11+ Maths: Place Value Mastery

Topic: Read, Write, Compare, and Order Numbers
Target Age: 10-11 years (Preparing for 11+ Exams)
Time: 60 Minutes
Resources: Place value charts, digit cards, number lines
Website: `https://oatutors.co.uk/`

This lesson develops deep understanding of place value up to millions, including decimals. Essential foundation for all 11+ arithmetic and problem-solving questions.

1 Learning Objectives

By the end of this lesson, students will be able to:

- Read and write numbers up to 10,000,000 in figures and words
- Understand the value of each digit in a number
- Compare and order numbers using inequality symbols
- Round numbers to nearest 10, 100, 1000
- Work confidently with decimal place value to 3 decimal places

2 Starter Activity (10 Minutes)

Time	Activity	Description
5 mins	Digit Detective	Show number 47,532. Students identify: What digit is in the thousands place? What's the value of the 7? Quick-fire questioning.
5 mins	Human Number Line	Students arrange themselves holding number cards 3,247 — 3,274 — 3,427 — 3,472 in ascending order.

3 Main Teaching (25 Minutes)

3.1 Place Value System (10 minutes)

The UK Number System:

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Units
M	HTh	TTh	Th	H	T	U
3	2	4	7	5	6	8

Number: 3,247,568 = Three million, two hundred and forty-seven thousand, five hundred and sixty-eight

Key Teaching Points:

- Each position is 10 times bigger than the position to its right
- Zero as a placeholder is crucial
- British vs American: We say "and" only for decimals

3.2 Decimal Place Value (8 minutes)

Hundreds	Tens	Units	.	Tenths	Hundredths	Thousandths
H	T	U	.	t	h	th
4	3	7	.	2	6	8

Number: 437.268 = Four hundred and thirty-seven point two six eight

Common 11+ Mistakes to Avoid:

- Don't say "point two hundred and sixty-eight"
- Remember: tenths are bigger than hundredths
- 0.5 = 0.50 = 0.500 (equivalent values)

3.3 Comparing and Ordering (7 minutes)

Strategy for Comparing Numbers:

1. Compare digits from left to right
2. Use inequality symbols: >, <, =
3. Line up decimal points when comparing decimals

Examples:

- 34,567 > 34,476 (Compare hundreds: 5 > 4)
- 7.39 < 7.4 (7.4 = 7.40, so 39 hundredths < 40 hundredths)

4 Guided Practice (15 Minutes)

Worksheet: Place Value Challenges

Section A: Reading and Writing Numbers (5 minutes)

1. Write in figures: Two million, three hundred and forty-five thousand, six hundred and twelve
2. Write in words: 1,407,380
3. What is the value of the digit 6 in 462,739?
4. Write these decimals in order from smallest to largest: 0.45, 0.405, 0.54, 0.5

Section B: Comparing Numbers (5 minutes)

5. Fill in >, <, or =: 67,234 ___ 67,324
6. Which is larger: 0.7 or 0.67?
7. Order these numbers from largest to smallest: 45,670 — 45,607 — 45,760 — 45,067

Section C: Rounding (5 minutes)

8. Round 47,368 to the nearest thousand
9. Round 3.247 to 1 decimal place
10. Round 156,499 to the nearest hundred thousand

5 Independent Work (8 Minutes)

11+ Style Challenge Questions:

1. In the number 5,_4_,273, what digits could go in the spaces to make the smallest possible number?
2. A number rounded to the nearest thousand is 47,000. What is the smallest whole number it could be?
3. Arrange these in ascending order: $\frac{3}{4}$, 0.8, 0.73, $\frac{4}{5}$
4. The digit 7 appears in a 6-digit number. Its value is 70,000. In which position is the digit 7?

6 Plenary and Assessment (2 Minutes)

Time	Activity	Description
2 mins	Place Value Pyramid	Students build a number pyramid: bottom row has 4 digits, each upper level shows place values. Quick visual check.

7 Homework Assignment

Place Value Mastery Sheet:

1. Convert 10 numbers between words and figures
2. Compare 15 pairs of numbers using inequality symbols
3. Round 10 numbers to various place values
4. Solve 5 place value word problems
5. Extension: Investigate numbers in different bases (base 5, base 8)

8 Extension Activities

For more able students:

- Create the largest and smallest numbers using given digits
- Explore negative numbers and their place value
- Investigate very large numbers (billions, trillions)
- Place value in other cultures (Roman numerals, Egyptian hieroglyphs)

Answer Key - For Teachers

Guided Practice Answers

Section A: Reading and Writing Numbers

1. 2,345,612
2. One million, four hundred and seven thousand, three hundred and eighty
3. 60,000 (six ten thousands)
4. 0.405, 0.45, 0.5, 0.54

Section B: Comparing Numbers

5. 67,234 < 67,324
6. 0.7 (which equals 0.70)
7. 45,760 — 45,670 — 45,607 — 45,067

Section C: Rounding

8. 47,000
9. 3.2
10. 200,000

Independent Work Answers

1. 5,040,273 (using digits 0 and 0 or 0 and 1, etc.)
2. 46,500
3. 0.73, $\frac{3}{4}$ (0.75), $\frac{4}{5}$ (0.8), 0.8
4. Ten thousands position

Teaching Notes

- Use concrete materials (place value counters) for visual learners
- Common error: Students write 2,0345 instead of 20,345
- Emphasize that decimal point separates whole numbers from parts
- Practice with money amounts for real-world relevance
- Use interactive place value charts for kinesthetic learners