Addition and Subtraction

Master The Curriculum

3

Fluency Teaching Slides

Add and subtract multiples of 100

3

Fluency Teaching Slides

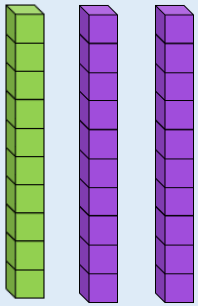
www.masterthecurriculum.co.uk

Activity 1

Add and subtract multiples of 100

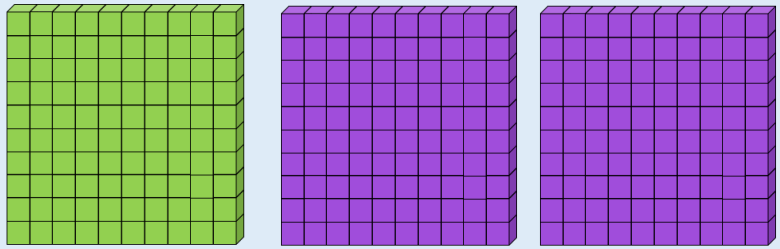
Look at the base ten below.

1 one and 2 ones is equal to 3 ones.



1 ten and 2 tens is equal to 3 tens.

So 1 hundred and 2 hundreds is equal to _____ hundreds.

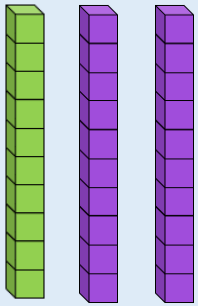


Activity 1

Add and subtract multiples of 100

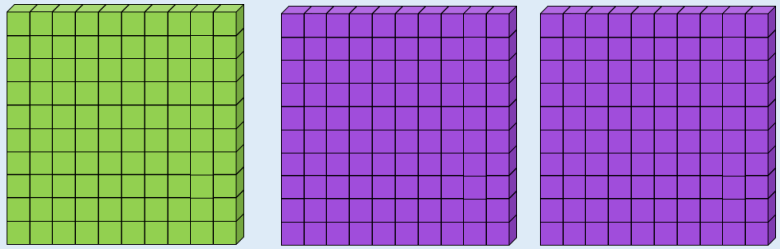
Look at the base ten below.

1 one and 2 ones is equal to 3 ones.



1 ten and 2 tens is equal to 3 tens.

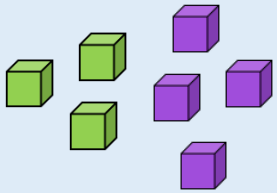
So 1 hundred and 2 hundreds is equal to ___3___ hundreds.



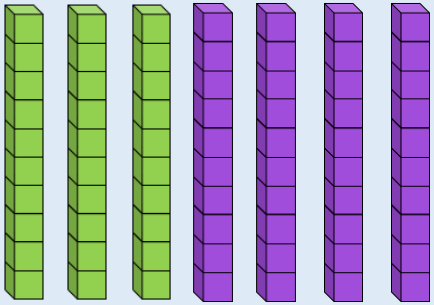
Activity 2

Add and subtract multiples of 100

Look at the base ten below.

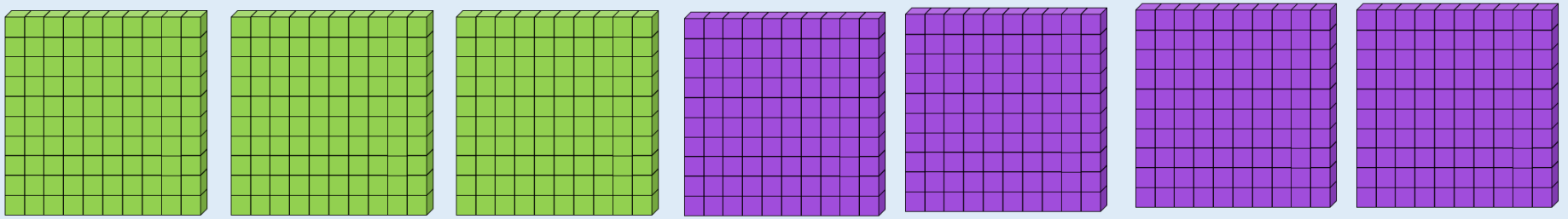


3 ones and 4 ones is equal to 7 ones.



3 tens and 4 tens is equal to 7 tens.

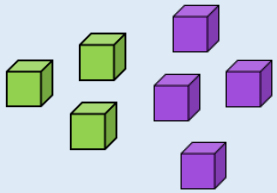
So 3 hundreds and 4 hundreds is equal to _____ hundreds.



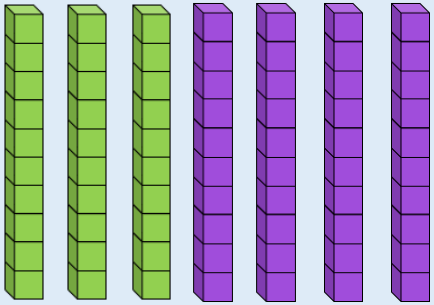
Activity 2

Add and subtract multiples of 100

Look at the base ten below.

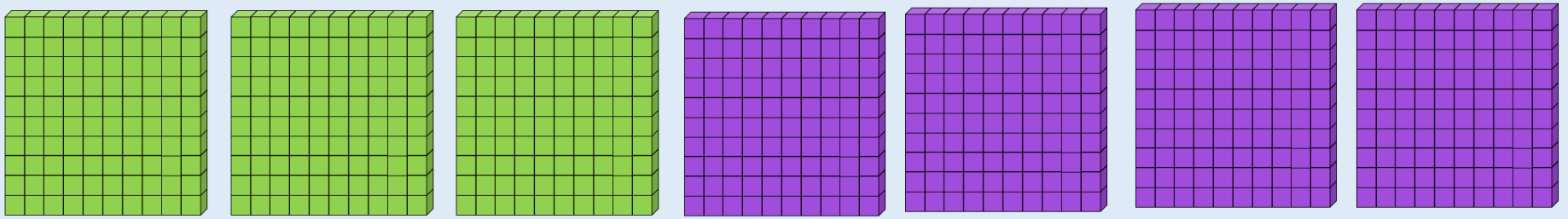


3 ones and 4 ones is equal to 7 ones.



3 tens and 4 tens is equal to 7 tens.

So 3 hundreds and 4 hundreds is equal to __7__ hundreds.



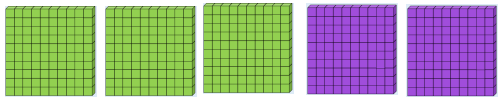
Activity 3

Add and subtract multiples of 100

Look at the boxes below - complete your own for the number sentences:

800 + 100 =	200 + 500 =	700 + 300 =
200 + 200 =	400 + 400 =	600 + 100 =

Build it and draw it

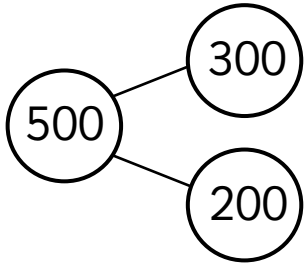


Write it in words

Three hundred add two hundred equals five hundred

300 + 200 =

Part whole model



Write two number sentences

300 + 200 = 500

500 = 300 + 200

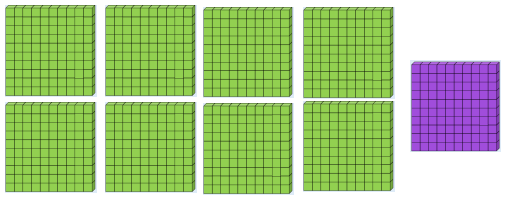
Activity 3

Add and subtract multiples of 100

Look at the boxes below - complete your own for the number sentences:

800 + 100 =	200 + 500 =	700 + 300 =
200 + 200 =	400 + 400 =	600 + 100 =

Build it and draw it

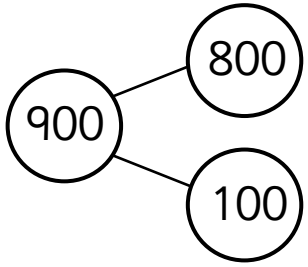


Write it in words

Eight hundred add one hundred equals nine hundred

800 + 100 =

Part whole model



Write two number sentences

800 + 100 = 900

900 = 800 + 100

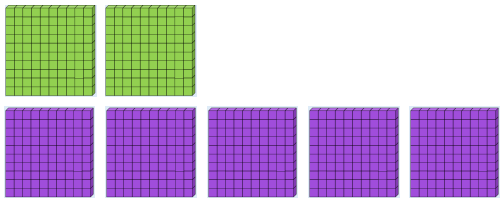
Activity 3

Add and subtract multiples of 100

Look at the boxes below - complete your own for the number sentences:

800 + 100 =	200 + 500 =	700 + 300 =
200 + 200 =	400 + 400 =	600 + 100 =

Build it and draw it

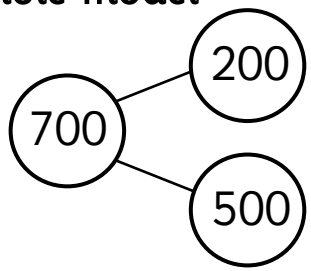


Write it in words

Two hundred add five hundred equals seven hundred

200 + 500 =

Part whole model



Write two number sentences

200 + 500 = 700

700 = 200 + 500

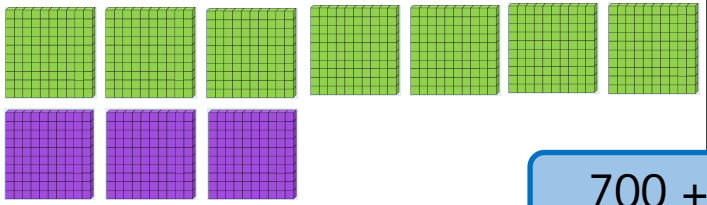
Activity 3

Add and subtract multiples of 100

Look at the boxes below - complete your own for the number sentences:

800 + 100 =	200 + 500 =	700 + 300 =
200 + 200 =	400 + 400 =	600 + 100 =

Build it and draw it

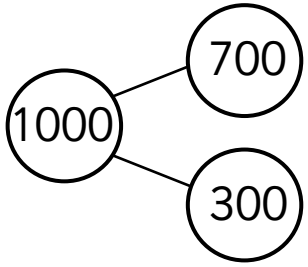


Write it in words

Seven hundred add three hundred equals one thousand

700 + 300 =

Part whole model



Write two number sentences

700 + 300 = 1000

1000 = 700 + 300

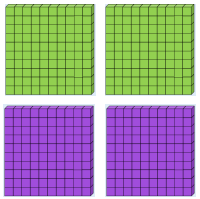
Activity 3

Add and subtract multiples of 100

Look at the boxes below - complete your own for the number sentences:

800 + 100 =	200 + 500 =	700 + 300 =
200 + 200 =	400 + 400 =	600 + 100 =

Build it and draw it

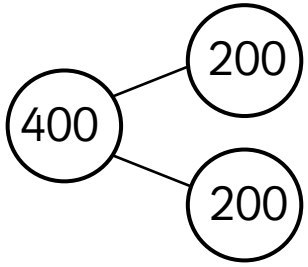


Write it in words

Two hundred add two hundred equals four hundred

200 + 200 =

Part whole model



Write two number sentences

200 + 200 = 400

400 = 200 + 200

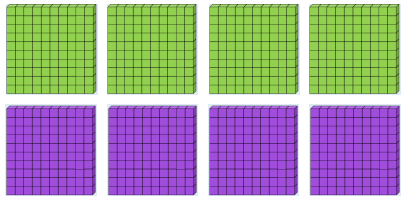
Activity 3

Add and subtract multiples of 100

Look at the boxes below - complete your own for the number sentences:

800 + 100 =	200 + 500 =	700 + 300 =
200 + 200 =	400 + 400 =	600 + 100 =

Build it and draw it

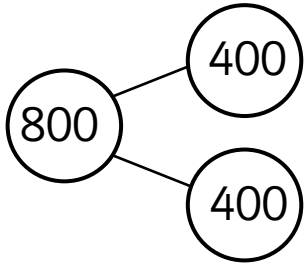


Write it in words

Four hundred add four hundred equals eight hundred

400 + 400 =

Part whole model



Write two number sentences

400 + 400 = 800

800 = 400 + 400

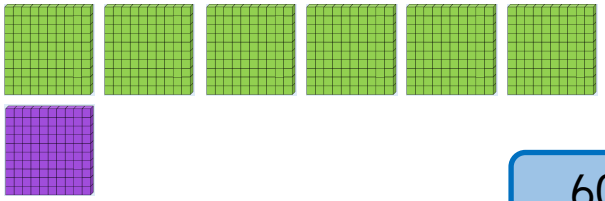
Activity 3

Add and subtract multiples of 100

Look at the boxes below - complete your own for the number sentences:

800 + 100 =	200 + 500 =	700 + 300 =
200 + 200 =	400 + 400 =	600 + 100 =

Build it and draw it

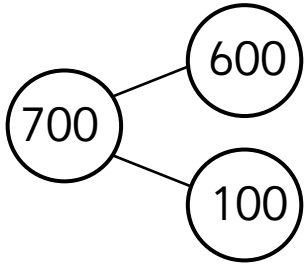


Write it in words

Six hundred add one hundred equals seven hundred

600 + 100 =

Part whole model



Write two number sentences

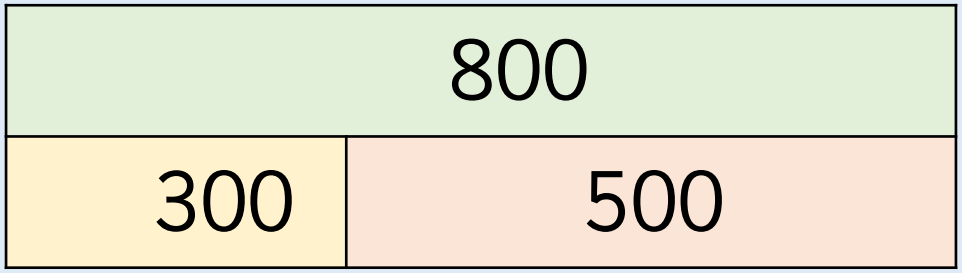
600 + 100 = 700

700 = 600 + 100

Activity 4

Add and subtract multiples of 100

Use the bar model to complete the number sentences.



_____ + _____ = 800

800 = _____ + _____

_____ + _____ = 800

800 = _____ + _____

_____ – _____ = 500

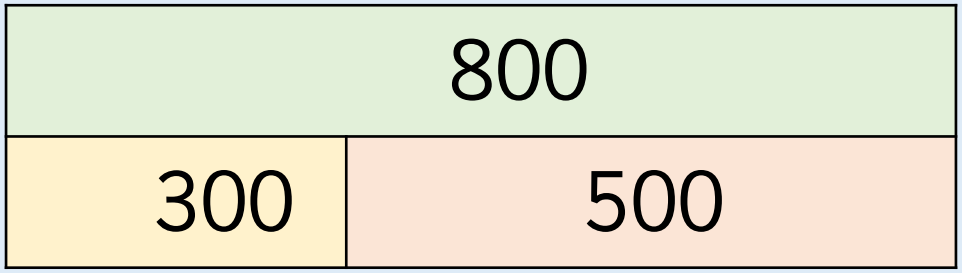
500 = _____ – _____

_____ – _____ = 300

300 = _____ – _____

Activity 4 Add and subtract multiples of 100

Use the bar model to complete the number sentences.



300 + 500 = 800 800 = 300 + 500

500 + 300 = 800 800 = 500 + 300

800 – 300 = 500 500 = 800 – 300

800 – 500 = 300 300 = 800 – 500

Activity 4 Add and subtract multiples of 100

Use the bar model to complete the number sentences.

_____ + _____ = 700 700 = _____ + _____

_____ + _____ = 700 700 = _____ + _____

_____ – _____ = 600 600 = _____ – _____

_____ – _____ = 100 100 = _____ – _____

Activity 4 Add and subtract multiples of 100

Use the bar model to complete the number sentences.

100 + 600 = 700 700 = 100 + 600

600 + 100 = 700 700 = 600 + 100

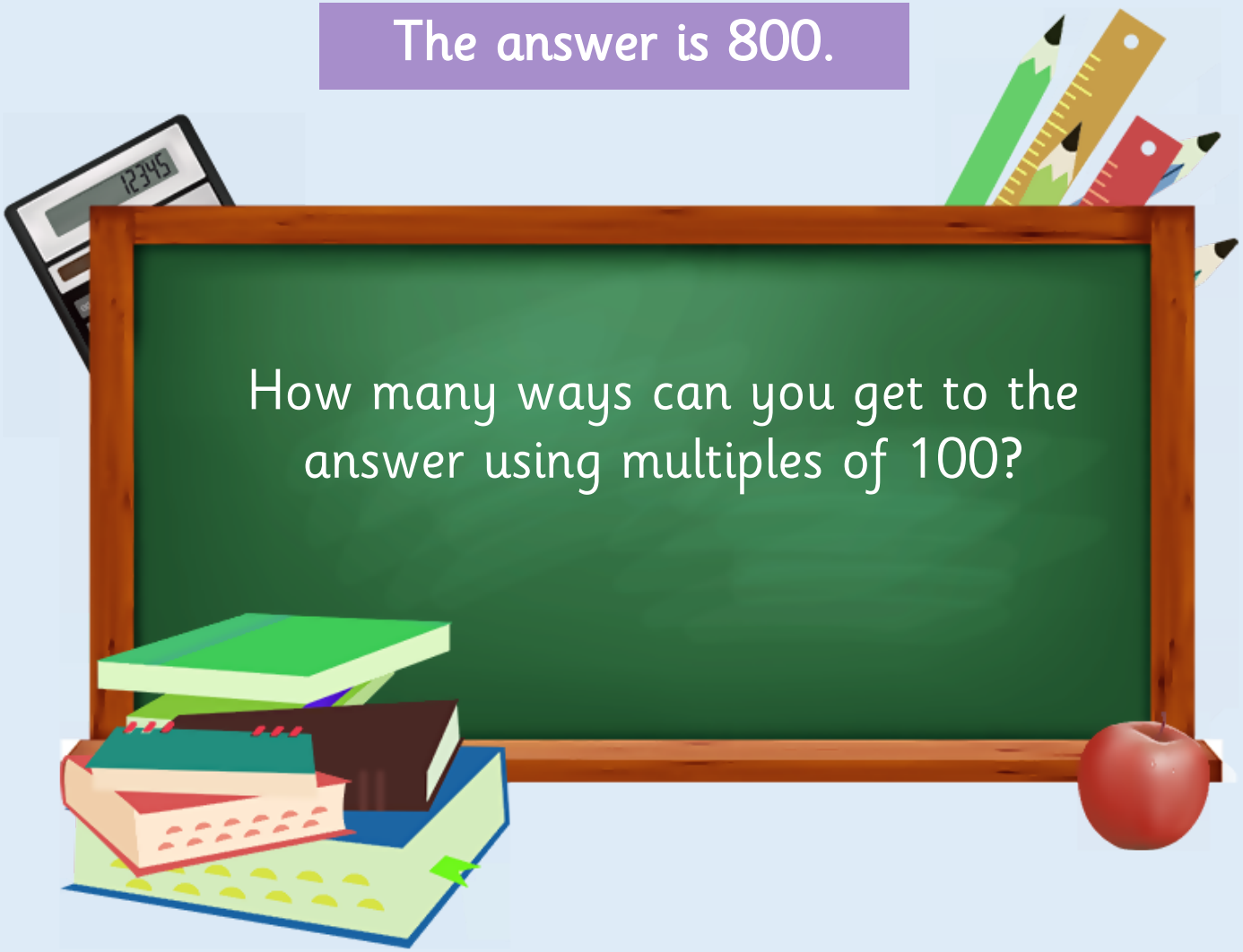
700 – 100 = 600 600 = 700 – 100

700 – 600 = 100 100 = 700 – 600

Reasoning 1

Add and subtract multiples of 100

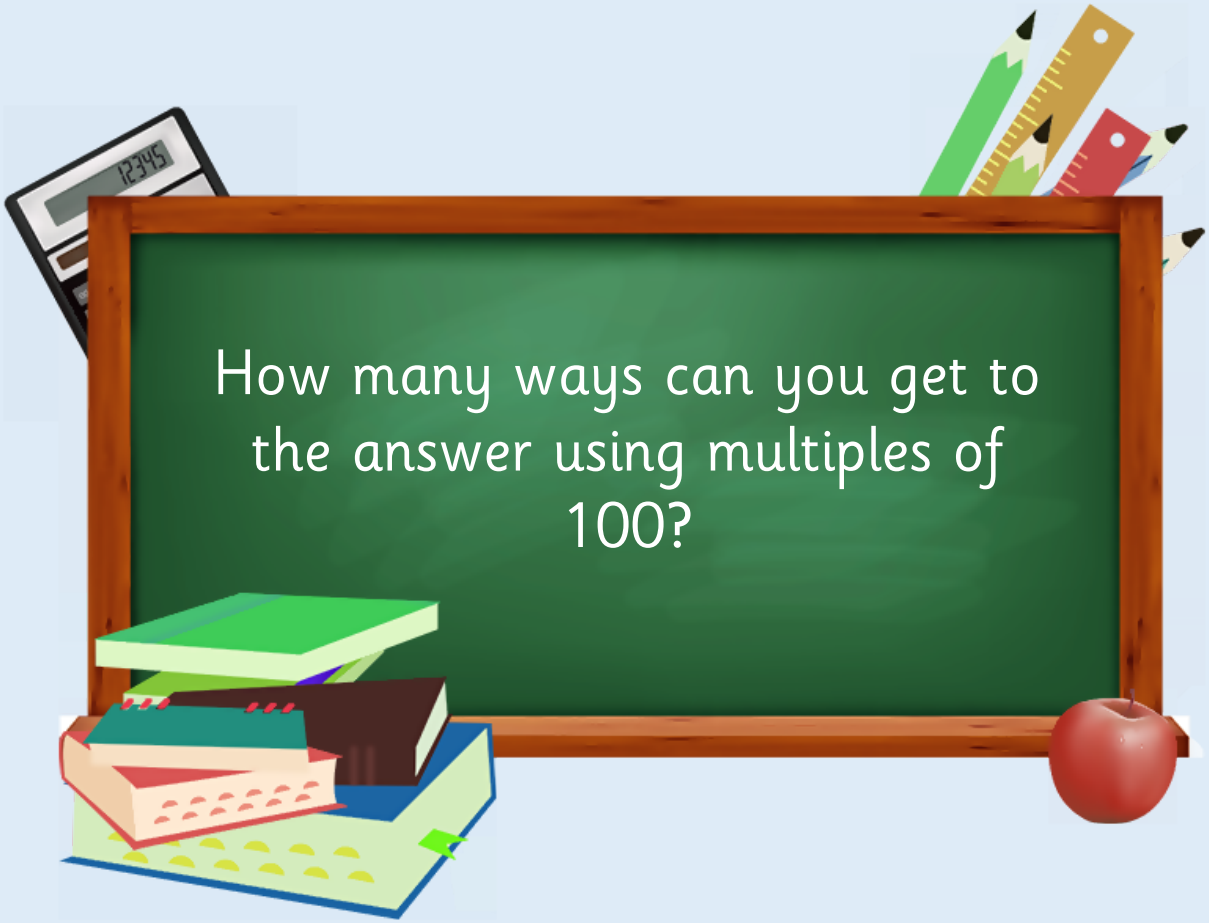
The answer is 800.



