## Year 3: Week 1, Day 1

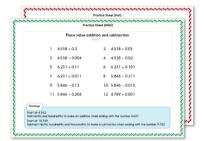
## **Numbers on lines**

Each day covers one maths topic. It should take you about 1 hour or just a little more.

1. Start by reading through the **Learning Reminders**. They come from our *PowerPoint* slides.



Tackle the questions on the Practice Sheet.
 There might be a choice of either Mild (easier) or Hot (harder)!
 Check the answers.

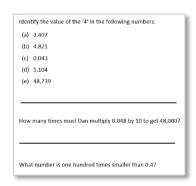


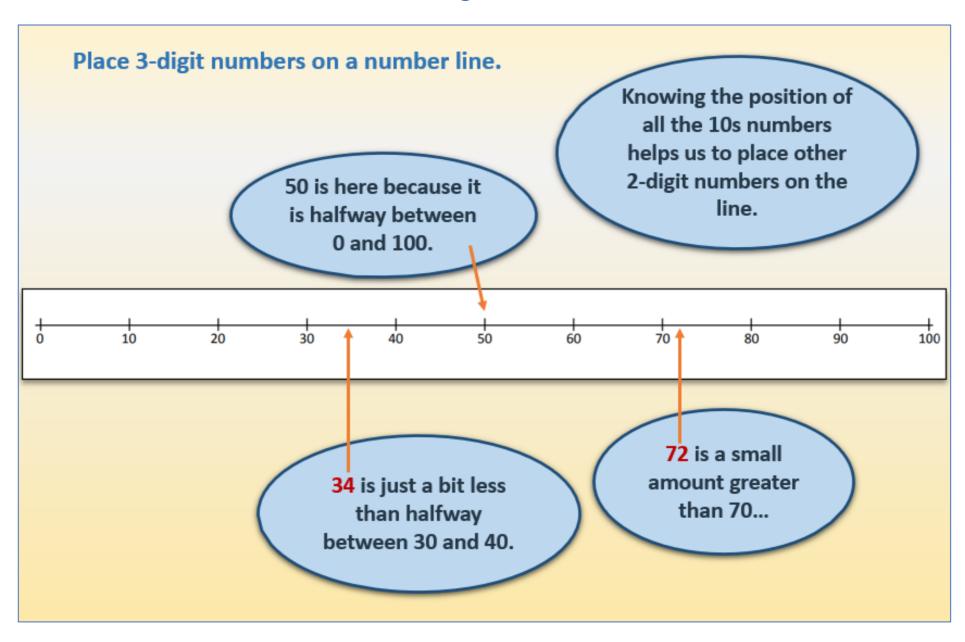
3. Finding it tricky? That's OK... have a go with a grown-up at A Bit Stuck?

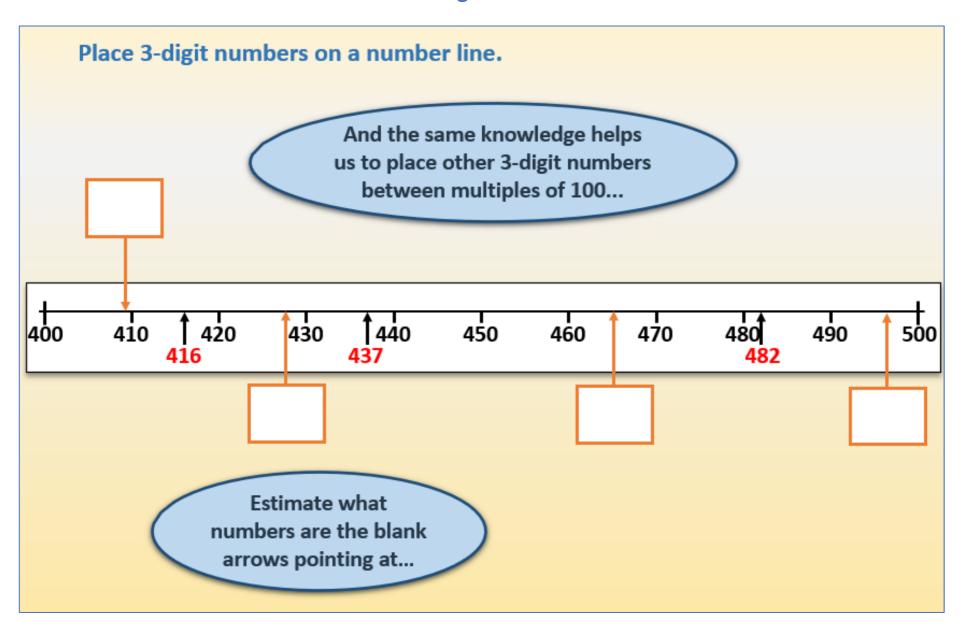


4. Have I mastered the topic? A few questions to Check your understanding.

Fold the page to hide the answers!







## **Practice Sheet Mild**

#### **Numbers on lines**

Mark the numbers on the number line where you think they should go.



Use three of these digits to make a number which belongs between 900 and 1000 and place it on the line: 3, 5, 7, 9. Repeat for as many numbers as you can.



# **Practice Sheet Hot**

## **Numbers on lines**

Mark the 100s intervals on the number line.

Write the numbers on the number line where you think they should go.

0

690	105	499	505
385	275	25	370
420	935	745	860

## Challenge

Roll three 0-9 dice. Use the digits to make 4 more different numbers to place on your line. Repeat.

## A Bit Stuck?

#### In-betweenies

#### Work in pairs

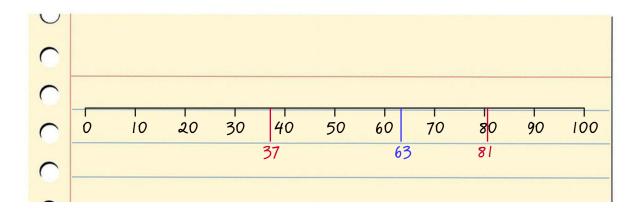
#### Things you will need:

- · A set of 1 to 9 digit cards
- 0 to 100 landmarked lines
- Two coloured pencils



#### What to do:

- Shuffle the cards and place face down. Take the top four.
- Use them in any order that you like to make two 2-digit numbers. Use your coloured pencil to mark these on the line, writing the numbers underneath the marks.
- Your partner takes the next two cards and uses them in either order to make a 2-digit number. They use their coloured pencil to mark this number on the line.
   Can they make a number which goes between your two numbers? If so they win a point. If not, you win the point.
- Play again on a new line, but your partner shuffles the cards and takes the first four this time.
- Keep playing, taking it in turns to take the first four cards.



