Addition and Subtraction:
Add Numbers with One Regroup

Aim:	Success Criteria:	Resources:
Add and subtract whole numbers with more than 4 digits, including using formal written methods. To add numbers with one regroup.	I can add whole numbers with up to 4 digits. I can use formal written methods to calculate. I can explain when and why regrouping is necessary in written calculations. I can make up to one regroup when using formal written methods of addition.	Lesson Pack Place value counters Place value grids
	Key/New Words: Add, addition, sum of, more, plus, increase, sum, total, altogether, regroup.	**Preparation:** Differentiated Word Mayhem Activity Sheet - one per child Diving into Mastery Activity Sheets - as required

Prior Learning: It will be helpful if children have a secure understanding of place value and will have added numbers with up to three digits using formal written methods.

Learning Sequence

	**Remember It:** Children partition given numbers, writing deconstructed representations before writing the number in words.	
	**Addition:** Show the '+' sign on the Lesson Presentation. What do we call this operation? Discuss the various words used to describe the operation of addition, ensuring children understand the terminology.	
	**Adding and Regrouping:** Children add numbers with up to 4 digits where it is necessary to regroup once. They use visual models within the Lesson Presentation to represent regrouping before performing written calculations using formal written methods.	
	**Word Game:** Each letter is given a numerical value on the Lesson Presentation. Model how to calculate how much the words 'me' and 'us' are worth, using column addition. Children then calculate the value of a three letter word: 'ant'.	
	**Word Mayhem:** Children complete the differentiated Word Mayhem Activity Sheets to find the value of words using column addition. Please note that some questions do not involve regrouping to ensure that children understand when it is necessary to regroup and when it is not.  Children find the value of words with two and three letters by using column addition to add two- and three-digit numbers.  Children find the value of words with two and three letters by using column addition to add two-, three- and four-digit numbers.  Children find the value of words with two and three letters by using column addition to add three- and four-digit numbers.	
	**Diving into Mastery:** Schools using a mastery approach may prefer to use the following as an alternative activity. These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.  Children add four-digit numbers that are represented through place value counters and base ten blocks.  Children use reasoning skills to explain mistakes made in addition calculations which require regrouping once.  Children use problem-solving skills to find as many solutions to mathematical calculations as possible, justifying their responses with clear reasoning.	

	**Calculation Exploration:** Children work with a partner to find as many ways as possible to complete the calculation shown on the Lesson Presentation.	

ExploreIt	
RollIt	Children create numbers using a dice roll for each digit. Can they rearrange the digits to make an addition calculation that requires them to regroup just once?
LearnIt:	Children will find this Knowledge Organiser a useful tool for strengthening their knowledge of addition and subtraction.
TimeIt:	Practise addition using the 3 Digit Number Addition Worksheet. This worksheet includes calculations in different formats, to help your children apply their knowledge of addition in a variety of contexts.

Maths

Addition and Subtraction

Add Numbers with One Regroup

Aim

- To add numbers with one regroup.

Success Criteria

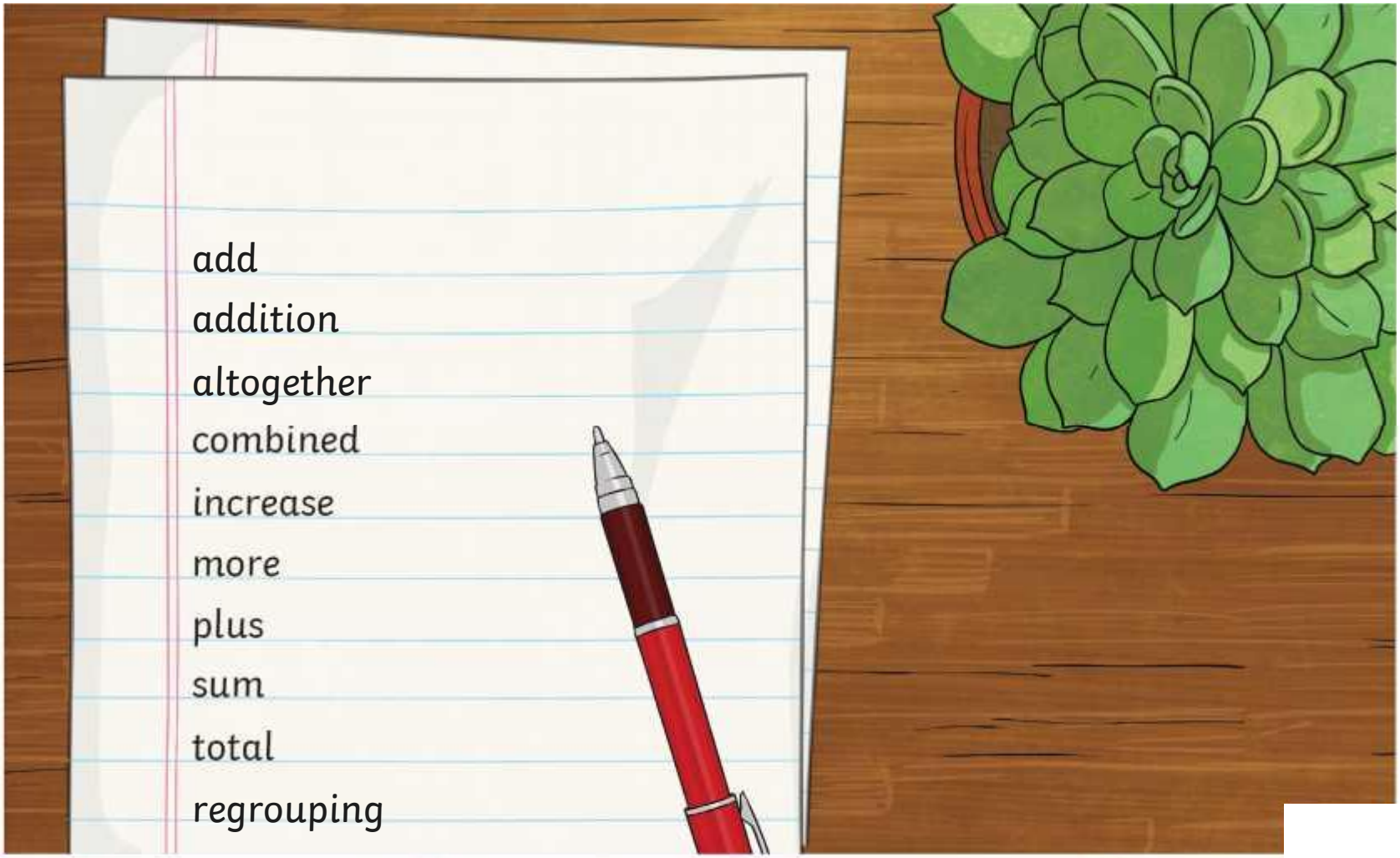
- I can add whole numbers with up to 4 digits.
- I can use formal written methods to calculate.
- I can explain when and why regrouping is necessary in written calculations.
- I can regroup once when using formal written methods of addition.

Remember It

Partition the numbers and write the value of each number in words.
An example has been given.