Reasoning 1

Add and subtract multiples of 100

The answer is 800.



Possible Answers:
1,000 – 200
900 – 100
800 + 0
Etc.

Reasoning 2

Add and subtract multiples of 100

Write a sensible story for the calculation.

300 + 500

Reasoning 2

Add and subtract multiples of 100

Write a sensible story for the calculation.

300 + 500

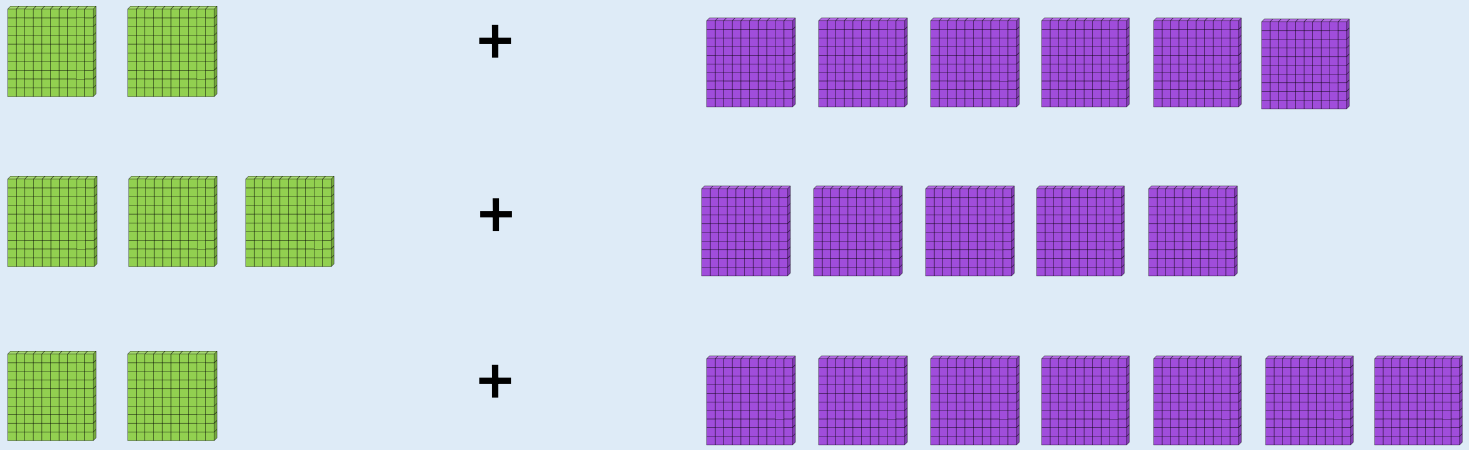
In school, there are 300 boys and 500 girls.
How many children are there altogether?

Reasoning 3

Add and subtract multiples of 100

Odd One Out

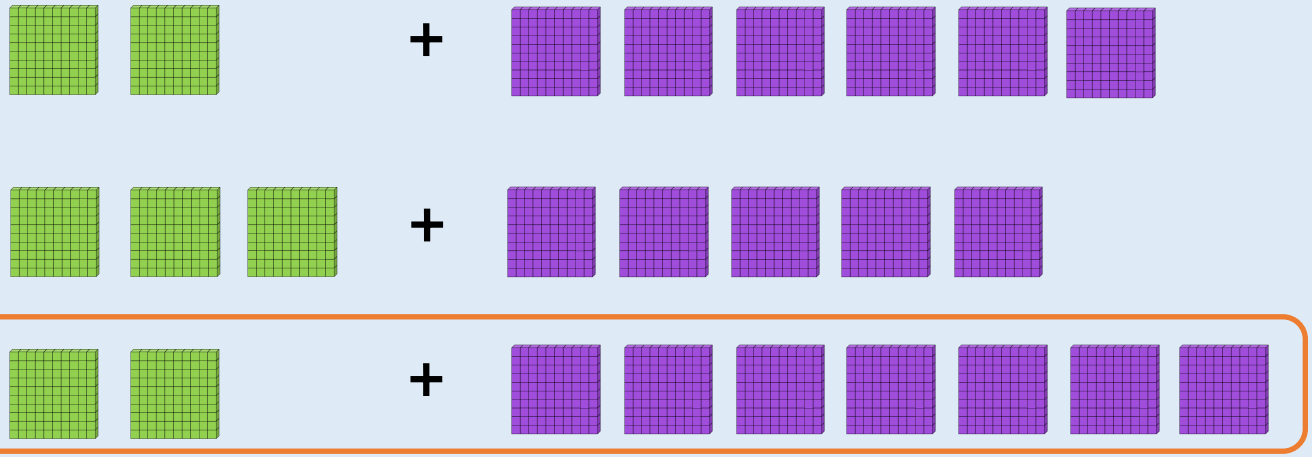
Which is the odd one out? Explain why.



Add and subtract multiples of 100

Odd One Out

Which is the odd one out? Explain why.



The odd one out is 200 + 700 because the answer is not 800.

Discuss

Add and subtract multiples of 100

What is the same and what is different about 2 ones and 3 ones, 2 tens and 3 tens and 2 hundreds and 3 hundreds?

What is ___ hundreds and ____ hundreds equal to?

How many different ways can you represent 200 + 300?

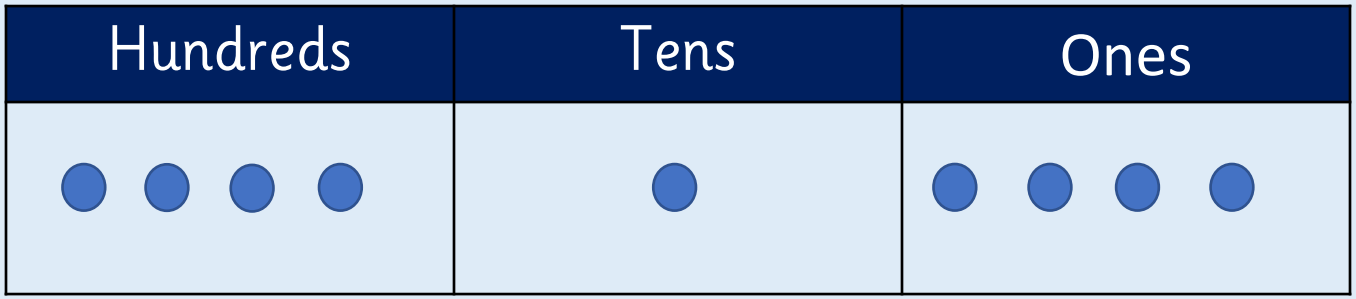
3-digit and 1-digit Numbers

3

Fluency Teaching Slides

Activity 1 — 3-digit and 1-digit Numbers

Use place value counters to complete the number sentences.



414 – 3 = ☐

414 + 3 = ☐

?

Which column do I need to focus on?

Activity 1 — 3-digit and 1-digit Numbers

Use place value counters to complete the number sentences.

Hundreds	Tens	Ones
● ● ● ●	●	● ● ● ●

414 – 3 = 411

Hundreds	Tens	Ones
● ● ● ●	●	●

?

Which column do I need to focus on?

Activity 1 — 3-digit and 1-digit Numbers

Use place value counters to complete the number sentences.

Hundreds	Tens	Ones
● ● ● ●	●	● ● ● ●

414 + 3 = 417

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

?

Which column do I need to focus on?

Activity 2 — 3-digit and 1-digit Numbers

Use place value counters to complete the number sentences.

Hundreds	Tens	Ones
● ●	● ●	● ● ● ● ●

225 – 2 = ☐

225 + 2 = ☐

Activity 2 — 3-digit and 1-digit Numbers

Use place value counters to complete the number sentences.

Hundreds	Tens	Ones
● ●	● ●	● ● ● ● ●

225 – 2 = 223

Hundreds	Tens	Ones
● ●	● ●	● ● ● ~~●~~ ~~●~~

Activity 2 — 3-digit and 1-digit Numbers

Use place value counters to complete the number sentences.

Hundreds	Tens	Ones
● ●	● ●	● ● ● ● ●

225 + 2 = 227

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

Activity 3 — 3-digit and 1-digit Numbers

Complete the boxes.

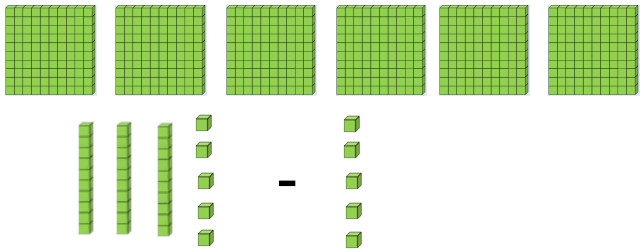
Calculate it. Six hundred and thirty- five subtract five	**Build it and draw it.**
Write it as a calculation.	**Explain it.**

?

How can you explain your method?
Is there another way of checking?

Activity 3 — 3-digit and 1-digit Numbers

Complete the boxes.

Calculate it.	Build it and draw it.
Six hundred and thirty- five subtract five	
Write it as a calculation.	**Explain it.**
635 - 5 = 630	Six hundred thirty-five subtract five equals 630

Activity 4 3-digit and 1-digit Numbers

Apple table has 367 table points and gets 3 more.

Peach table has 367 table points and loses 3 more.

How many points does each table have?

What table has the most?

Use comparison symbols > = < to compare the table points.

Activity 4 — 3-digit and 1-digit Numbers

Apple table has 367 table points and gets 3 more.

367 + 3 = 370

Peach table has 367 table points and loses 3 more.

367 - 3 = 364

How many points does each table have?

Apple table has 370 points

Peach table has 364 points

What table has the most?

Apple table has the most number of points.

Use comparison symbols > = < to compare the table points.

Apple table points > Peach table points

Reasoning 1

3-digit and 1-digit Numbers

Esin has added or subtracted ones to get this answer.

Esin

Hundreds	Tens	Ones
● ●	● ● ● ●	● ●

What could her calculations have been?

Her starting numbers are between and include 240 and 250.

Did you use a strategy?

Do you see a pattern?

Reasoning 1 — 3-digit and 1-digit Numbers

Esin has added or subtracted ones to get this answer.

Esin

Hundreds	Tens	Ones
● ●	● ● ● ●	● ●

What could her calculations have been?

Her starting numbers are between and include 240 and 250.

Did you use a strategy?

Do you see a pattern?

Possible answers:

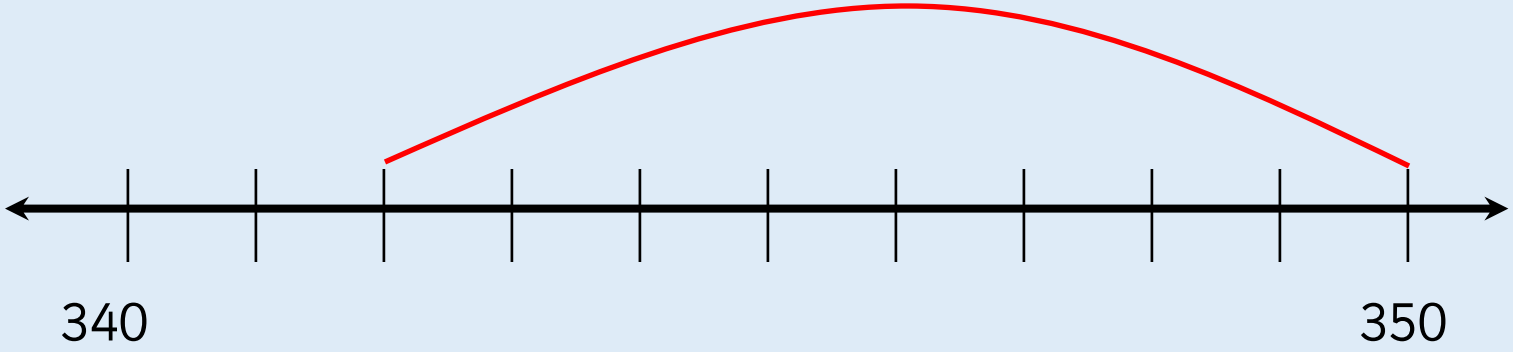
240 + 2
241 + 1
242 + 0
243 – 1
244 – 2
245 – 3
246 – 4
247 – 5
248 – 6
249 – 7
250 – 8

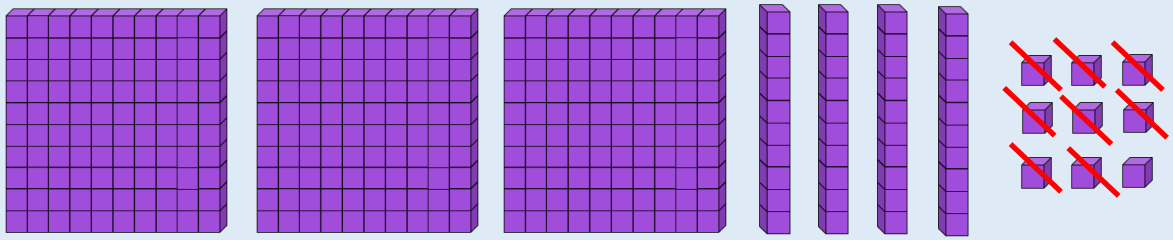
When the ones digit in the 3-digit number increases, the ones we subtract decreases.

Reasoning 2

3-digit and 1-digit Numbers

Which image does not represent 349 - 8?

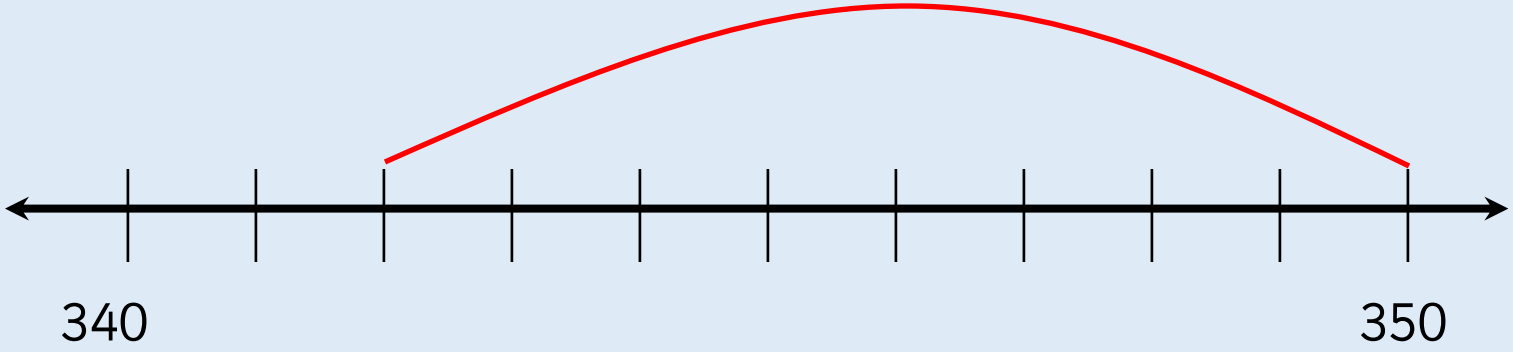


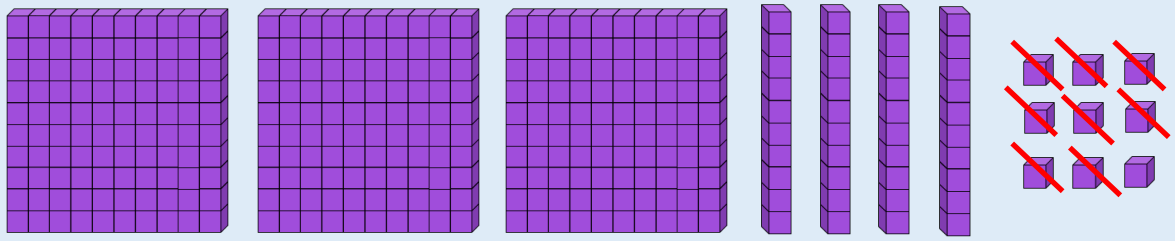


Reasoning 2

3-digit and 1-digit Numbers

Which image does not represent 349 - 8?





The number lines does not because it starts at 350 and not 349.

Reasoning 3

3-digit and 1-digit Numbers

Rosie thinks the chart shows 565 – 5. Do you agree?

Rosie

Hundreds	Tens	Ones
● ● ● ● ●	~~● ● ●~~ ~~● ● ●~~	● ● ● ● ●

Explain why.

Reasoning 3

3-digit and 1-digit Numbers

Rosie thinks the chart shows 565 – 5. Do you agree?

Rosie

Hundreds	Tens	Ones
● ● ● ● ●	~~● ● ●~~ ~~● ● ●~~	● ● ● ● ●

Explain why.

No, I disagree.
Rosie has subtracted 5 tens not 5 ones.

Discuss

3-digit and 1-digit Numbers

Which column do I need to focus on?

Do we need to make and use the whole number? Why?

How can you explain your method?

Is there another way of checking?

What do we do when there are no ones left?

Can you use < and > to compare Sam and Tim's team points?

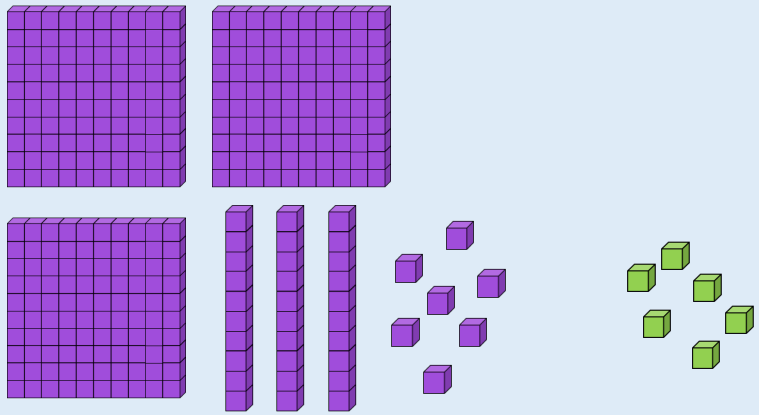
Add 3-digit and 1-digit Numbers

3

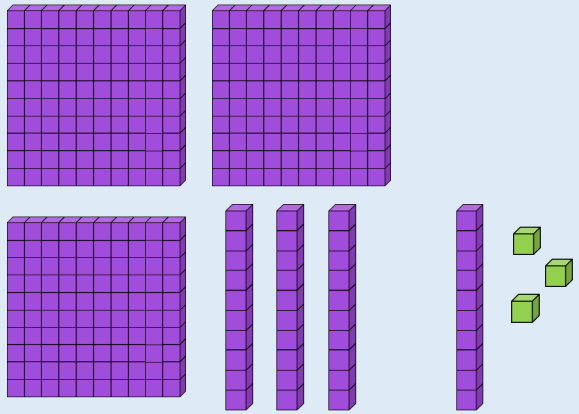
Fluency Teaching Slides

Solve the calculation.

337 + 6 =



You can exchange 10 ones for 1 ten.



$$\begin{array}{r} 337 \\ +\quad 6 \\ \hline 343 \\ \hline 1 \end{array}$$

One ten-
this then is added to
your tens column.

Activity 1 — Add 3-digit and 1-digit Numbers

Solve the calculations by exchanging your ones for tens using equipment.

248 + 8 =

524 + 7 =

189 + 3 =

355 + 6 =

303 + 9 =

2 + 559 =

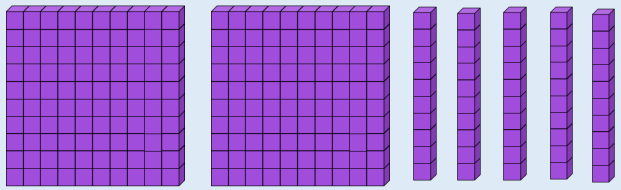
?

When you add ones to a number does it always, sometimes or never affect the tens columns?

Activity 1 — Add 3-digit and 1-digit Numbers

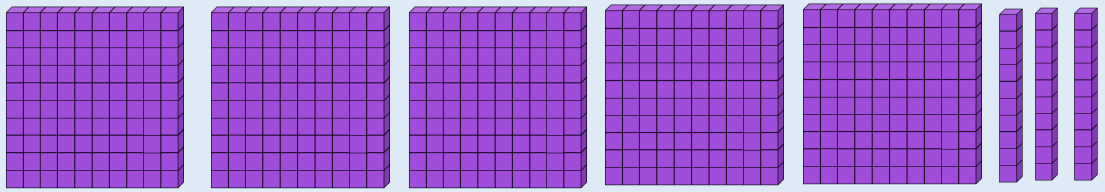
Solve the calculations by exchanging your ones for tens using equipment.