#### S-t-r-e-t-c-h:

Think about the best order to use your digit cards to make it difficult for the other person to make a number in between your two numbers on the line.

#### Learning outcomes:

- I can place 2-digit numbers on a 0 to 100 landmarked line.
- I am beginning to have an idea about whether numbers are close or far apart on the number line.
- I am beginning to identify mystery numbers on 0 to 100 landmarked lines.

# Check your understanding: Questions

Sketch a line 0-1000 and mark 500 on it.

Mark 350, 700 and 990 on the line.

How can you demonstrate that you have marked these accurately?

#### True or false

- Between any pair of next-door multiples of 100, there are always 98 whole numbers.
- The middle of a 500-1000 line is 800.
- There are ten numbers ending in 3 between 300 and 400.
- The digit 0 is used 18 times between 600 and 700.

Fold here to hide answers:

# Check your understanding: Answers

Sketch a line 0-1000 and mark 500 on it.

Mark 350, 700 and 990 on the line.

How can you demonstrate that you have marked these accurately?

350 is around a third of 1000, 700 almost three quarters and 990 is almost 1000; children's markings should reflect this.

#### True or false

- Between any pair of next-door multiples of 100, there are always 98 whole numbers. False, there are
   99, for example between 200 and 300 the numbers 201 299 (99 numbers).
- The middle of a 500-1000 line is 800. False, it would be 750.
- There are ten numbers ending in 3 between 300 and 400.

True – 303, 313, 323, 333, 343, 353, 363, 373, 383, 393. Some may miss 303.

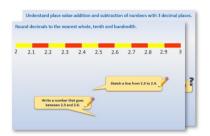
The digit 0 is used 18 times between 600 and 700. True, in the numbers 601 – 609 (9 times) and 610,
 620 ... 690 (9 times).

## Year 3: Week 1, Day 2

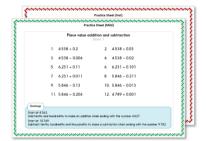
# 3-digit numbers

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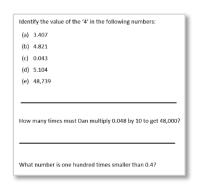


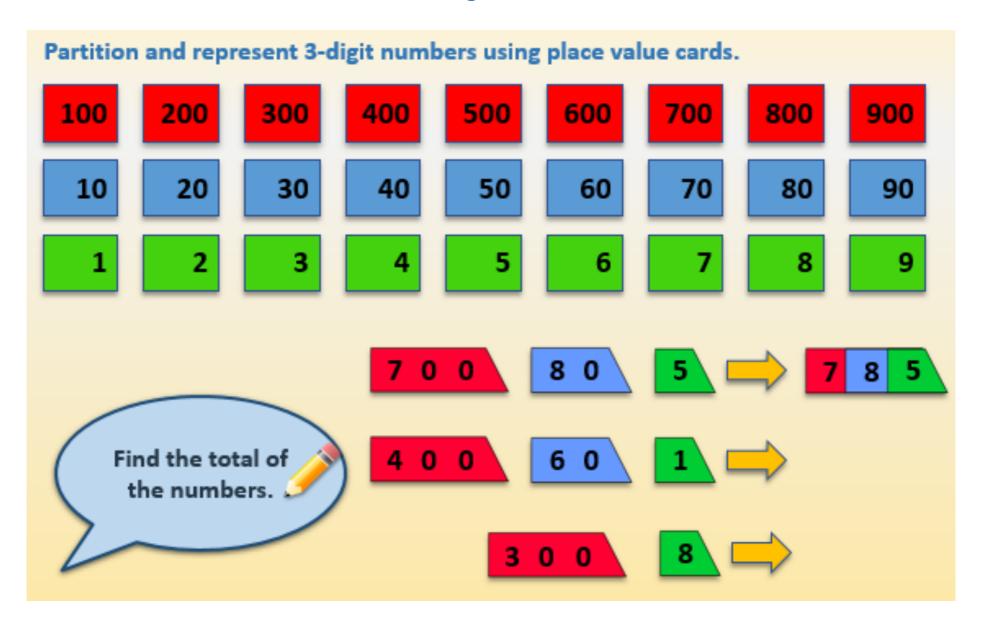
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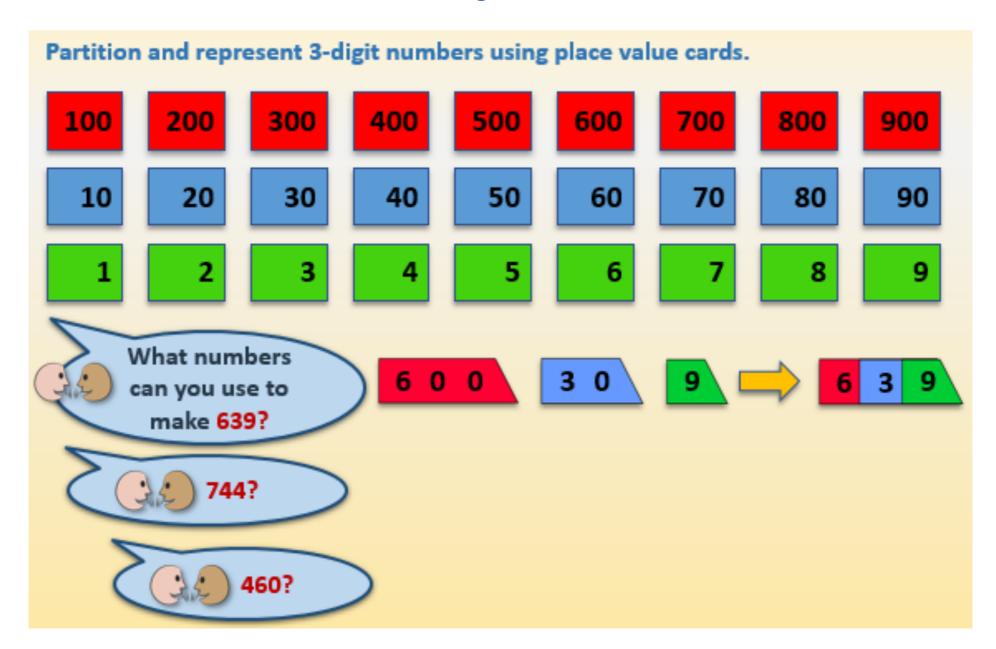


4. Have I mastered the topic? A few questions to **Check your understanding.** 

Fold the page to hide the answers!







