



# 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 or 100 000 using a number line;
- count 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 | Topic 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
<b>Autumn</b>	Number: Place Value			Number: Addition and Subtraction		Statistics		Number: Multiplication and Division		Perimeter and Area		Consolidation
<b>Spring</b>	Number: Multiplication and Division			Number: Fractions						Number: Decimals and Percentages		Consolidation
<b>Summer</b>	Number: Decimals			Geometry: Properties of Shapes			Geometry: Position and Direction		Measurement: Converting Units		Measures: Volume	Consolidation

# Order Whole Numbers to 1 000 000



# Aim

- To order and compare numbers to 1 000 000.

# Success Criteria

- I can determine the value of each digit in a number.
- I can use a place value grid to compare numbers.
- I can put numbers in a given order.

# Remember It

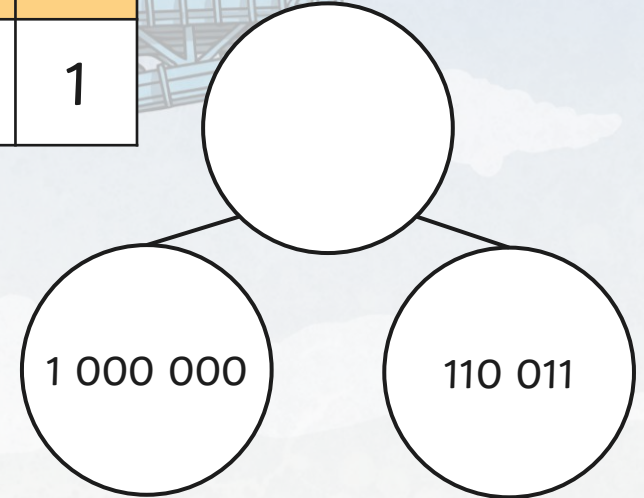
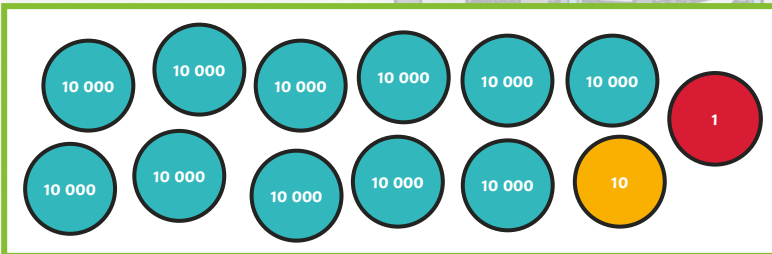


Which of the representations is the odd one out?  
Explain your reasoning to your partner.