248 + 8 =



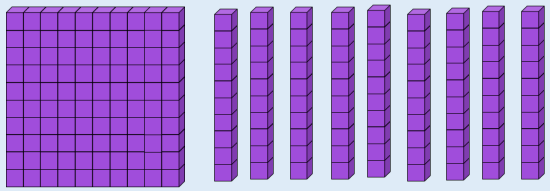
$$\begin{array}{r} 248 \\ +\ \ 8 \\ \hline 256 \\ \ \ 1 \end{array}$$

524 + 7 =



$$\begin{array}{r} 524 \\ +\ \ 7 \\ \hline 531 \\ \ \ 1 \end{array}$$

189 + 3 =

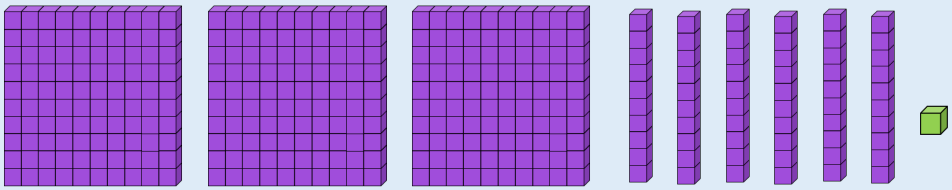


$$\begin{array}{r} 189 \\ +\ \ 3 \\ \hline 192 \\ \ \ 1 \end{array}$$

Activity 1 — Add 3-digit and 1-digit Numbers

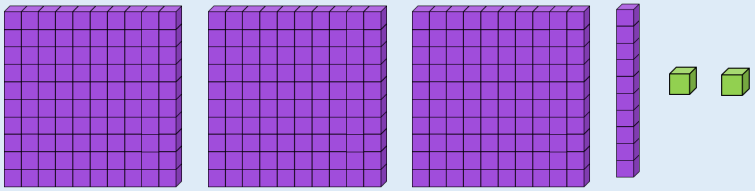
Solve the calculations by exchanging your ones for tens using equipment.

355 + 6 =



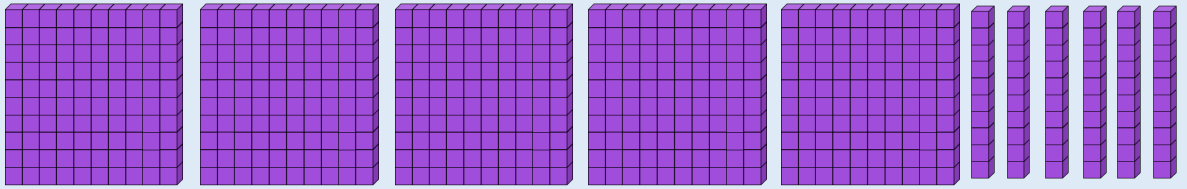
$$\begin{array}{r} 355 \\ +\ \ 6 \\ \hline 361 \\ \ \ 1 \end{array}$$

303 + 9 =



$$\begin{array}{r} 303 \\ +\ \ 9 \\ \hline 312 \\ \ \ 1 \end{array}$$

2 + 559 =

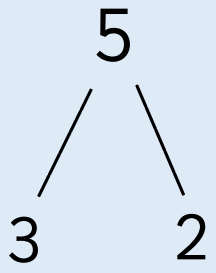


$$\begin{array}{r} 559 \\ +\ \ 2 \\ \hline 561 \\ \ \ 1 \end{array}$$

Activity 2 Add 3-digit and 1-digit Numbers

Look at this method for calculating.

Two hundred and seventy-seven add five.



277 + 3 = 280

280 + 2 = 282

Use this method to calculate the following:

six hundred and nine add three

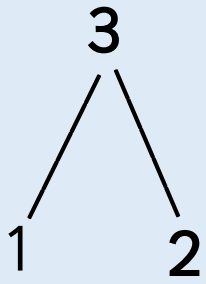
6 + 784

seven add two hundred and fifty- two

Activity 2 Add 3-digit and 1-digit Numbers

Six hundred and nine add three

Six hundred and nine add three



609 + 1 = 610

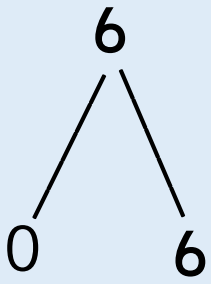
610 + 2 = 612

Activity 2

Add 3-digit and 1-digit Numbers

6 + 784

Seven hundred eighty-four add six



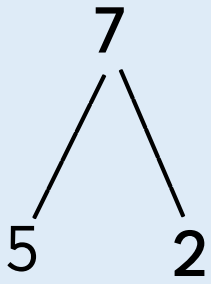
784 + 0 = 784

784 + 6 = 790

Activity 2 Add 3-digit and 1-digit Numbers

Seven add two hundred and fifty- two

Seven add two hundred and fifty-two



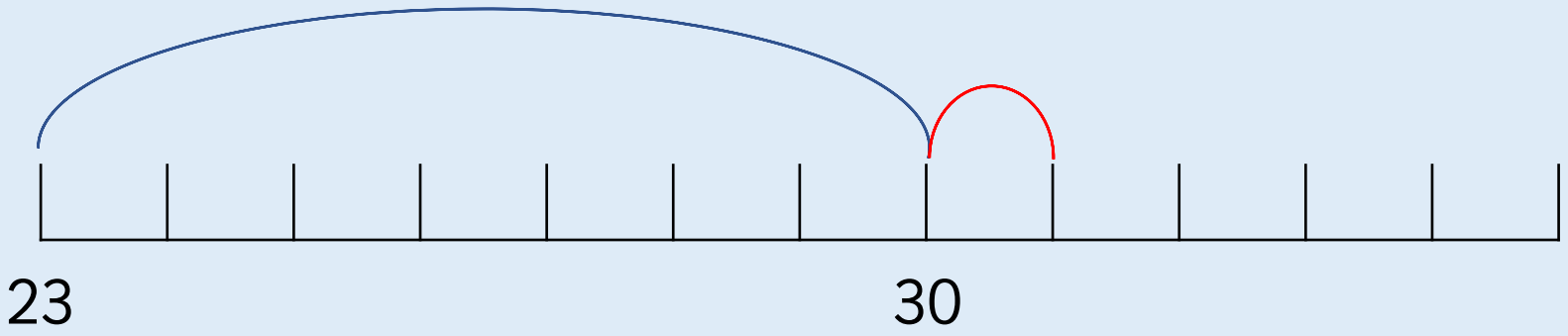
252 + 5 = 257

257 + 2 = 259

Activity 3

Add 3-digit and 1-digit Numbers

523 + 8 =



23 + 8 = 31

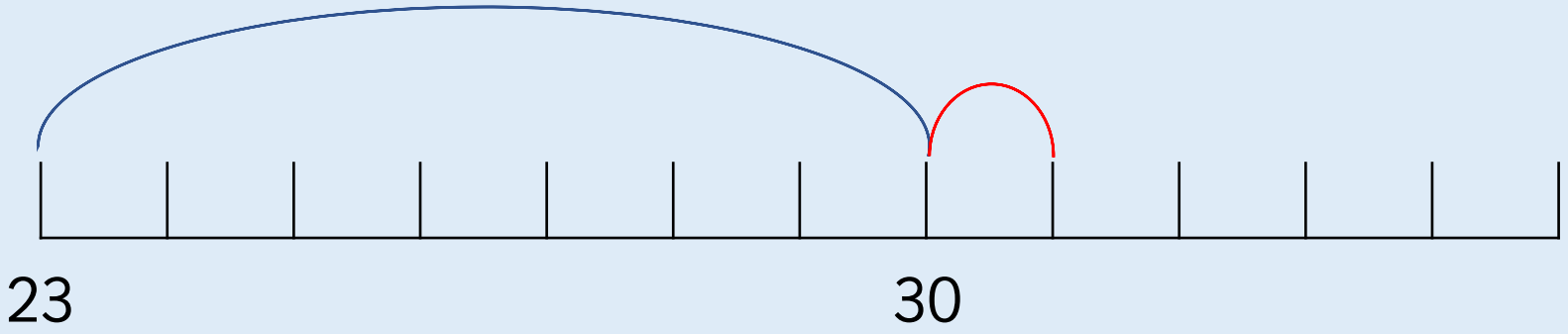
500 + 31 = 531

Can you explain this method?

Activity 3

Add 3-digit and 1-digit Numbers

523 + 8 =



23 + 8 = 31

500 + 31 = 531

Can you explain this method?

The number was partitioned into hundreds and tens and ones,
The tens and ones were added to the number 8.
Then we added the hundreds to the result we got earlier.

Reasoning 1

Add 3-digit and 1-digit Numbers

Always, Sometimes, Never

When numbers 7 and 6 are added together in the ones column, the digit in ones column of the answer will always be 3.

What other digits would always give a 3 in the ones column? Prove it.

Reasoning 1 Add 3-digit and 1-digit Numbers

Always, Sometimes, Never

When numbers 7 and 6 are added together in the ones column, the digit in ones column of the answer will always be 3.

What other digits would always give a 3 in the ones column? Prove it.

Always

1 + 2
3 + 0
9 + 4
8 + 5

Will also always give a 3 in the ones column

Reasoning 2

Add 3-digit and 1-digit Numbers

Which questions are harder to calculate?
Explain your answer.

123 + 3

406 + 9

789 + 8

432 + 4

Reasoning 2 Add 3-digit and 1-digit Numbers

Which questions are harder to calculate? Explain your answer.

123 + 3

406 + 9

789 + 8

432 + 4

The second and third are harder as an exchange needs to be made.

Discuss

Add 3-digit and 1-digit Numbers

When you add ones to a number does it always, sometimes or never affect the tens column?

What is the largest number you can have in each column? Why?

Subtract 1-digit from 3-digits

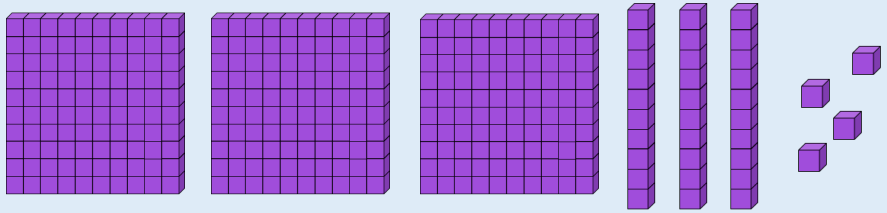
3

Fluency Teaching Slides

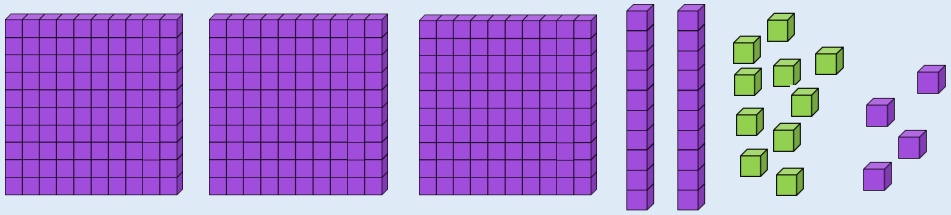
www.masterthecurriculum.co.uk

Solve the calculation using equipment.

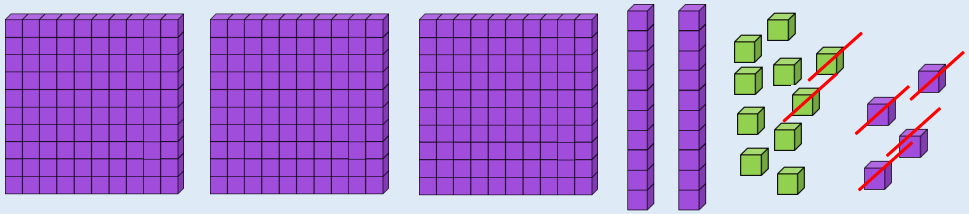
334 - 6 =



Did you exchange a 10 for ten 1s?



Now you're able to subtract 6 ones.



Activity 1 Subtract 1-digit from 3-digits

Solve these calculations using equipment.

294 – 5 =

783 – 6 =

472 – 9 =

300 – 7 =

960 - 1

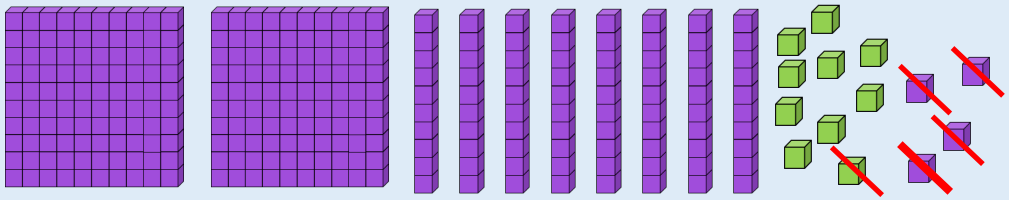
557 – 8 =

Activity 1

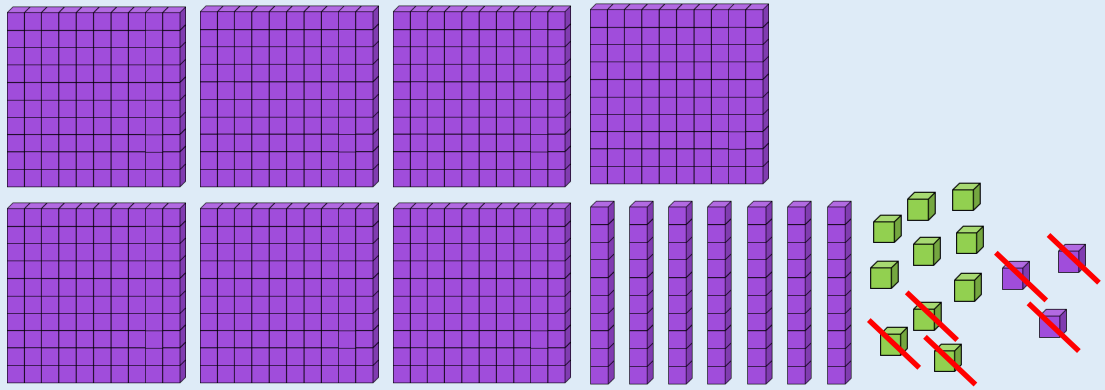
Subtract 1-digit from 3-digits

Solve these calculations using equipment.

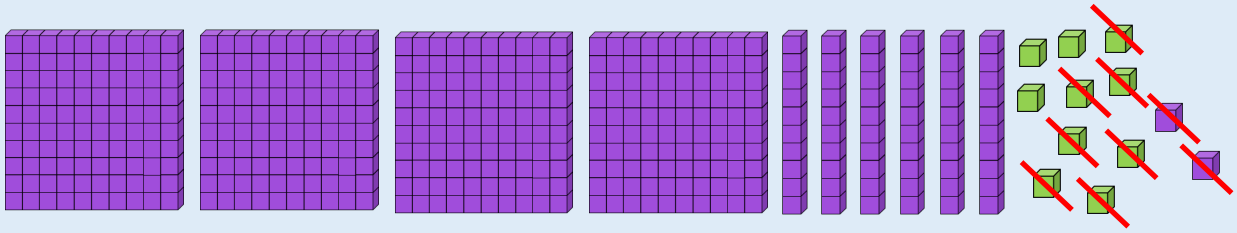
294 – 5 = 289



783 – 6 = 777



472 – 9 = 463

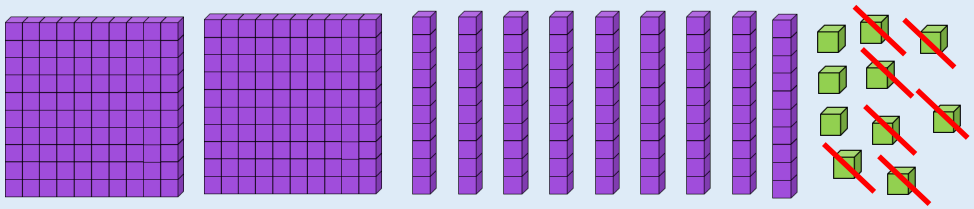


Activity 1

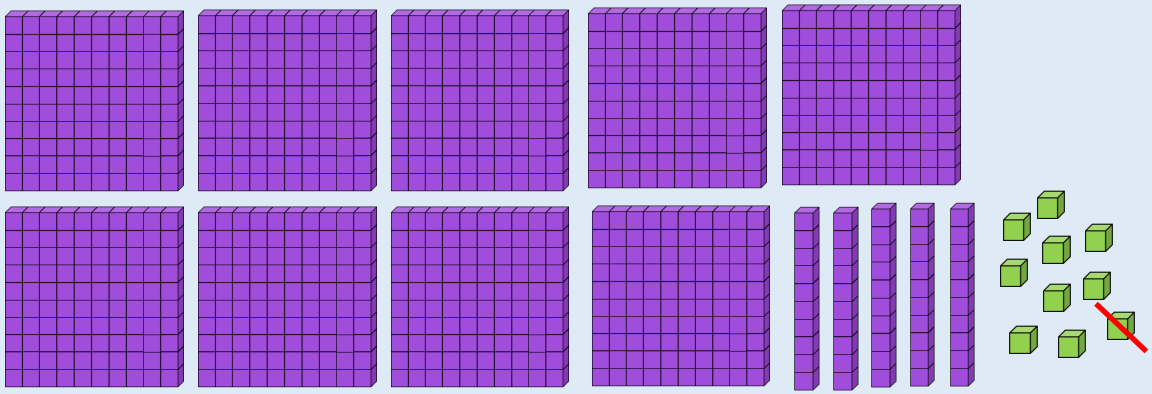
Subtract 1-digit from 3-digits

Solve these calculations using equipment.

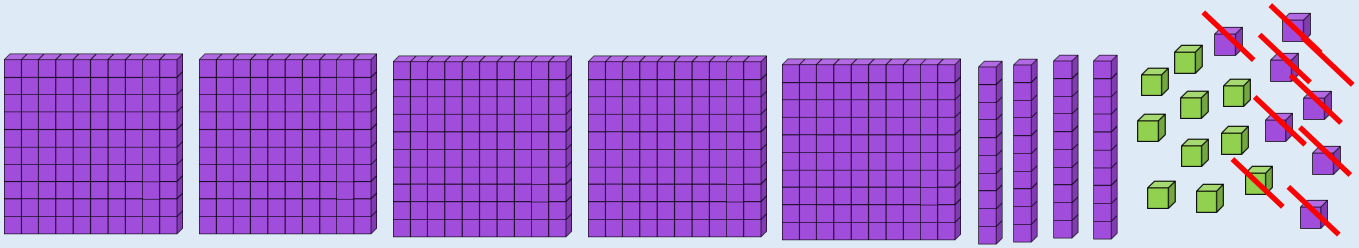
300 – 7 =
293



960 - 1
959

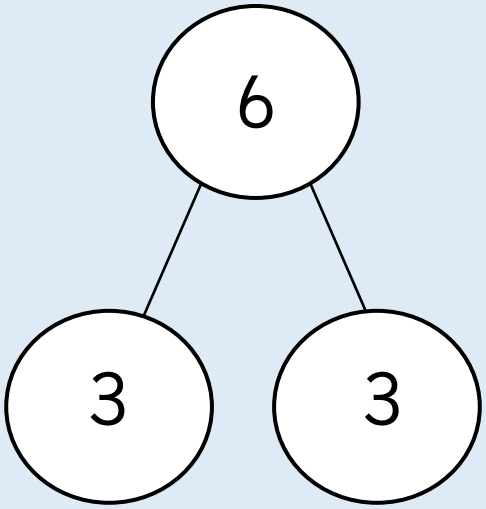


557 – 8 =
549



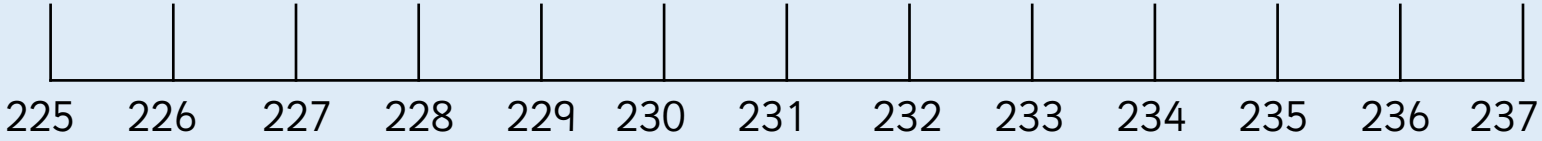
Activity 2 Subtract 1-digit from 3-digits

How can the part whole model help solve the calculation:



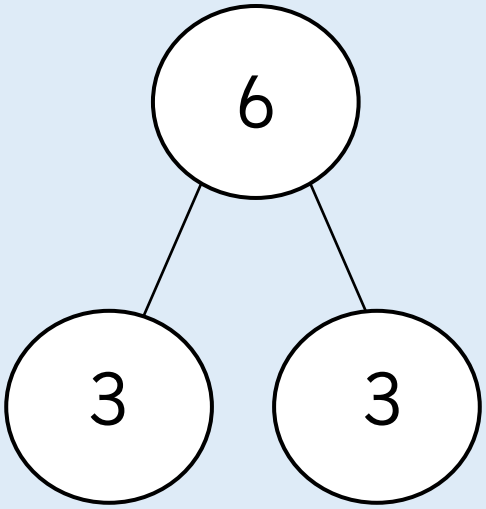
232 – 6 =

How can you use the number line to show this?