## **Practice Sheet Mild**

# Place value practice

Use the following digits to make 3-digit numbers as instructed:

3 2 7 9 4

- 1. A number with seven 100s.
- 2. A number where the 10s digit is four.
- 3. A number with a 1s digit <3.
- 4. A number with more than six 10s.
- 5. An even number between 200 and 300.
- 6. An odd number >800.

Now order these numbers from smallest to largest:

#### **Challenge**

How many numbers are there between (but not including) 100 and 200 that have a seven in them?

# **Practice Sheet Hot**

# Place value practice

Use the following digits to make as many 3-digit numbers as you can. Now order them all from smallest to largest.

Start using these digits: 1, 5, 7, 0, 9, 3

157, 150, 159...

#### Challenge

How many numbers are there between (but not including) 100 and 200 that do not have a seven in them?

# **Practice Sheet Answers**

## Place value practice (Mild)

- 1. e.g. **7**39
- 2. e.g. 243
- 3. e.g. 492
- 4. e.g. 374 or 294
- 5. e.g. 274
- 6. e.g. 927

#### **Challenge**

There are 19 numbers:

1s digit is 7: 107, 117, 127, ... 197 (10 numbers).

10s digit is 7: 170, 171, 172, ... 179 (not counting 177 because it was in the list above,

9 numbers)

## Place value practice (Hot)

e.g. 103, 197, 359, 301, 571, 509, etc.

#### Challenge

There are 80 numbers between 100 and 200 without a seven in them.

# A Bit Stuck? Make the number

#### Work in pairs

#### Things you will need:

• 100s, 10s and 1s place value cards



#### What to do:

- Take it in turns to choose a number.
- One person makes that number using place value cards.
- They then show the three cards in any order to their partner.
- They must write the number and say it aloud.
- Do you agree?
- Repeat this, taking turns to make the number.

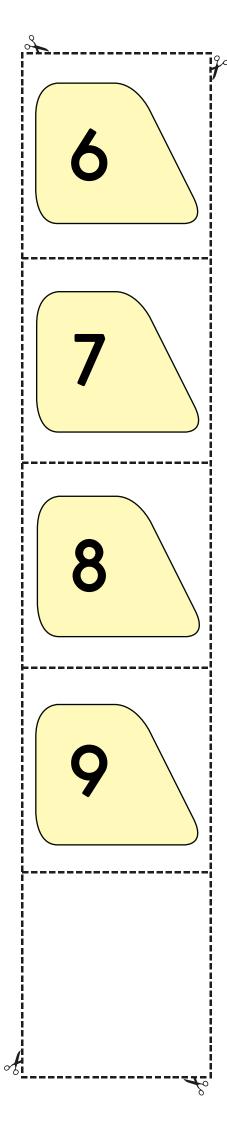
326 831 555 473 154 617 282 736 962

#### S-t-r-e-t-c-h:

Make the numbers 520 and 603 using place value cards.

#### Learning outcomes:

- I can make 3-digit numbers using place value equipment (no zeros).
- I am beginning to make 3-digit numbers with a 0 in the 10s or 1s place using place value equipment.



# Check your understanding: Questions

Write numbers	to	make	the	sentences	true:

- a) 100 < < 110
- b) 304 > > > 302
- c) 999 > [ ] > 888
- d) 0 < 101 <
- e) 459 < < 461

Write the value of the 5 digit in these numbers:

- (i) 652
- (ii) 591
- (iii) 905

Fold here to hide answers:

# Check your understanding: Answers

Write numbers to make the sentences true:

- g) 304 > > 302 303.
- h) 999 > > > 888 Any number from 889 to 998.
- i) 0 < 101 < [ ] Any number 102 or greater.
- j) 459 < < < < 461 460.

Write the value of the 5 digit in these numbers:

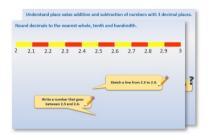
- (i) 652 50 (or 5 tens).
- (ii) 591 500 (or 5 hundreds).
- (iii) 905 5 (or 5 ones).
- The digit 0 is used 18 times between 600 and 700. True, in the numbers 601 609 (9 times) and 610, 620 ... 690 (9 times).

## Year 3: Week 1, Day 3

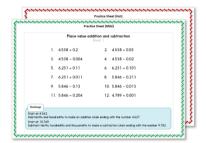
# Adding mentally - in our heads!

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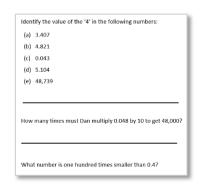


