the nearest 1000, 10 000 or 100 000 using a number line;
- compare and order negative numbers;
- solve age appropriate problems involving negative numbers;
- count forwards and backwards in steps of 10;
- read Roman numerals up to 1000 (M);
- identify years written in Roman numerals;
- solve reasoning problems using all of the above.

Introduction

Teacher Note: The Y5 Place Value objectives read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit and round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000 are closely linked to the Y5 Fractions objectives read, write, order and compare numbers with up to three decimal places and round decimals with two decimal places to the nearest whole number and to one decimal place. Please head over to the Fractions Topic Area to find some more support lessons to support decimal place value.

In this unit, children will read, write, construct and deconstruct numbers up to 1 000 000. They will use concrete, visual and abstract methods to help identify the value of individual digits in numbers with up to six digits. As well as larger numbers, children are introduced to the concept of decimal numbers in preparation for the designated book in Spring term. They revisit comparisons of numbers using the greater than and less than symbols and then develop their skills by reasoning about numbers. Children will focus on rounding any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 or 100 000. They will work with negative numbers, counting forwards and backwards across zero. They will use negative numbers in context to solve problems. Children will count forwards and backwards in different powers of 10. They will have the opportunity to use all of their number and place value skills to solve a range of problems. Finally, children will extend their knowledge of Roman numerals to represent numbers up to 1000 and read years written in Roman numerals.

Resources
In addition to your standard maths resources, you may need place value counters, scissors, glue or sticky tape, playing cards, D9 dice and T4 dice.

Number and Place Value
Maths | Year 5 | Steps to Progression Overview

The aim of the overview is to support teachers using PlanIt Maths to show the most coherent and progressive sequence to teach each area of maths. We also want to fully support teachers who use the White Rose Maths scheme of learning to make full use of the resources available within PlanIt Maths. Wherever possible, lesson packs have been matched to each of the small steps on the White Rose Maths scheme of learning.

Yearly Overview

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction		Statistics		Number: Multiplication and Division		Perimeter and Area		Consolidation
Spring	Number: Multiplication and Division				Number: Fractions					Number: Decimals and Percentages		Consolidation
Summer	Number: Decimals			Geometry: Properties of Shapes			Geometry: Position and Direction	Measurement: Converting Units		Measurement: Volume		Consolidation

See our [Unit Name Steps to Progression](#) document.

Determine Whole Number Digit Values



Aim

- To determine the value of each digit in numbers to 1 000 000.

Success Criteria

- I can write numbers correctly into a place value grid.
- I can describe the value of different digits.
- I can solve reasoning challenges about the value of the digits in a number.



Remember It



64 000

Can you read this number? Tell your partner now!

Could you read it?

It says sixty-four thousand.

We are going to think about everything we know about this number.



Remember It



64 000

What can we say about this number?
Can you tell your partner a fact about 64 000?

Complete these facts about 64 000.

1. 64 000 is made up of four thousand and sixty thousand.
2. There are 6400 tens in 64 000.
3. One more than 64 000 is 64 001.
4. 63 999 is one less than 64 000.
5. 64 000 is 36 000 less than 100 000.
6. 10 000 more than 64 000 is 74 000.

Describing Digits



Today we are going to be digit detectives!
We will explore and describe the value of the different digits in a number.

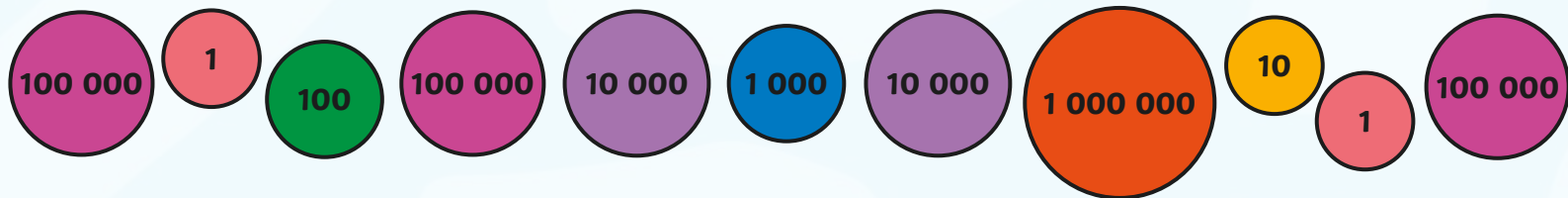
Each digit in a number has a particular value depending on its place in the number. This is what place value is all about!