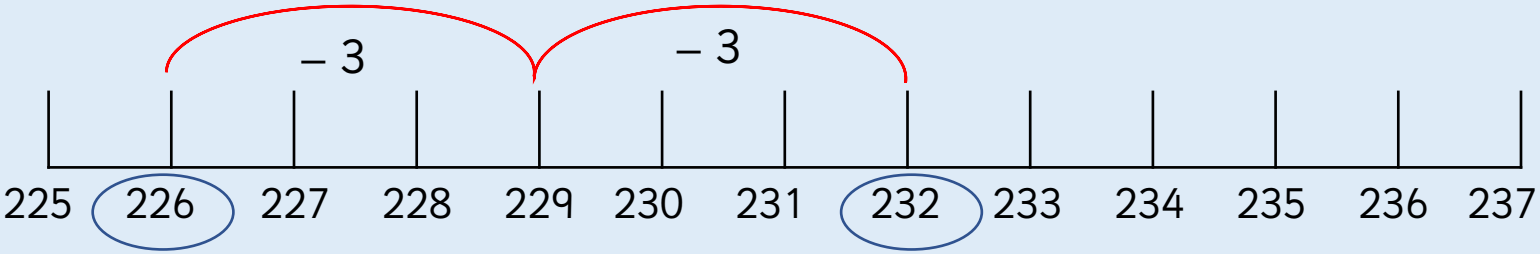
Activity 2 Subtract 1-digit from 3-digits

How can the part whole model help solve the calculation:



232 – 6 =
226

How can you use the number line to show this?



Activity 3 Subtract 1-digit from 3-digits

Oak class earned 827 table points for the year and won a trip to the park.

Hazel class was second with 9 points less than oak class.

How many points did Hazel class finish on?

What does each number represent in the word problem?

Activity 3 Subtract 1-digit from 3-digits

Oak class earned 827 table points for the year and won a trip to the park.

Hazel class was second with 9 points less than oak class.

How many points did Hazel class finish on?

827 points – 9 points = 818 points

Activity 4 Subtract 1-digit from 3-digits

Questions to discuss and think about.

Look at the below calculation.

Why is this method not the most efficient?

$$\begin{array}{r} 431 \\ -\quad 5 \\ \hline \\ \hline \end{array} \quad \rightarrow \quad \begin{array}{r} 4\cancel{3}^{2}\,{}^{1}1 \\ -\quad 5 \\ \hline 426 \\ \hline \end{array}$$

31 – 5 = 26... so 431 – 5 = 426

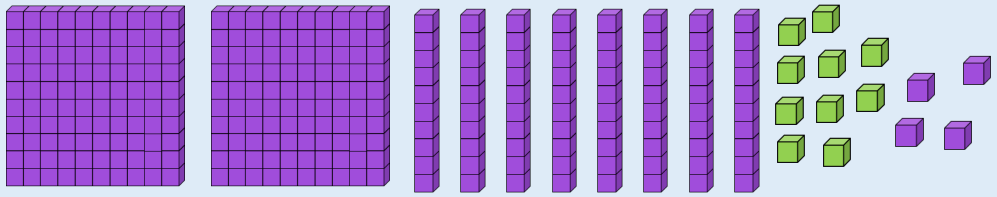
Reasoning 1 Subtract 1-digit from 3-digits

Malachi and Esin use Base 10 to solve 294 - 7

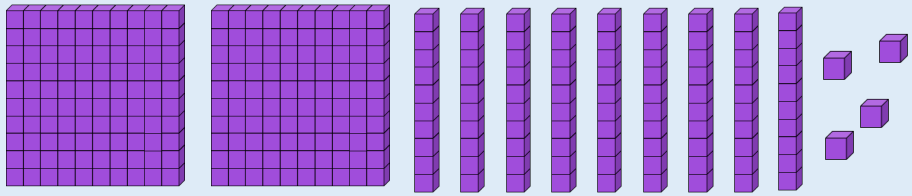
Malachi

Esin

Malachi's method:



Esin's method:



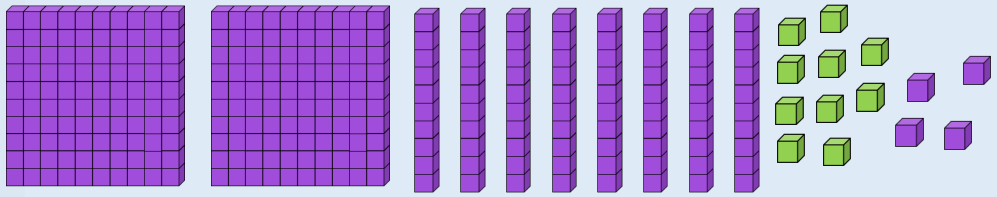
Explain which diagram you would use and why to solve the calculation.

Reasoning 1 Subtract 1-digit from 3-digits

Malachi and Esin use Base 10 to solve 294 - 7

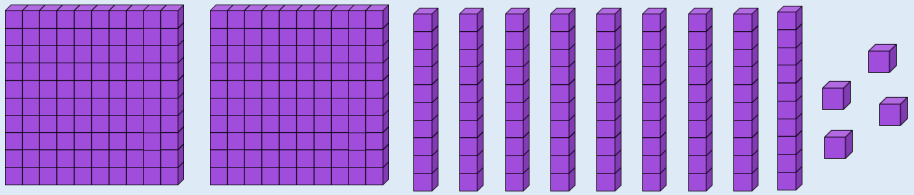
Malachi

Malachi's method:



Esin

Esin's method:



Explain which diagram you would use and why to solve the calculation.

Both methods can get the answer of 287 but I would choose Malachi's because he has already exchanged one of his tens for ten ones.

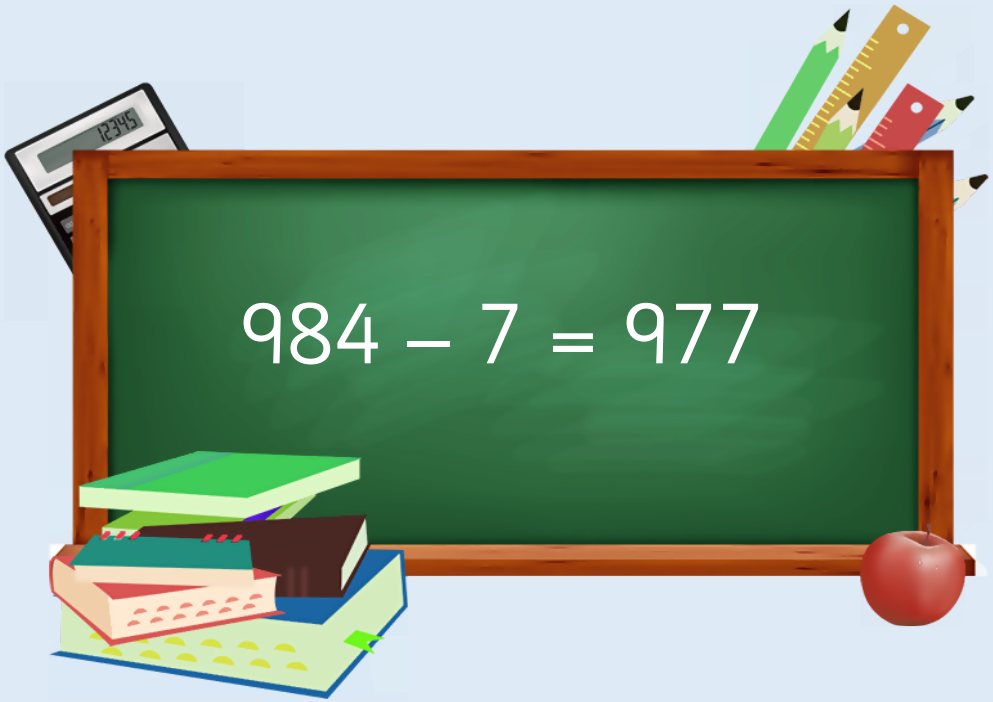
Reasoning 2

Subtract 1-digit from 3-digits

Write a sensible story for the calculation

Reasoning 2 Subtract 1-digit from 3-digits

Write a sensible story for the calculation:



Open ended.
Example answer: 984 people attended the party.
7 people leave the party early. How many people are left?

Reasoning 3

Subtract 1-digit from 3-digits

Explain how you would solve these calculations:

624 - _____ = 618

_____ - 9 = 712

412 = 420 - _____

Reasoning 3

Subtract 1-digit from 3-digits

Explain how you would solve these calculations:

624 - 6 = 618

For 624 - ? = 632, I would count from 18 to 24.

721 - 9 = 712

For ? – 9 = 712, I would add 9 to 712.

412 = 420 - 8

For 412 = 420 - ?, I would count from 412 to 420.

Discuss

Subtract 1-digit from 3-digits

How can we partition the number 572?

How else could we partition it to make it easier to subtract 4?

What calculation is the word problem representing?

What does each number represent in the word problem?

3-digit and 2-digit Numbers

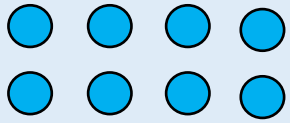
3

Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 — 3-digit and 2-digit Numbers

Use the place value counters to complete the number sentences.

Hundreds	Tens	Ones
		

328 + 5 tens = _____

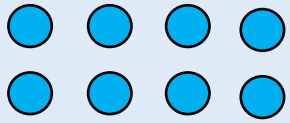
328 – 2 tens = _____

?

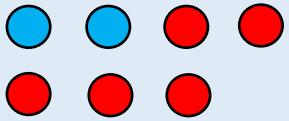
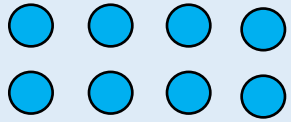
How is it similar to adding and subtracting ones?
Which column changes?

Activity 1 — 3-digit and 2-digit Numbers

Use the place value counters to complete the number sentences.

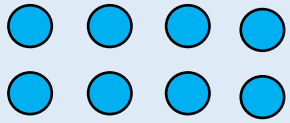
Hundreds	Tens	Ones
		

328 + 5 tens = 378

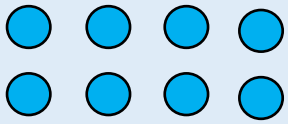
Hundreds	Tens	Ones
		

Activity 1 — 3-digit and 2-digit Numbers

Use the place value counters to complete the number sentences.

Hundreds	Tens	Ones
		

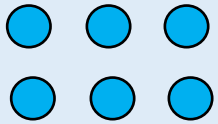
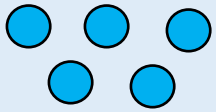
328 – 2 tens = 308

Hundreds	Tens	Ones
		

Activity 2

3-digit and 2-digit Numbers

Use the place value counters to complete the number sentences.

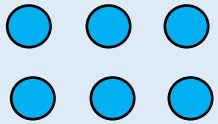
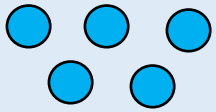
Hundreds	Tens	Ones
		

653 + 3 tens = _____

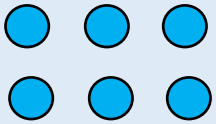
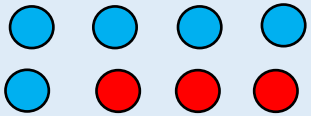
653 – 3 tens = _____

Activity 2 — 3-digit and 2-digit Numbers

Use the place value counters to complete the number sentences.

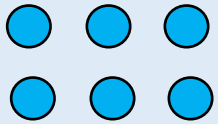
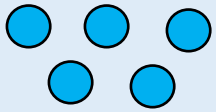
Hundreds	Tens	Ones
		

653 + 3 tens = 683

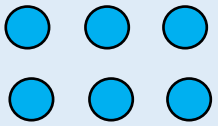
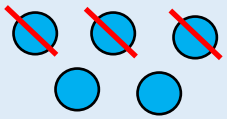
Hundreds	Tens	Ones
		

Activity 2 — 3-digit and 2-digit Numbers

Use the place value counters to complete the number sentences.

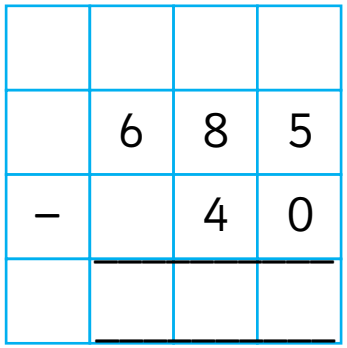
Hundreds	Tens	Ones
		

653 – 3 tens = 623

Hundreds	Tens	Ones
		

Activity 3 — 3-digit and 2-digit Numbers

Complete to solve 685 subtract 40.

Calculate	Build it and draw it
	
Sensible word problem	Explain

?

How else can you represent the calculation?

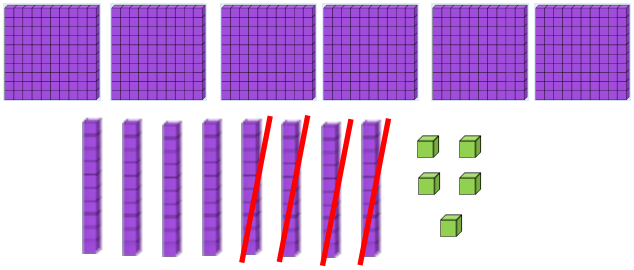
Activity 3 — 3-digit and 2-digit Numbers

Complete to solve 685 subtract 40.

Calculate

	6	8	5
–		4	0
	6	4	5

Build it and draw it



Sensible word problem

Blue team had 685 points and won the Live game.
Red team finished second with 40 less points than blue team.
How many points does the Red team have?

Explain

Six hundred eighty-five subtract forty equals six hundred forty-five.

3-digit and 2-digit Numbers

Complete to solve 252 subtract 30.

Calculate	**Build it and draw it**
Sensible word problem	**Explain**

	2	5	2
−		3	0

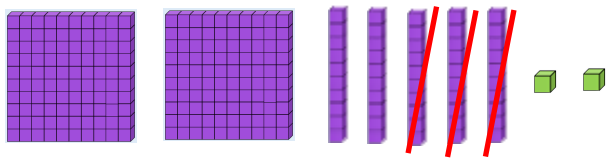
Activity 4 — 3-digit and 2-digit Numbers

Complete to solve 252 subtract 30.

Calculate

	2	5	2
–		3	0
	2	2	2

Build it and draw it



Sensible word problem

252 parents joined the meeting.
30 parents left the meeting early.
How many parents were left?

Explain

Two hundred fifty-two subtract thirty equals two hundred twenty-two.

Activity 5 — 3-digit and 2-digit Numbers

Compare using comparison symbols <, > or =.

346 + 1	○	346 + 10
632 + 10	○	632 – 10
714 + 10	○	714 – 10
246 + 10	○	451 + 10

?

Do we need to calculate to find the answer?

Activity 5 — 3-digit and 2-digit Numbers

Compare using comparison symbols <, > or =.

346 + 1	<	346 + 10
632 + 10	>	632 – 10
714 + 10	>	714 – 10
246 + 10	<	451 + 10

Reasoning 1

3-digit and 2-digit Numbers

Leanna

368 – 50 is equal to 363

What should the answer be?

Reasoning 1

3-digit and 2-digit Numbers

Leanna

368 – 50 is equal to 363

What should the answer be?

Leanna has subtracted 5 ones instead of 5 tens. The answer should be 318.

Reasoning 2

3-digit and 2-digit Numbers

Choose one calculation that can complete all of the statements correct.

$356 - 10 <$ ☐

$366 + 1 >$ ☐

$366 + 0 =$ ☐

Reasoning 2 — 3-digit and 2-digit Numbers

Choose one calculation that can complete all of the statements correct.

356 – 10 < ☐

366 + 1 > ☐

366 + 0 = ☐

Possible answers:
396 – 30
306 + 60
316 + 50

Any calculation with an answer of 366.

Reasoning 3

3-digit and 2-digit Numbers

Tia

When I calculated 292 subtract 30, I used my known fact that 9 - 3 = 6

Explain Tia's method.

Reasoning 3

3-digit and 2-digit Numbers

Tia

When I calculated 292 subtract 30, I used my known fact that 9 - 3 = 6

Explain Tia's method.

Tia was able to use the fact because 9 tens subtract 3 tens is like doing 9 ones subtract 3 ones.
We do not need to subtract any ones or hundreds so those columns will stay the same.

Discuss

3-digit and 2-digit Numbers

How else can you represent this calculation?

Do we need to make this number?

How is it similar and different to subtracting ones?

What do you notice about the columns that change?

Why don't we have to calculate for each? Give a reason.

Add 3-digit and 2-digit Numbers

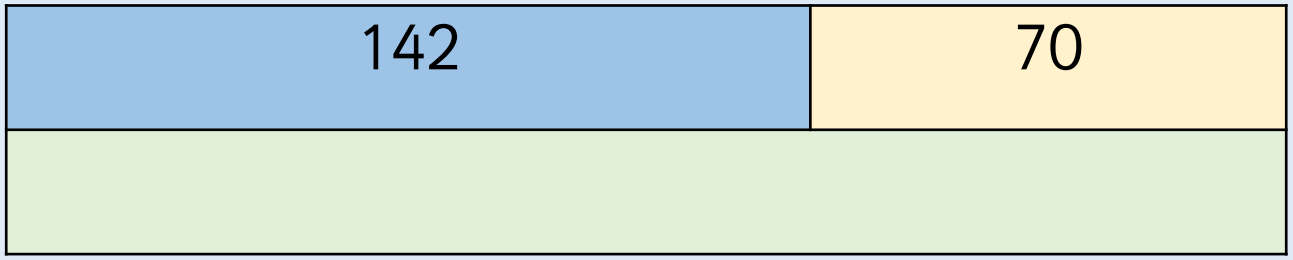
3

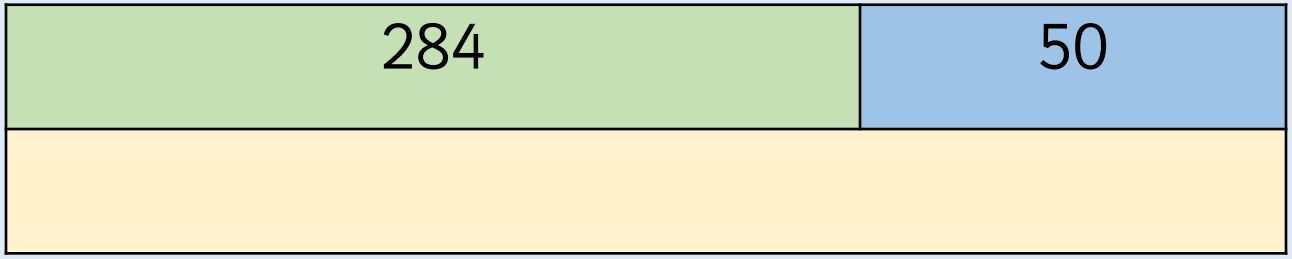
Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 Add 3-digit and 2-digit Numbers

Complete the bar models.



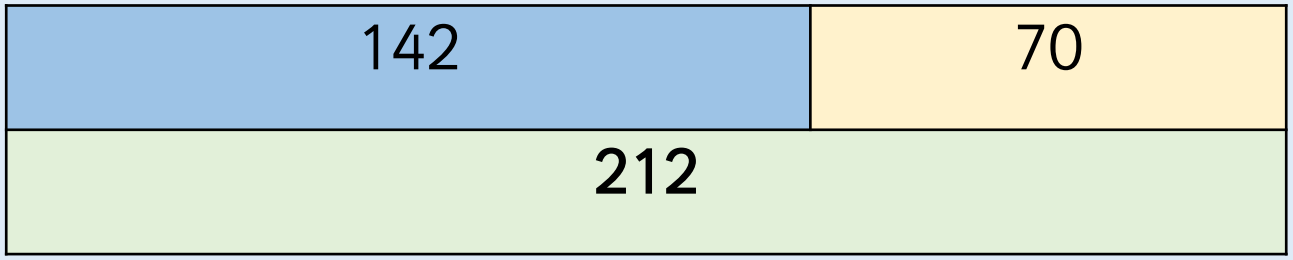


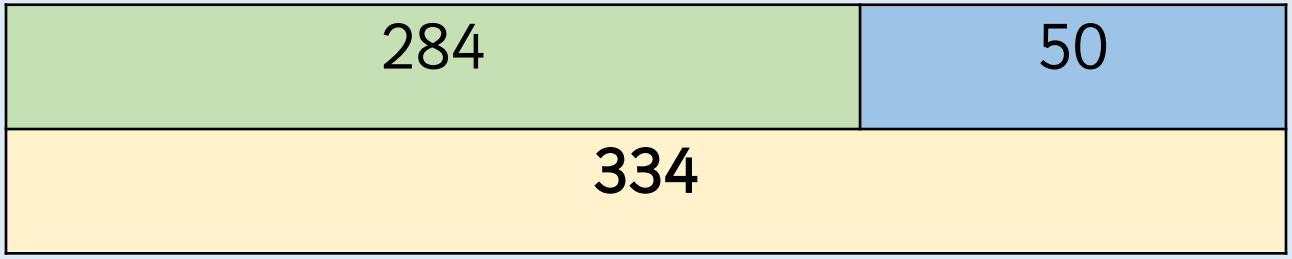
?

What did you do to calculate the answer?

Activity 1 Add 3-digit and 2-digit Numbers

Complete the bar models.





Activity 2 Add 3-digit and 2-digit Numbers

There are 348 gold coins in the treasure chest.
Pirate Joe adds 6 more bags of 10 coins.

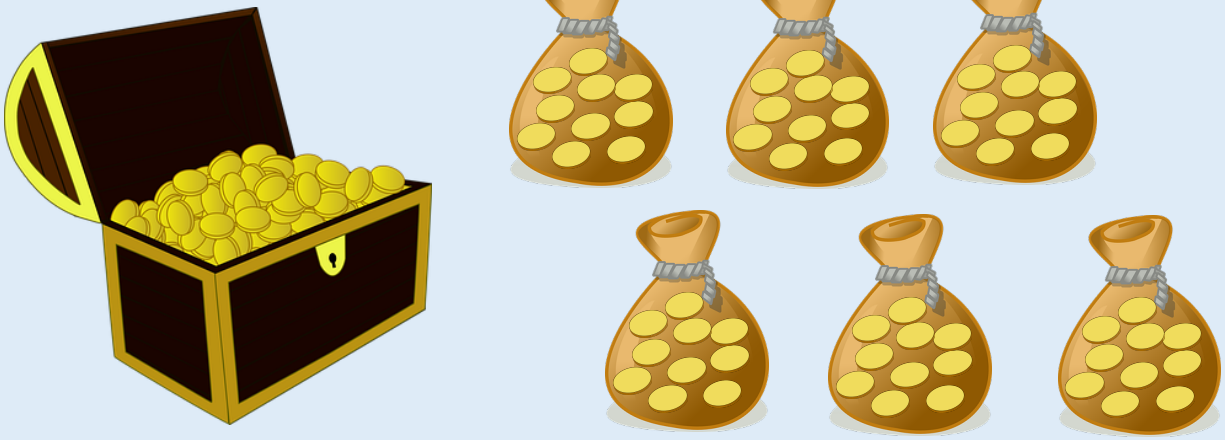
How many gold coins will he have when he adds it to the treasure chest?