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
1	1	1	0	0	1	1

one million, one hundred and ten thousand and eleven

one millions, one hundred thousands, one ten thousands, one ten and one ones

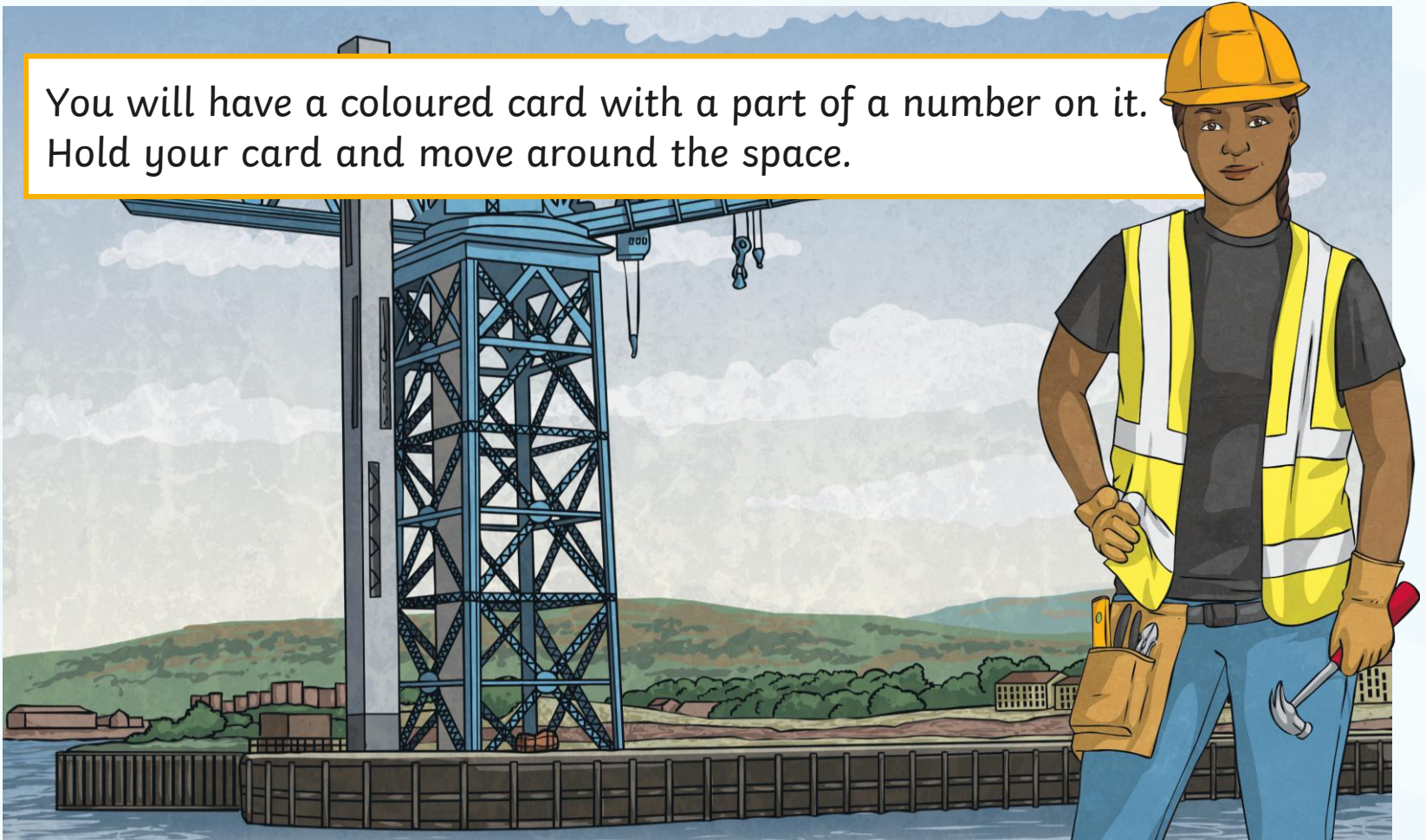


The place value counters is the odd one out.  
All other representations total 1 110 011.  
The counters represent 1 100 011.

# Build a Number



You will have a coloured card with a part of a number on it.  
Hold your card and move around the space.



# Build a Number



When I blow the whistle, get into a group of 6. Each person in your group should have a different coloured card.

If it is not possible to get into a group of 6, just make sure everyone in your group has a different coloured card.

Look at the parts of numbers on your cards.  
What number can you build from the different parts?

I will choose a winner based on different criteria each time. It might be the highest number, the lowest number or the number closest to 500 000.

# Build a Number





# Build a Number



The **highest**  
number wins!

