

Maths

Number and Place Value

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

Lesson Breakdown

Below is our suggestion for the most coherent and progressive sequence to teach this area of PlanIt Maths. Steps on the White Rose Maths scheme of learning although we have not aimed to mirror the exact order in which they are presented.

Read, write, order and compare numbers (1): Powers of 10 up to 1 Mill
 Children identify the relationships between powers of 10 from one thousand to one million. They use bar models to show the relationship between powers of 10. Sentence stems demonstrate the correct language focus. The closing by of the concepts introduced and being into Mastery resources include fun activities.

NC Statement: Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.
Lesson Aim: To understand the relationship between powers of 10 from 1 hundredth to 10 million.

Read, write, order and compare numbers (2): Dividing Powers of 10 into
 Using bar model representations and sentence stems will help children see 10. The Powers of 10 in Equal Parts Measurement Game uses measuring in concept. Fluency, reasoning and problem-solving questions are included in the pack.

NC Statement: Read, write, order and compare numbers up to 10 000 000 and determine the value of each digit.
Lesson Aim: To divide powers of 10 into 2, 4, 5 and 10 equal parts.

Introduction

In this unit, the children read and write numbers up to 10 000 000 and continue to identify the value of individual digits in a number. They revisit comparisons of numbers using the greater than and less than symbols and then further develop their skills by reasoning about numbers. Children will focus on rounding numbers to any given degree of accuracy and will also investigate reasoning problems based on rounding numbers. They will work with negative numbers, ordering and comparing them and calculating intervals across zero. They will use negative numbers in context to solve problems. Finally, children will have the opportunity to use all their number and place value skills to solve a range of problems.

Resources
 Dice, Gattegno charts, place value charts, place value counters, whiteboards and markers.

Assessment Statements
 By the end of this unit, children working towards the expected level will be able to:

- read and write numbers up to 1 000 000;
- identify the value of each digit in a number up to 1 000 000;
- identify the value of a digit in numbers with two decimal places;
- order numbers up to 1 000 000;
- compare numbers using the greater than and less than symbols;
- round numbers to a required degree of accuracy using a number line;
- calculate intervals across zero using a number line;
- compare and order negative numbers;
- solve simple problems involving negative numbers in context;
- solve simple reasoning problems using all of the above.

children working at the expected level will be able to:

- read and write numbers up to 10 000 000;
- identify the value of each digit in a number 000 000;
- identify the value of a digit in numbers decimal places;
- order numbers up to 10 000 000;
- compare numbers by working out calculations;
- round numbers to a required degree of accuracy;
- calculate intervals across zero;
- solve problems involving negative numbers in context;
- solve reasoning problems using all of the above.

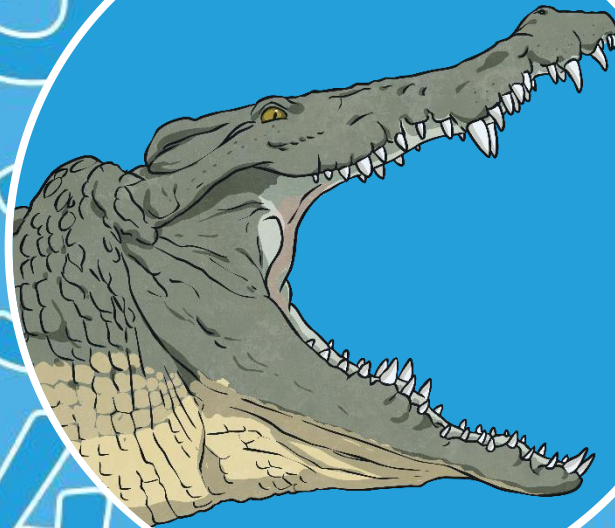
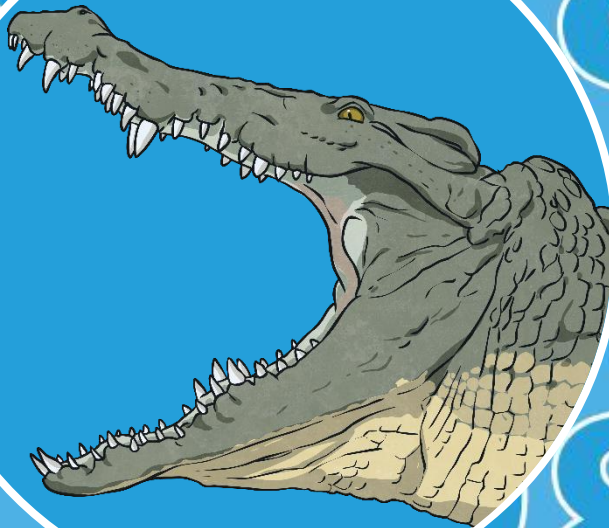
Number and Place Value
 Maths | Year 5 | Skills to Progress Overview

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, Subtraction, Multiplication and Division					Fractions			Ordering: Position and Direction	Consolidation
Spring	Number: Decimals		Number: Percentages		Number: Algebra		Measurement: Converting Units		Measurement: Perimeter, Area and Volume		Number: Ratio		Consolidation
Summer	Geometry: Properties of Shapes		Problem Solving			Statistics			Investigations				Consolidation

Compare and Order Numbers



Aim

- To compare and order numbers up to 10 000 000.