Write the calculation for this problem.

Activity 2

Add 3-digit and 2-digit Numbers

There are 348 gold coins in the treasure chest.
Pirate Joe adds 6 more bags of 10 coins.



348 gold coins +
60 gold coins =
408 gold coins

How many gold coins will he have when he adds it to the treasure chest?

Write the calculation for this problem.

Activity 3 Add 3-digit and 2-digit Numbers

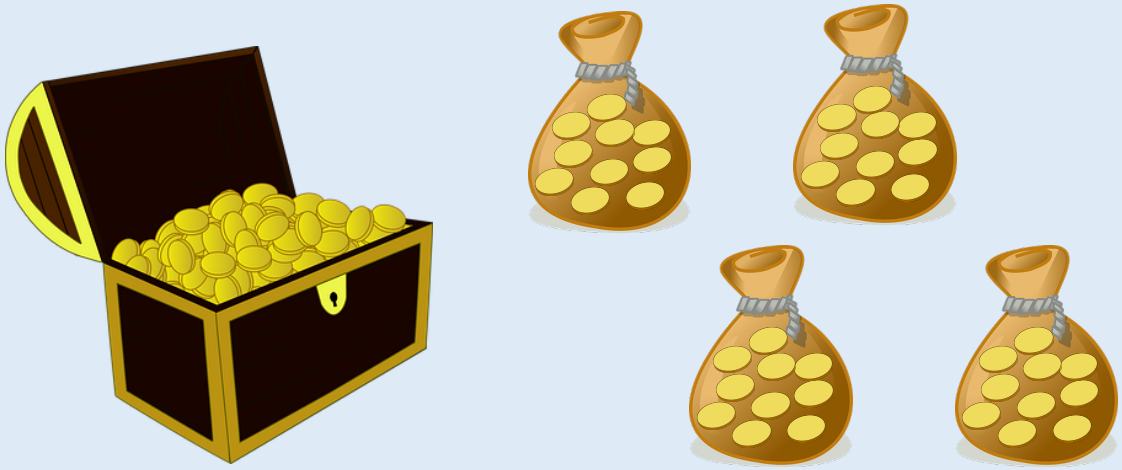
There are 733 gold coins in the treasure chest.
Pirate Malik adds 4 more bags of 10 coins.

How many gold coins will he have when he adds it to the treasure chest?

Write the calculation for this problem.

Activity 3 Add 3-digit and 2-digit Numbers

There are 733 gold coins in the treasure chest.
Pirate Malik adds 4 more bags of 10 coins.



733 gold coins +
40 gold coins =
773 gold coins

How many gold coins will he have when he adds it to the treasure chest?

Write the calculation for this problem.

Activity 4

Add 3-digit and 2-digit Numbers

Can you think of three different ways to work out 453 + 90?

?

Would it be easier for us to just count up in our heads?

Activity 4

Add 3-digit and 2-digit Numbers

Can you think of three different ways to work out 453 + 90?

Column addition

Add 100 and then subtract 10

Count in tens

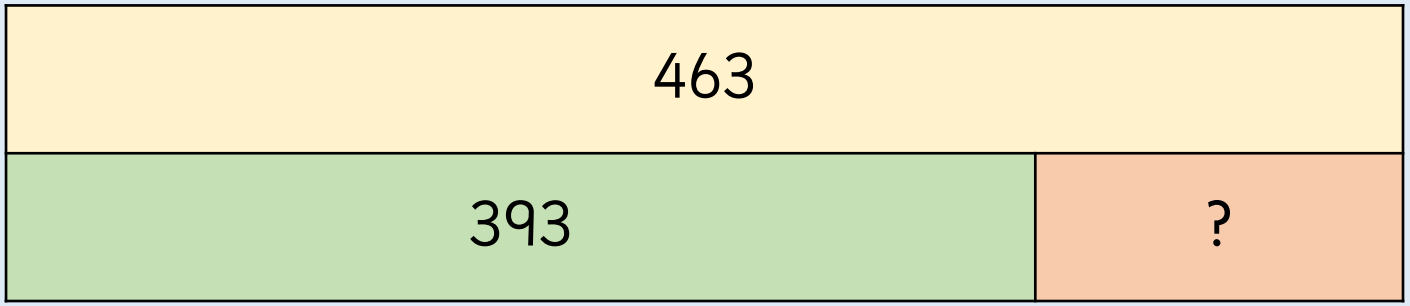
?

Would it be easier for us to just count up in our heads?

Reasoning 1

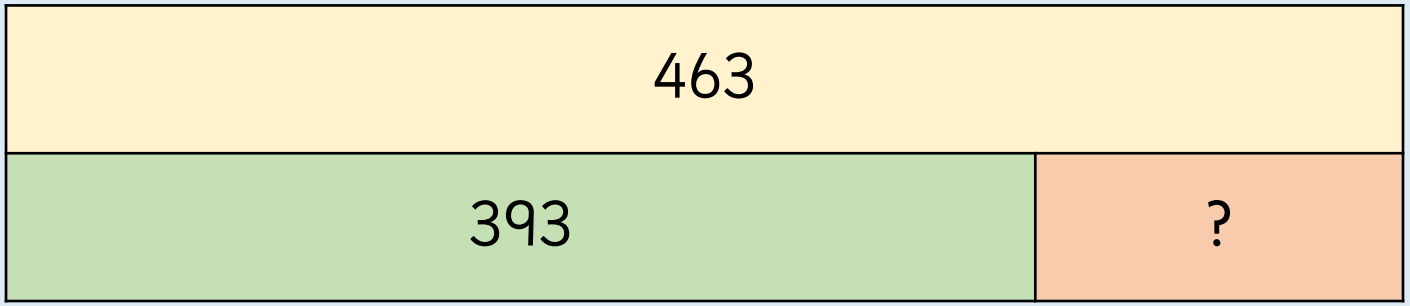
Add 3-digit and 2-digit Numbers

Write a sensible number story to represent this bar model.



Reasoning 1 Add 3-digit and 2-digit Numbers

Write a sensible number story to represent this bar model.



463 burgers are ordered for a school trip. 393 are eaten. How many are left?

Reasoning 2

Add 3-digit and 2-digit Numbers

Which is the odd one out? Why?

336 + 80

453 + 60

347 + 70

285 + 80

Reasoning 2

Add 3-digit and 2-digit Numbers

Which is the odd one out? Why?

336 + 80

453 + 60

347 + 70

285 + 80

285 + 80 is the odd one out because in all the others the tens columns add up to 11 tens.

Discuss

Add 3-digit and 2-digit Numbers

How many tens do we have?

What can we do with the tens?

If we know how to count in tens, do we always need to use the column method or other methods?

Would it be easier for us to just count up in our heads?

Subtract 2-digits from 3-digits

3

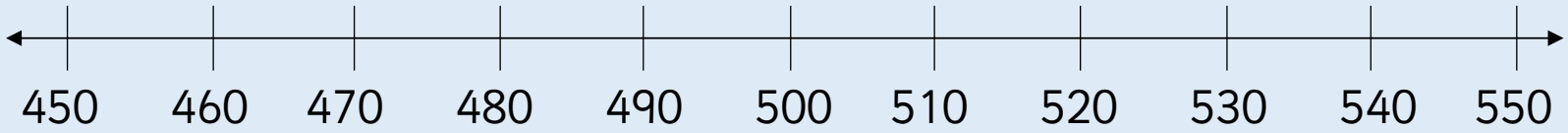
Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 Subtract 2-digits from 3-digits

Count back in tens to solve the calculation

530 – 60



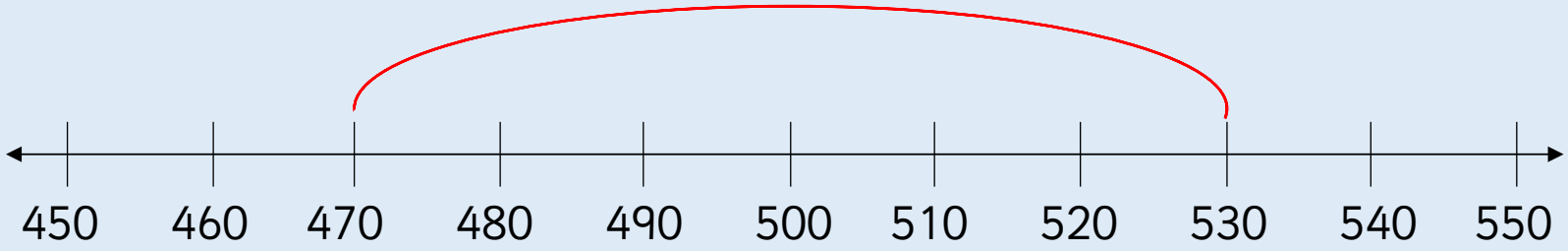
?

How can you use the number line to help?

Activity 1 Subtract 2-digits from 3-digits

Count back in tens to solve the calculation

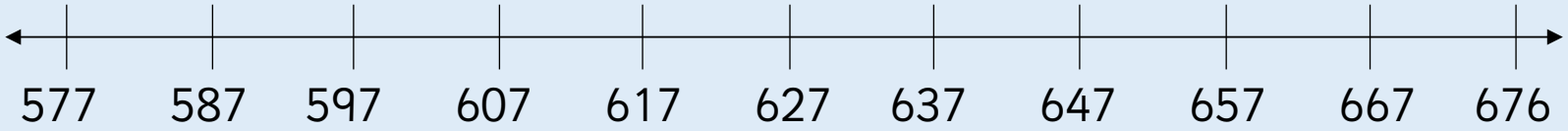
530 – 60 = 470



Activity 2 Subtract 2-digits from 3-digits

Count back in tens to solve the calculation

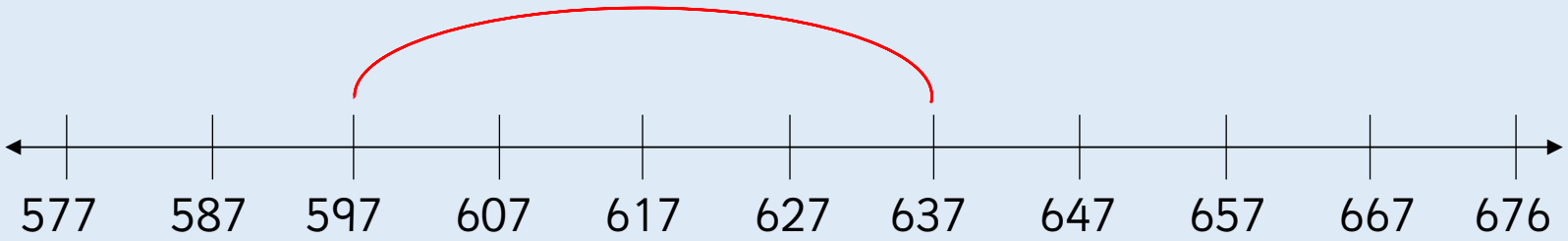
637 – 40



Activity 2 Subtract 2-digits from 3-digits

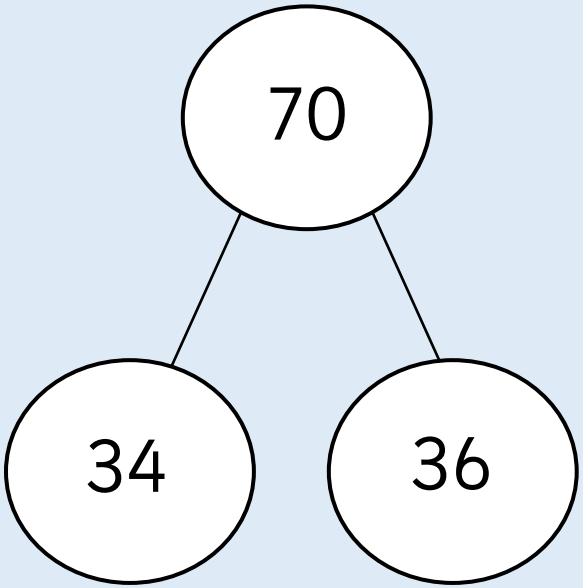
Count back in tens to solve the calculation

637 – 40 = 470



Activity 3 Subtract 2-digits from 3-digits

How can the part whole model help solve six hundred and thirty-four subtract seventy?

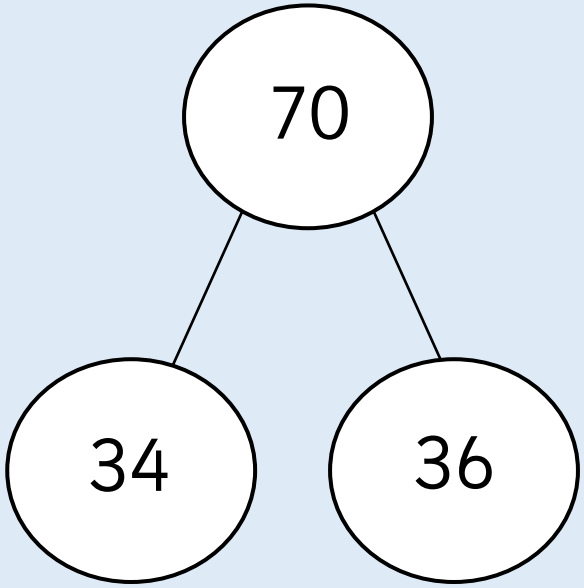


?

Why are the numbers 34 and 36 shown?

Activity 3 Subtract 2-digits from 3-digits

How can the part whole model help solve six hundred and thirty-four subtract seventy?



634 – 34 = 600
600 – 36 = 564

Activity 3

Subtract 2-digits from 3-digits

Solve 325 – 90 using the calculations below.

325 – 100 = ☐

☐ + 10 = ☐

Activity 3 Subtract 2-digits from 3-digits

Solve 325 – 90 using the calculations below.

325 – 100 = 315

315 + 10 = 325

Reasoning 1

Subtract 2-digits from 3-digits

Find the missing numbers and explain how you found them.

15___ - 60 = 92

453 - ___ = 389

645 = _____ - 70

Reasoning 1 Subtract 2-digits from 3-digits

Find the missing numbers and explain how you found them.

15 2 - 60 = 92

I added 60 to 92.

453 - 64 = 389

I subtracted 389 from 453.

645 = 715 - 70

I added 70 to 645.

Reasoning 2 Subtract 2-digits from 3-digits

Zach thinks the rule for the function machine is subtract 60.
Is he correct? Explain why.

Zach

Input	Rule	Output
578 →	? →	508

Reasoning 2 Subtract 2-digits from 3-digits

Zach thinks the rule for the function machine is subtract 60.
Is he correct? Explain why.

Zach

Input	Rule	Output
578	- 70	508

He is wrong because 578 subtract 60 is 518.

The rule is subtract 70.

Reasoning 3

Subtract 2-digits from 3-digits

How many different methods could you use to solve 837 – 90?

Share your methods with a partner.

Reasoning 3

Subtract 2-digits from 3-digits

How many different methods could you use to solve 837 – 90?

Share your methods with a partner.

Possible methods:

837 – 100 = 737

737 + 10 = 747

90 = 37 and 53

(could show in part-whole model)

837 – 37 = 800

800 – 53 = 747

Expanded or written methods

Discuss

Subtract 2-digits from 3-digits

How can counting help us with finding 1 less?

Where can 1 less than ___ be found on a number track?

What does one less mean?

Will the number get bigger or smaller? Why?

How can we show one less?

Add and Subtract 100s

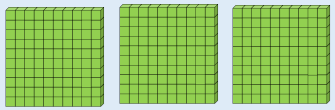
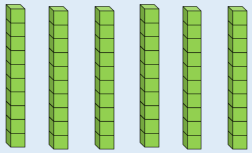
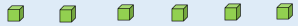
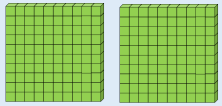
3

Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 Add and Subtract 100s

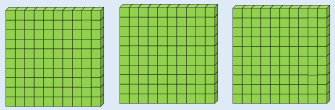
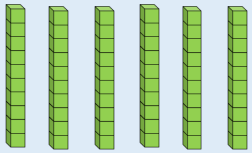
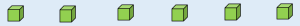
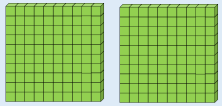
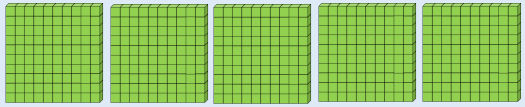
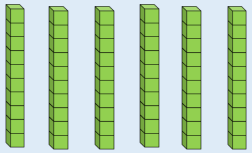
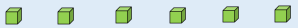
Use the place value grid to work out
3 hundred and sixty-six add two hundred.

Hundreds	Tens	Ones
		
		

? **Why is the column method not the most efficient when adding hundreds?**

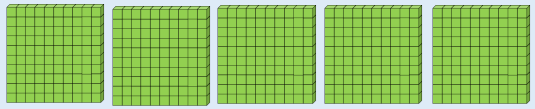
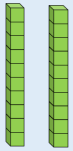
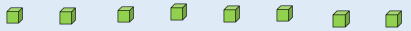
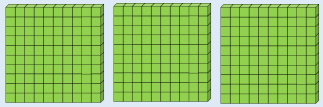
Activity 1 Add and Subtract 100s

Use the place value grid to work out
3 hundred and sixty-six add two hundred.

Hundreds	Tens	Ones
		
		
		

Activity 2 Add and Subtract 100s

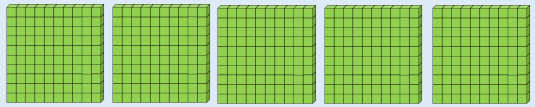
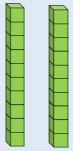
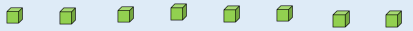
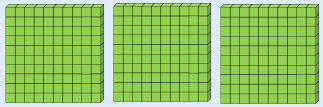
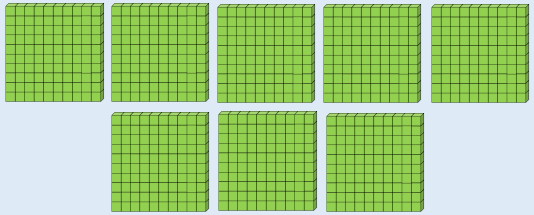
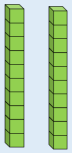
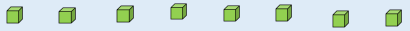
Use the place value grid to work out
5 hundred and twenty-eight add three hundred.

Hundreds	Tens	Ones
		
		

What do you notice when you add and subtract 100s from a 3-digit number?

Activity 2 Add and Subtract 100s

Use the place value grid to work out
5 hundred and twenty-eight add three hundred.

Hundreds	Tens	Ones
		
		
		

What do you notice when you add and subtract 100s from a 3-digit number?

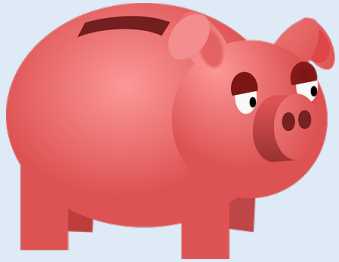
Activity 3 Add and Subtract 100s

Malachi has saved £688.

He has saved £200 more than Leanna.

How much does Leanna have?

Malachi



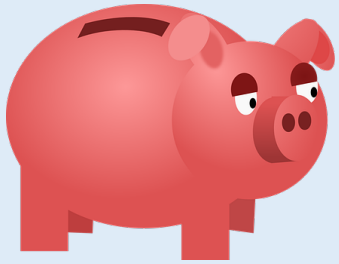
Activity 3 Add and Subtract 100s

Malachi has saved £688.

He has saved £200 more than Leanna.

How much does Leanna have?

Malachi



£688 - £200 = £488

Leanna has saved £488.

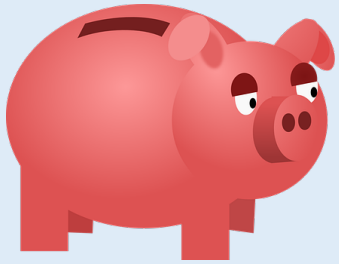
Activity 3 Add and Subtract 100s

Esin has saved £585.

She has saved £400 more than Tia.

How much does Tia have?

Esin



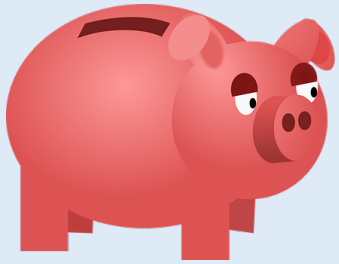
Activity 3 Add and Subtract 100s

Esin has saved £585.

She has saved £400 more than Tia.

How much does Tia have?

Esin



£585 - £400 = £185
Tia has saved £488.

Activity 4 Add and Subtract 100s

Complete each with a calculation that either adds or subtracts 100s.

207 + 300		898 – 100

smallest → greatest

	678 – 200	300 + 179

smallest → greatest

?

Is there more than one way to complete the questions?

Activity 4 Add and Subtract 100s

Complete each with a calculation that either adds or subtracts 100s.