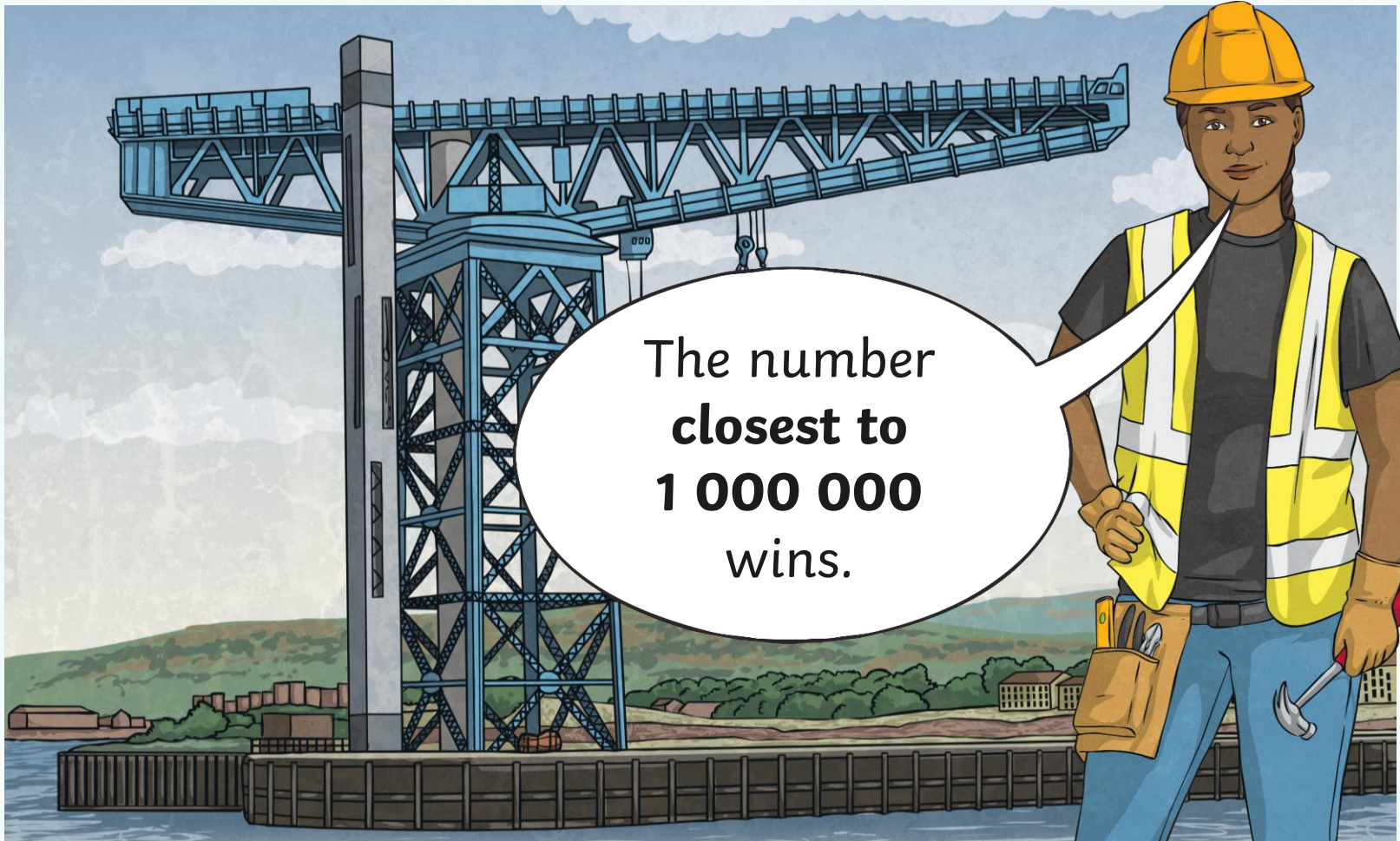


# Build a Number



The winning group is the one with the number **closest to 400 000.**

# Build a Number



The number  
**closest to**  
**1 000 000**  
wins.

# Build a Number



# Build a Number



The winning groups  
are any that have  
made a number  
**higher than**  
**700 000.**

# Comparing 6-Digit Numbers



When we compare 6-digit numbers, we compare the values of each digit starting with the hundred thousands. If the numbers have the same amount of hundred thousands, we compare the ten thousands. If the digits are the same again, we look at the next place value digit to the right.

881 317

<

881 371

<

less than

881 317

881 713

881 371

881 137

881 317 and 881 371 both have 8 hundred thousands, 8 ten thousands, 1 thousand and 3 hundreds.

881 317 has 1 ten.

881 371 has 7 tens.

881 317 is less than 881 371.



# Comparing 6-Digit Numbers



When we compare 6-digit numbers, we compare the values of each digit starting with the hundred thousands. If the numbers have the same amount of hundred thousands, we compare the ten thousands. If the digits are the same again, we look at the next place value digit to the right.

881 713

>

881 137

>

greater than

881 317

881 713

881 371

881 137

881 713 and 881 137 both have 8 hundred thousands, 8 ten thousands and 1 thousand.

881 713 has 7 hundreds.

881 137 has 1 hundred.

881 713 is greater than 881 137.

# Ordering Numbers



When ordering numbers, we need to compare the value of the digits in each place. We can do this using a place value grid to help us.

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
£12 875	£10 423	£12 785	£9758	£13 853	£19 758	£21 758

**Look at this table.**

It shows the takings at an amusement park over a week.





# Ordering Numbers



Entering the amounts into a place value grid helps to compare the value of the digits.