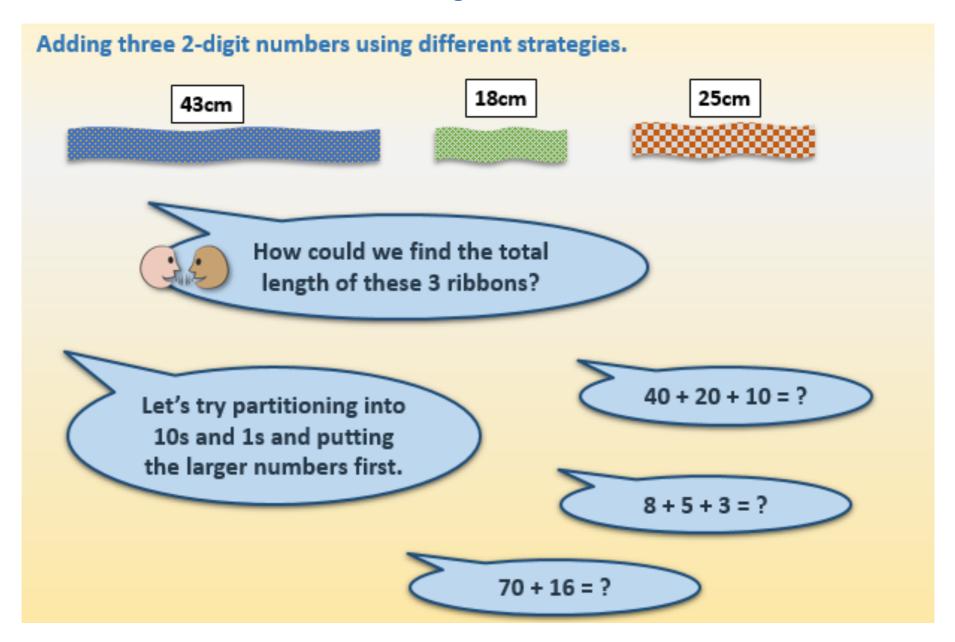
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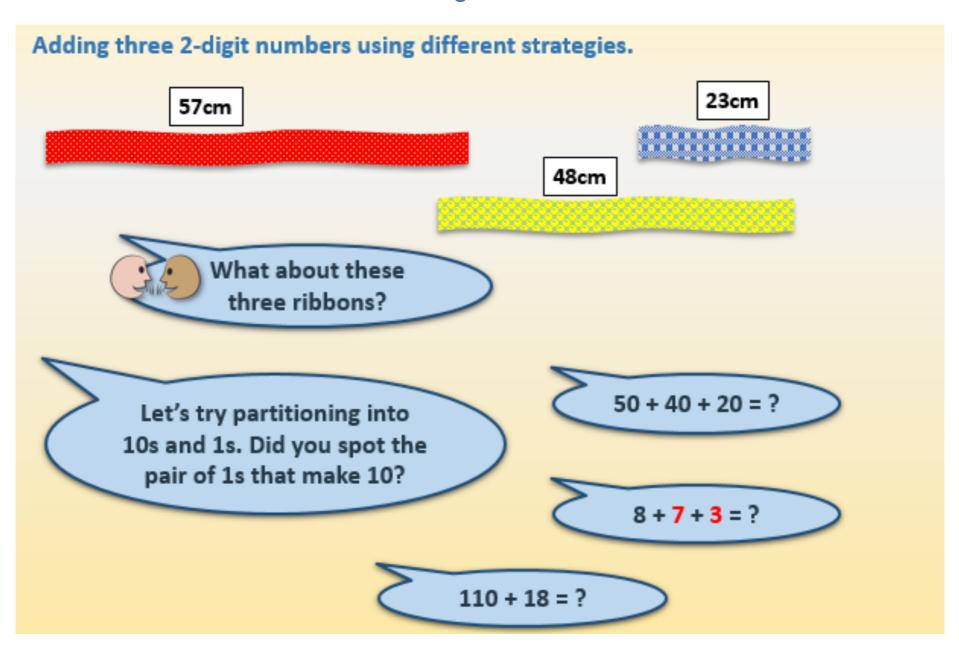


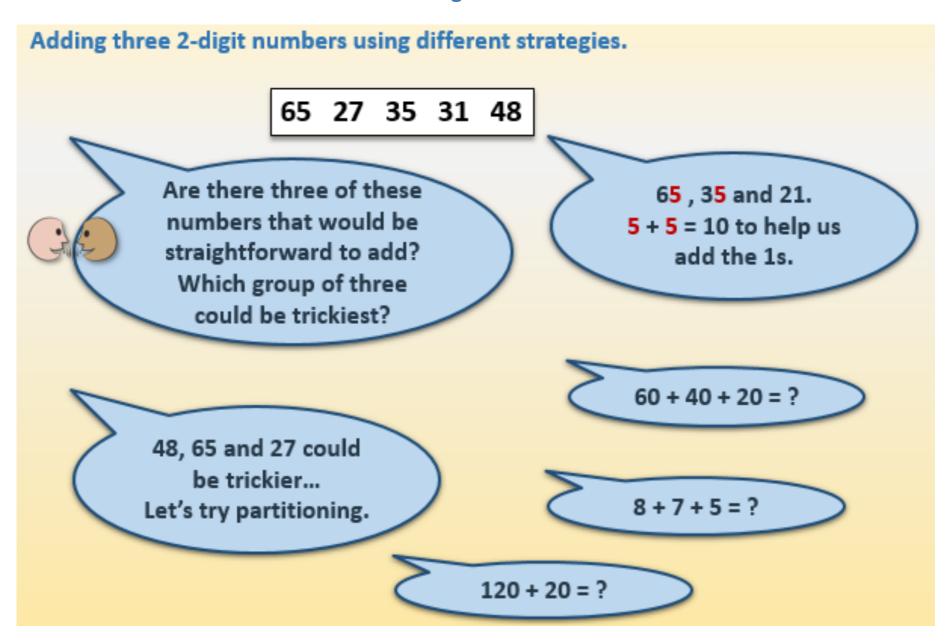
4. Have I mastered the topic? A few questions to **Check your understanding**.

Fold the page to hide the answers!









# **Practice Sheet Mild**

# Addition and subtraction practice

You have £1 pocket money to spend. Which two stickers can you buy? Find as many pairs as you can.



- 2. 54 + 24 =
- 3. 67 + 21 =
- $4. \quad 65 + 25 =$
- 5. 36 + 47 + 54 =
- 6. 42 + 28 + 38 =
- 7. 53 + 27 + 41 =
- 8. 52 + 62 + 38 =
- 9. 42 + 37 + 48 =
- 10. 55 + 32 + 25 =
- 11. Ellie bought a skateboard for £45, a helmet for £24 and knee pads for £19.

How much did she spend altogether?

12. Daniel bought roller skates for £56, a helmet for £24 and arm pads for £21.

How much did he spend altogether?