207 + 300	502 + 200	898 – 100

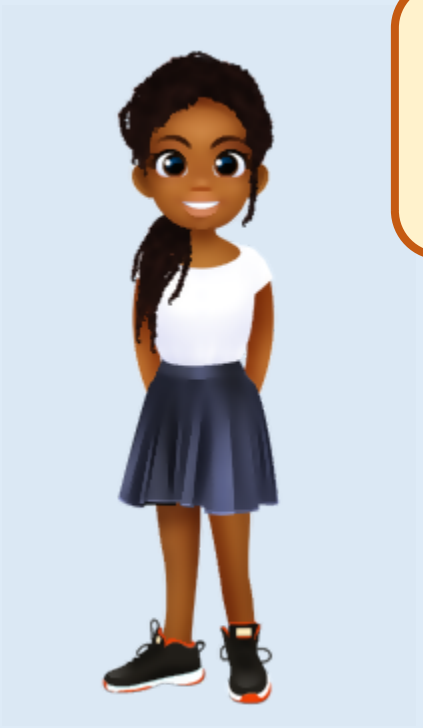
smallest → greatest

111 + 200	678 – 200	300 + 179

smallest → greatest

Reasoning 1

Add and Subtract 100s



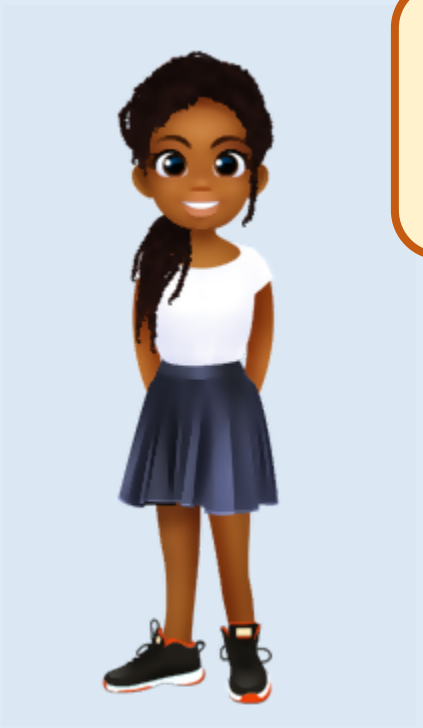
Leanna

206 + 300 = 806 - 300

Is she correct?
Explain how you know.

Reasoning 1

Add and Subtract 100s



Leanna

206 + 300 = 806 - 300

Is she correct?
Explain how you know.

She is correct because both give an answer of 506.

Reasoning 2 Add and Subtract 100s

Tia

Tia starts with the number 356.
She adds a multiple of 100.
Her new number is greater than 500 but less than 800.
Complete the table.

Numbers she couldn't have added	Numbers she could have added

Reasoning 2 Add and Subtract 100s

Tia

Tia starts with the number 356.
She adds a multiple of 100.
Her new number is greater than 500 but less than 800.
Complete the table.

Numbers she couldn't have added	Numbers she could have added
100 500 600	200 300 400

Reasoning 3

Add and Subtract 100s

Write a more than and less than word problem to describe the calculation 845 - 400

Reasoning 3 Add and Subtract 100s

Write a more than and less than word problem to describe the calculation 845 - 400

Example answers:

More than:

Rosie has raised £845. She has raised £400 more than her target. What was her target?

Less than:

Zach spent £845 on a laptop. He spent £400 less on a phone. How much did Zach spend on the phone?

Discuss

Add and Subtract 100s

What do you notice when we add and subtract 100s from a 3-digit number?

What is the calculation that matches the word problem?

What does each number in your calculation represent?

Is there more than one way to complete the questions?

Pattern Spotting

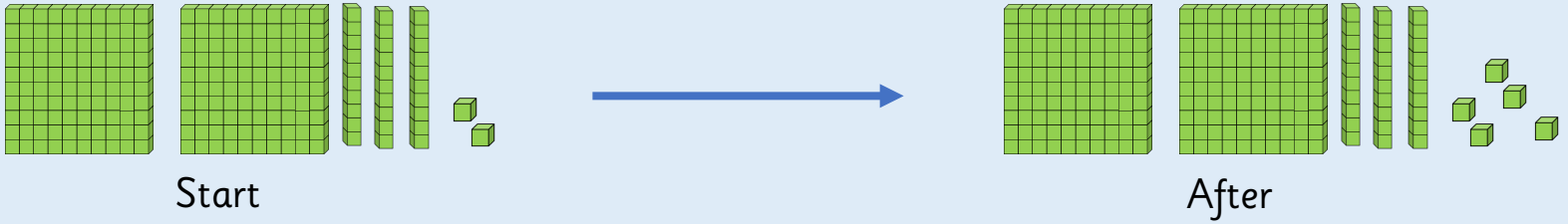
3

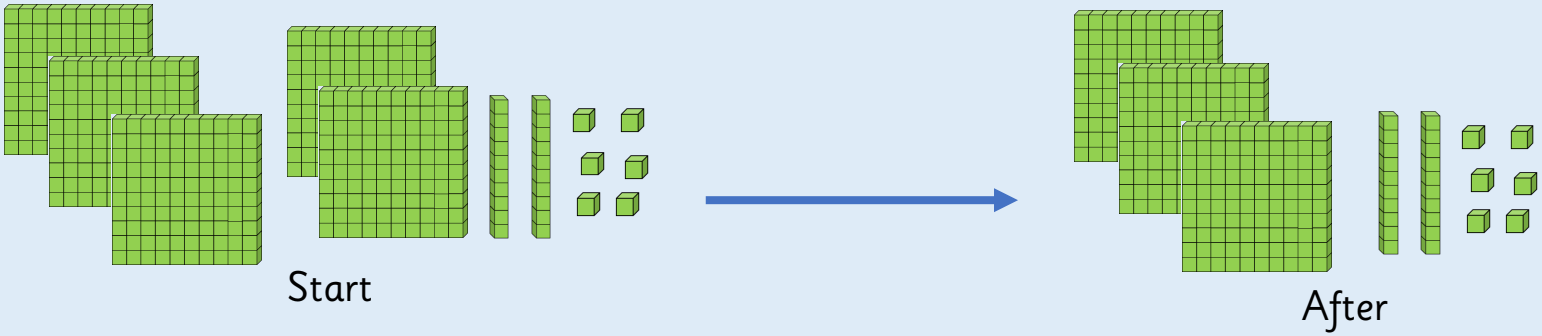
Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 Pattern Spotting

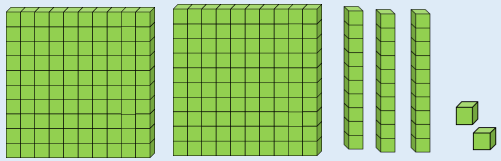
What has happened to each starting number?
How do you know?





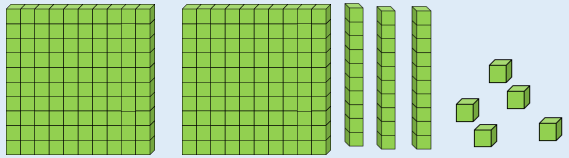
Activity 1 Pattern Spotting

What has happened to each starting number?
How do you know?

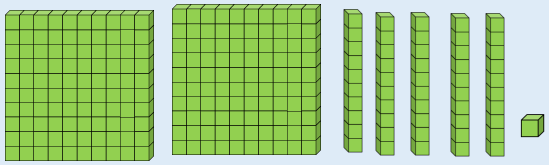


Start

3 has been added

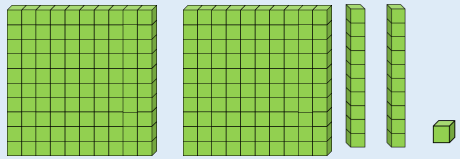


After

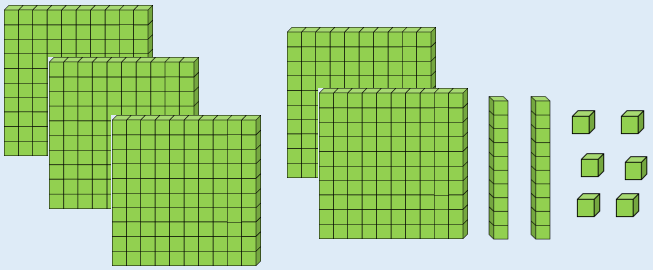


Start

30 has been subtracted

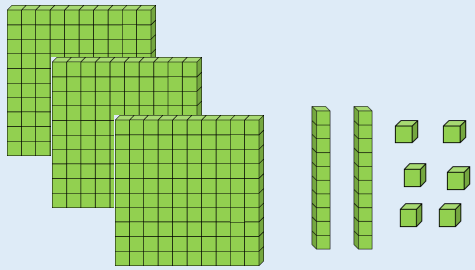


After



Start

200 has been subtracted



After

Activity 2 Pattern Spotting

What has happened to each starting number?
How do you know?

four hundred and twenty → four hundred and eighty

Start: four hundred and twenty

After: four hundred and eighty

one hundred and fourteen → one hundred

Start: one hundred and fourteen

After: one hundred

nine hundred and ninety-nine → one thousand

Start: nine hundred and ninety-nine

After: one thousand

?

Do we always need to work out each calculation or can we use what we already know?

Activity 2 Pattern Spotting

What has happened to each starting number?
How do you know?

four hundred and twenty
Start

60 has been added →

four hundred and eighty
After

one hundred and fourteen
Start

14 has been subtracted →

one hundred
After

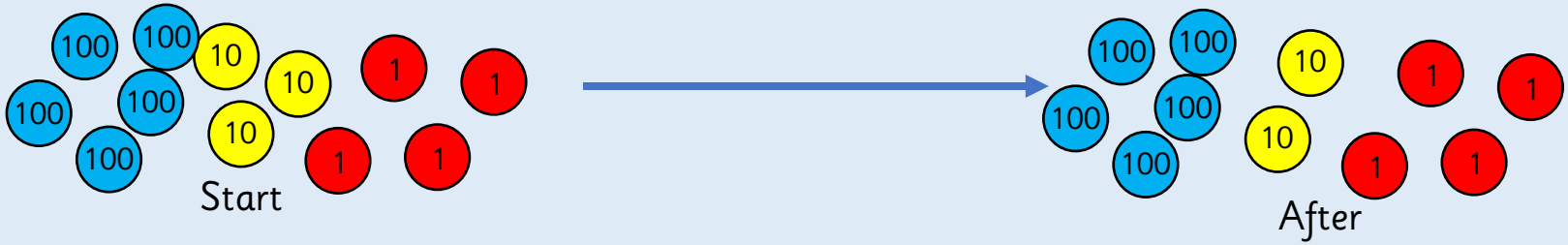
nine hundred and ninety-nine
Start

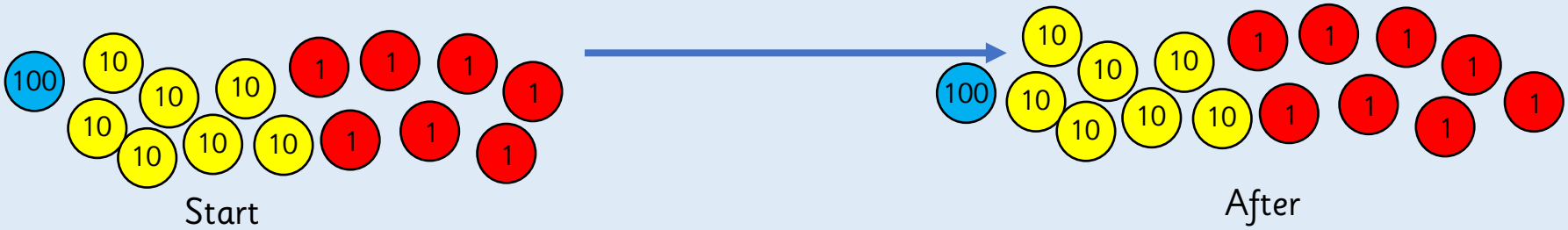
1 has been added →

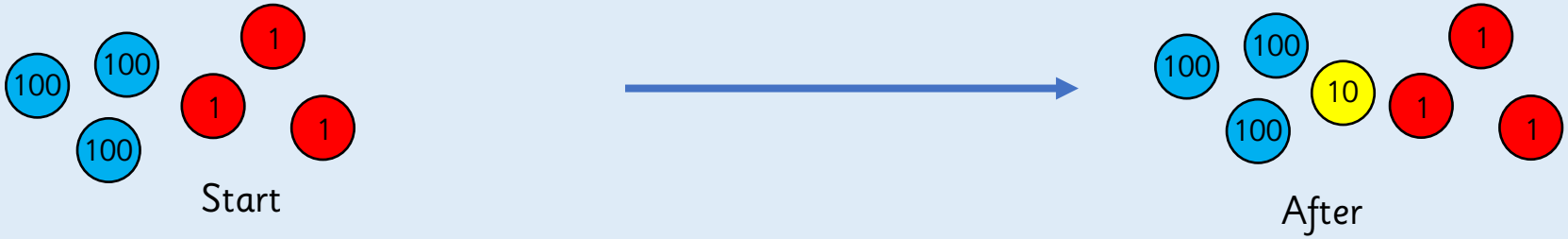
one thousand
After

Activity 3 Pattern Spotting

What has happened to each starting number?
How do you know?

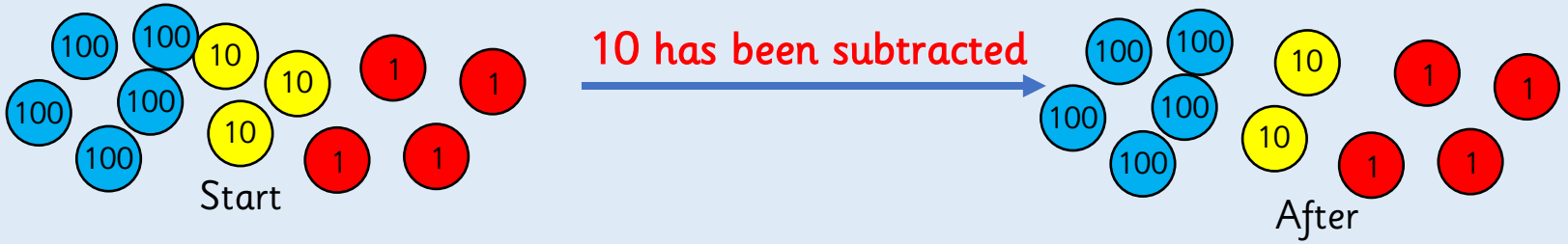


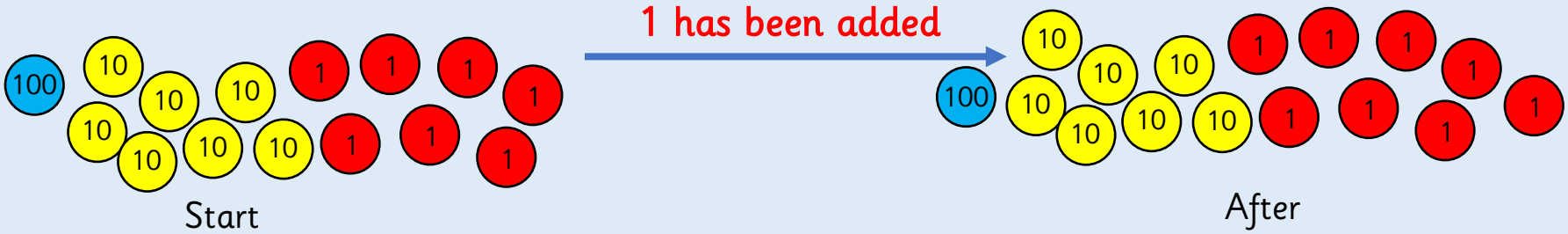




Activity 3 Pattern Spotting

What has happened to each starting number?
How do you know?





Activity 4 Pattern Spotting

Calculate.

434 + 3 = ☐

434 + 300 = ☐

434 – 3 = ☐

434 – 300 = ☐

434 + 30 = ☐

434 – 30 = ☐

Activity 4 Pattern Spotting

Calculate.

434 + 3 = 437

434 + 300 = 734

434 – 3 = 431

434 – 300 = 134

434 + 30 = 464

434 – 30 = 404

Activity 5 Pattern Spotting

Fill in the missing numbers.

_____ = 30 + 292

832 – _____ = 632

324 + _____ = 329

?

Do we need to write a zero in the hundreds column when there are no hundreds left?

Activity 5 Pattern Spotting

Fill in the missing numbers.

322 = 30 + 292

832 – 200 = 632

324 + 5 = 329

Reasoning 1 Pattern Spotting

Zach uses column addition to solve 461 + 4

Zach

	4	6	1
+			4
	4	6	5

Is this the most efficient method?

Explain what Zach could have done?

Tell Zach how he can use your strategy to solve 461 + 40 and 461 + 400

Reasoning 1 Pattern Spotting

Zach uses column addition to solve 461 + 4

Zach

	4	6	1
+			4
	4	6	5

Is this the most efficient method?
Explain what Zach could have done?
Tell Zach how he can use your strategy to solve 461 + 40 and 461 + 400

The best strategy is to complete 1 + 4, which is 5 and the 4 hundreds and 6 tens stay the same.

When adding 40 it is the tens column which Zach needs to look at because 40 is 4 tens.

When adding 400, he needs to look at the hundreds column because 400 is 4 hundreds.

Reasoning 2 Pattern Spotting

Investigate.

Does adding and subtracting ones to a 3-digit number only affect the ones column?

Does adding and subtracting tens to a 3-digit number only affect the tens column?

Reasoning 2 Pattern Spotting

Investigate.

Does adding and subtracting ones to a 3-digit number only affect the ones column?

Does adding and subtracting tens to a 3-digit number only affect the tens column?

No, the ones can change the tens column and any column to the left
e.g. 123 + 9 and 402 -4.

The tens column can change itself and the hundreds column
e.g. 456 + 50 and 456 – 60

When adding and subtracting from any column, it can only affect its own column and columns to the left.

Discuss

Pattern Spotting

What do you notice?

Which strategy can we use to add these numbers?

Do we need to write a zero in the hundreds column when there are no hundreds left?

Do we always need to work out each situation or can we use what we already know?

2-digit and 3-digit Numbers

3

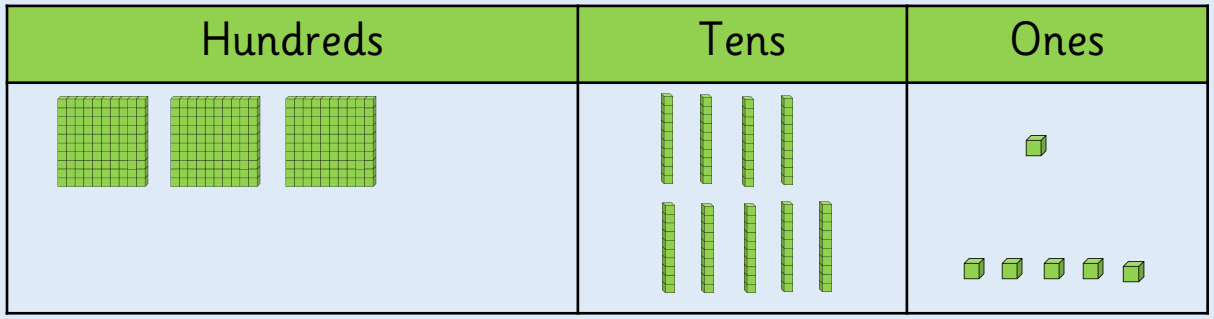
Fluency Teaching Slides

www.masterthecurriculum.co.uk

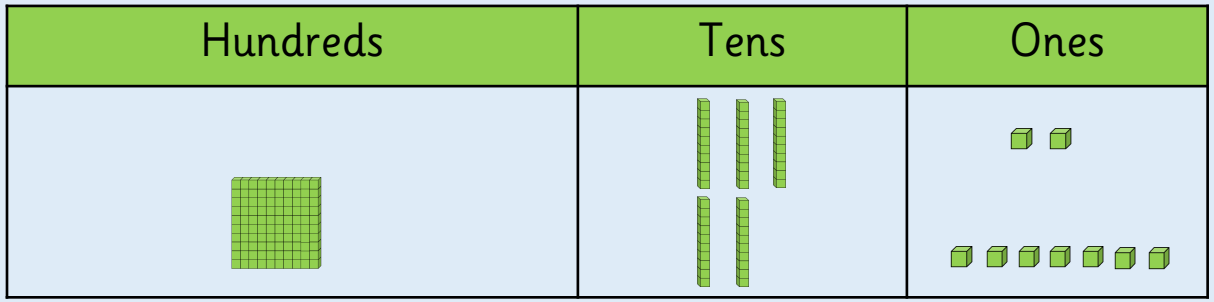
Activity 1 — 2-digit and 3-digit Numbers

Match the calculation to the correct representation.