	Number	Partitioned	Number in Words
	421	400 + 20 + 1	four hundred and twenty-one
a)	807	800 + 7	eight hundred and seven
b)	1307	1000 + 300 + 7	one thousand, three hundred and seven
c)	2585	2000 + 500 + 80 + 5	two thousand, five hundred and eighty-five
d)	9070	9000 + 70	nine thousand and seventy
e)	9019	9000 + 10 + 9	nine thousand and nineteen

Addition


add
addition
altogether
combined
increase
more
plus
sum
total
regrouping

Adding and Regrouping

Ten Thousands	Thousands	Hundreds	Tens	Ones

5214

Add up the place value counters to help find the value.

Adding and Regrouping

5214 + 5142 = 10 356

Ten Thousands	Thousands		Ones
10 000	1000 1000 1000 1000		1

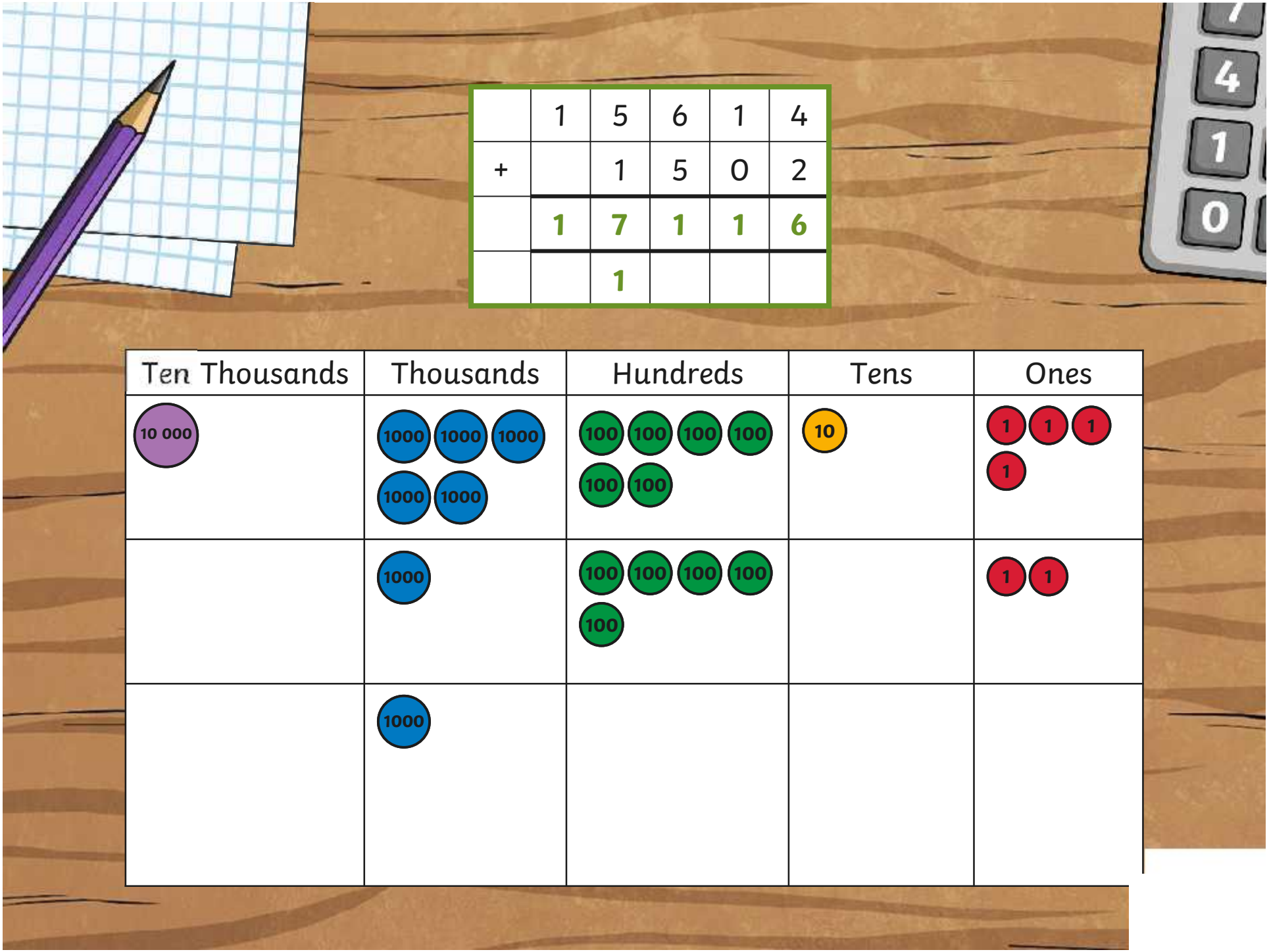
The thousands have been regrouped into one lot of ten thousand.

First, we add the ones counters. There are 6 ones in total.

Adding and Regrouping

	1	5	6	1	4
+		1	5	0	2

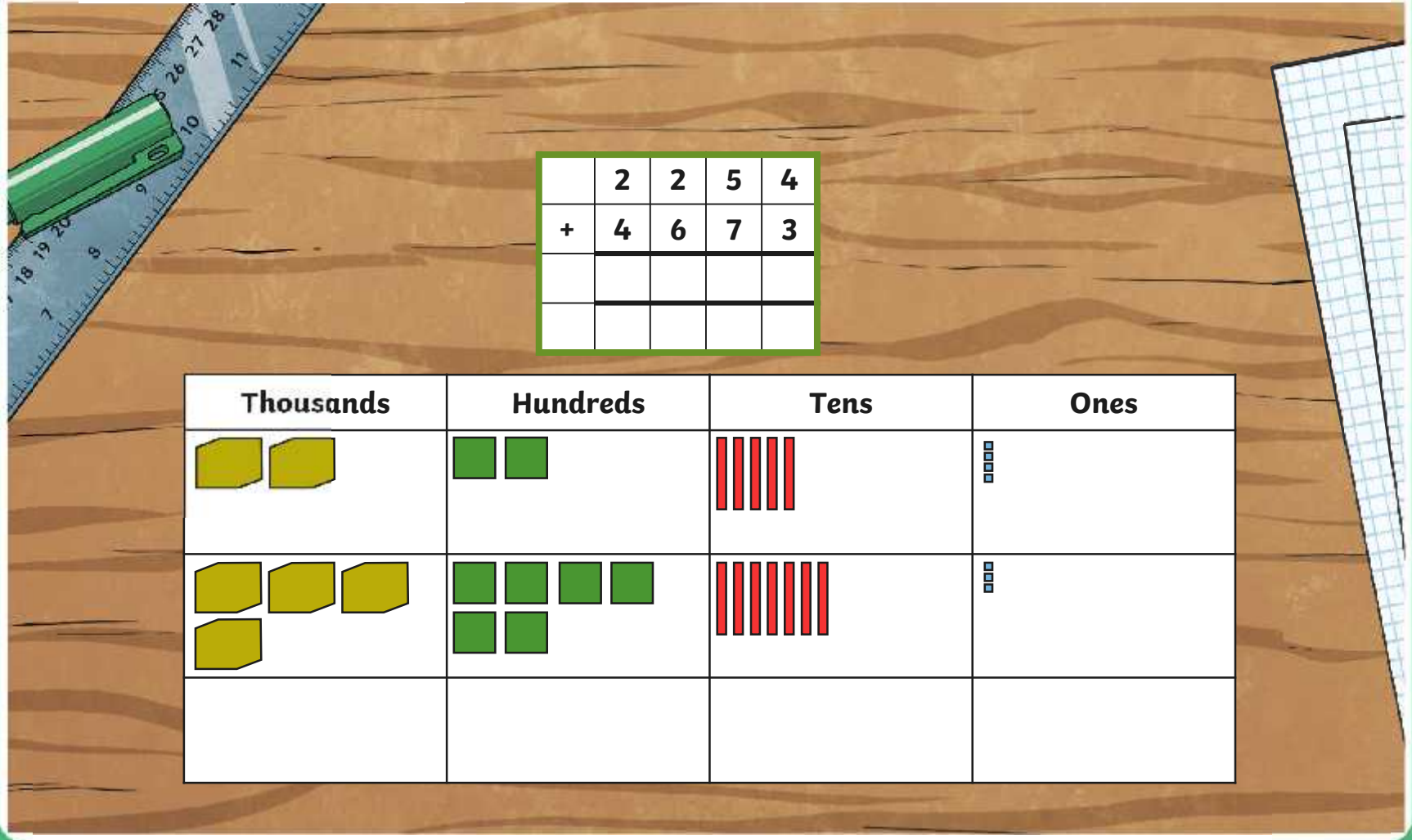
Ten Thousands	Thousands	Hundreds	Tens	Ones
●	● ● ● ●	● ● ● ● ● ●	●	● ● ● ●
	●	● ● ● ● ●		● ●



