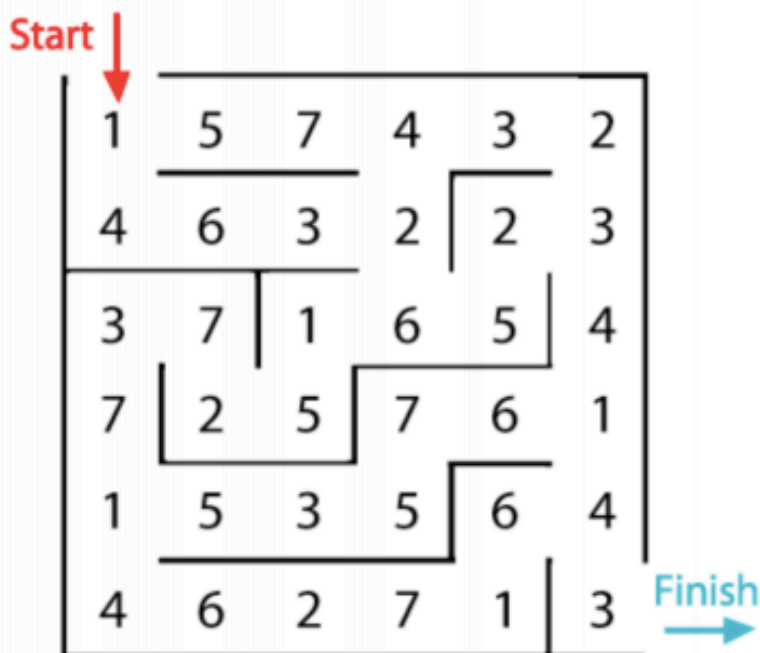


## Marvellous Maths

### Year 2 Brain Teaser

In this maze there are numbers in each of the cells. You go through adding all the numbers that you pass. You may not go through any cell more than once.



Find different pathways through the maze and add up your total each time. Remember to use your number bonds to add mentally. You can use jottings so that you don't lose count!

What is the lowest total you can make?

What is the highest?

Can you make exactly 100?

Year 2

This week we will be completing work on Addition and Subtraction. This builds on prior work we have covered in school and at home.

The objectives for this week are:

- Identifying an operation in a word problem
- Adding pairs of 2-digit numbers by partitioning
- Adding pairs of 2-digit numbers by partitioning or counting on

### 1. Identifying the operation in a word problem

Work through the problem together deciding on the appropriate operation. A bar model will help children to visualise the problem.

Use the 100 square and spider and fly on the second slide to help you.

Identify an appropriate operation (addition/subtraction) needed to solve a word problem.

Farmer Pete collected 54 eggs.  
Unfortunately, he dropped his basket  
and 23 eggs broke. How many eggs  
does he have left to sell?

How could we solve this problem?

We can use this **bar model** to show the problem...

54	
23	?

How can we find  $54 - 23$ ?

Identify an appropriate operation (addition/subtraction) needed to solve a word problem.

Let's use Spider and Fly.



Put spider on 54.

Count back 20, to land on 34.

Now swap to Fly. He counts back 3.

$$54 - 23 = 31$$

31 eggs left!

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	26	27	28	29	30
31	32	33		35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53		55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

Now solve these problems in the same way:

Identify an appropriate operation (addition/subtraction) needed to solve a word problem.

Let's read some more word problems.

Decide if you will solve each one by **addition** or **subtraction**.



Gabby had 24 birthday cards. She had her party the day after her birthday and received another 12! How many does she now have altogether?

This one needs **addition**.

Olivia baked 35 cupcakes for the class bake sale. She was very sad because she burnt 14. How many did she have left to sell?

This one needs **subtraction**.

2. Complete sheets 1 and/or 2 using the 100-square and the number lines.

3. Print and solve the number stories.

**You will need:**

- Number stories

**What to do:**

- Read the number stories one at a time. Try to imagine the story.
- Sort them into 2 piles: a pile that need addition to solve them and a pile that need subtraction to solve them.
- You should have three in each pile!
- Choose at least one from each pile to solve.

4. Adding pairs of 2-digit numbers by partitioning

Watch the powerpoint and cut out the arrow cards.

Use the arrow cards to solve the problem.

**Add pairs of 2-digit numbers by partitioning.**

When we learnt to double numbers like 34, we used **partitioning**. Could we use this method to add 34 and 23?

Make 34 and 23 with **place value cards**.

**Partition** each number.  
**Re-order** the numbers.  
Can you see how?

**Add the 10s then the 1s.**

**Re-combine** the numbers.



$34 + 23 = 57$



We can record that as:  
 $34 + 23 = 30 + 20 + 4 + 3$   
 $= 50 + 7$   
 $= 57$


Let's try this one!

**Add pairs of 2-digit numbers by partitioning.**

Let's try  $46 + 25$ .

What shall we do first?  

What shall we do next?  

What shall we do next? 

Add the 60 and 10, then the 1.

$46 + 25 = 71$

We can record that as:  
 $46 + 25 = 40 + 20 + 6 + 5$   
 $= 60 + 11$   
 $= 70 + 1$   
 $= 71$

5. Complete sheets 3 and/or 4.

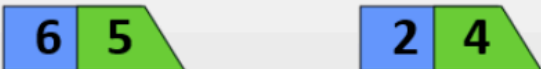
## 6. Adding 2-digit numbers by partitioning or counting on.

Read through the slides and use a number line to help you solve the problem.


**Add pairs of 2-digit numbers by partitioning or counting on.**

Make **65** and **24** using **place value cards** then use partitioning to add them together.


