

<b>Subject:</b>  <b>Maths PBL</b>	<b>Activity: Place Value</b>	
<b>Class:</b>  <b>Years: 10 and 11</b>	<b>Teacher: Ollie Hoare</b> <b>Ben Inman</b>	<b>Term: 1</b>
	<b>Learning Environments</b>  Class room based with availability to outside learning space.	<b>Resources:</b>  Maths equipment inclusive of base ten, ones and hundreds. Number lines, 100 square, calculators, IT access to White Rose and My Maths.

### Prior Learning: stage 1/2

Part-whole model	Sort objects
Addition symbol	Count objects
Fact families - addition facts	Represent objects
Find number bonds for numbers within 10	Count, read and write forwards from any number 0 to 10
Systematic methods for number bonds within 10	Count, read and write backwards from any number 0 to 10
Number bonds to 10	Count one more
Compare number bonds	Count one less
Addition - adding together	One-to-one correspondence to start to compare groups
Addition - adding more	Compare groups using language such as equal, more/greater, less/fewer
Finding a part	Introduce <, > and = symbols
Subtraction - taking away, how many left? Crossing out	Compare numbers
Subtraction - taking away, how many left? Introducing the subtraction symbol	Order groups of objects
Subtraction - finding a part, breaking apart	Order numbers
Fact families - the 8 facts	Ordinal numbers (1 <sup>st</sup> , 2 <sup>nd</sup> , 3 <sup>rd</sup> ...)
Subtraction - counting back	The number line

### Differentiation:

More able students help less able pupils demonstrating and giving suitable feedback.

Students will be placed into ability groups to support learning with a staff member supporting where possible.

Adapting equipment. Equal levelling of students. Making use of different work areas to enable positive engagement.

### Key Words:

Number, Digit, One, Ten, Hundred, Thousand, More, Less, Count on, Count back, more than, less than, equal to, intervals, adjacent, multiples

**End of term expectations:****Stage 2**

Counts in steps of 2, 3, and 5 from 0, and in tens from any number, forward and backward.

Recognises the place value of each digit in a two-digit number (tens, ones)

Identifies, represents and estimates numbers using different representations, including the number line

Uses reasoning about place value and number facts to solve problems

Solves problems with addition and subtraction using concrete objects and pictorial representations, including those involving numbers, quantities and measures

Solves problems with addition and subtraction applying their increasing knowledge of mental and written methods.

Adds and subtracts numbers using concrete objects, pictorial representations, and mentally, including a 2-digit number and 1's

Shows that addition of two numbers can be done in any order and subtraction of one number from another cannot

Recognises and uses the inverse relationship between addition and subtraction and use this to check calculations and solves missing number problems

**Stage 3**

Compares and orders numbers up to 1000

Recognises the place value of each digit in a three-digit number (hundreds, tens, ones)

Identifies, represents and estimates numbers using different representations

Solves number problems and practical problems involving these ideas.

Adds and subtracts numbers mentally, including a three-digit number and ones

Adds and subtracts numbers with up to three digits, using formal written methods of columnar addition and subtraction

Solves problems, including missing number problems, using number facts, place value, and more complex addition and subtraction

Stage	Lesson objective:	Differentiation	Resources:
Stage 1	We are learning to work on official maths papers WILF: <ol style="list-style-type: none"> <li>1. I can put my name on the exam paper</li> <li>2. I can date the exam paper</li> <li>3. I can complete the paper independently</li> </ol>	Past papers: EL2/EL3 Lower: reader and scribe  Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	BBC Skillswise maths video link on place value Past papers: EL2/EL3 Pens/rulers/scrap paper/pencils  <i>White rose:</i> powerpoint teaching slides true or false sheet
Stage 2	We are learning to use 10's and 1's to find whole numbers <ol style="list-style-type: none"> <li>1. I can use a part whole model</li> <li>2. I can find groups of ten <i>or</i> 100</li> <li>3. I can find single parts</li> </ol>	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	<i>White rose:</i> Teaching video: Aut3.1.2 - 10s and 1s using addition powerpoint worksheets year 2/3
Stage 3	We are learning to make sums of hundreds <ol style="list-style-type: none"> <li>1. I can represent numbers to a 100</li> <li>2. I can find different ways to find 100</li> <li>3. I can find numbers up to a 1000</li> </ol>	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	<i>White rose:</i> powerpoint teaching slides true or false sheet  White Rose Teaching video: Aut3.1.3 - Hundreds powerpoint worksheets
Stage 4	We are learning to use a number line <ol style="list-style-type: none"> <li>1. I can use a number line up to 20</li> <li>2. I can use a number line up to a 100</li> <li>3. I can use a number line up to a 1000</li> </ol>	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	<i>White rose:</i> powerpoint teaching slides true or false sheet  Aut3.2.3 - Number line to 100 true or false sheet powerpoint worksheets
Stage 5	4. We are learning to count in multiples <ol style="list-style-type: none"> <li>1. I can count in 2's, 10's, and 5's</li> <li>2. I can count in 4's, 8's, 50's and 100s</li> </ol>	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	Multiples mymaths Counting 1: Lily pads game onwards Counting 3: scarves game onwards  Count in 50's: <a href="https://vimeo.com/457790310">https://vimeo.com/457790310</a> true or false sheet powerpoint worksheets