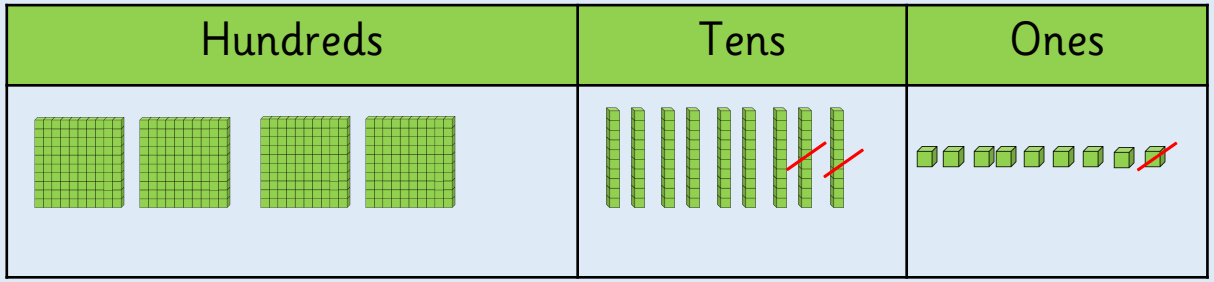
32 + 127 = 159



478 = 499 – 21



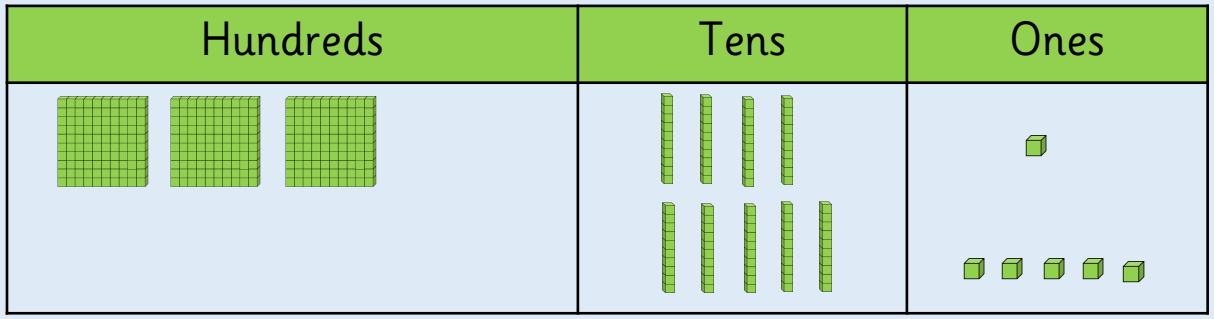
396 = 341 + 55



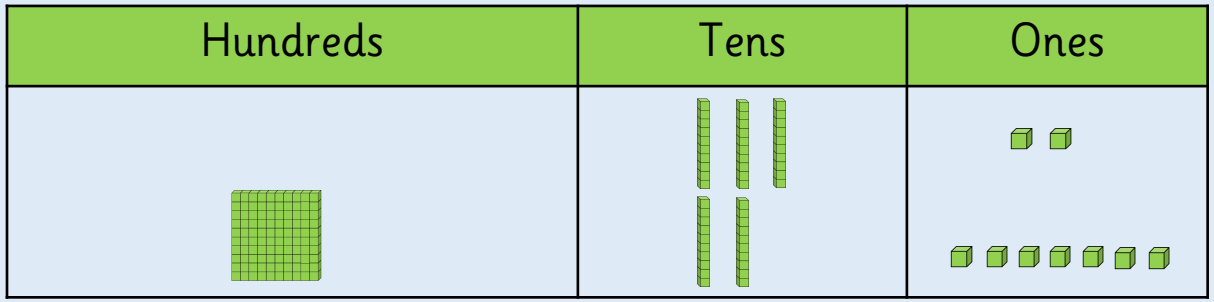
Activity 1 — 2-digit and 3-digit Numbers

Match the calculation to the correct representation.

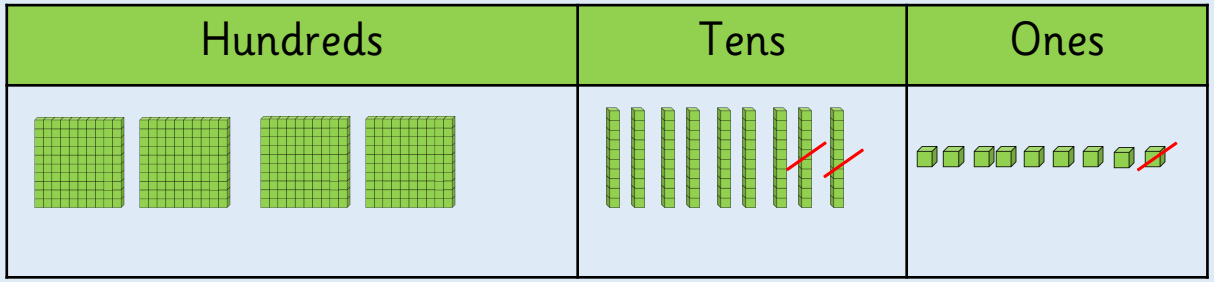
396 = 341 + 55



32 + 127 = 159



478 = 499 – 21



Activity 2 — 2-digit and 3-digit Numbers

Represent the following calculations using Base 10.

28 + 312

357 – 34

895 – 81

864 + 26

275 – 63

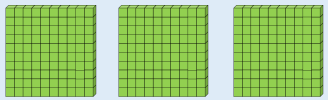
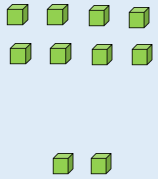
?

When we subtract, why do we not make both numbers?
Why do we make both numbers when we add?

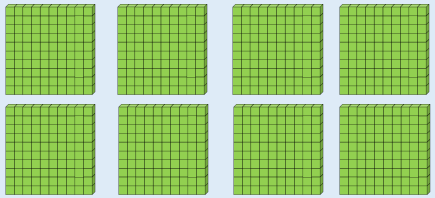
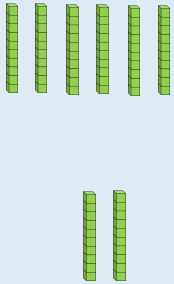
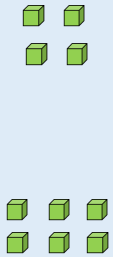
Activity 2 — 2-digit and 3-digit Numbers

Represent the following calculations using Base 10.

28 + 312 = 340

Hundreds	Tens	Ones
		

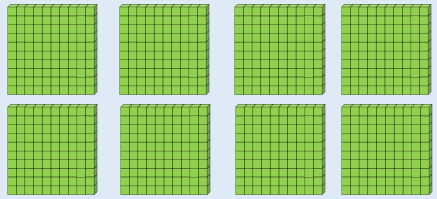
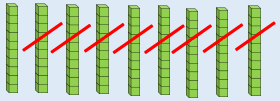
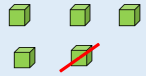
864 + 26 = 890

Hundreds	Tens	Ones
		

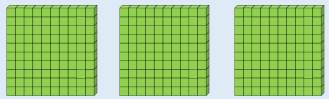
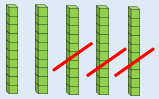
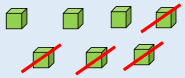
Activity 2 — 2-digit and 3-digit Numbers

Represent the following calculations using Base 10.

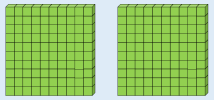
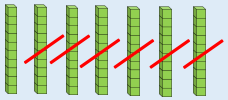
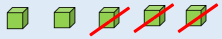
895 - 81= 814

Hundreds	Tens	Ones
		

357 – 34 = 323

Hundreds	Tens	Ones
		

275 – 63 = 223

Hundreds	Tens	Ones
		

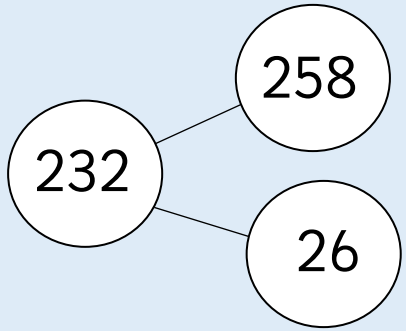
2-digit and 3-digit Numbers

Leanna has 258 sweets in a jar.
She gives 26 sweets to Malachi.
Which model represents this problem?

a)

232	
26	258

b)



c)

258	
26	232

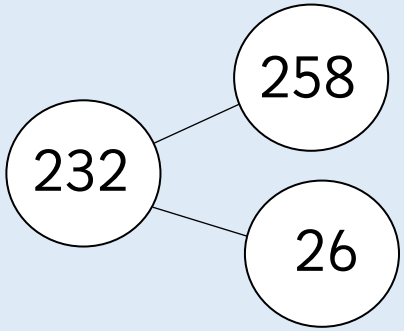
Reasoning 1 — 2-digit and 3-digit Numbers

Leanna has 258 sweets in a jar.
She gives 26 sweets to Malachi.
Which model represents this problem?

a)

232	
26	258

b)



c)

258	
26	232

C is correct because 26 + 232 = 258.

26 is a part, 232 is a part and 258 is the whole.

Reasoning 2

2-digit and 3-digit Numbers

Explain the mistake Zach has made.

	H	T	O
	5	6	1
+	2	3	

Reasoning 2

2-digit and 3-digit Numbers

Explain the mistake Zach has made.

Zach

	H	T	O
	5	6	1
+	2	3	

Zach has put 23 in the wrong place value columns.

Reasoning 3 — 2-digit and 3-digit Numbers

Tia and Esin have some nuts.
Tia has 57 and Esin has 141.
They want to know how many nuts there are in total, but they have written the calculation differently.

Tia

	H	T	O
	1	4	1
+		5	7

Esin

	H	T	O
		5	7
+	1	4	1

Who is correct?

Reasoning 3 — 2-digit and 3-digit Numbers

Tia and Esin have some nuts.
Tia has 57 and Esin has 141.
They want to know how many nuts there are in total, but they have written the calculation differently.

Tia

	H	T	O
	1	4	1
+		5	7

Esin

	H	T	O
		5	7
+	1	4	1

Both are correct because addition is commutative and can be added either way round.

Who is correct?

Discuss

2-digit and 3-digit Numbers

Where would these digits go on the place value chart? Why?

When we subtract, why do we not make both numbers?

Why do we make both numbers when we add?

Can you represent ___ using the equipment?

Add 2-digit and 3-digit Numbers

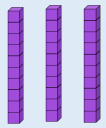
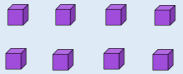
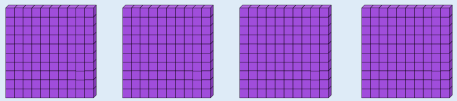
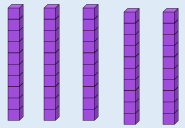
3

Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 Add 2-digit and 3-digit Numbers

Represent 38 + 452 using Base 10.

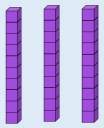
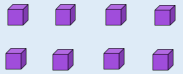
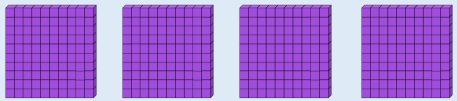
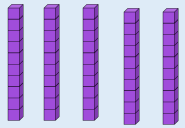
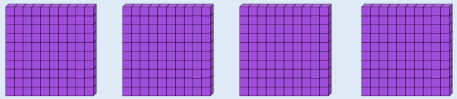
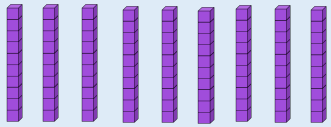
Hundreds	Tens	Ones
		
		

?

What happens when we have 10 ones.
Can you exchange them for anything?

Activity 1 Add 2-digit and 3-digit Numbers

Represent 38 + 452 using Base 10.

Hundreds	Tens	Ones
		
		
		

Activity 2 Add 2-digit and 3-digit Numbers

Represent the following calculations using Base 10.

45 + 264

357 + 53

329 + 68

864 + 99

275 + 25

?

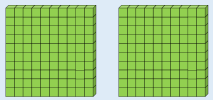
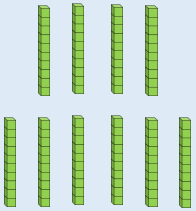
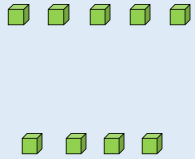
What happens when we have 10 ones?
Can we exchange them for anything? Why?

Activity 2

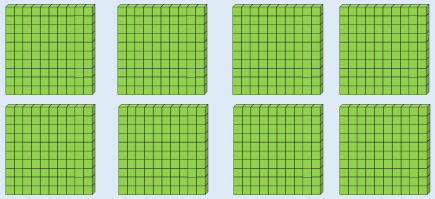
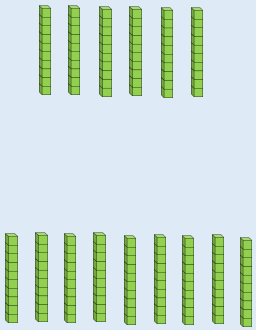
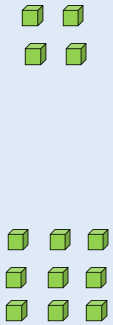
Add 2-digit and 3-digit Numbers

Represent the following calculations using Base 10.

45 + 264 = 309

Hundreds	Tens	Ones
		

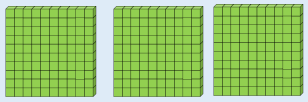
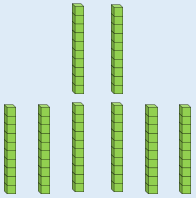
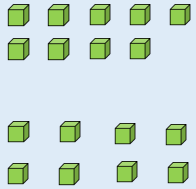
864 + 99 = 963

Hundreds	Tens	Ones
		

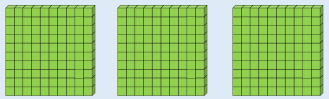
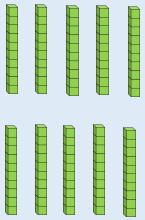
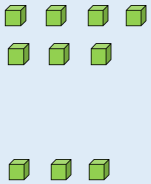
Activity 2 — Add 2-digit and 3-digit Numbers

Represent the following calculations using Base 10.

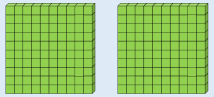
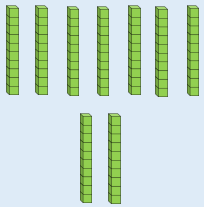
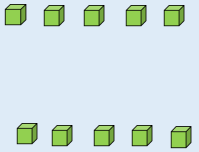
329 + 68 = 397

Hundreds	Tens	Ones
		

357 + 53 = 410

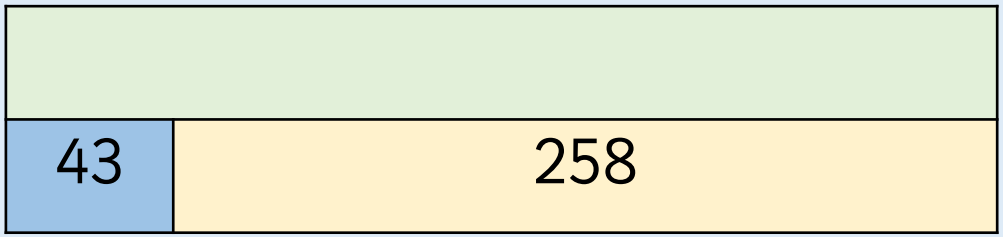
Hundreds	Tens	Ones
		

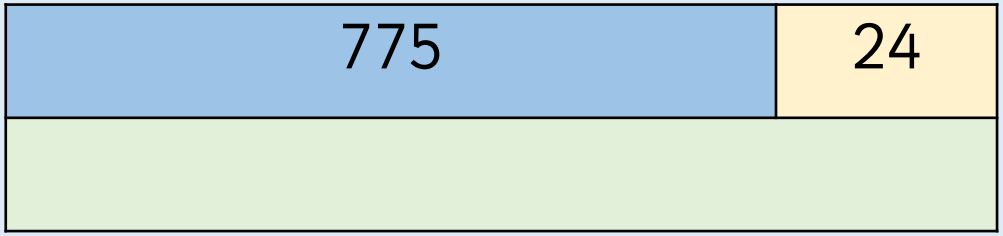
275 + 25 = 300

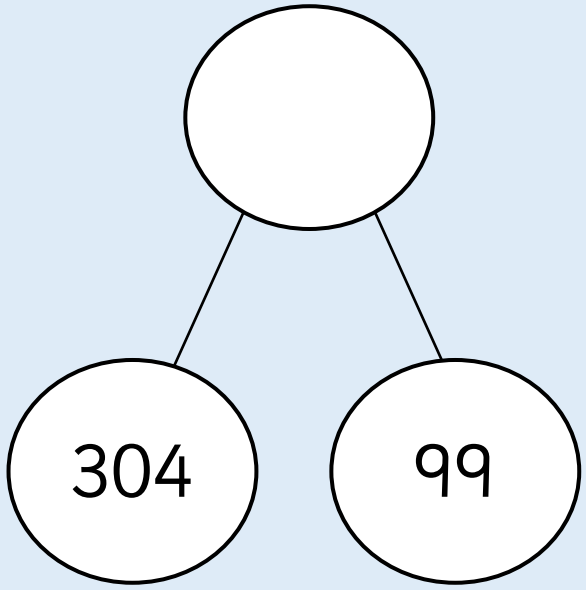
Hundreds	Tens	Ones
		

Activity 3 Add 2-digit and 3-digit Numbers

Use column addition to work out.





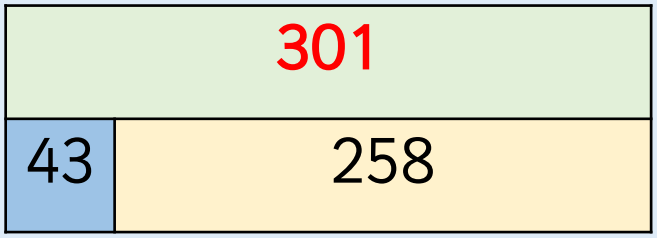


?

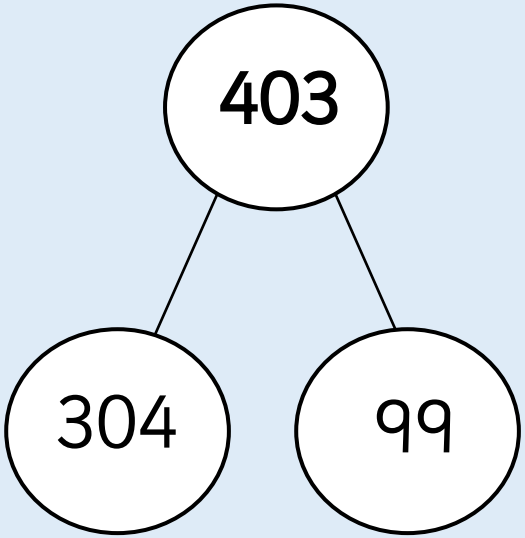
What happens when we have 10 tens?
Can we exchange them for anything? Why?

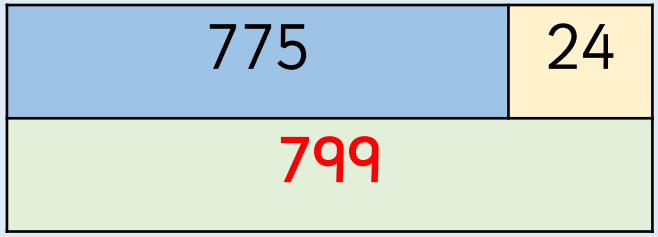
Activity 3 Add 2-digit and 3-digit Numbers

Use column addition to work out.



	H	T	O
	2	5	8
+		4	3
	3	0	1
	1	1	





	H	T	O
	7	7	5
+		2	4
	7	9	9

	H	T	O
	3	0	4
+		9	9
	4	0	3
	1	1	

Activity 4 Add 2-digit and 3-digit Numbers

Solve the calculations using column addition.

67 + 567

647 + 33

777 + 55

835 + 86

Activity 4 Add 2-digit and 3-digit Numbers

Solve the calculations using column addition.

67 + 567

	H	T	O
		6	7
+	5	6	7
	6	3	4
	1	1	

647 + 33

	H	T	O
	6	4	7
+		3	3
	6	8	0
		1	

777 + 55

	H	T	O
	7	7	7
+		5	5
	8	3	2
	1	1	

835 + 86

	H	T	O
	8	3	5
+		8	6
	9	2	1
	1	1	

Reasoning 1 Add 2-digit and 3-digit Numbers

Malachi

265 + 67 = 222

Here is his working out:

	H	T	O
	2	6	5
+		6	7
	2	2	3

Is he correct? Explain why.

Reasoning 1 Add 2-digit and 3-digit Numbers

Malachi

265 + 67 = 222

Here is his working out:

	H	T	O
	2	6	5
+		6	7
	2	2	2

Is he correct? Explain why.

Malachi is incorrect because he has not exchanged ten ones for one ten or ten tens for one hundred.

The answer should be 332.

Reasoning 2

Add 2-digit and 3-digit Numbers

Zach, Malachi and Leanna are working out 485 + 48

Zach

I used column method.

I used column method.

Malachi

Leanna

I added 50 and subtracted 2.

Which method do you prefer?
Are there any other ways to work this out?

Reasoning 2

Add 2-digit and 3-digit Numbers

Zach, Malachi and Leanna are working out 485 + 48

Zach

I used column method.

Children choose their preferred method and explain why.

I used column method.

Malachi

Leanna

I added 50 and subtracted 2.

Which method do you prefer?
Are there any other ways to work this out?

Discuss

Add 2-digit and 3-digit Numbers

What happens when we have 10 ones?

Can we exchange them for anything? Why?

Where does this ten go?

How does that help us?

What happens when we have 10 tens?

Can we exchange them for anything? Why?

Where does this hundred go?

How does that help us?

Subtract 2-digits from 3-digits

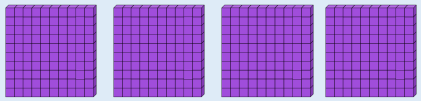
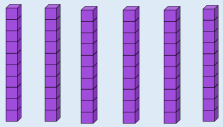
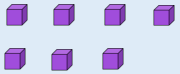
3

Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 Subtract 2-digits from 3-digits

Represent 467 – 29 using Base 10.

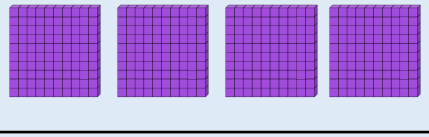
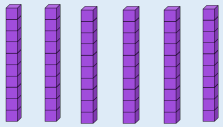
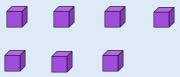
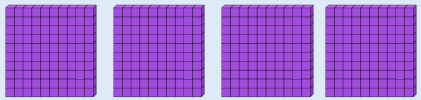
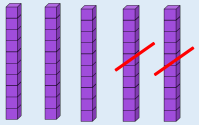
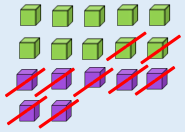
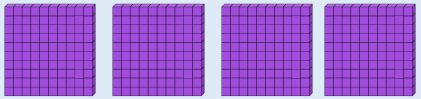
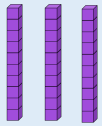
Hundreds	Tens	Ones
		

	H	T	O
	4	6	7
+		2	9

What happens when we are subtracting more ones than we have?

Activity 1 Subtract 2-digits from 3-digits

Represent 467 – 29 using Base 10.

Hundreds	Tens	Ones
		
		
		

	H	T	O
	4	$^{5}\cancel{6}$	$^{1}7$
-		2	9
	4	3	8

? What happens when we are subtracting more ones than we have? Can you exchange anything? Where would the exchange go?

Activity 2 Subtract 2-digits from 3-digits

Represent the following calculations using Base 10.