Day	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
Monday			1	2	8	7	5
Tuesday			1	0	4	2	3
Wednesday			1	2	7	8	5
Thursday				9	7	5	8
Friday			1	3	8	5	3
Saturday			1	9	7	5	8
Sunday			2	1	7	5	8



# Ordering Numbers



Monday and Wednesday both have 2s in the thousands column, so we look at their hundreds digits. Monday has an 8, so this is the next biggest number in the set, while Wednesday has a 7 in the hundreds column, making it the next number in the set.

Day	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
Monday			1	2	8	7	5
Tuesday			1	0	4	2	3
Wednesday			1	2	7	8	5
Thursday				9	7	5	8
Friday			1	3	8	5	3
Saturday			1	9	7	5	8
Sunday			2	1	7	5	8

Wednesday has the highest number in the thousands column, so we begin to look at the digits in the hundreds column closest to the left (the ten thousands). This makes it the largest number in the set.



# Ordering Numbers



Here are the numbers in order:

Day	Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
Sunday			2	1	7	5	8
Saturday			1	9	7	5	8
Friday			1	3	8	5	3
Monday			1	2	8	7	5
Wednesday			1	2	7	8	5
Tuesday			1	0	4	2	3
Thursday				9	7	5	8



# Explain Yourself



Look at this set of numbers:

3 576 283

3 756 382

3 567 382

3 765 283

If you put them in order from highest to lowest, which number would be third?

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



# Explain Yourself



3 576 283

**3 756 382**

3 567 382

**3 765 283**

To order the numbers, compare the digits. All the numbers have 3 millions, so we need to compare the digits in the hundred thousands place.

We can see that 2 of the numbers have 5s in the hundred thousands place and 2 of the numbers have 7s in the hundred thousands place.

We know that the numbers with 7s in the hundred thousands place are higher than the numbers with 5s, so we then move on to compare the digits in the ten thousands place.

# Explain Yourself



3 576 283

3 756 382

3 567 382

3 765 283

Looking at the 2 highlighted numbers, we can see that one has a 5 in the ten thousands place, whereas the other number has a 6 in the ten thousands place.

This means that 3 765 283 is bigger than 3 756 382. Therefore, we can put these two numbers in order

**3 765 283, 3 756 382**



# Explain Yourself



3 576 283

3 567 382

We now just need to compare the ten thousands digits in the remaining two numbers.

We can see that the first number has a 7 in the ten thousands place, whereas the second number has a 6 in the ten thousands place.

This means that 3 576 283 is bigger than 3 567 382.  
We can order these numbers now.