	1	5	6	1	4
+		1	5	0	2
	1	**7**	**1**	**1**	**6**
		1			

Ten Thousands	Thousands	Hundreds	Tens	Ones
10 000	1000 1000 1000 1000 1000	100 100 100 100 100 100	10	1 1 1 1
	1000	100 100 100 100 100		1 1
	1000			

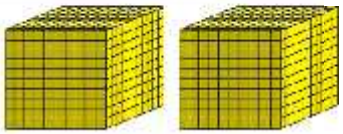
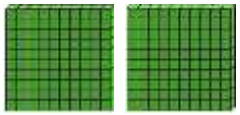
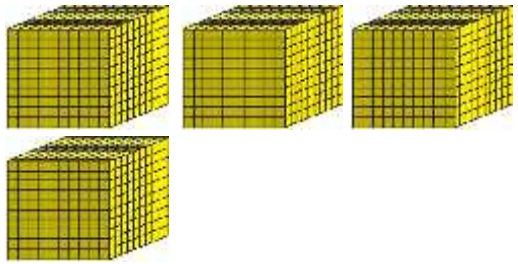
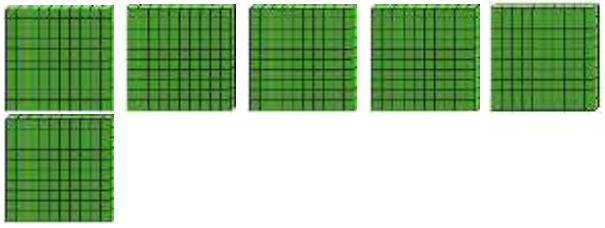
Adding and Regrouping



	2	2	5	4
+	4	6	7	3

Thousands	Hundreds	Tens	Ones

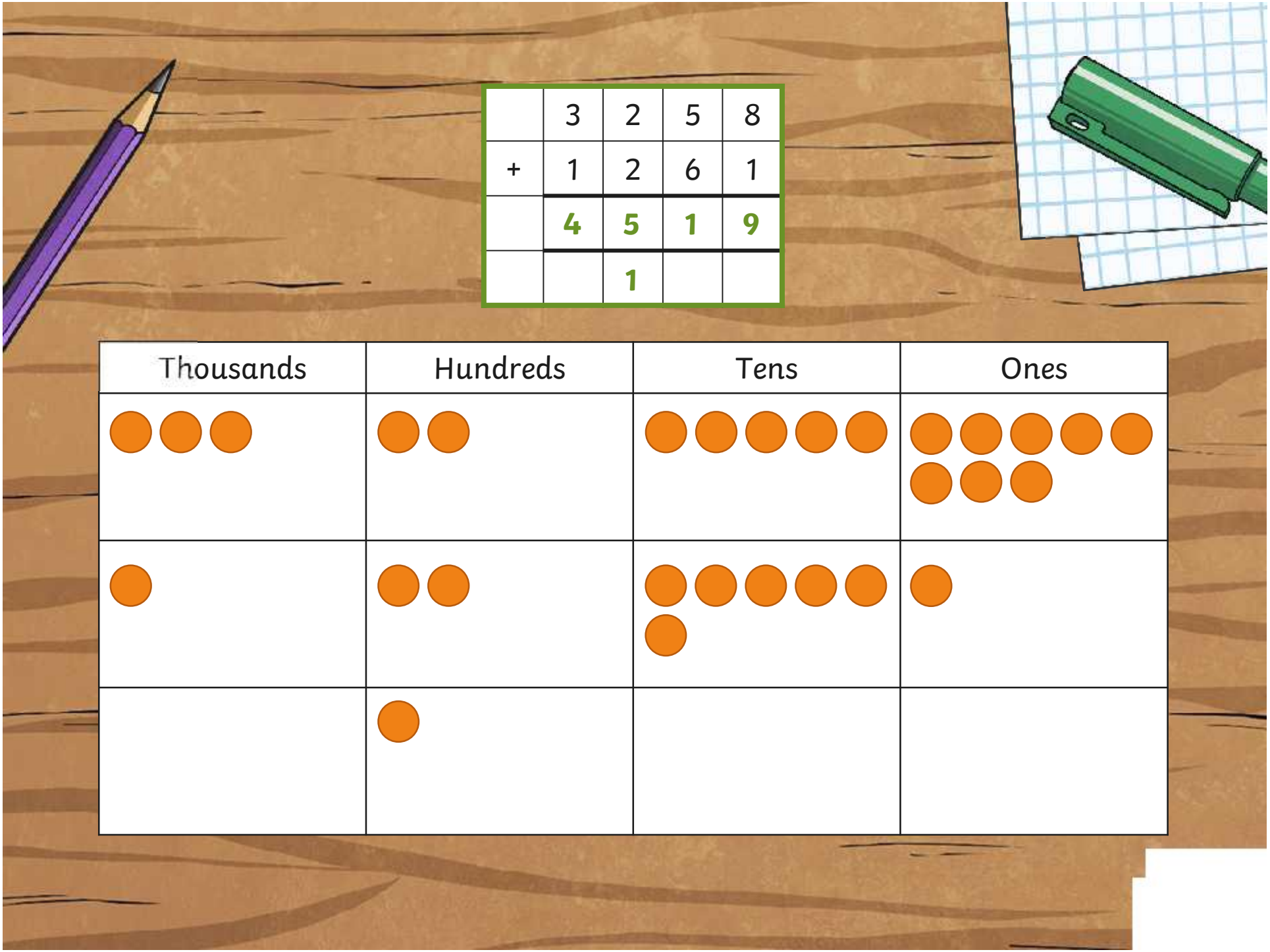
	2	2	5	4
+	4	6	7	3
	6	**9**	**2**	**7**
		1		

Thousands	Hundreds	Tens	Ones
			
			
			

