
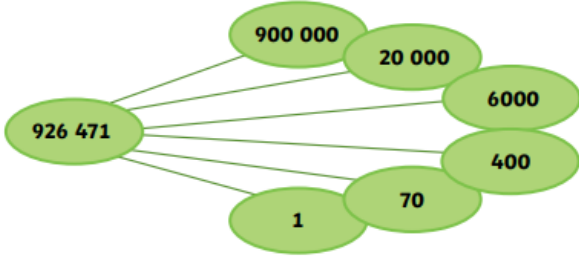
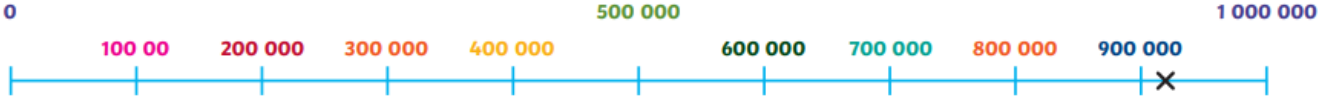



Number and Place Value		Knowledge Organiser		
Key Vocabulary	Compare and Order			
millions	equals	greater than	less than	
thousands	$26 + 38 = 8 \times 8$	$23\ 873 > 8256$	$901\ 198 < 1\ 091\ 098$	
hundreds	Both calculations have the value 64.	The number on the left has 2 ten thousands and the number on the right has 0 ten thousands.	The number on the right has 1 million and the number on the left has 0 millions.	
tens				
ones				
zero				
place value	smallest	898	6735	6835
greater than				7019
less than				9002
order				11 235
round				greatest
rounded	Negative Numbers			
negative number	-25 -24 -23 -22 -21 -20 -19 -18 -17 -16 -15 -14 -13 -12 -11 -10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25			
partition	Counting in Powers of 10			
digit	Counting in 10s	Counting in 100s		
interval	365 375 385 395 405 415	2841 2941 3041 3141 3241 3341		
sequence	The tens increase until 9 tens becomes one more hundred and 0 tens.	The hundreds increase until 9 hundreds becomes one more thousand and 0 hundreds.		
linear sequence	Counting in 10 000s	Counting in 100 000s		
	276 109 286 109 296 109 306 109	2 972 151 3 072 151 3 172 151 3 272 151		
	The ten thousands increase until 9 ten thousands become one more hundred thousand and 0 ten thousands.	The hundred thousands increase until 9 hundred thousands becomes one more million and 0 hundred thousands.		
				

Number and Place Value		Knowledge Organiser														
Numbers to One Million																
926 471																
Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones											
9	2	6	4	7	1											
nine hundred and twenty-six thousand, four hundred and seventy-one																
																
																
Roman Numerals			Rounding													
	I = 1	II = 2	III = 3													
IV = 4	V = 5	VI = 6	VII = 7	VIII = 8												
IX = 9	X = 10	XI = 11	XX = 20	XXX = 30												
XL = 40	L = 50	LX = 60	LXX = 70	LXXX = 80												
XC = 90	C = 100	CL = 150	CC = 200	CCC = 300												
CD = 400	D = 500	DC = 600	DCC = 700	DCCC = 800												
CM = 900	M = 1000	MC = 1100	MD = 1500	MM = 2000												
			CCXLVIII = 248 DCCLXXXIV = 784 MMXIX = 2019													
Rounding Rounding to the nearest 10 <table border="1"> <tr> <td>20</td><td>21</td><td>22</td><td>23</td><td>24</td><td>25</td><td>26</td><td>27</td><td>28</td><td>29</td><td>30</td> </tr> </table> round down (20-24) round up (25-29)						20	21	22	23	24	25	26	27	28	29	30
20	21	22	23	24	25	26	27	28	29	30						
Rounding to the nearest 1000 <table border="1"> <tr> <td>2000</td><td>2499</td><td>2500</td><td>3000</td> </tr> </table> round down (2000-2499) round up (2500-3000)						2000	2499	2500	3000							
2000	2499	2500	3000													
Rounding to the nearest 100 000 <table border="1"> <tr> <td>200 000</td><td>249 999</td><td>250 000</td><td>300 000</td> </tr> </table> round down (200 000-249 999) round up (250 000-300 000)						200 000	249 999	250 000	300 000							
200 000	249 999	250 000	300 000													

Addition and Subtraction		Knowledge Organiser	
Key Vocabulary	Addition	Subtraction	
Add	Place Value Grid: $3274 + 5601 = 8875$	Place Value Grid: $35\ 727 - 6313 = 29\ 414$	
Total			
Make			2 ten thousands left
Plus			5 thousands - 6 thousands cannot be done. Exchange ten thousand for ten thousands becoming 15 thousands - 6 thousands = 9 thousands
Sum			7 hundreds - 3 hundreds = 4 hundreds
More			2 tens - 1 ten = 1 ten
Altogether	Column Method Starting with the ones, add each column in turn. Regroup tens, hundreds, thousands, ten thousands and/or as required.	Column Method Starting with the ones, subtract each column in turn. Exchange tens, hundreds, thousands and/or ten thousands as required.	
Difference			
Subtract			
Less			
Minus			
Take away			
Column addition			
Column subtraction			
Estimate			
Inverse operation			
Number facts			
Place value			
Complex			

Addition and Subtraction		Knowledge Organiser									
Estimate and Approximate	Inverse Operations										
Rounding to Estimate	Use the inverse to check:										
$41\ 635 + 7386 = 49\ 021$	$53\ 476$ $32\ 732$ $20\ 744$	To check $53\ 476 - 32\ 732 = 20\ 744$ use $32\ 732 + 20\ 744 = 53\ 476$									
Round to ten:											
$41\ 630 + 7380 = 49\ 010$											
$41\ 630 + 7390 = 49\ 020$											
$41\ 640 + 7390 = 49\ 030$											
Rounding is not as accurate when both numbers are rounded up. A better estimate comes from "rounding" one down and one up.	Start with a number, subtract 409 and double. I end with 6264. To find the starting number use the inverse: halve, then add 409. Half of 6264 = 3132. $3132 + 409 = 3541$. The starting number was 3541.										
Estimating on a Number Line	Multistep Problems										
	Using a Bar Model										
The arrow is about $\frac{3}{4}$ of the way across the line so it is 40 000.	The sum of two numbers is 25 567. The difference is 1875.										
	Subtract 1875 from 25 567 = 23 692. Halve 23 692 to find smaller number = 11 846. Add 1875 to find larger number = 13 721.										
	<table border="1"> <tr> <td colspan="2">£20</td> <td>£20 is used to buy 2 books costing</td> </tr> <tr> <td>£3.75</td> <td>£8.49</td> <td>£3.75 and £8.49.</td> </tr> <tr> <td>£12.24</td> <td>£7.76</td> <td>How much change is given?</td> </tr> </table>	£20		£20 is used to buy 2 books costing	£3.75	£8.49	£3.75 and £8.49.	£12.24	£7.76	How much change is given?	
£20		£20 is used to buy 2 books costing									
£3.75	£8.49	£3.75 and £8.49.									
£12.24	£7.76	How much change is given?									
	$£3.75 + £8.49 = £12.24$ $£20.00 - £12.24 = £7.76$										