Describing Digits



In previous lessons, place value counters were ordered from right to left to find the value of different whole numbers. What number is represented?



Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
1 000 000	100 000 100 000 100 000	10 000 10 000	1 000	100	10	1 1
1 321 112	1 232 121	1 301 112				

Describing Digits



We can use a place value grid to find out the value of each digit in a number.

Each digit of a number goes into a different column in the grid.
We always start at the right when writing digits in the columns.

Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones



Describing Digits



Let's try an example all together.
We will put the following number into the place value grid:

4 768 235

Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
	4	7	6	8	2	3	5



Describing Digits



4 768 235

Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
	4	7	6	8	2	3	5

**The digit in the ten thousands column is 6.
It represents 6 ten thousands, or 60 thousands.**



Describing Digits



Choose 1 of the following numbers and write it on your **Place Value Grid** to find out what each digit represents. Remember to start from the right hand side.

★	★★	★★★
85 923	734 691	5 841 926

Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones



Describing Digits



Let's have a look at how the numbers fit into the place value grid.

★	★★	★★★
85 923	734 691	5 841 926

Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
			8	5	9	2	3
		7	3	4	6	9	1
	5	8	4	1	9	2	6



Describing Digits



734 691 does not have a 9 in the hundreds place.

★	★★	★★★
85 923	734 691	5 841 926

Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
			8	5	9	2	3
		7	3	4	6	9	1
	5	8	4	1	9	2	6

Describing Digits



The 8 in 85 923 represents 8 ten thousands. The 8 in 5 841 926 represents 8 hundred thousands. The value of the digit 8 is greatest in 5 841 926.

★	★★	★★★
85 923	734 691	5 841 926

Ten Millions	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
			8	5	9	2	3
		7	3	4	6	9	1
	5	8	4	1	9	2	6

Digit Detectives



Can you be digit detectives and describe the magnified digit in each number?
You can use your place value grid to help you.



Digit Detectives



What is the value of this magnified digit?

This digit represents 9 hundreds.

A colorful illustration of a forest scene. In the foreground, a dirt path leads into a grassy area with several trees. The numbers "576 943" are overlaid in large white font with black outlines on the grass.

576 943

Digit Detectives



What is the value of this magnified digit?

This digit represents 8 hundred thousands.

4 8 2 7 1 0 3

Digit Detectives



Which of these magnified digits is greater?

The digit 7 in 6 874 924 represents 7 ten thousands, whereas the digit 7 in 67 294 represents 7 thousands. It is greater in 6 874 924.

6 874 924 67 294



Digit Detectives



What would you need to add to change the magnified digit into a 7?

The magnified digit represents 4 ten thousands. To change it into a 7, we would need to add 3 ten thousands, or 30 000.

5 349 102

Digit Detectives



What would you need to subtract to change the magnified digit into a 6?

The magnified digit represents 0 tens. To change it into a 6 using subtraction, we would need to subtract 40.

62 109



Digit Detectives Top Cards



Use your set of **Digit Detectives Top Cards** to compare the value of the digits in a number.

945 130				
Ten Thousand	Thousand	Hundred	Tens	Ones

56 284				
Ten Thousand	Thousand	Hundred	Tens	Ones

**				
1276				
Ten Thousand	Thousand	Hundred	Tens	Ones

**				
39 024				
Ten Thousand	Thousand	Hundred	Tens	Ones

*				
1642				
Ten Thousand	Thousand	Hundred	Tens	Ones

*				
32 105				
Ten Thousand	Thousand	Hundred	Tens	Ones

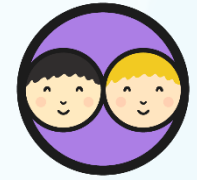
To start the game, shuffle the cards and share them out between each of you. Don't look at the cards as you share them out. Each player should hold their cards so that they can only see the information on the top card.