Success Criteria

- I can identify the value of each digit up to 10 000 000.
- I can compare numbers up to 10 000 000.
- I can order sets of numbers up to 10 000 000.

Remember It



- The millions digit is less than 8.
- The hundreds digit is an odd number.
- When added together, the thousands and the hundreds digit total is 6.
- The hundred thousands digit is smaller than the ones digit.
- The ten thousands digit is one less than the thousands digit.
- The tens digit is a multiple of 3.
- The ones digit is the same as the ten thousands digit.

Write three different 7-digit numbers that would fit the clues.

Comparing Numbers

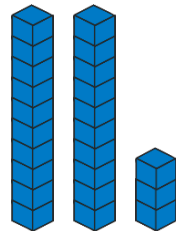


Comparing numbers is useful for working out if one number is greater or smaller than another number.

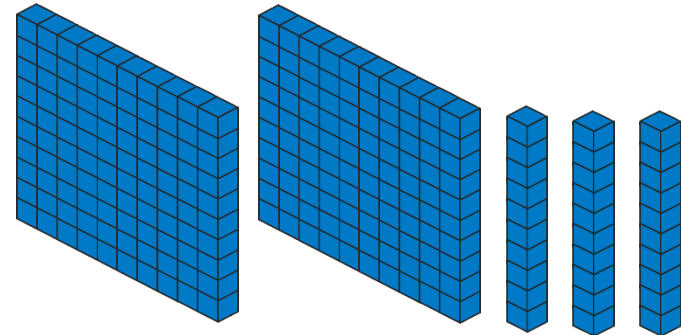
We compare numbers by looking at their digits and by understanding the place value of each digit.

Let's look at a simple example. Which number is greater, 23 or 230?

We can see that 230 is greater than 23.



23 = two tens and three ones



230 = two hundreds and three tens

Comparing Numbers



A place value grid can also help to visualise the comparison.

Which is greater?
2 235 282 or 2 235 822

2 235 282							2 235 822						
M	Hth	Tth	Th	H	T	O	M	Hth	Tth	Th	H	T	O
●●	●●	●● ●	●● ●● ●	●●	●● ●● ●● ●●	●●	●●	●●	●● ●	●● ●● ●	●● ●● ●● ●●	●●	●●

We need to compare the place value of the digits in each number.
To do this, we always start with the digits on the left.
Be careful to check the place value of each digit in each number.
We then compare the value of each digit until the numbers are different.

Comparing Numbers



2 235 282							2 235 822						
M	Hth	Tth	Th	H	T	O	M	Hth	Tth	Th	H	T	O
○ ○	○ ○	○ ○ ○	○ ○ ○ ○ ○	○ ○	● ● ● ● ● ● ● ●	● ●	○ ○	○ ○	○ ○ ○	○ ○ ○ ○ ○	○ ○ ○ ○ ○ ○ ○ ○	● ●	● ●

2 235 282 has two hundred and thirty five thousand two hundred and eighty two. 2 235 822 has eight hundred and twenty two thousand three hundred and fifty two. Now, we are able to compare the two numbers as we have found two digits

**2 235 822
is greater than
2 235 282.**

Eight hundred is bigger than two hundred. We don't need to look at any more of the digits as we have found a difference between the two numbers.

Comparing Numbers



Which number is greater in these pairs?

If you are correct, the number will turn blue.

56 211 or 54 211

123 984 or 123 948

1 762 482 or 1 762 184

2 375 121 or 2 378 121

8 484 448 or 8 484 884

Greater Than and Less Than



Which symbol goes in each of these boxes?
Explain your choice to your partner.
Click each box to reveal the answers.

9 539 289



9 593 289

374 284



347 248

5763



5376

6 464 464



6 464 646

Ordering Numbers



When ordering sets of numbers, use your knowledge of place value.

You can see all the numbers have the same amount of millions and the same amount of hundred thousands.

From greatest to smallest the order is:
3 467 222, 3 457 222, 3 453 435

The first and the last number have the same amount of ten thousands, but the first number has a greater amount of thousands.

