



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 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, 10 000 or 100 000 using a number line;
- compare backwards and forwards across number lines;
- 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

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 super 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 block 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, 0-9 dice and 1-6 dice.

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

The aim of this 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		Measures: Volume	Consolidation

See our [Number and Place Value Steps to Progression](#) document.

Number Reasoning



Aim

- To use reasoning to solve problems with numbers up to 1 000 000.

Success Criteria

- I can use place value to solve number puzzles.
- I can use my knowledge of numbers to answer reasoning questions.

Remember It



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>

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Order the numbers in ascending order.
Use the correct mathematical symbols to help when ordering.

40 086 < 40 099 < 40 190 < 40 490 < 41 291

Order the numbers in descending order.

140 096 > 139 890 > 120 090 > 119 294 > 19 235

Roll and Compare



Play this game in pairs.

You will need a **Number Comparisons Dice**, and each partner will need their own set of the **Comparison Cards**.

Take turns to roll the dice. Look at the symbol shown on the dice. You need to find two numbers from your **Comparison Cards** that will work with the symbol shown.

Let's look at an example!

Comparison Cards

To use reasoning to solve problems with numbers up to 1 000 000.

Cut out these cards and use them to play the Roll and Compare game with your partner.

Set 1

58 485	4 320 187	120 663	6803
50 111	100 798	678 342	787 221
501 474	89 736	47 298	3978
296 857	5 857 322		

Set 2

65 308	565 408	2
4765	98 712	4
176 399	1290	4
5423	1 297 345	4

Number Comparisons Dice

To use reasoning to solve problems with numbers up to 1 000 000.

Cut out this dice net and assemble it to play the Roll and Compare game.

Roll and Compare



Your dice shows this symbol:

>

You could choose

58 485

and

89 736

You then need to use the symbol to compare the numbers,
and write this on your whiteboard or in your book:

89 736

>

58 485

Roll and Compare



If your partner agrees that your number comparison is accurate, place the two **Comparison Cards** in the middle. You have used them up.

The aim of the game is to be the first player to use up all of your **Comparison Cards**.

If you can't make an accurate number comparison with the cards you have left, miss a go.



Reasoning about Numbers

Today we are going to be reasoning about numbers.

Reasoning means to think mathematically, using what you already know to work out things you don't yet know.

In order to reason about numbers, you need to apply what you know about number and place value to solve problems and find things out.



Number Puzzle



Look at this list of numbers:

45 679, 54 796, 65 497, 69 457, 76 549, 76 495, 95 476, 97 564

Are these statements about the numbers true or false?

- The numbers are in order from smallest to largest.
- Each number in the list has a digit total of 31.
- The number with the greatest digit in the hundreds place is 54 796.
- All the numbers in the list are odd.
- The difference between the lowest and highest number is 52 000.



Number Puzzle



Look at this list of numbers:

45 679, 54 796, 65 497, 69 457, 76 549, 76 495, 95 476, 97 564

Did you work out which statements were true and which were false?

- The numbers are in order from smallest to largest. **False**
- Each number in the list has a digit total of 31. **True**
- The number with the greatest digit in the hundreds place is 54 796. **True**
- All the numbers in the list are odd. **False**
- The difference between the lowest and highest number is 52 000. **False**

Number Puzzle



Look at this list of numbers:

45 679, 54 796, 65 497, 69 457, 76 549, 76 495, 95 476, 97 564

Let's look at why the false statements are incorrect.

All the numbers in the list are odd.

The difference between the lowest and highest number is 52 000.

Although 52 000 is a good estimate of the difference between the highest and lowest numbers, the actual difference is 51 885.

However, 3 of the numbers are even: 54 796, 95 476, 97 564.

Number Puzzle



Year 5 are discussing how to order the numbers shown.

19 375

19 642

19 782

19 103

To put the numbers in ascending order, you start by looking at the ones column.

I would start by looking at the tens of thousands digit. Both that and the thousands digits are the same, so I would then look at the hundreds digits to help when ordering.

The second child is correct in this instance. Looking at the hundreds column would help when placing numbers in ascending or descending order.



True or False?



Around your classroom you will find several different number puzzles. You will get chance to move round and visit each puzzle.

On your **True or False Activity Sheet**, there are statements for each puzzle.

Can you colour code each statement to show whether it is true or false?

Look carefully at each puzzle to make your decisions about the statements.

True or False?

To use reasoning to solve problems with numbers up to 1 000 000.

Highlight the statements for each puzzle according to whether they are true or false.

Colour in these boxes to show which colour is for the true statements and which is for the false ones:

True False

Puzzle 1

- The number that is one hundred more is five hundred and eighty-four thousand and twenty-four.
- The number that is 100 more is 584 24 written in digits.
- The only digit that changed in the number was the hundreds digit.
- Both the hundreds digit and the tens digit changed.

Puzzle 2

- It is four hundred and sixty less than 60 000.
- It is 360 less than 60 000.
- It is 1460 less than 60 000.
- All the digits in the original number need to change for it to become 60 000.

Puzzle 3

- The highest even number with a 2 in the thousands place that you can make with the cards is 2756.
- The lowest odd number with a seven in the hundreds place is 1725.
- The difference between the highest and lowest 5-digit numbers you can make is 64, 086.
- The highest number you can make with all the cards has a 5 in the ten thousands place.