Adding and Regrouping

	3	2	5	8
+	1	2	6	1

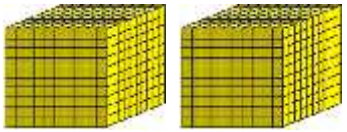
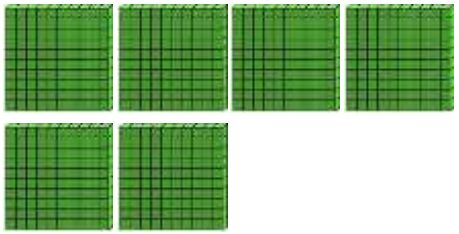
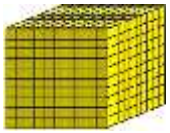
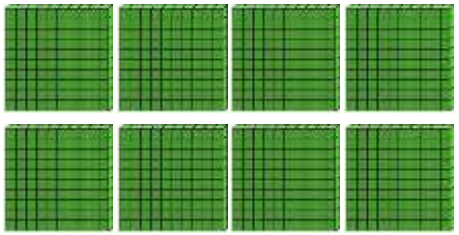
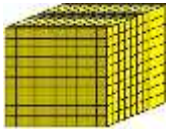
Thousands	Hundreds	Tens	Ones
●●●	●●	●●●●●	●●●●●●●
●	●●	●●●●●●	●



	3	2	5	8
+	1	2	6	1
	4	**5**	**1**	**9**
		1		

Thousands	Hundreds	Tens	Ones
●●●	●●	●●●●●	●●●●●●●●●
●	●●	●●●●●●	●
	●		

Adding and Regrouping

Thousands	Hundreds	Tens	Ones
			
			
			

		2	6	1	2	
	+	1	8	0	4	
		4	**4**	**1**	**6**	
		1				

Word Game

Each letter has a value shown in the grid. We can find the value of the word '**me**' by using column addition.

A	B	C	D	E	F	G	H	I	J
1010	1111	444	213	4056	412	678	222	412	6160

K	L	M	N	O	P	Q	R	S	T
700	1212	1016	321	333	999	4020	312	9099	492

U	V	W	X	Y	Z
7000	5000	2031	123	500	8080

Word Game

Each letter has a value shown in the grid. We can find the value of the word '**me**' by using column addition.

		1	0	1	6	
	+	4	0	5	6	
		5	**0**	**7**	**2**	
				1		

Word Game

Find the value of the word 'us' by using column addition.

A	B	C	D	E	F	G	H	I	J
1010	1111	444	213	4056	412	678	222	412	6160

K	L	M	N	O	P	Q	R	S	T
700	1212	1016	321	333	999	4020	312	9099	492

U	V	W	X	Y	Z
7000	5000	2031	123	500	8080

Word Game

Find the value of the word ‘us’ by using column addition.

		7	0	0	0	
	+	9	0	9	9	
	1	**6**	**0**	**9**	**9**	

Word Game

We can also add more than two numbers to find the value of words with more than two letters. Have a go at finding the value of this three-letter word: **ant**.

