

PLACE VALUE CONCEPT SEQUENCE

This concept is broken into additive concepts and multiplicative concepts. We start our mathematical reasoning using additive thinking and then develop our understanding and capacity to think multiplicatively.

ADDITIVE PLACE VALUE CONCEPTS (standard and non-standard place value of whole numbers to three-digits, partitioning, friends of 10) ARE THE FOCUS IN KINDERGARTEN (informally), YEAR 1, and YEAR 2. Thinking additively about Place Value means we are adding the values together to get the number.

MULTIPLICATIVE PLACE VALUE CONCEPTS (we continue thinking additively - standard and non-standard place value of whole numbers from four-digits and decimals, and begin to think multiplicatively - multiplicative place value of whole numbers and decimals) ARE THE FOCUS IN YEAR 3, YEAR 4, YEAR 5, and YEAR 6. Thinking multiplicatively about Place Value means we are multiplying or dividing each place by 10 to get the value of the place to left or right.

Select the Level number to link to the [TEACHING RESOURCES](#) for that Level at [A LEARNING PLACE A TEACHING PLACE](#).

Concepts with a logical basis are in the same column to allow for easy differentiation.

ADDITIVE PLACE VALUE		MULTIPLICATIVE PLACE VALUE	PARTITION	FRIENDS OF 10	
KINDERGARTEN - INFORMAL	LINKS		LINKS		
			1 Partition single-digit numbers, and 10, into 2 or more equal or unequal parts - informal.	T3	
			2		Make friends of 10 using 10 frames – informal.
			3 Partition teen numbers into 2 or more equal and unequal parts - informal.		
	4 Make teen numbers as '10 and ...' using two 10 frames - informal.				T4
		5	Make friends of 20 using two 10 frames - informal.		

ADDITIVE PLACE VALUE		MULTIPLICATIVE PLACE VALUE	PARTITION	FRIENDS OF 10	
YEAR 1	LINKS		LINKS	.1 Friends of 10 through addition .2 Friends of 10 through subtraction .3 Friends of 10 through commutativity.	
			<u>6</u>		
	<u>7</u>	Explain place value of teen numbers on a place value chart.		T1	
			<u>8</u>		Partition single-digit numbers and teen numbers using place value and non-place value.
	Use these concepts now to add and subtract single-digit numbers bridging 10 using place value. (Addition and Subtraction 6 and 7)				
		<u>9</u>	.1 Friends of 20 through addition. .2 Friends of 20 through subtraction.	T2	
		<u>10</u>	Friends of any decade, through addition and subtraction.		
<u>11</u>	.1 Standard place value of two-digit numbers. .2 Non-standard place value of two-digit numbers. .4 Read and order two-digit numbers using place value.		.3 Partition two-digit numbers using standard and non-standard place value and non-place value.		
Use these concepts now to add and subtract single-digit numbers to and from teen numbers bridging 20 using place value (Addition and Subtraction 8) and to add and subtract single-digit numbers to and from two-digit numbers bridging any decade using place value. (Addition and Subtraction 9)					

ADDITIVE PLACE VALUE		MULTIPLICATIVE PLACE VALUE	PARTITION	FRIENDS OF 10
YEAR 2	LINKS		LINKS	
	<u>12</u>	.1 Explain counting forwards by 10s on the decade. .2 Explain counting backwards by 10s on the decade. .3 Explain counting forwards by 10s off the decade. .4 Explain counting backwards by 10s off the decade. <i>(Also Patterns and Algebra 11)</i>		
	Use this concept now to add and subtract tens numbers, counting by 10 on the decade. (Addition and Subtraction 13) and to measure lengths using informal units grouped in tens, and using centimetres. (Measurement and Geometry 21)			
			<u>13</u>	Partition tens numbers.
			<u>14</u>	Identify friends of any 100, through addition and subtraction.
	<u>15</u>	.1 Explain standard and non-standard place value of three-digit numbers grouping flexibly in hundreds, tens and ones. .3 Read and order three-digit numbers using place value.		.2 Partition three-digit numbers using standard and non-standard place value and non-place value.
<u>16</u>	.1 Count forwards by 100s, 10s and 1s on and off the hundred and decade from three-digit numbers. .2 Count backwards by 100s, 10s and 1s on and off the hundred and decade from three-digit numbers. <i>(Also Patterns and Algebra 12)</i>			
Use these concepts now to add and subtract tens numbers, partitioning to bridge to 100. (Addition and Subtraction 14) and to add and subtract tens numbers and two-digit numbers, counting by 10 off the decade. (Addition and Subtraction 15) and add and subtract tens numbers and numbers with tens and ones, partitioning to bridge to 100 and some ones. (Addition and Subtraction 16) and to add and subtract numbers with tens and ones, partitioning tens and ones using place value. (Addition and Subtraction 17)				