Decide which player is going to start. This player should read out the value of one of the digits in the number on the card, for example:

the digit in the ten thousands place is a 5.









The other player then reads out the digit in the same place from their card. The player with the highest value wins, and that player collects both the top cards, including their own, and moves them to the bottom of their pile. It is then their turn to choose a digit value from their next card.

Digit Detectives Top Cards

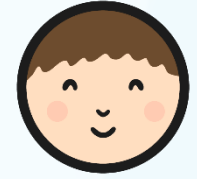


If both your cards share the same digit for the chosen value, or if one of the numbers does not have a digit in that particular place, then all the cards should be placed on the table and the player should choose again from their next card. This time, the player with the highest digit value takes the cards from the table as well as the 2 top cards.

The person with all the cards at the end is the winner.

 <p>***</p> <p>7 650 265</p>	 <p>***</p> <p>1 732 546</p>																								
 <p>**</p> <p>945 130</p> <table border="1"> <thead> <tr> <th>Hundred Thousand</th> <th>Ten Thousand</th> <th>Thousand</th> <th>Hundred</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Hundred Thousand	Ten Thousand	Thousand	Hundred	Tens	Ones							 <p>**</p> <p>56 284</p> <table border="1"> <thead> <tr> <th>Hundred Thousand</th> <th>Ten Thousand</th> <th>Thousand</th> <th>Hundred</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	Hundred Thousand	Ten Thousand	Thousand	Hundred	Tens	Ones						
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Digit Detectives Challenge



Use your knowledge of place value to solve these digit puzzles.

Digit Detectives

To determine the value of each digit in numbers to 1 000 000

Solve these challenges using your knowledge of the value of each digit in a number.

Here is a 5-digit number:

45 602

Write down the number that is:

1. One thousand more _____
2. Ten less _____
3. One hundred more _____
4. Ten thousand less _____
5. One more _____



Digit Detectives

To determine the value of each digit in numbers to 1 000 000

Solve these challenges using your knowledge of the value of each digit in a number.

Here is a 6-digit number:

504 692

Write down the number that is:

1. One thousand more _____
2. Ten less _____
3. One hundred more _____
4. Ten thousand less _____
5. One more _____

Solve these challenges using your knowledge of the value of each digit in a number.

What could you add to 8 234 051 to reverse the last three digits?

What could you subtract from 5 734 201 to reverse the last four digits?

What could you add to 3 465 297 to reverse all of the digits?

What could you subtract from 4 532 981 to reverse all the digits?

What could you add to 8 234 051 to reverse the last three digits?

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What could you add to 3 465 297 to reverse all of the digits?

What could you subtract from 4 532 981 to reverse all the digits?