A	B	C	D	E	F	G	H	I	J
1010	1111	444	213	4056	412	678	222	412	6160

K	L	M	N	O	P	Q	R	S	T
700	1212	1016	321	333	999	4020	312	9099	492

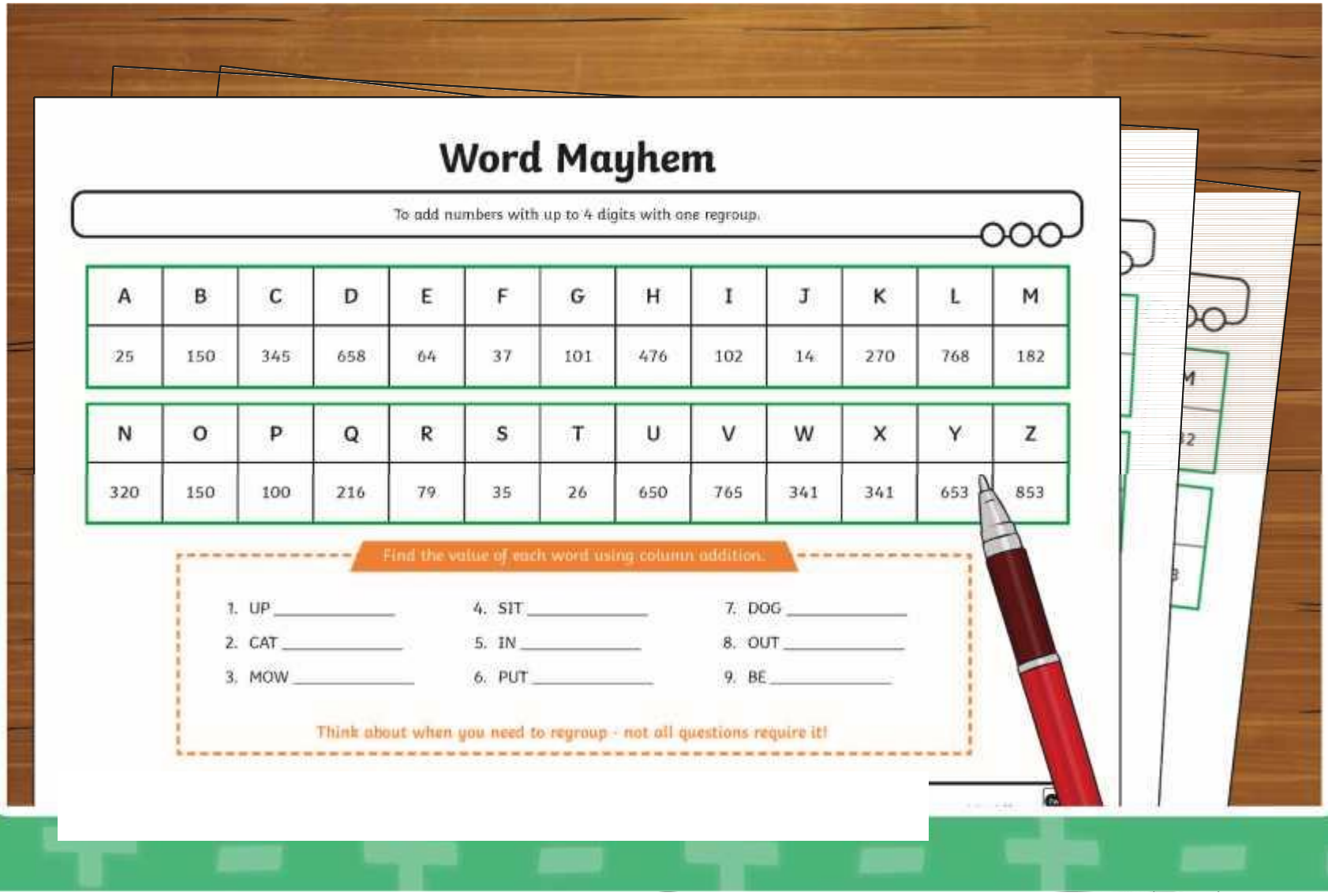
U	V	W	X	Y	Z
7000	5000	2031	123	500	8080

Word Game

Thousands	Hundreds	Tens	Ones
●		●	
	● ● ●	● ●	●
	● ● ● ●	● ● ● ● ● ●	● ●

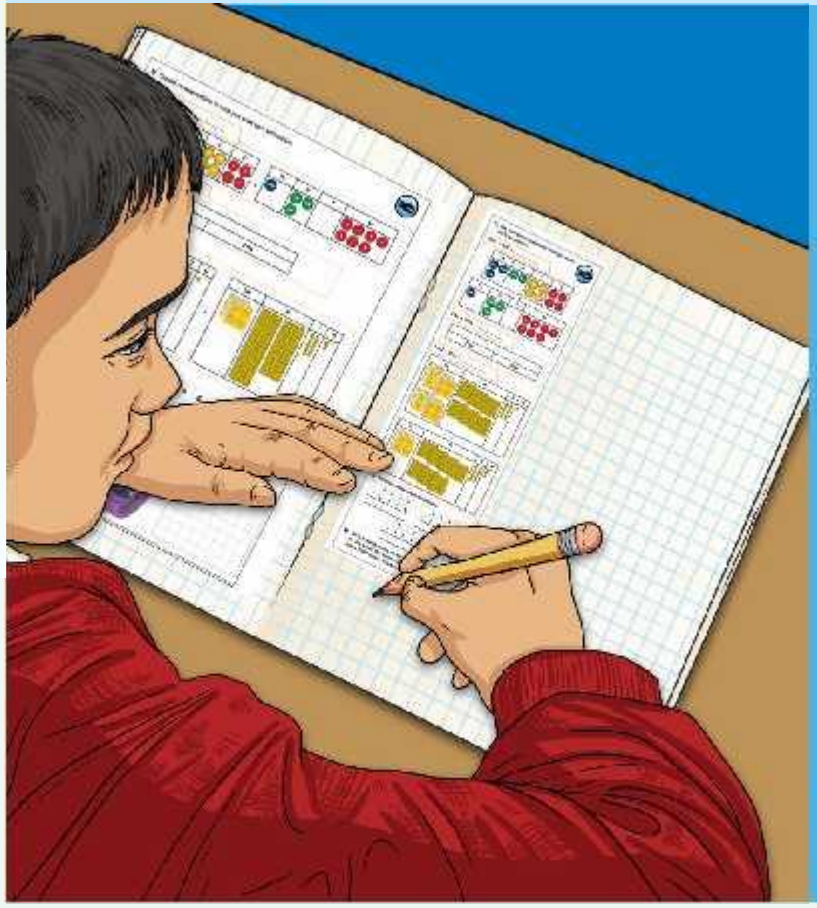
		1	0	1	0	
			3	2	1	
	+		4	9	2	
		1	**8**	**2**	**3**	
			1			

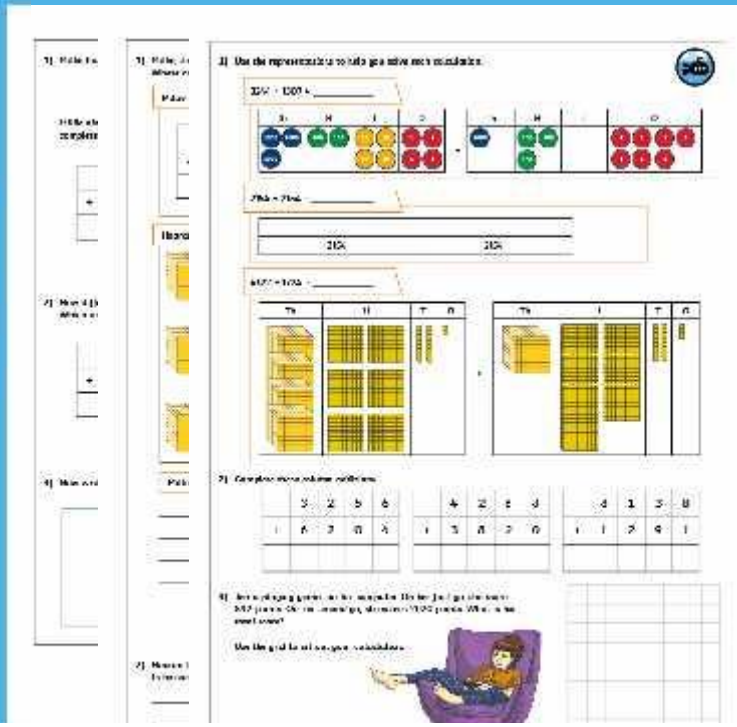
Word Mayhem


Word Mayhem
To add numbers with up to 4 digits with one regroup.
A B C D E F G H I J K L M
25 150 345 658 64 37 101 476 102 14 270 768 182
N O P Q R S T U V W X Y Z
320 150 100 216 79 35 26 650 765 341 341 653 853
Find the value of each word using column addition.
1. UP
2. CAT
3. MOW
4. SIT
5. IN
6. PUT
7. DOG
8. OUT
9. BE
Think about when you need to regroup - not all questions require it!
twinkl.com

Diving into Mastery

Dive in by completing your own activity!





Calculation Exploration

How many different ways can you find to complete the calculation correctly?

		2	3	▯	4	
	+	3	4	▯	3	
		5	**8**	**5**	**7**	
			1			

The two missing digits must add up to 15 tens so that 10 tens can be regrouped into 1 hundred as shown.

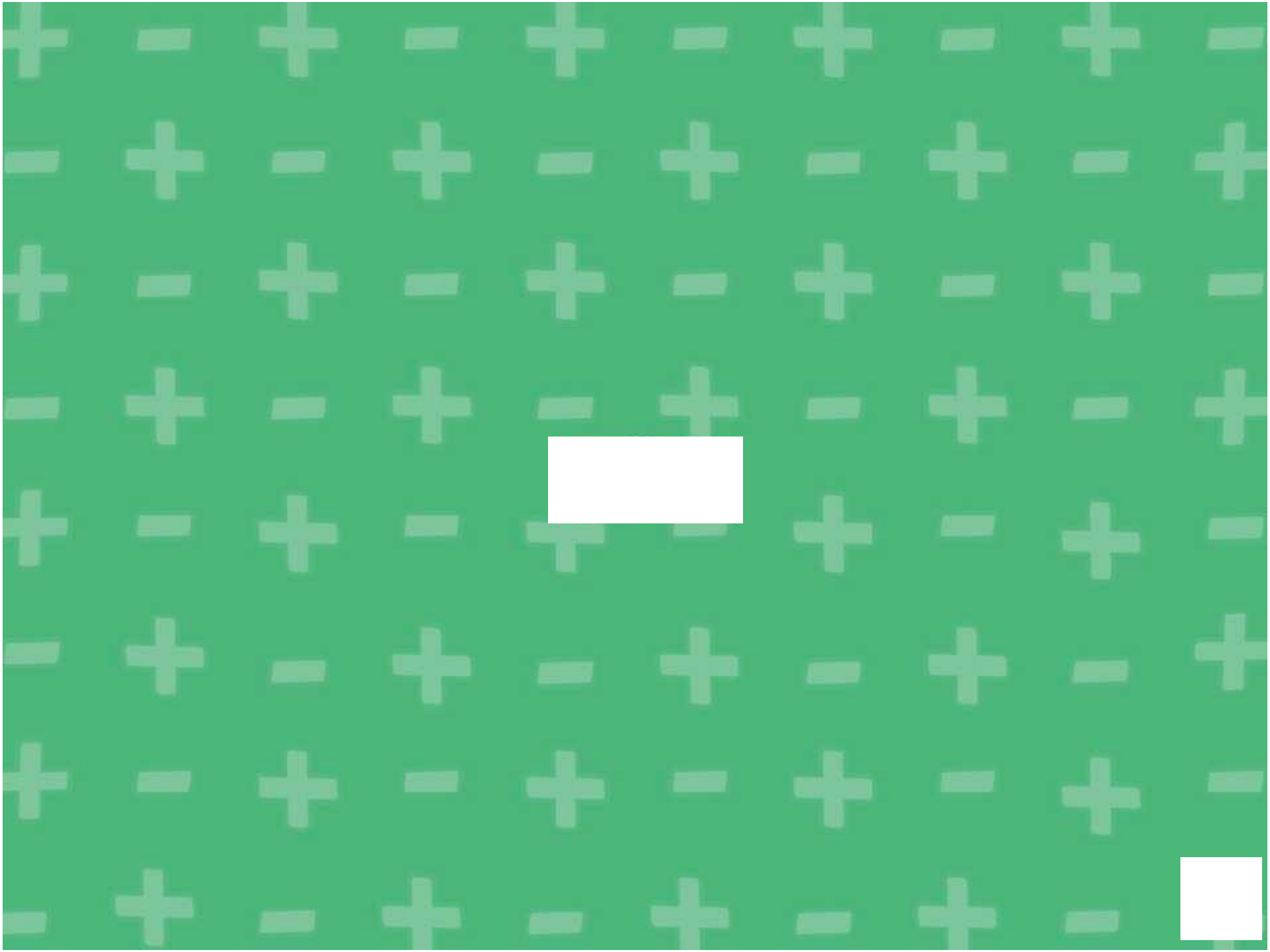
The tens digits 9 and 6 or 8 and 7 could be used, so there are four possible calculations.