T1

LINKS		ADDITIVE PLACE VALUE	MULTIPLICATIVE PLACE VALUE	PARTITION	FRIENDS OF 10
YEAR 3	17	.1 Explain standard and non-standard place value of four-digit numbers. .3 Read and order four-digit numbers using place value. .4 Count forwards and backwards by 100s and 1000s on and off the decade, hundred and thousand from four-digit numbers, including over 1000s. <i>(Also Patterns and Algebra 16)</i>		.2 Partition four-digit numbers using standard and non-standard place value and non-place value.	
	Use these concepts now to add and subtract three- and four-digit numbers using place value. (Addition and Subtraction 21) and to add and subtract three- and four-digit numbers as money using place value. (Addition and Subtraction 23)				
	18		.1 Multiplicative place value of whole numbers to ten-thousands by multiplying by 10. .2 Multiplicative place value of whole numbers to ten-thousands by dividing by 10.		
Use this concept now to multiply and divide by 10 using multiplicative place value. (Multiplication and Division 9) and to relate metric length units (metres, decimetres, centimetres and millimetres) to multiplicative place value. (Measurement and Geometry 30)					

T1

		LINKS	ADDITIVE PLACE VALUE	MULTIPLICATIVE PLACE VALUE	PARTITION	RELATED	
YEAR 4	19		.1 Standard and non-standard place value of five-digit numbers. .3 Read and order five-digit numbers. .4 Count forwards and backwards by 1000s, 100s, 10s and 1s on and off the decade, hundred and thousand from five-digit numbers. <i>(Also Patterns and Algebra 21)</i>		.2 Partition five-digit numbers using standard and non-standard place value and non-place value.		
	Use this concept now to add and subtract five-digit numbers, including as money, using place value. (Addition and Subtraction 24)						
	20		.1 Multiplicative place value of decimals to tenths by dividing 1 by 10 to get tenths. .2 Multiplicative place value of decimals to tenths by multiplying tenths by 10 to get 1. .3 Standard and non-standard place value of decimals to tenths. .4 Express tenths as both fraction and decimal. <i>(Also Fractions and Decimals 11)</i>				
	21		.1 Multiplicative place value to hundredths by dividing a tenth by 10 to get hundredths. .2 Multiplicative place value to hundredths by multiplying hundredths by 10 to get tenths. .3 Standard and non-standard place value of decimals to hundredths. .4 Express hundredths as both fraction and decimal. <i>(Also Fractions and Decimals 12)</i>				
Use these concepts now to convert between metres, centimetres, millimetres and millilitres, litres and grams, kilograms. (Measurement and Geometry 39, 45, 47)							
					22	Recognise that amounts of money are written with two decimal places and cents are a fraction of a dollar. <i>(Also Money Financial Mathematics 11, Fractions Decimals 16)</i>	
					23	Round a number with one or two decimal places to the nearest whole number. <i>(Also Fractions and Decimals 17)</i>	

T1

T4

		ADDITIVE PLACE VALUE	MULTIPLICATIVE PLACE VALUE	RELATED
YEAR 5	LINKS			
	24		Multiplicative place value of whole numbers and decimals to hundredths by multiplying and dividing by 10, 100 and 1000. <i>(Also Fractions and Decimals 18)</i>	T1
	25	Standard and non-standard, and multiplicative place value of whole numbers and decimals to thousandths, expressing decimals as both decimals and fractions. <i>(Also Fractions and Decimals 19)</i>		
	Use these concepts now to relate metric length units decametres, hectometres, kilometres and grams, kilograms, tonnes. (Measurement and Geometry 51, 57)			
	26		Order decimals to thousandths on a number line, recording decimals as fractions and decimals. <i>(Also Fractions and Decimals 22)</i>	T3
27		.1 Explain patterns that increase by adding fractions. .2 Explain patterns that decrease by subtracting fractions. .3 Explain patterns that increase by adding decimals. .4 Explain patterns that decrease by subtracting decimals. <i>(Also Fractions and Decimals 24, Patterns and Algebra 28)</i>		
Use these concepts now to add and subtract fractions with the same denominator (Addition and Subtraction 28)				

LINKS		ADDITIVE PLACE VALUE	MULTIPLICATIVE PLACE VALUE	RELATED
YEAR 6	28	Standard, non-standard, and multiplicative place value of whole numbers and decimals of any size by multiplying and dividing by 10, 100 and 1000. <i>(Also Fractions and Decimals 25)</i>		
	29			<p>Multiply and divide decimals to thousandths by whole numbers and powers of 10.</p> <p>Record remainders as fractions and decimals when dividing by 10. <i>(Also Multiplication and Division 25, Fractions and Decimals 26)</i></p>
	Use these concepts now to add and subtract now to add and subtract decimals. (Addition and Subtraction 29) and to convert between millimetres, centimetres, metres, kilometres and millilitres, litres, kilolitres, megalitres and milligrams, grams, kilograms, tonnes. (Measurement and Geometry 59, 65, 68)			
	30			Describe probabilities using fractions, decimals and percentages, including on a number line. <i>(Also Fractions and Decimals 31, Statistics and Probability 18)</i>
	31			Number patterns with decimals in a table, describing the rule using the relationship between the term and the number. <i>(Also Addition and Subtraction 31, Patterns and Algebra 29, Fractions and Decimals 34)</i>
	32			<p>.1 Add decimals using place value.</p> <p>.2 Subtract decimals using place value. <i>(Also Addition and Subtraction 29, Fractions and Decimals 32)</i></p>
Use these concepts now to measure the perimeters of shapes. (Measurement and Geometry 60)				