**3 765 283, 3 756 382, 3 576 283, 3 567 382.**

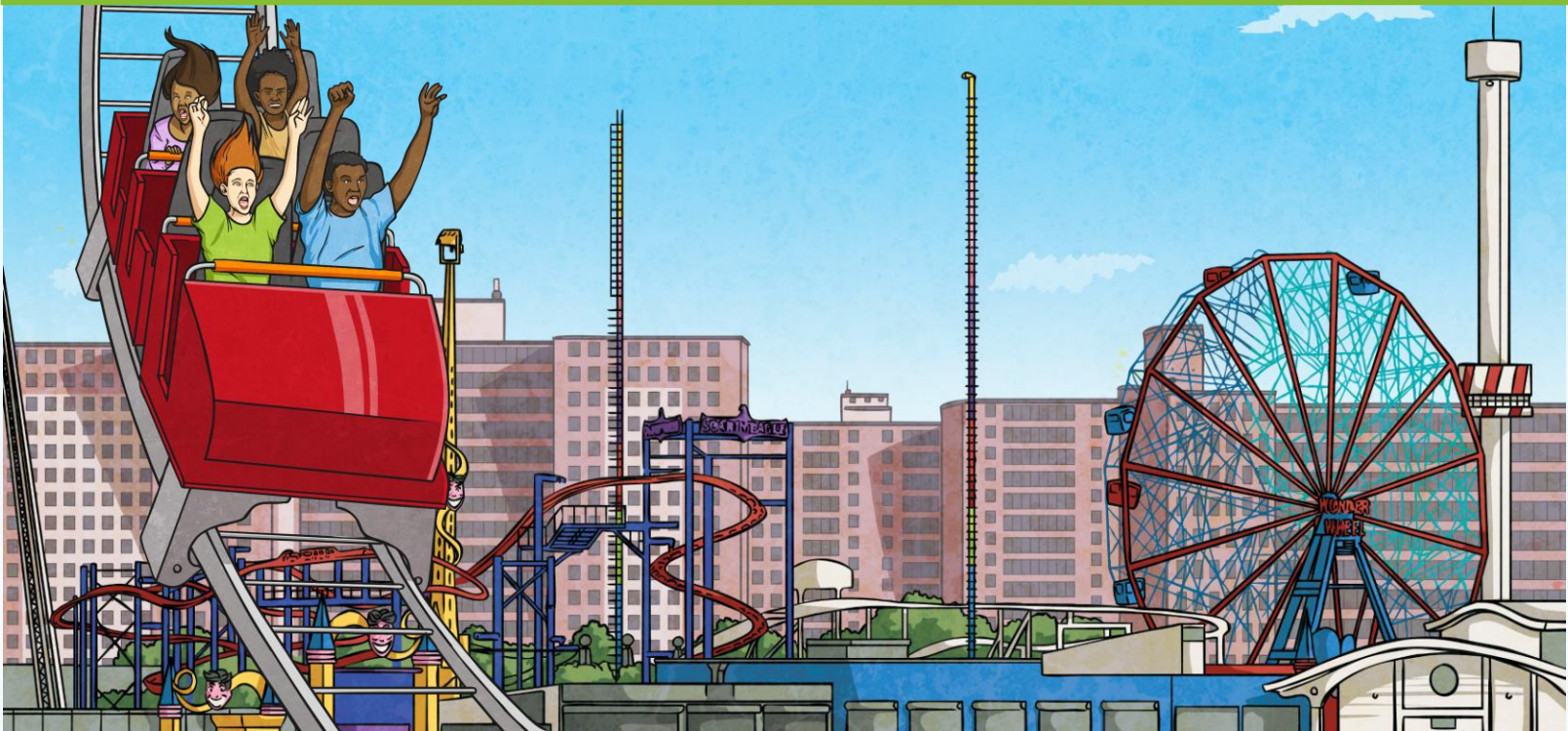


# Explain Yourself



3 765 283, 3 756 382, 3 576 283, 3 567 382.

This means that **3 576 283** would appear **third** in this list!





# Connect the Dots



Can you order these numbers smallest to greatest by connecting the dots?  
Start at the green dot.