Aim

- To add numbers with one regroup.

Success Criteria

- I can add whole numbers with up to 4 digits.
- I can use formal written methods to calculate.
- I can explain when and why regrouping is necessary in written calculations.
- I can regroup once when using formal written methods of addition.



Aim: To add numbers with one regroup.				**Date:**					
				Delivered By:			**Support:**		
Success Criteria	**Me**	**Friend**	**Teacher**	**T**	**PPA**	**S**	**I**	**AL**	**GP**
I can add whole numbers with up to 4 digits.				**Notes/Evidence**					
I can use formal written methods to calculate.									
I can explain when and why regrouping is necessary in written calculations.									
I can make up to one regroup when using formal written methods of addition.									
Next Steps) _____) _____									

T	Teacher	**I**	Independent
PPA	Planning, Preparation and Assessment	**AL**	Adult Led
S	Supply	**GP**	Guided Practice

Aim: To add numbers with one exchange.				**Date:**					
				Delivered By:			**Support:**		
Success Criteria	**Me**	**Friend**	**Teacher**	**T**	**PPA**	**S**	**I**	**AL**	**GP**
I can add whole numbers with up to 4 digits.				**Notes/Evidence**					
I can use formal written methods to calculate.									
I can explain when and why exchanging is necessary in written calculations.									
I can make up to one exchange when using formal written methods of addition.									
Next Steps) _____) _____									

T	Teacher	**I**	Independent
PPA	Planning, Preparation and Assessment	**AL**	Adult Led
S	Supply	**GP**	Guided Practice

1) 3244 + 1307 = **4551**
2154 + 2154 = **4308**
4622 + 1724 = **6346**

2)

	3	2	5	6
+	6	2	0	4
	9	**4**	**6**	**0**
	1			

	4	2	6	8
+	3	8	2	0
	8	**0**	**8**	**8**
	2			

	8	1	3	8
+	1	2	9	1
	9	**4**	**2**	**9**
	1			

3)

	2	**0**	**2**	**0**
+		**8**	**9**	**2**
	2	**9**	**1**	**2**
		1		

1) James' representation is correct. Millie's column addition is incorrect – 10 tens have not been exchanged for 1 hundred. Haaran's base ten calculation is incorrect for the same reason – 10 (tens) have not been exchanged for 1 hundred.

2) Haaran is not correct. There are many other calculations that produce a 3 in the tens column after exchanging. For example, 80 + 50 gives 130, as does 90 + 40.

1) The missing digits need to total 13 (hundreds). They could be: 9 and 4, 8 and 5 or 6 and 7. There are 6 possible calculations using these combinations.

2) There are 10 possible ways to complete the calculation:

Exchanging	No Exchanging
1323 + 1217 = 2540	1333 + 1210 = 2543
1323 + 1218 = 2541	1333 + 1211 = 2544
1323 + 1219 = 2542	1333 + 1212 = 2545
	1333 + 1213 = 2546
	1333 + 1214 = 2547
	1333 + 1215 = 2548
	1333 + 1216 = 2549

1) Use the representations to help you solve each calculation.

3244 + 1307 = _____

Th	H	T	O
1000 1000 1000	100 100	10 10 10 10	1 1 1 1
1000	100 100 100		1 1 1 1 1 1 1

2154 + 2154 = _____

2154	2154

4622 + 1724 = _____

Th	H	T	O

2) Complete these column additions.

	3	2	5	6
+	6	2	0	4

	4	2	6	8
+	3	8	2	0

	8	1	3	8
+	1	2	9	1

3) Jen is playing games on her computer. On her first go, she scores 892 points. On her second go, she scores 2020 points. What is her total score?

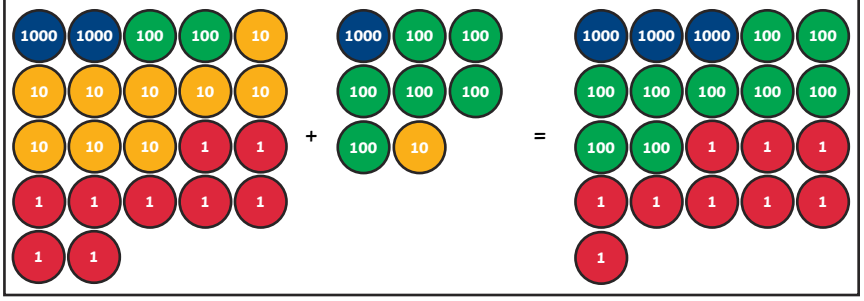
Use the grid to set out your calculation.

1) Millie, James and Haaran used different representations to show some calculations.
Whose answers are correct? Explain and correct any errors.