- 13. 146 + 58 + 47 =
- 14. 241 + 27 + 18 =
- 15. 135 + 28 + 36 =
- 16. 127 + 54 + 31=

## Challenge

Can you find three two-digit numbers that add up to a total of 200?

## **Practice Sheet Answers**

#### Addition and subtraction practice (Mild)

#### Possible combinations:

$$73p + 27p = £1$$

$$73p + 23p = 96p$$

$$70p + 27p = 97p$$

$$70p + 23p = 93p$$

$$59p + 41p = £1$$

$$59p + 27p = 86p$$

$$59p + 23p = 82p$$

$$41p + 27p = 68p$$

$$41p + 23p = 64p$$

$$27p + 23p = 50p$$

#### Addition and subtraction practice (Hot)

1. 
$$36 + 23 = 59$$

5. 
$$36 + 47 + 54 = 137$$

6. 
$$42 + 28 + 38 = 108$$

$$8. 52 + 62 + 38 = 152$$

9. 
$$42 + 37 + 48 = 127$$

10. 
$$55 + 32 + 25 = 112$$

11. 
$$£45 + £24 + £19 = £88$$

12. 
$$£56 + £24 + £21 = £101$$

13. 
$$146 + 58 + 47 = 251$$

$$14. \quad 241 + 27 + 18 = 286$$

15. 
$$135 + 28 + 36 = 199$$

16. 
$$127 + 54 + 31 = 212$$

## A Bit Stuck?

## Do the splits

#### Work in pairs

#### Things you will need:

- · A set of 10s and 1s place value cards
- A pencil



#### What to do:

- Shuffle the 10 to 50 cards and place face down in a pile. Shuffle the 1 to 5 cards and place face down.
- Take the top card from each pile and put them together to make a 2-digit number.
- Take the next card from each pile to make another 2-digit number.
- One person collects the 10s.
   The other person collects the 1s.
   How much do you have each?
   Now add your totals.
- Record the addition.
- How many split sums can you do before the time is up?

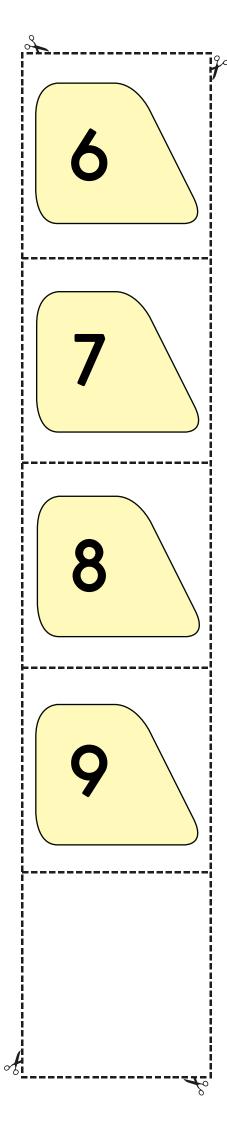
0	
0	
0	53 + 24
0	= 50 + 20 + 3 + 4
	= 70 + 7
0	= 77
0	
0	
0	
0	
0	

#### **S-t-r-e-t-c-h**:

Include the 6 to 9 cards so that sometimes the 1s will come to more than 10.

#### Learning outcomes:

- $\cdot$  I can add pairs of 2-digit numbers using partitioning (1s < 10, 10s < 100)
- I am beginning to add pairs of 2-digit numbers where the 1s come to more than 10.



## **Check your understanding:**

## **Questions**

Use a different strategy for each of these additions:

- (a) 45 + 29
- (b) 45 + 34
- (c) 65 + 35
- (d) 78 + 28

Explain why you chose a particular strategy for (a) and (c)

Complete the bar model diagrams:

1	?
36	37

?	
57	39

	?
48	24

Fold here to hide answers:

# **Check your understanding:**

#### **Answers**

Use a different strategy for each of these additions:

(a) 45 + 29 = 74 Add 30 and subtract 1

(b) 45 + 34 = 79 Add 30 then 4 or add 40 + 30, then 5 + 4, then 70 + 9

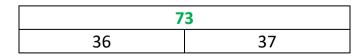
(c) 65 + 35 = 100 Numbers which add to 10 or 100

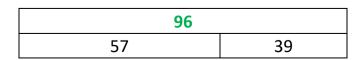
(d) 78 + 28 = 106 Easiest to do as 70 + 20, then 8 + 8, then 90 + 16

Explain why you chose a particular strategy for (a) and (c)

Children may use other strategies but are they the most efficient? Encourage ways of doing each one to avoid making errors.

Complete the bar model diagrams:





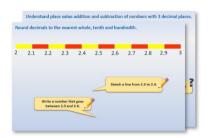
7	2
48	24

## Year 3: Week 1, Day 4

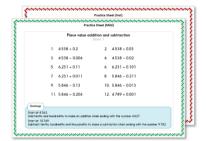
## Written addition

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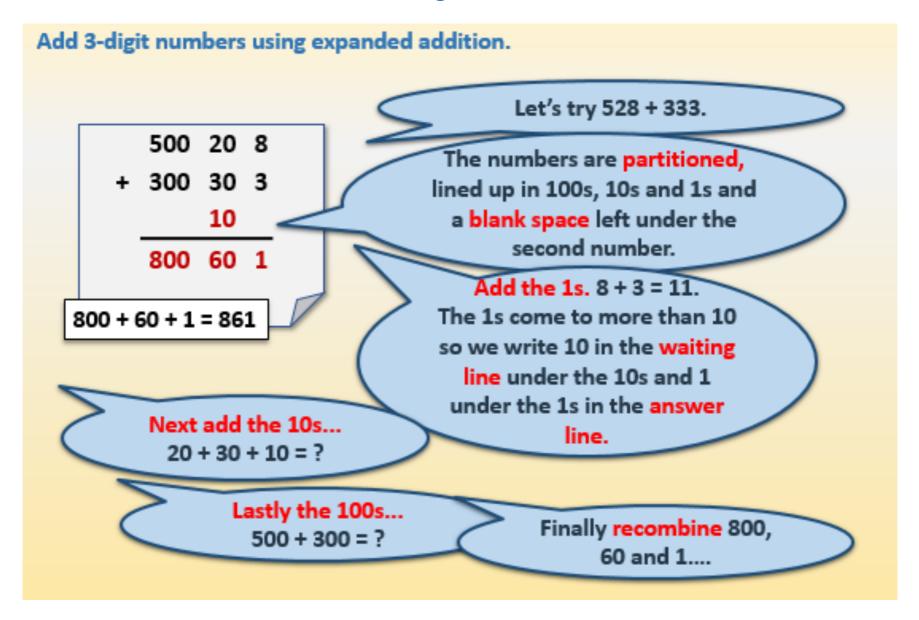
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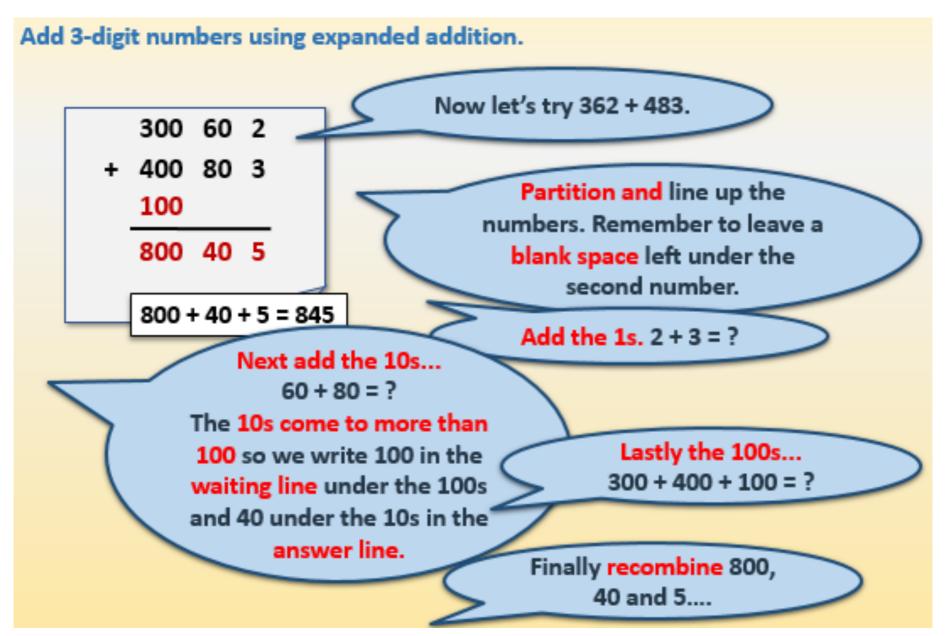


4. Have I mastered the topic? A few questions to **Check your understanding**.

Fold the page to hide the answers!

Iden	tify the value of the '4' in the following numbers:
(a)	3.407
(b)	4.821
(c)	0.043
(d)	5.104
(e)	48,739
How	many times must Dan multiply 0.048 by 10 to get 48,000
_	





## **Practice Sheet Mild**

# Addition and subtraction practice

$$437 + 231$$

$$523 + 415$$

$$743 + 126$$

$$545 + 427$$

$$614 + 352$$

$$353 + 216$$

$$572 + 325$$

$$436 + 265$$

## Challenge

Write two additions with an answer of 888.

## **Practice Sheet Hot**

# Addition and subtraction practice

$$1. \quad 438 + 214$$

$$2. 549 + 235$$

$$3. 116 + 236$$

$$4. \quad 239 + 344$$

$$5. 625 + 147$$

$$6. 378 + 414$$

$$7. 380 + 257$$

$$8. \quad 472 + 384$$

$$9. 582 + 284$$

$$10.693 + 242$$

$$11.461 + 256$$

$$12.543 + 261$$

Challenge

Write two additions with the answer 321. You can't use a zero in either number!

## **Practice Sheet Answers**

#### Addition and subtraction practice (Mild)

#### Challenge

Accept correctly laid out answers where total is 888, e.g.

444 + 444, 350 + 538, 480 + 408,

738 + 150, etc.

## Addition and subtraction practice (Hot)

10. 
$$693 + 242 = 935$$

#### Challenge

Accept asnswers where the total is 321, e.g. 198 + 123, 167 + 154, 272 + 49, etc.

### A Bit Stuck?

## More split sums

#### Work in pairs

#### Things you will need:

- · A set of 100s, 10s and 1s place value cards
- A pencil



#### What to do:

- Shuffle the 10 to 50 cards and place face down in a pile. Shuffle the 1 to 9 cards and place face down.
- Take the top card from each pile and put them together to make a 2-digit number.
- Take the next card from each pile to make another 2-digit number.
- One person collects the 10s.
   The other person collects the 1s.
   How much do you have each?
   Now add your totals.
- · Record the addition.
- Repeat at least two more times.
- Play again, but this time shuffle the 10 to 90 cards, and the 1 to 5 cards.
- · Repeat at least two more times.

U	
0	
0	47 + 26
0	= 40 + 20 + 7 + 6
	= 60 + 13
	= 73
0	
0	
0	

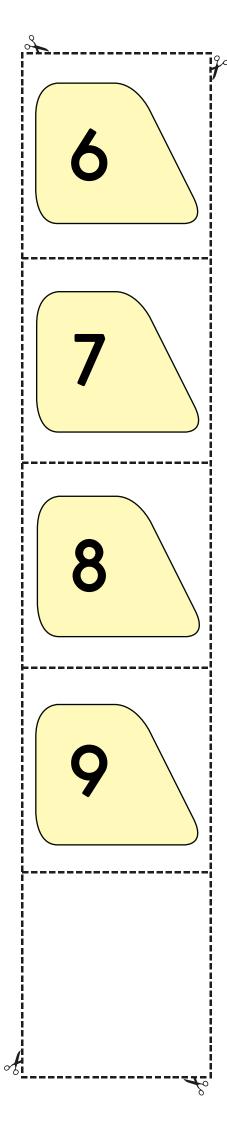
## S-t-r-e-t-c-h:

Use 10 to 90 and 1 to 9 cards so that sometimes the 1s will come to more than 10 and the 10s will come to more than 100.