Digit Detectives

To determine the value of each digit in numbers to 1 000 000

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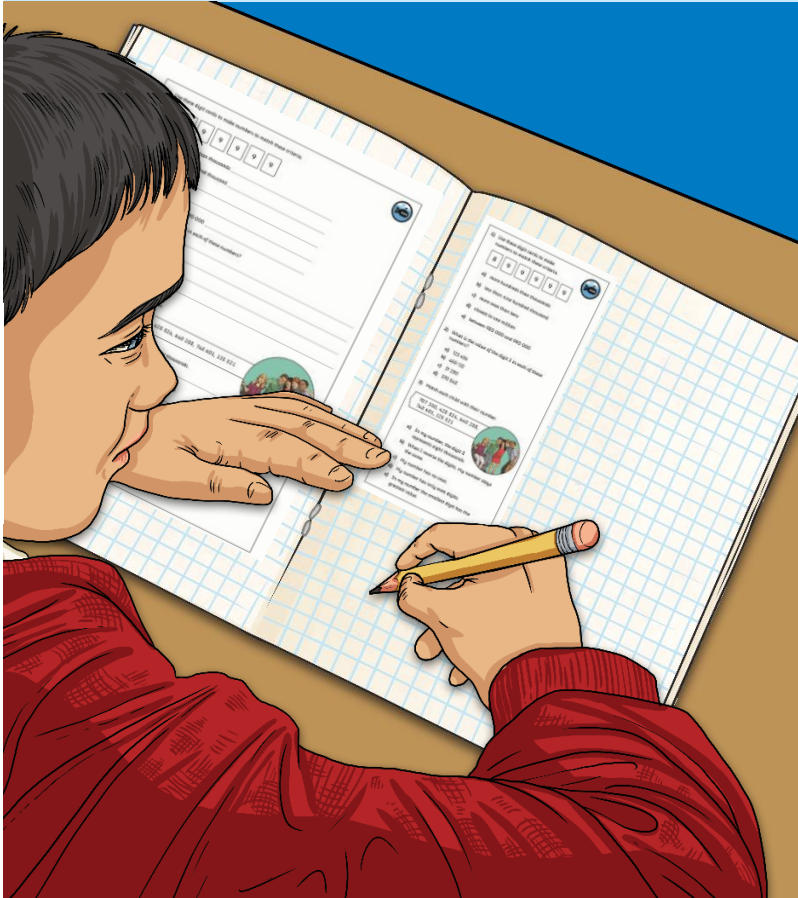
What could you add to 3 465 297 to reverse all of the digits?

What could you subtract from 4 532 981 to reverse all the digits?



Diving into Mastery

Dive in by completing your own activity!



1) Here is a number line. Write the number that is 100 more than the number on the line.

a) What is the number that is 100 more than 500? _____

b) What is the number that is 100 more than 1000? _____

2) Gina is thinking of a number. Write the number that is 100 more than the number on the line.

a) Follow the number line. Write the number that is 100 more than 500. _____

b) Write the number that is 100 more than 1000. _____

3) Are these numbers 100 more than the number on the line? Write 'yes' or 'no'.

a) Numbers on the number line are 500 and 600. _____

b) One hundred hundred more than 500 is 1000. _____

c) The digit in the hundreds place is 100 more than the digit in the tens place. _____

d) A million plus one hundred is one million one hundred. _____

1) What is the number that is 100 more than the number on the line?

2) Bradley has 1000 cards. Write the number that is 100 more than the number of cards Bradley has. _____

3) Giovanni has 1000 cards. Write the number that is 100 more than the number of cards Giovanni has. _____

1) Use these digit cards to make numbers to match these criteria.

8 9 9 9 9 9

a) more hundreds than thousands _____

b) less than nine hundred thousand _____

c) more ones than tens _____

d) closest to one million _____

e) between 980 000 and 990 000 _____

2) What is the value of the digit 3 in each of these numbers?

a) 123 456 _____

b) 450 132 _____

c) 31 280 _____

d) 370 540 _____

3) Match each child with their number.

707 350, 428 824, 648 288, 748 601, 125 521

a) In my number, the digit 6 represents eight thousands. _____

b) When I reverse the digits, my number stays the same. _____

c) My number has no ones. _____

d) My number has only even digits. _____

e) In my number the smallest digit has the greatest value. _____



Digit Reversal



Reversing the digits in a number means making a new number by writing it backwards. **For example, if we reverse the digits in 387, we get 783.**

Look at this number: **673 291**

- If we reversed its digits, which digit would be in the thousands place?
- Is the digit in the hundreds place greater in the reversed number or the original number?
- How much less is the digit in the hundreds thousands place in the reversed number than in the original number?



Aim



- To determine the value of each digit in numbers to 1 000 000.

Success Criteria

- I can write numbers correctly into a place value grid.
- I can describe the value of different digits.
- I can solve reasoning challenges about the value of the digits in a number.