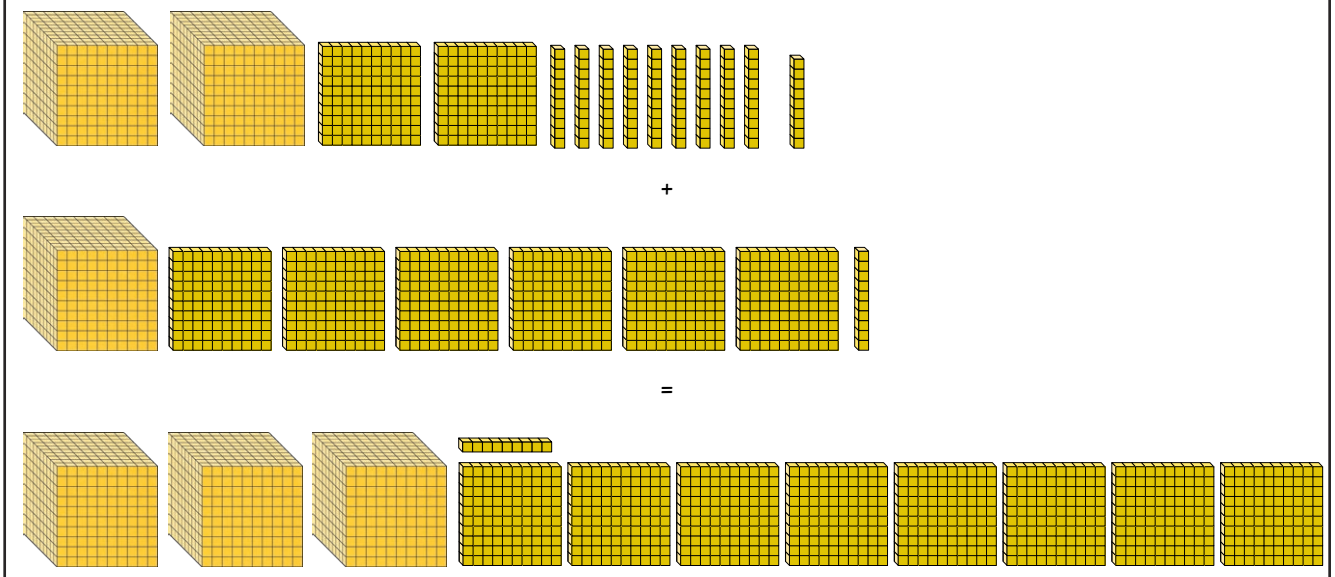
Millie

	2	2	9	9
+	1	6	1	0
	3	8	0	9

James



Haaran



Millie

James

Haaran

2) Haaran thinks that only 70 + 60 would produce an answer with a 3 in the tens column after exchanging.
Is he correct? Prove your answer.

1) Millie has written part of an addition calculation. James says:

There is only one possible correct answer.

Millie disagrees. How many different ways can you find to complete the calculation correctly?

	6	□	3	1
+	1	□	2	0
	8	3	5	1
	1			

2) How different solutions can you find to complete this calculation? Which solutions include exchange? Which ones do not?

	1	3	□	3
+	1	2	1	□
	2	5	4	□

3) Now write a missing number addition of your own, including one exchange, for a friend to solve!

1) Use the representations to help you solve each calculation.

3244 + 1307 = _____

Th	H	T	O
1000 1000 1000	100 100	10 10 10 10	1 1 1 1
1000	100 100 100		1 1 1 1 1 1 1

2154 + 2154 = _____

2154	2154

4622 + 1724 = _____

Th	H	T	O

2) Complete these column additions.

	3	2	5	6
+	6	2	0	4

	4	2	6	8
+	3	8	2	0

	8	1	3	8
+	1	2	9	1

3) Jen is playing games on her computer. On her first go, she scores 892 points. On her second go, she scores 2020 points. What is her total score?

1) Use the representations to help you solve each calculation.

3244 + 1307 = _____

Th	H	T	O
1000 1000 1000	100 100	10 10 10 10	1 1 1 1
1000	100 100 100		1 1 1 1 1 1 1

2154 + 2154 = _____

2154	2154

4622 + 1724 = _____

Th	H	T	O

2) Complete these column additions.

	3	2	5	6
+	6	2	0	4

	4	2	6	8
+	3	8	2	0

	8	1	3	8
+	1	2	9	1

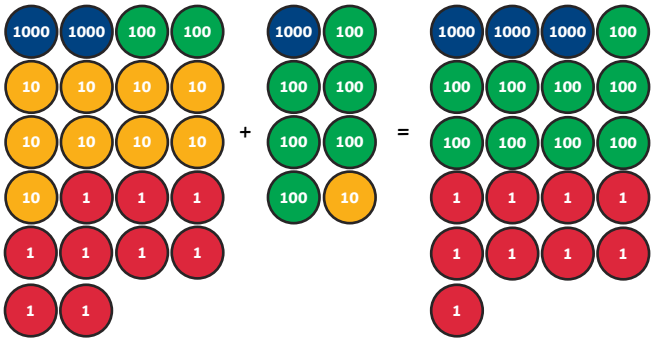
3) Jen is playing games on her computer. On her first go, she scores 892 points. On her second go, she scores 2020 points. What is her total score?

1) Millie, James and Haaran used different representations to show some calculations. Whose answers are correct? Explain and correct any errors.

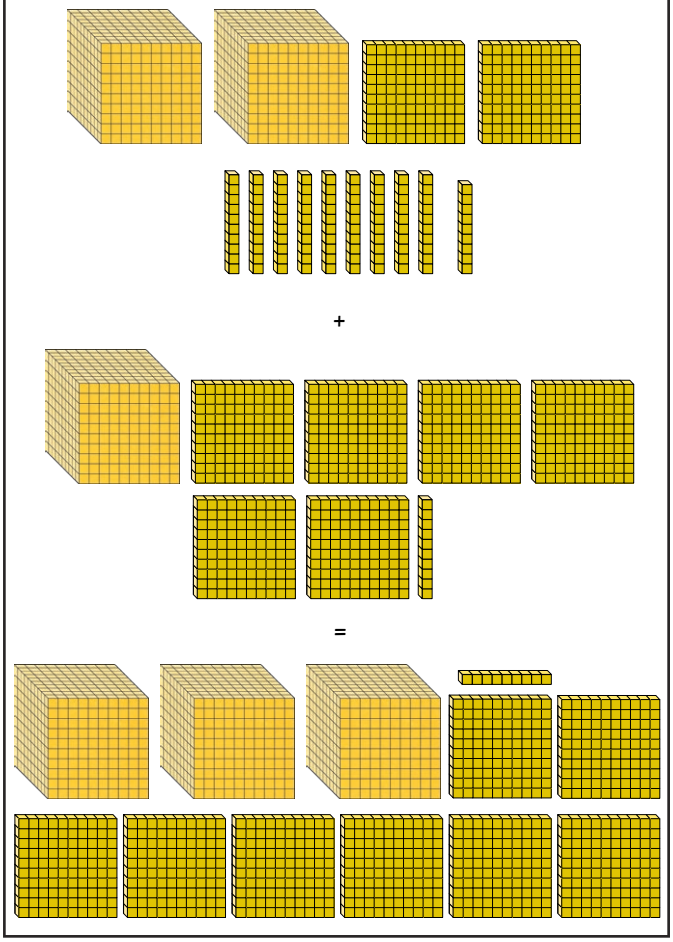
Millie

	2	2	9	9
+	1	6	1	0
	3	8	0	9

James



Haaran



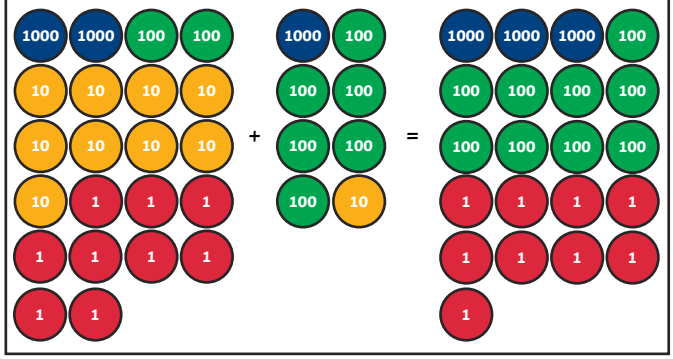
2) Haaran thinks that only 70 + 60 would produce an answer with a 3 in the tens column after exchanging. Is he correct? Prove your answer.

1) Millie, James and Haaran used different representations to show some calculations. Whose answers are correct? Explain and correct any errors.