56 874

54 867

45 768

65 478

47 658

54 847

67 487

65 784

# Explain Yourself

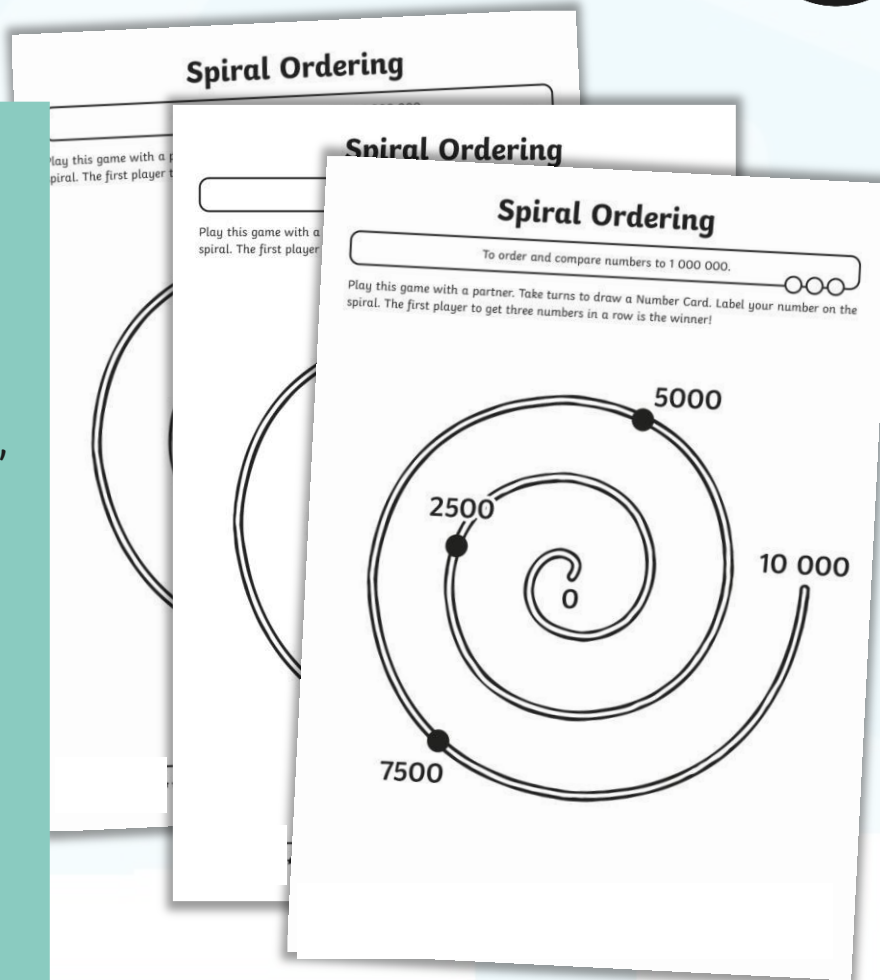


Play this game in pairs.

On your **Spiral Ordering Activity Sheet** you will see a spiral numbered from zero.

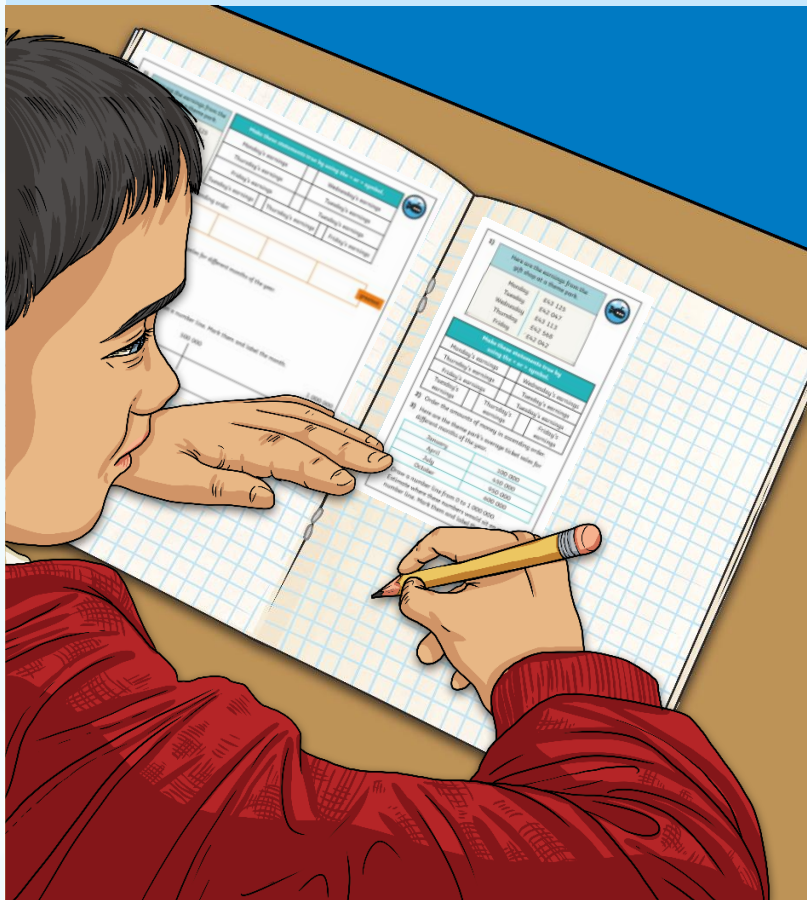
Take turns to draw a Number Card. Label your number on the spiral. The first person to get 3 numbers in a row, with none of their partner's numbers between them, is the winner.

When you order your numbers, it is helpful to think about where the halfway point of the spiral is, and which number would be there. You could also work out the numbers that would be one quarter and three quarters along the spiral.



## Diving into Mastery

Dive in by completing your own activity!



1) Here are the earnings from the gift shop at a theme park.

Monday	£43 125
Tuesday	£42 047
Wednesday	£43 113
Thursday	£42 568
Friday	£42 042

Make these statements true by using the < or > symbol.

Monday's earnings		Wednesday's earnings
Thursday's earnings		Tuesday's earnings
Friday's earnings		Tuesday's earnings
Tuesday's earnings		Thursday's earnings
		Friday's earnings

2) Order the amounts of money in ascending order.

smallest      greatest

3) Here are the theme park's average ticket sales for different months of the year.

January	100 000
April	450 000
July	950 000
October	600 000

Estimate where these numbers would sit on a number line. Mark them and label the month.