Puzzle 4

8 999.

0 in the tens place.

1 in the ones place.

9 000.

Puzzle 5

ent possibilities for numbers that could go in the box.

the box.

six hundred and ninety could go in the box.

the box.

Puzzle 6

written in descending order.

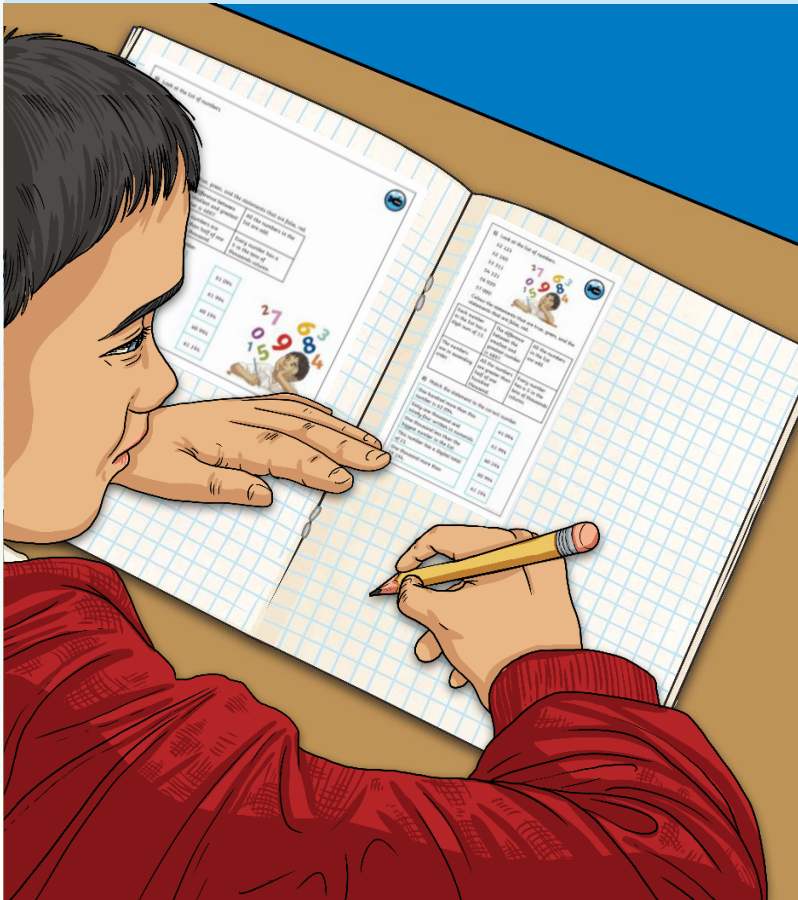
written in order from smallest to biggest.

ite the blank space.

ite the blank space.

Diving into Mastery

Dive in by completing your own activity!



1) Can you...
325
All the...
All the thousand...
All the...

2) Can you...
Can you...
13 8...
The num...
All the hundred...
All the...

3) a) Creat...
Make...
b) Can...
They an...
They an...
They all...

1) Are these...
Explain...
a) To an...
b) A num...
column...
c) As a...
2) Year 5 an...
3) Find a set...

1) Look at the list of numbers.
52 123
52 150
53 311
54 121
56 020
57 000

Colour the statements that are true, green, and the statements that are false, red.

Each number in the list has a digit sum of 13.	The difference between the smallest and greatest number is 4487.	All the numbers in the list are odd.
The numbers are in ascending order.	All the numbers are greater than half of one hundred thousand.	Every number has a 5 in the tens of thousands column.

2) Match the statement to the correct number.

One hundred more than this number is 62 094.	61 094
Sixty-one thousand and ninety-four written in numerals.	61 994
One thousand less than the biggest number in the list.	60 194
This number has a digital total of 21.	60 994
One thousand more than 59 194.	61 194

Add a Card



Can you choose a number to go on the blank card that will make the following statements true and false?

5876

7454

3010

9230

True

- All the numbers are even.
- All the numbers have a different odd digit in the thousands place.
- All the numbers have four digits.

False

- All the tens digits are odd.
- The lowest number has a 9 in the hundreds place and a 0 in the ones place.
- The numbers have either odd or even digits in the hundreds place.



Add a Card



There are lots of possibilities for the missing number! It should have four digits, be even, have a one in the thousands place, have an even tens digit and an even hundreds digit. Look at some examples.

5876

1804

7454

3010

9230

True

- All the numbers are even.
- All the numbers have a different odd digit in the thousands place.
- All the numbers have four digits.

False

- All the tens digits are odd.
- The lowest number has a 9 in the hundreds place and a 0 in the ones place.
- The numbers have either odd or even digits in the hundreds place.



Add a Card



Use the statements to solve the missing card. Explain your thinking fully.

4776

6435

7424

9830

True

- The number in the thousands column is even and larger than the thousands digit in the first number.
- Adding all four digits totals 18.
- There are two even and two odd digits in the number.
- The remaining even number is 4.
- The even and odd number sit next to each other.

False

- The thousands digit is 4.
- The number ends with 53.

Aim



- To use reasoning to solve problems with numbers up to 1 000 000.

Success Criteria

- I can use place value to solve number puzzles.
- I can use my knowledge of numbers to answer reasoning questions.





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