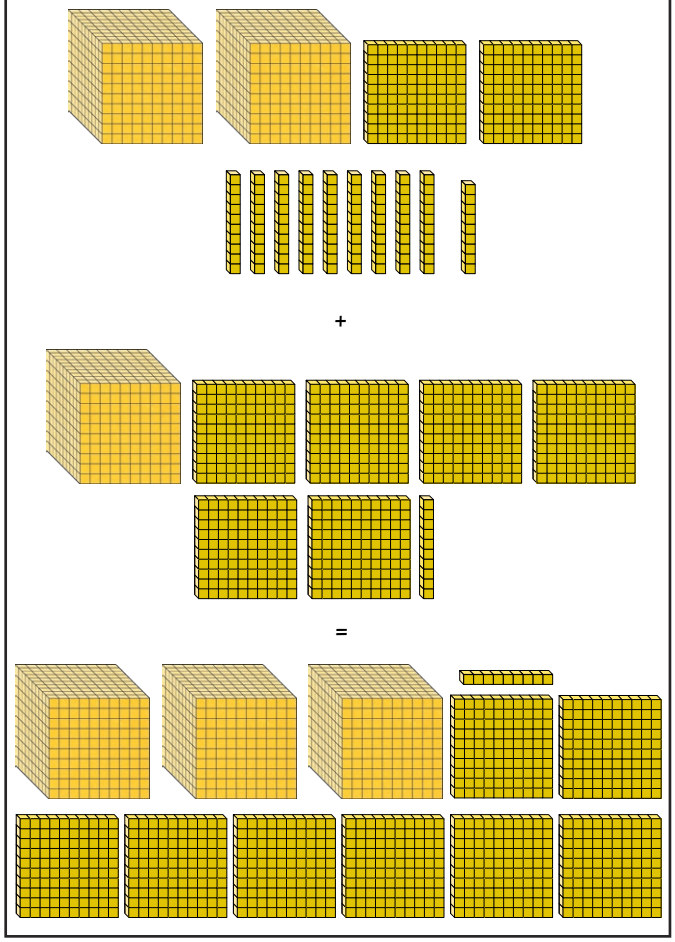
Millie

	2	2	9	9
+	1	6	1	0
	3	8	0	9

James



Haaran



2) Haaran thinks that only 70 + 60 would produce an answer with a 3 in the tens column after exchanging. Is he correct? Prove your answer.

1) Millie has written part of an addition calculation. James says:

There is only one possible correct answer.

Millie disagrees. How many different ways can you find to complete the calculation correctly?

	6	□	3	1
+	1	□	2	0
	8	3	5	1
	1			

2) How different solutions can you find to complete this calculation? Which solutions require regrouping? Which ones do not?

	1	3	□	3
+	1	2	1	□
	2	5	4	□

3) Now, write a missing number addition of your own, including one exchange, for a friend to solve!

1) Millie has written part of an addition calculation. James says:

There is only one possible correct answer.

Millie disagrees. How many different ways can you find to complete the calculation correctly?

	6	□	3	1
+	1	□	2	0
	8	3	5	1
	1			

2) How different solutions can you find to complete this calculation? Which solutions require regrouping? Which ones do not?

	1	3	□	3
+	1	2	1	□
	2	5	4	□

3) Now, write a missing number addition of your own, including one exchange, for a friend to solve!

Thousands, Hundreds, Tens and Ones Place Value Grid

Thousands	Hundreds	Tens	Ones

Word Mayhem

To add numbers with up to 4 digits with one regroup.

A	B	C	D	E	F	G	H	I	J	K	L	M
25	150	345	658	64	37	101	476	102	14	270	768	182

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
320	150	100	216	79	35	26	650	765	341	341	653	853

Find the value of each word using column addition.

1. UP _____
2. CAT _____
3. MOW _____
4. SIT _____
5. IN _____
6. PUT _____
7. DOG _____
8. OUT _____
9. BE _____

Think about when you need to regroup - not all questions require it!

Word Mayhem

To add numbers with up to 4 digits with one regroup.

A	B	C	D	E	F	G	H	I	J	K	L	M
1022	1130	1005	100	644	37	976	1026	402	402	2779	768	102

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
3720	1501	134	216	79	35	36	209	765	341	6783	653	85

Find the value of each word using column addition.

1. UP _____
2. CAT _____
3. MOW _____
4. SIT _____
5. IN _____
6. PUT _____
7. DOG _____
8. OUT _____
9. BE _____

Think about when you need to regroup - not all questions require it!

Word Mayhem

To add numbers with up to 4 digits with one regroup.

A	B	C	D	E	F	G	H	I	J	K	L	M
1004	150	345	101	6384	3577	671	476	102	2514	279	768	582

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
320	150	314	216	7649	2355	3026	2330	765	2241	683	6653	253

Find the value of each word using column addition.

1. UP _____
2. CAT _____
3. MOW _____
4. SIT _____
5. IN _____
6. PUT _____
7. DOG _____
8. OUT _____
9. BE _____

Think about when you need to regroup - not all questions require it!

Word Mayhem **Answers**

Question	★	★★	★★★
1	**750**	**343**	**2644**
2	**396**	**2063**	**4375**
3	**673**	**1944**	**2973**
4	**163**	**473**	**5483**
5	**422**	**4122**	**422**
6	**776**	**379**	**5670**
7	**909**	**2577**	**922**
8	**826**	**1746**	**5506**
9	**214**	**1774**	**6534**

Addition and Subtraction | Add Numbers with One Regroup

To add numbers with one regroup.		
I can add whole numbers with up to 4 digits.		
I can use formal written methods to calculate.		
I can explain when and why regrouping is necessary in written calculations.		
I can make up to one regroup when using formal written methods of addition.		

Addition and Subtraction | Add Numbers with One Regroup

To add numbers with one regroup.		
I can add whole numbers with up to 4 digits.		
I can use formal written methods to calculate.		
I can explain when and why regrouping is necessary in written calculations.		
I can make up to one regroup when using formal written methods of addition.		

Addition and Subtraction | Add Numbers with One Regroup

To add numbers with one regroup.		
I can add whole numbers with up to 4 digits.		
I can use formal written methods to calculate.		
I can explain when and why regrouping is necessary in written calculations.		
I can make up to one regroup when using formal written methods of addition.		

Addition and Subtraction | Add Numbers with One Regroup

To add numbers with one regroup.		
I can add whole numbers with up to 4 digits.		
I can use formal written methods to calculate.		
I can explain when and why regrouping is necessary in written calculations.		
I can make up to one regroup when using formal written methods of addition.		

Addition and Subtraction | Add Numbers with One Regroup

To add numbers with one regroup.		
I can add whole numbers with up to 4 digits.		
I can use formal written methods to calculate.		
I can explain when and why regrouping is necessary in written calculations.		
I can make up to one regroup when using formal written methods of addition.		

Addition and Subtraction | Add Numbers with One Regroup

To add numbers with one regroup.		
I can add whole numbers with up to 4 digits.		
I can use formal written methods to calculate.		
I can explain when and why regrouping is necessary in written calculations.		
I can make up to one regroup when using formal written methods of addition.		

Addition and Subtraction | Add Numbers with One Regroup

To add numbers with one regroup.		
I can add whole numbers with up to 4 digits.		
I can use formal written methods to calculate.		
I can explain when and why regrouping is necessary in written calculations.		
I can make up to one regroup when using formal written methods of addition.		

Addition and Subtraction | Add Numbers with One Regroup

To add numbers with one regroup.		
I can add whole numbers with up to 4 digits.		
I can use formal written methods to calculate.		
I can explain when and why regrouping is necessary in written calculations.		
I can make up to one regroup when using formal written methods of addition.		