#### Learning outcomes:

- I can add pairs of 2-digit numbers using partitioning (1s > 10 or 10s > 100).
- I am beginning to add pairs of 2-digit numbers where the 1s come to more than 10 the 10s come to more than 100.

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# **Check your understanding:**

## **Questions**

What is the total of two hundred and sixty-eight and two hundred and eighty-six?

Write the missing numbers

Amit uses 346 Lego pieces in building his model X-wing, and his sister uses 287 in building her Millennium Falcon.

How many Lego pieces have they used altogether?

Fold here to hide answers:

# **Check your understanding:**

#### **Answers**

For this, children should be using the expanded column method. Errors may be due to splitting numbers wrongly, lining them up incorrectly or to making mistakes in the procedure. Talk through how they did each calculation that they got wrong.

What is the total of two hundred and sixty-eight and two hundred and eighty-six? 554

Write the missing numbers

$$(673) - 426 = 247$$

Some may not recognise the second and fourth question as one to do using addition.

Amit uses 346 Lego pieces in building his model X-wing, and his sister uses 287 in building her Millennium Falcon.

How many Lego pieces have they used altogether? 633 pieces.

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## Year 3: Week 1, Day 5

#### More written addition

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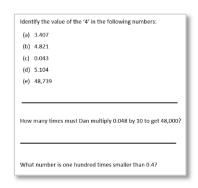


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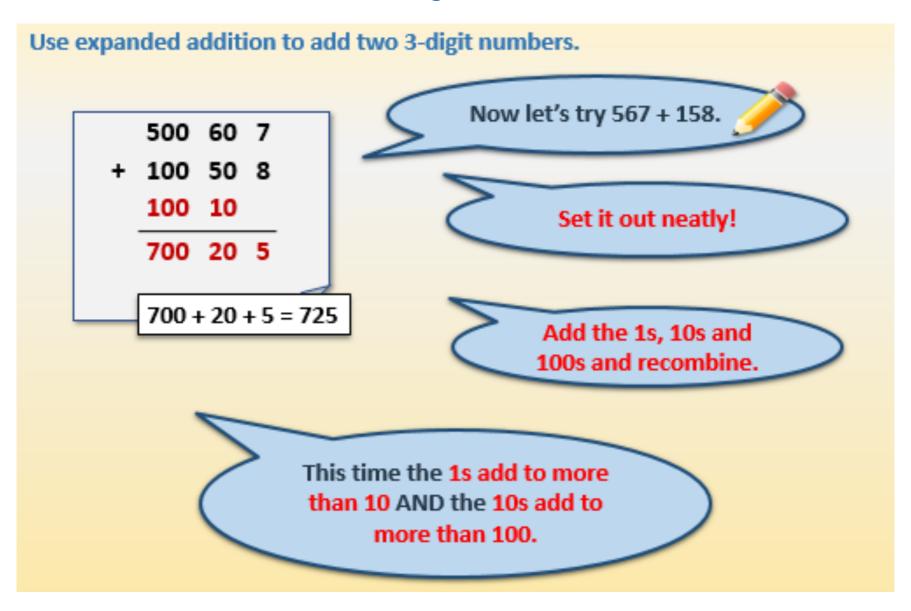


4. Have I mastered the topic? A few questions to **Check your understanding.** 

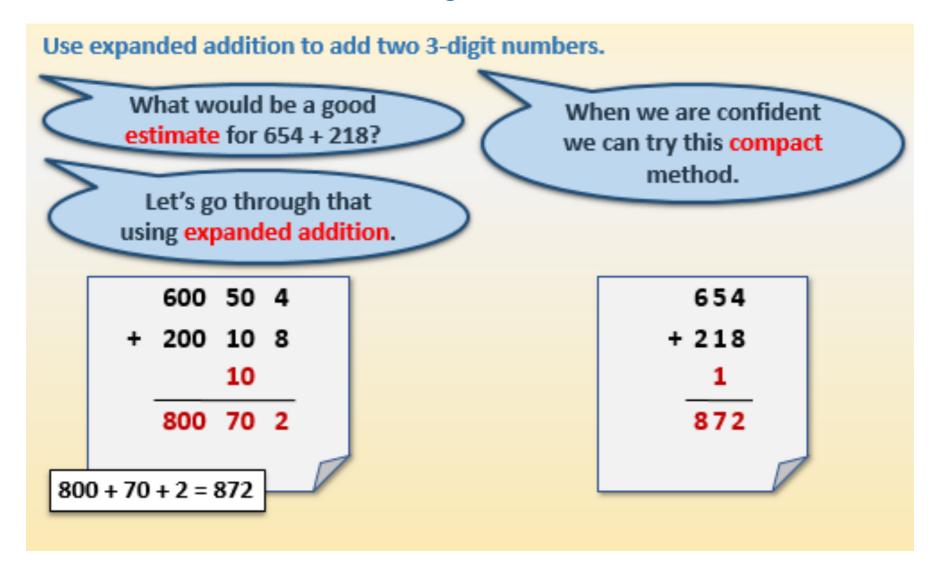
Fold the page to hide the answers!