0 500 000 1 000 000

701 898  
761 898  
312 740

Emmanuel

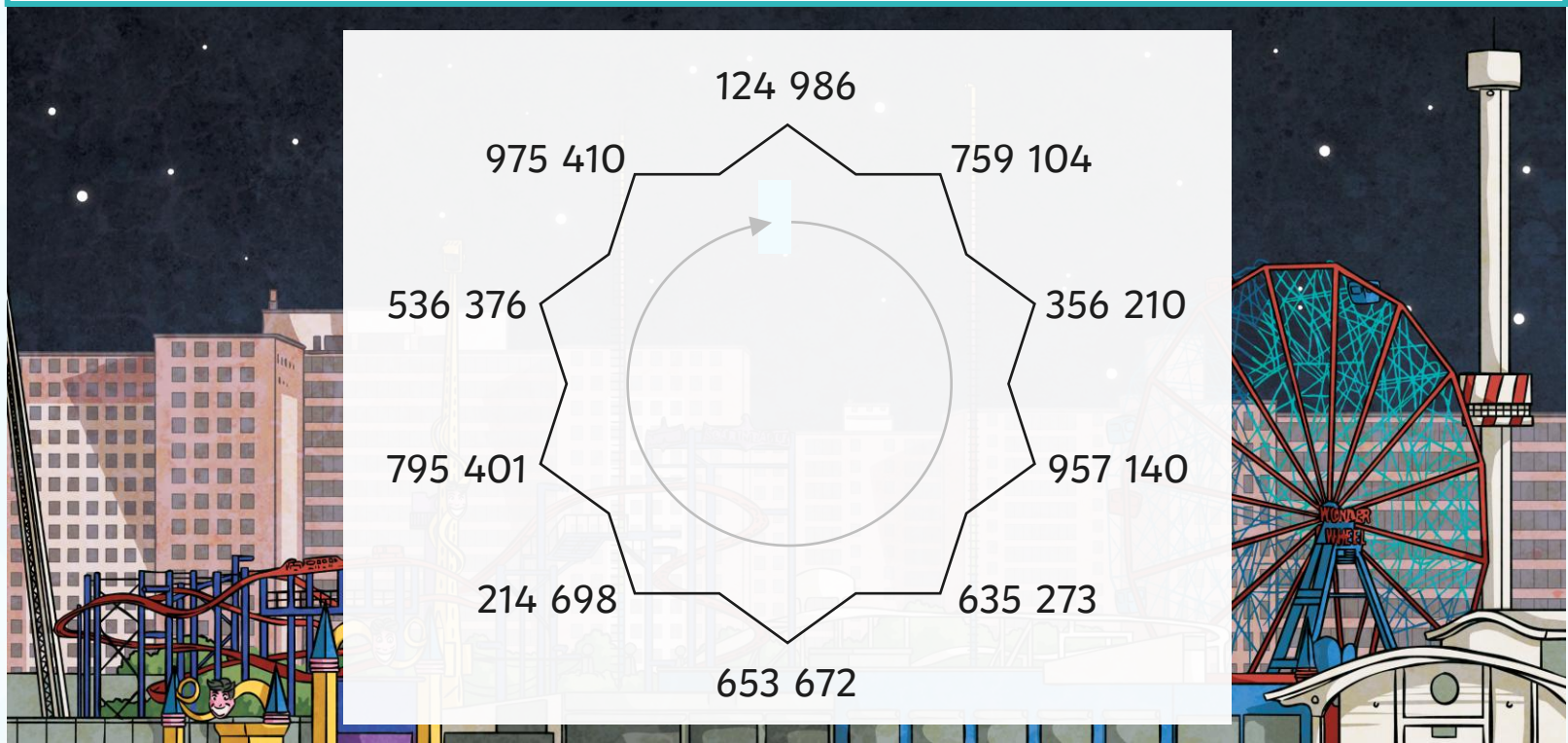
as she could.



# Star Swap



The numbers on the points of this star are in order from lowest to highest. However, two opposite pairs of numbers have been swapped. Can you work out which opposite pairs need to be swapped to get the numbers in order?



# Star Swap



Did you work out which pairs of numbers had been swapped?

124 986

975 410

**759 104**

536 376

356 210

795 401

**957 140**

214 698

635 273

653 672

# Aim

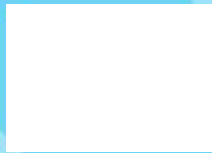


- To order and compare numbers to 1 000 000.

# Success Criteria

- I can determine the value of each digit in a number.
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