**Partition** each number.



**Re-order** the numbers.



**Add the 10s then the 1s.**



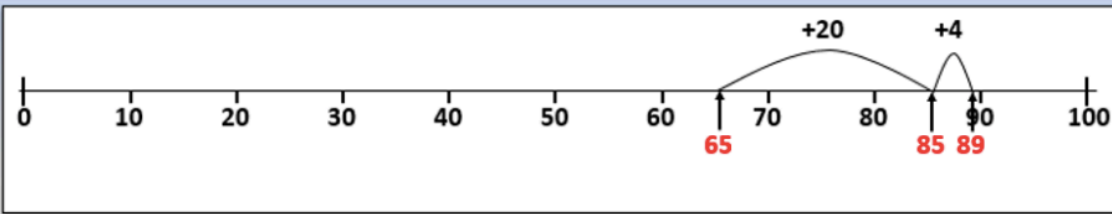
**Re-combine** the numbers.

$65 + 24 = 89$

Remember we record that as:

$$\begin{aligned} 65 + 24 &= 60 + 20 + 5 + 4 \\ &= 80 + 9 \\ &= 89 \end{aligned}$$

**Add pairs of 2-digit numbers by partitioning or counting on.**



We can also add 65 and 24 by counting on in 10s and 1s on a number line.

We mark **65** then jump **20** to **85**.

Then a hop of **4** to **89**.

There is no one 'right' way to do this... Which strategy do you prefer?

7. Complete sheets 5 and/or 6.

8. Challenge: Have a go at the coin collections challenge.

## Year 3 Brain Teaser

### Year 3 Task: 'Find the Number'

**Aim of the game:** To find the number which matches all of the clues

**Equipment:** pencil and paper for jottings, number base board and clues (see below)

This is a paired game.

<b>63</b>	<b>55</b>
<b>41</b>	<b>87</b>
<b>103</b>	<b>76</b>
<b>90</b>	<b>33</b>

#### Clues:

1. I am less than 10 lots of 10.
2. The sum of my digits is more than 5.
3. I am not a multiple of 10.
4. I am an odd number.
5. I am not a multiple of 5.
6. The sum of my digits is less than 10.
7. I am in the three times table.
8. Double me and the answer is less than 100.

#### How to play:

1. Start by reading out clue 1
2. Look at the numbers on the baseboard to see if you can cross any out
3. Then read out clue 2
4. Look at the numbers on the baseboard to see if you can cross any out
5. Repeat for each of the clues until you should have just one number left

Year 3

This week we will be completing work on Addition and Subtraction. This builds on prior work we have covered in school and at home.

The objectives for this week are:

- To add and subtract multiples of 10 and 100
- To add and subtract near multiples of 10

### Adding and subtracting multiples of 10 and 100

1. Look at the slide below to work out  $346 + 50$ .

**Add and subtract multiples of 100.**

Which digit(s) will change when we find  $346 + 500$ ?

$346 + 500$

We can count on five 100s from 346: 446, 546, 646, 746, **846**. Only the **100s digit** changes this time.

Now try  $846 - 500$ .

What will happen this time?

Let's **count back** five 100s from 846... 746, 646, 546, 446, **346**.

Just the 100s changed.

Now let's try subtracting:

**Subtract multiples of 10.**

Now let's try **subtracting** 10s...

**386 - 50**

Which digit changes?


We can **count back** five 10s from 386... 376, 366, 356, 346, **336**. Only the 10s digit changes!

Now try **336 - 50**.

What will happen this time?

Let's **count back** five 10s from 336... 326, 316, 306, 296, **286**.

Both the 100s and the 10s digit change; we have crossed a **multiple of 100**.



What about multiples of 100?

**Add and subtract multiples of 100.**

Which digit(s) will change when we find  $346 + 500$ ?

$346 + 500$

We can count on five 100s from 346: 446, 546, 646, 746, **846**. Only the **100s digit** changes this time.

Now try  $846 - 500$ .

What will happen this time?

Let's **count back** five 100s from 846... 746, 646, 546, 446, **346**.

Just the 100s changed.

2. Complete sheets 1 and 2

3. Complete the Secret Spider activity.

### **Adding and subtracting near multiples**

4. Look through the Powerpoint - near multiples

Use the 100 square to help you solve the problems.


**Add multiples of 10.**

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

We can use this grid to work out  $356 + 40$ .

Start at 356 and count on 4 tens down the grid.

Do you remember spider counting?



**Subtract near multiples of 10.**

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

We can also use this grid to work out  $356 - 40$ .

This time, start at 356 and count back 4 tens.

$356 - 40 = 316$

Now use it to solve the near multiples problem.

**Add near multiples of 10.**

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

How could we use the grid to find  $356 + 41$ ?

We could add the 40 then 1 more.

$356 + 41 = 397$

**Add near multiples of 10.**

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

How could we use the grid to find  $356 + 39$ ?

We could add the 40 then subtract 1. 39 is 1 less than 40.

$356 + 39 = 395$

Now use it to subtract.

Subtract near multiples of 10.

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

How could we use the grid to find  $356 - 41$ ?

Start at 356 and count back 4 tens.

Now we need to subtract another 1 to subtract 41.

$356 - 341 = 315$

Subtract near multiples of 10.

301	302	303	304	305	306	307	308	309	310
311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330
331	332	333	334	335	336	337	338	339	340
341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360
361	362	363	364	365	366	367	368	369	370
371	372	373	374	375	376	377	378	379	380
381	382	383	384	385	386	387	388	389	390
391	392	393	394	395	396	397	398	399	400

How could we use the grid to find  $356 - 39$ ?

Start at 356 and count back 4 tens.

But 40 is 1 more than 39 so we add 1 to adjust.

$356 - 39 = 317$

5. Have a go at solving sheet 3 using the 100 square.