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

Ordering Numbers



Draw your own place value chart to help you order the sets of numbers:

**Greatest to
Smallest**

2 354 211

2 333 421

2 372 282

2 347 801

**Smallest to
Greatest**

1 384 297

2 654 234

1 777 301

2 632 121

**Smallest to
Greatest**

3 121 412

5 812 400

3 074 322

4 598 211

Ordering Numbers



Look at this set of numbers:

7 576 283

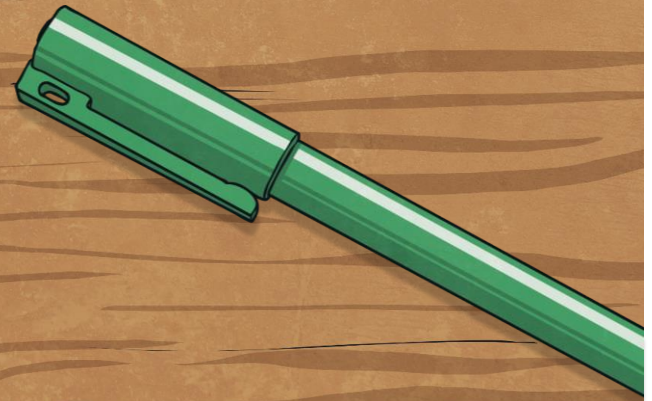
7 567 382

7 756 382

7 765 283

If you put them in order from greatest to smallest, which number would be third?

Explain your choice to a partner and explain how you ordered the numbers.



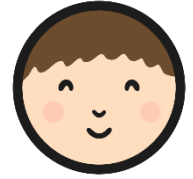
Ordering Numbers



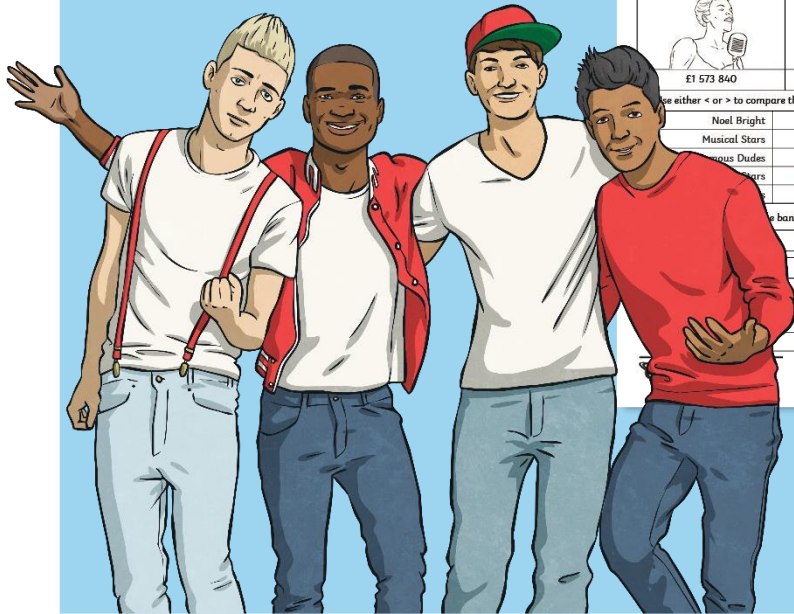
Identify the number that has been incorrectly placed in the largest to smallest sequence. Place the number in the correct place in the sequence on a whiteboard.

1 321 573	1 321 512	1 312 521	1 203 125	1 308 521
1 321 573	1 321 512	1 312 521	1 308 521	1 203 125

Song Stars



Solve the number puzzles on your Song Stars Activity Sheet using $<$ and $>$.



Song Stars

To compare and order numbers up to 10 000 000.

This table shows the earnings of six bands and singers.

Noel Bright £2 987 300	Rock On £1 357 150
Bethany £1 573 840	Musical Stars £175 390

Use either $<$ or $>$ to compare the earnings of these bands which would make the statement true.

Noel Bright	Rock On	$<$	£4 800 000
Musical Stars	Ceilidh	$<$	£4 000 000
Famous Dudes	Noel Bright	$<$	£7 550 000
Rock On		$<$	

Write the names of all the bands which would make this statement true:

	$<$	£1 000 000	$>$	
--	-----	------------	-----	--

Can you list the bands and singers in order from lowest earnings to highest earnings?

Song Stars

To compare and order numbers up to 10 000 000.

This table shows the earnings of six bands and singers.

Noel Bright £9 873 591	Rock On £3 572 508	Ceilidh £957 648
Bethany £5 738 400	Musical Stars £75 399	Famous Dudes £372 600

Tick the statements which are correct about the artists' earnings:

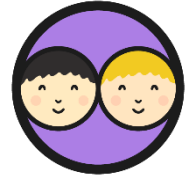
- Noel Bright $>$ £9 000 000
- Rock On $>$ Bethany
- £1 000 000 $>$ Ceilidh
- Musical Stars $>$ Famous Dudes $>$ Ceilidh
- Noel Bright $>$ Famous Dudes $<$ Rock On

Write the names of all the bands which would make this statement true:

	$<$	£1 000 000	$>$	
--	-----	------------	-----	--

Can you list the bands and singers in order from lowest earnings to highest earnings?

Which Number?



Which of these numbers could fit in the empty box?

4 121 490

3 427 718

4 863 215

4 984 725

4 192 367

$3\ 983\ 210 < \boxed{} > 4\ 345\ 632$

Can you think of two more numbers which would fit in the empty box?

Aim



- To compare and order numbers up to 10 000 000.

Success Criteria

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765.395289873

991 6789 78 096

8 562 853 2234

309 31 238 948

9 5698 435 -31

63 567 892 2.542