<b>Stage 6</b>	We are learning to use a place value chart 1. I can use a place value grid 2. I can recognise the place value of each digit in a two-digit number. 3. Recognise the place value of each digit in a three-digit number.	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	Year 2: Aut2.3.2 - Using a place value chart True or false worksheet
<b>Stage 7</b>	We are learning to use a place value chart 1. I can use a place value grid. 2. I can recognise the place value of each digit in a two-digit number 3. Recognise the place value of each digit in a three-digit number 4. Recognise the place value of each digit in a four-digit number	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	Year 3: teaching slide, Numbers to 1000 on a place value grid Year 3: Education city – surfs up worksheet. Place value chart teaching slide Year 2: Education city: hang tenths interactive game. Education city worksheet: hang tenths. Place value cards
<b>Stage 8</b>	We are learning to make a place value grid 1. I can demonstrate numbers up to a hundred 2. I can demonstrate numbers up to a thousand 3. I can demonstrate numbers up to ten thousand	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	Paper cups Place value cup video <a href="https://www.youtube.com/watch?v=Kpj7Rt2qT6o&amp;t=1s">https://www.youtube.com/watch?v=Kpj7Rt2qT6o&amp;t=1s</a>
<b>Stage 9</b>	We are learning to compare numbers 1. I can say what is greater than between 2 sets of numbers 2. I can say what is less than between 2 sets of numbers 3. I can say what is equal to.	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	Compare numbers: <a href="https://vimeo.com/457760511">https://vimeo.com/457760511</a> true or false sheet powerpoint worksheets
<b>Stage 10</b>	We are learning to compare and order numbers 1. I can order 3 digit numbers. 2. I can compare and order numbers up to a 1000.	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	<i>White rose:</i> powerpoint teaching slides true or false sheet Mymaths interactive lesson activities
<b>Stage 11</b>	We are learning to compare and order numbers 1. I can order 3 digit numbers 2. I can compare and order numbers up to a 1000	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	Aut3.3.3 - Ordering numbers Mymaths interactive lesson activities
<b>Stage 12</b>	We are learning to compare objects 1. I can say what is greater than 2. I can say what is less than 3. I can say what is equal to	Lower: works 1-1 with TA Medium: works in small groups Higher: works independently Work differentiated stage 1-4 pupil asset	<i>White rose:</i> powerpoint teaching slides true or false sheet  Compare objects: <a href="https://vimeo.com/457760059">https://vimeo.com/457760059</a> true or false sheet powerpoint worksheets
<b>Stage 13</b>	We are learning to write numbers as words WILF: 1. I can write numbers up to twenty. 2. I can write numbers up to a hundred 3. I can read numbers up to a thousand.	Upper: Reading/writing 4 digit numbers worksheet Medium: Reading/writing 3 digit numbers worksheet Lower: Reading/writing 2 digit numbers worksheet	<a href="https://www.youtube.com/watch?v=DBZNK_CEVZw">https://www.youtube.com/watch?v=DBZNK_CEVZw</a> Twinkl powerpoint Twinkl worksheets
<b>Stage 14</b>	<b>End of term mock exam: properties of number.</b>		Past Exam paper.

Pupil Asset
Stage 4: counts in multiples of 6,7,9,25 and 1000; orders and compares numbers beyond 1000; recognises place value of each digit in a four digit number.
Stage 3: <sup>1</sup> Counts from 0 in multiples of 4,8,50 and 100 more or less than a given number; recognises place value of each digit in a three digit number.
Stage 2: counts in steps 2,3 and 5 from 0, and in tens from any number, forward or backward; reads and writes to at least 100 in numerals and in words; recognises place value of each digit in a two digit number; compares and orders numbers from 0-100; using: < > and =

Year 2	Year 3	Year 4
Counting forwards and backwards within 20	Represent numbers to 100	Represent numbers to 1,000
Tens and ones within 20	Tens and ones using addition	100s, 10s and 1s
Counting forwards and backwards within 50	Hundreds	Number line to 1,000
Tens and ones within 50	Represent numbers to 1,000	Round to the nearest 10
Compare numbers within 50	100s, 10s and 1s (1)	Round to the nearest 100
Count objects to 100 and read and write numbers in numerals and words	100s, 10s and 1s (2)	Count in 1,000s
Represent numbers to 100	Number line to 1,000	1,000s, 100s, 10s and 1s
Tens and ones with a part-whole model	Find 1, 10, 100 more or less than a given number	Partitioning
Tens and ones using addition	Compare objects to 1,000	Number line to 10,000
Use a place value chart	Compare numbers to 1,000	Find 1, 10, 100 more or less
Compare objects	Order numbers	1,000 more or less
Compare numbers	Count in 50s	Compare numbers
Order objects and numbers		