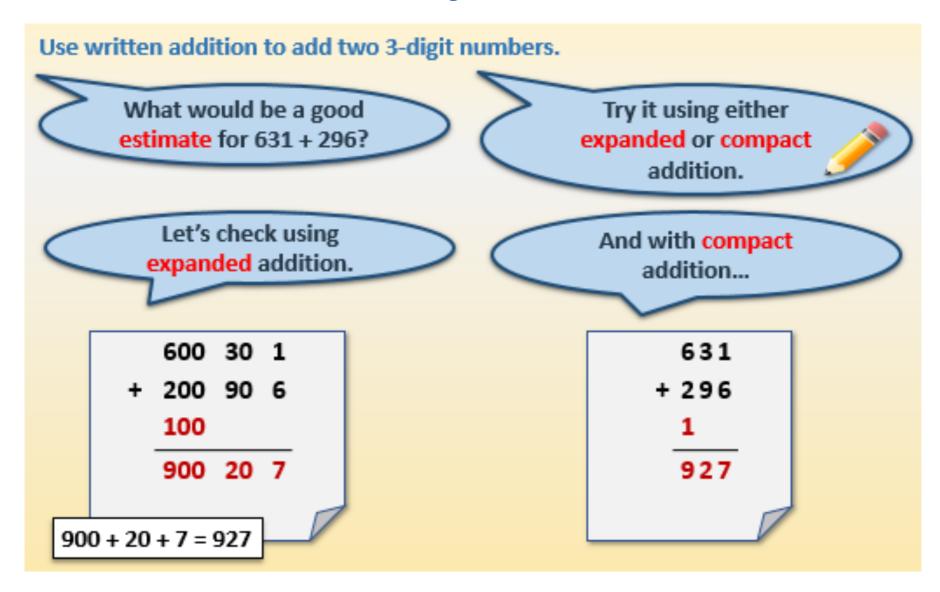
# **Learning Reminders**



# **Learning Reminders**



# **Learning Reminders**



## **Practice Sheet Mild**

## Addition and subtraction practice

Partition each number then use expanded addition to find the answer.

$$1.435 + 234$$

$$2.534 + 361$$

$$3.427 + 128$$

$$4.746 + 234$$

$$5.573 + 261$$

$$6.482 + 345$$

$$7.653 + 255$$

$$8.474 + 350$$

#### **Practice Sheet Hot**

## Addition and subtraction practice

Use expanded and compact column addition to work out the answers to the first two additions.

Did you get the same answer?

Now choose which layout you prefer to work out the answers to the other questions.

$$1.456 + 237$$

$$2.653 + 281$$

$$3. 367 + 218$$

$$4.584 + 223$$

$$5. 539 + 273$$

$$6.478 + 256$$

$$7.359 + 261$$

$$8.754 + 158$$

$$9.645 + 528$$

Challenge

Write an addition of two 3-digit numbers with a total of 1000. No zeroes allowed!

## **Practice Sheet Answers**

#### Addition and subtraction practice (Mild)

- 1. 435 + 234 = 669
- 2. 534 + 361 = 895
- 3. 427 + 128 = 555
- 4. 746 + 234 = 980
- 5. 573 + 261 = 834
- 6. 482 + 345 = 827
- 7. 653 + 255 = 908
- 8. 474 + 350 = 824

#### Addition and subtraction practice (Hot)

- 1. 456 + 237 = 693
- 2. 653 + 281 = 934
- 3. 367 + 218 = 585
- 4. 584 + 223 = 807
- 5. 448 + 265 = 713
- 5. 478 + 256 = 734
- 6. 359 + 261 = 620
- 7. 754 + 158 = 912
- 8. 645 + 528 = 1173
- 9. 539 + 273 = 812

#### Challenge

Accept sums which add to a total of 1000 and without zeros, e.g. 647 + 353, 182 + 818

# A Bit Stuck? Awesome adders

#### Work in pairs

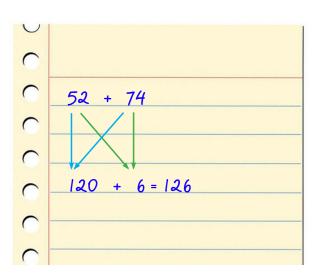
#### Things you will need:

- · A set of 10s and 1s place value cards
- · A pencil



#### What to do:

- Spread the 10 to 90 cards out face up on the table.
   Spread the 1 to 9 cards out face up on the table.
- Choose a card from each group and put them together to make a 2-digit number.
- Choose another card from each group to make another 2-digit number.
- One person collects the 10s.
   The other person collects the 1s.
   How much do you have each?
   Now add your totals.
- Record the addition.
- · Repeat at least four more times.
- You score 10 points for correct answer less than 100 and 20 points for each correct answer more than 100.

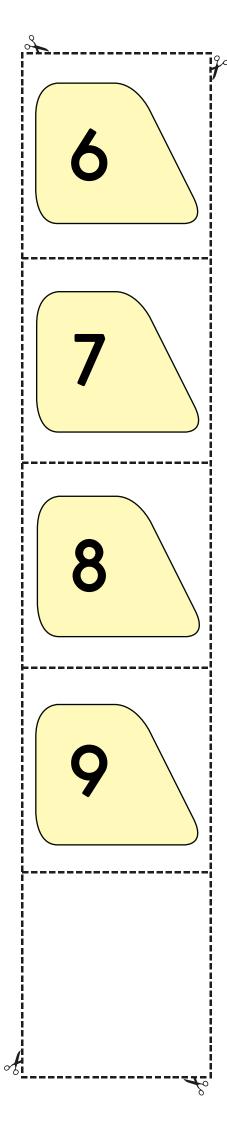


#### S-t-r-e-t-c-h:

Think of two sums with an answer of 100. Both numbers must be made using both a 10s card and 1s card.

#### Learning outcomes:

- I can add pairs of 2-digit numbers using partitioning (1s > 10 or 10s > 100).
- I am beginning to add pairs of 2-digit numbers where the 1s come to more than 10 <u>and</u> 10s come to more than 100.
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# Check your understanding: Questions

Choose two numbers from the cards below and estimate the total.

Write this.

Then calculate and compare the actual answer with your estimate.

Repeat, choosing two different numbers.

475 386

248 349

Choose to use expanded or compact addition to add 484 to 368. Explain your choice.

Add two numbers both ending in 5 to make 810. One digit must be '6'.

Fold here to hide answers

## **Check your understanding:**

#### **Answers**

Choose two numbers from the cards below and estimate the total.

Write this.

Then calculate and compare the actual answer with your estimate.

Repeat, choosing two different numbers.

The 6 possible pairs and totals are:

475 + 386 = 861

475 + 349 = 824

475 + 248 = 723

386 + 349 = 735

386 + 248 = 634

349 + 248 = 597

Children should be estimating before doing the sum. They estimate by rounding to the nearest 100 or nearest 10. So estimate the first by doing 500 + 400 = 900 (answer is 861).

Choose to use expanded or compact addition to add 484 to 368. Explain your choice.

The total is 852. If children are making errors with compact addition, then look at both methods side by side.

Add two numbers both ending in 5 to make 810.

One digit must be '6'. Many possible answers, e.g. 605 + 205. Check that the addition is correct and that a 6 is included!