583 – 28

240 – 26

104 – 25

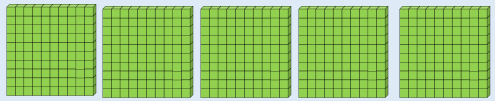
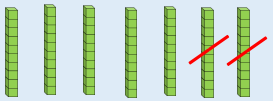
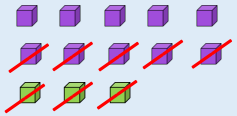
670 – 37

321 – 44

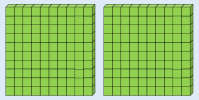
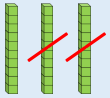
Activity 2 Subtract 2-digits from 3-digits

Represent the following calculations using Base 10.

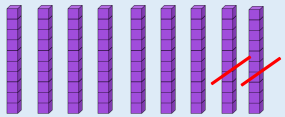
583 – 28

Hundreds	Tens	Ones
		

240 – 26

Hundreds	Tens	Ones
		

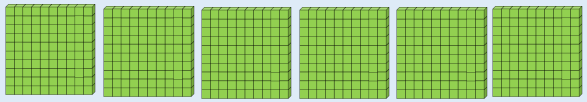
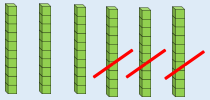
104 – 25

Hundreds	Tens	Ones
		

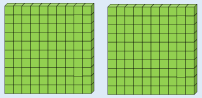
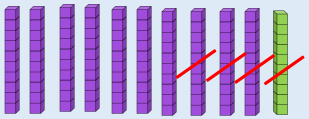
Activity 2 Subtract 2-digits from 3-digits

Represent the following calculations using Base 10.

670 – 37

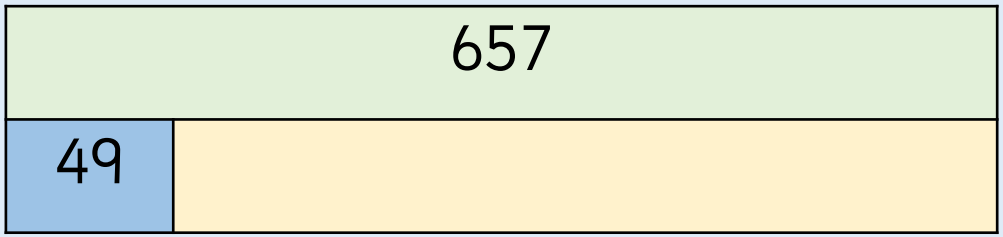
Hundreds	Tens	Ones
		

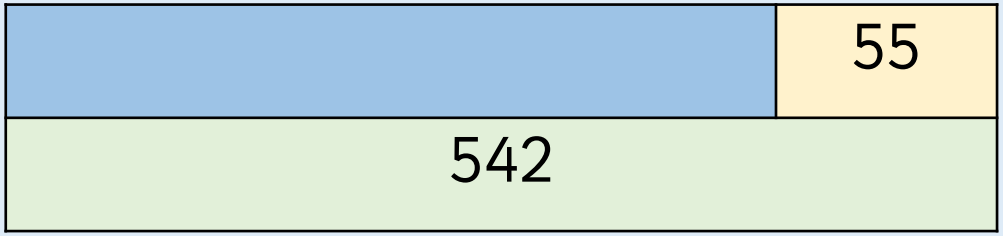
321 – 44

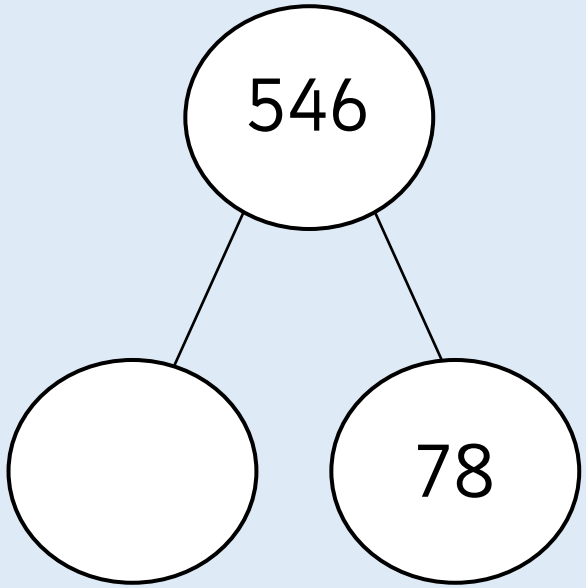
Hundreds	Tens	Ones
		

Activity 3 Subtract 2-digits from 3-digits

Use column subtraction to work out.







?

What happens when we have 10 tens?
Can we exchange them for anything? Why?

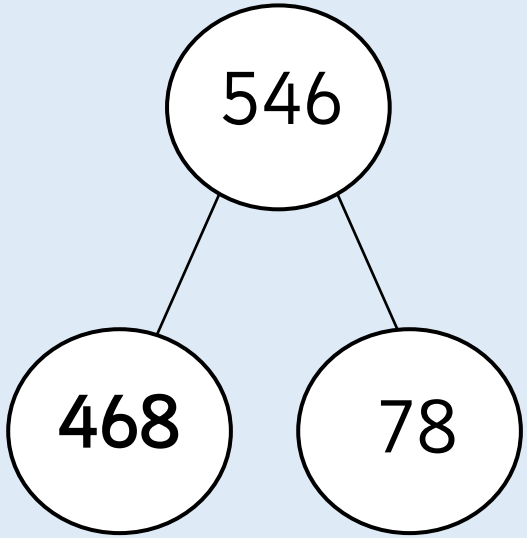
Activity 3

Subtract 2-digits from 3-digits

Use column subtraction to work out.

657	
49	518

	H	T	O
	6	~~5~~ 4	17
-		4	9
	3	0	1



487	55
542	

	H	T	O
	~~5~~ 4	~~4~~ 13	12
-		5	5
	4	8	7

	H	T	O
	~~5~~ 4	~~4~~ 13	16
-		7	8
	4	6	8

Activity 4

Subtract 2-digits from 3-digits

Use comparison symbols to make the statements true

> = <

$$\begin{array}{r} 456 \\ -\ 61 \\ \hline \\ \hline \end{array} \quad \bigcirc \quad \begin{array}{r} 428 \\ -\ 39 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 825 \\ -\ 52 \\ \hline \\ \hline \end{array} \quad \bigcirc \quad \begin{array}{r} 795 \\ -\ 18 \\ \hline \\ \hline \end{array}$$

Activity 4 Subtract 2-digits from 3-digits

Use comparison symbols to make the statements true

> = <

$$\begin{array}{r} {}^{3}\cancel{4}^{1}56 \\ -\ \ 61 \\ \hline 395 \\ \hline \end{array} \quad > \quad \begin{array}{r} {}^{3}\cancel{4}^{1\,1\,1}28 \\ -\ \ 39 \\ \hline 389 \\ \hline \end{array}$$

$$\begin{array}{r} {}^{7}\cancel{8}^{1}25 \\ -\ \ 52 \\ \hline 773 \\ \hline \end{array} \quad < \quad \begin{array}{r} 7{}^{8}\cancel{9}^{1}5 \\ -\ \ 18 \\ \hline 777 \\ \hline \end{array}$$

Reasoning 1

Subtract 2-digits from 3-digits

Rosie thinks 253 – 79 = 226

Rosie

	H	T	O
	2	5	3
-		7	9
	2	2	6

Is she correct?
Explain why.

Reasoning 1 Subtract 2-digits from 3-digits

Rosie thinks 253 – 79 = 226

Rosie

	H	T	O
	2	5	3
-		7	9
	2	2	6

Is she correct?
Explain why.

Rosie is incorrect because she has just found the difference between the ones rather than making an exchange. She has done the same with the tens.

The answer should be 174.

Reasoning 2

Subtract 2-digits from 3-digits

Zach, Malachi and Leanna are working out 200 - 47

Zach

I know that take away means difference, so I can do 199 take away 46 and get the right answer.

I can count on from 47 to 100, and then count on to 200.

Malachi

Leanna

I can use the column method to work it out and exchange when need to.

Who has the most efficient way of working it out?
Explain how you know.

Reasoning 2

Subtract 2-digits from 3-digits

Zach, Malachi and Leanna are working out 200 - 47

Zach

I know that take away means difference, so I can do 199 take always 46 and get the right answer.

Accept different answers as long as they are justified.
Children might even suggest subtracting 50 and then adding 3.

I can count on from 47 to 100, and then count on to 200.

Malachi

Leanna

I can use the column method to work it out and exchange when need to.

Who has the most efficient way of working it out?
Explain how you know.

Discuss

Subtract 2-digits from 3-digits

What happens when we are subtracting more ones than we have?

Can we exchange anything? (1 ten for ones)

Where do the 10 ones go?

How does this help us solve the problem?

What happens if there are ones remaining after exchanging for 1 ten?

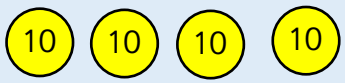
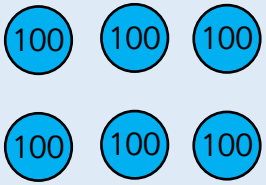
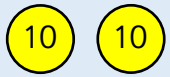
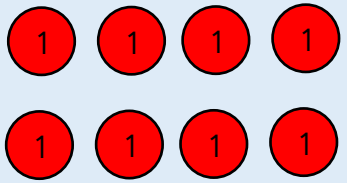
Add Two 3-digit Numbers

3

Fluency Teaching Slides

Activity 1 Add Two 3-digit Numbers

Complete the calculation.

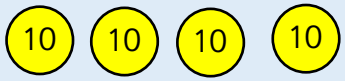
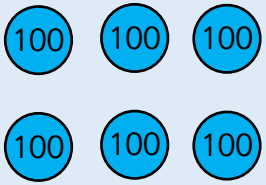
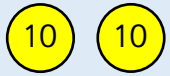
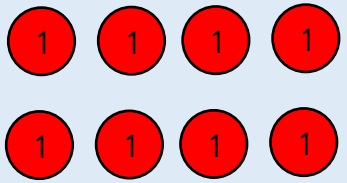
Hundreds	Tens	Ones
		
		

_____ + _____ = _____

? Can you draw a picture to represent this?

Activity 1 Add Two 3-digit Numbers

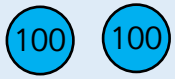
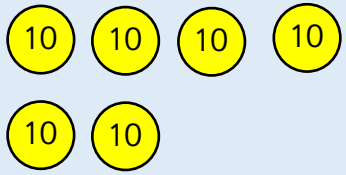
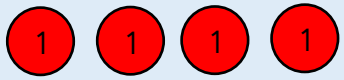
Complete the calculation.

Hundreds	Tens	Ones
		
		

341 + 628 = 969

Activity 2 Add Two 3-digit Numbers

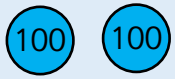
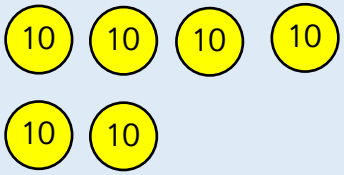
Complete the calculation.

Hundreds	Tens	Ones
		
		

_____ + _____ = _____

Activity 2 Add Two 3-digit Numbers

Complete the calculation.

Hundreds	Tens	Ones
		
		

263 + 334 = 597

Activity 3 Add Two 3-digit Numbers

Use column addition to work out.

seven hundred and thirty- two and one hundred and eighteen

forty- seven add five hundred and twenty-one

The total of five hundred and thirty-four and twelve

Activity 3 Add Two 3-digit Numbers

Use column addition to work out.

seven hundred and thirty- two and one hundred and eighteen

	H	T	O
	7	3	2
+	1	1	8
	8	5	0
		1	

? Why is it important to put the digits in the correct column?

Activity 3 Add Two 3-digit Numbers

Use column addition to work out.

forty- seven add five hundred and twenty-one

	H	T	O
		4	7
+	5	2	1
	5	6	8

Activity 3 Add Two 3-digit Numbers

Use column addition to work out.

The total of five hundred and thirty-four and twelve

	H	T	O
	5	3	4
+		1	2
	5	4	6

Activity 4 Add Two 3-digit Numbers

Use column addition to work out.

45 + 264

357 + 53

864 + 99

275 + 25

?

Why do we make both numbers when we add?

Activity 4 Add Two 3-digit Numbers

Use column addition to work out.

45 + 264

	H	T	O
		4	5
+	2	6	4
	3	0	9
	1		

357 + 53

	H	T	O
	3	5	7
+		5	3
	4	1	0
	1	1	

864 + 99

	H	T	O
	8	6	4
+		9	9
	9	6	3
	1	1	

275 + 25

	H	T	O
	2	7	5
+		2	5
	3	0	0
	1	1	

Add Two 3-digit Numbers

Tia

Tia is calculating 406 + 353.
Here is her working out.

	H	T	O
		4	6
+	3	5	3
	3	9	9

Can you spot Tia's mistake?
Work out the correct answer.

Reasoning 1 — Add Two 3-digit Numbers

Tia

Tia is calculating 406 + 353.
Here is her working out.

	H	T	O
		4	6
+	3	5	3
	3	9	9

Can you spot Tia's mistake?
Work out the correct answer.

Tia hasn't used zero as a place holder in the tens column.

The correct answer should be 759.

Reasoning 2 Add Two 3-digit Numbers

Here are three digit cards.

1	2	3

Malachi and Zach made 3-digit numbers using each card once.

Malachi

I have made the greatest possible number.

I have made the smallest possible number.

Zach

Work out the total of their two numbers.

Reasoning 2 Add Two 3-digit Numbers

Here are three digit cards.

1	2	3

Malachi and Zach made 3-digit numbers using each card once.

Malachi

I have made the greatest possible number.

I have made the smallest possible number.

Zach

Work out the total of their two numbers.

Malachi's number is 321. Zach's number is 123.

The total is 444.

Discuss

Add Two 3-digit Numbers

Where would these digits go on the place value chart? Why?

Why do we make both numbers when we add?

Can you represent ___ using the equipment?

Can you draw a picture to represent this?

Why is it important to put the digits in the correct column?

Add Two 3-digit Numbers (2)

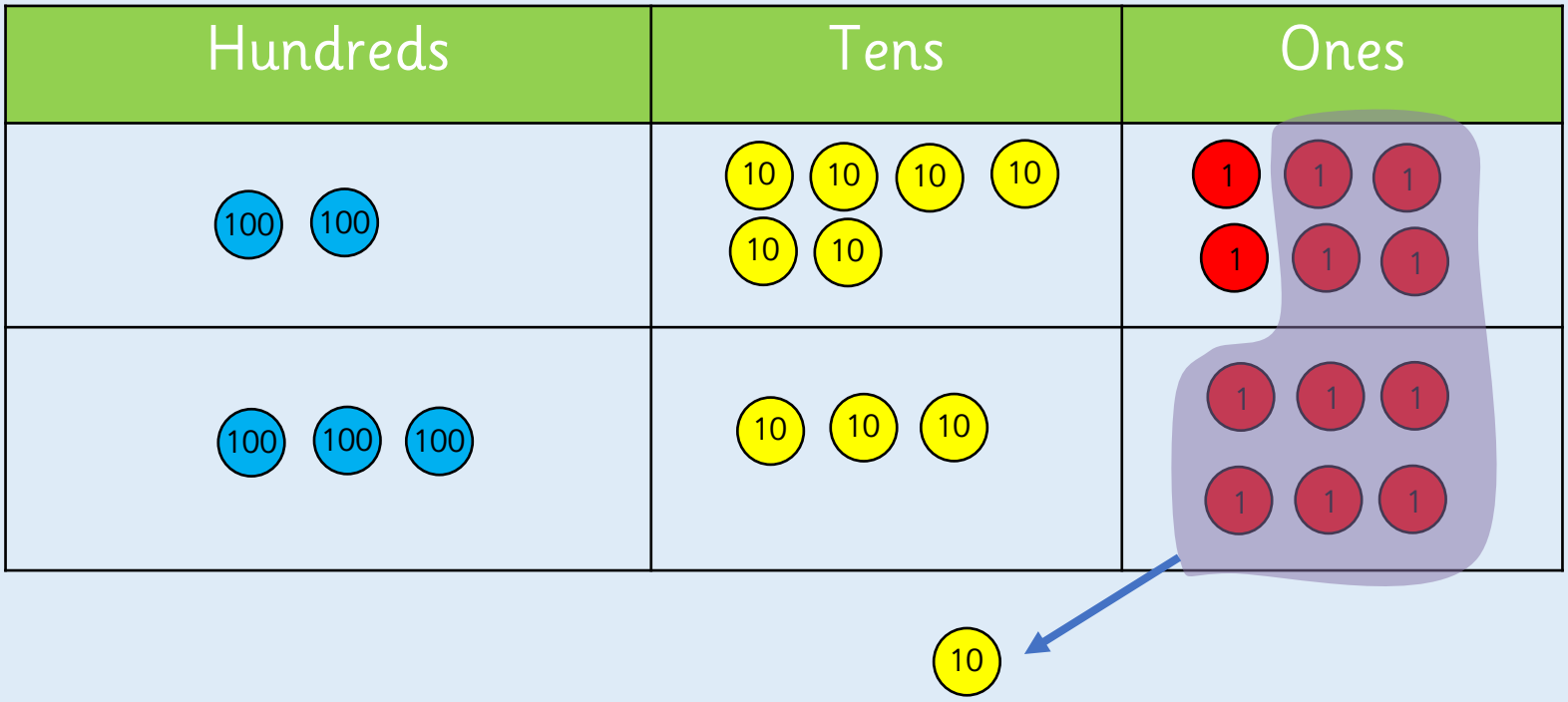
3

Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 Add Two 3-Digit Numbers (2)

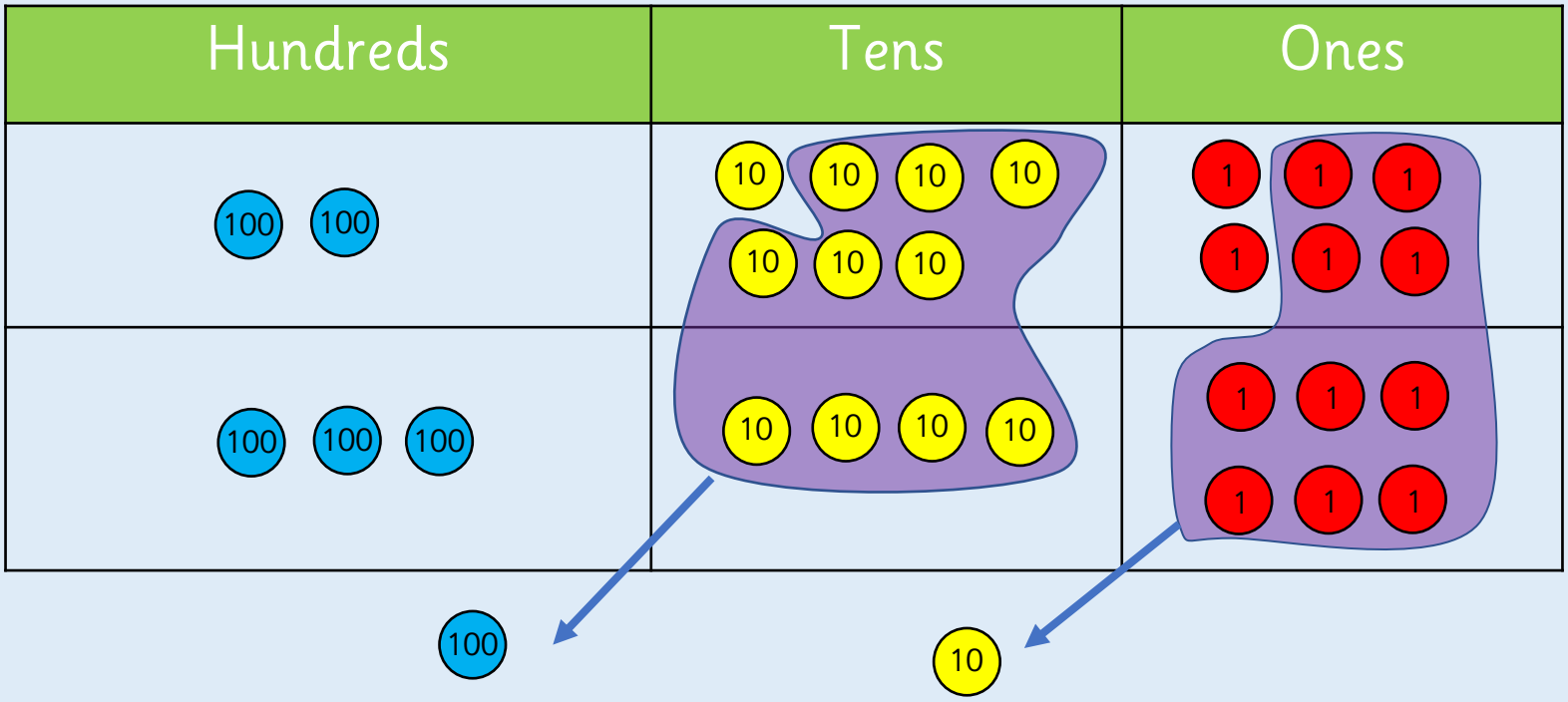
This image shows 266 + 336.



What happens you have ten ones?

Activity 2 Add Two 3-Digit Numbers (2)

This image shows 276 + 346.

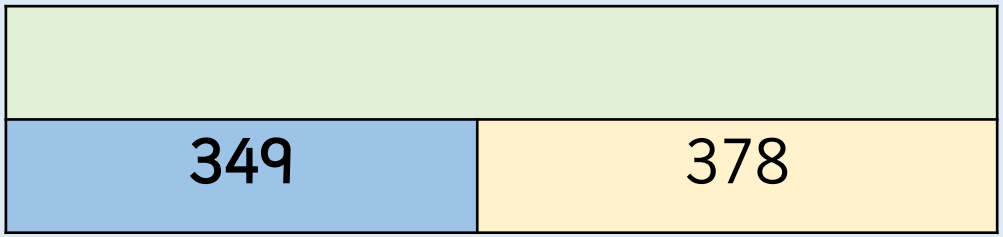


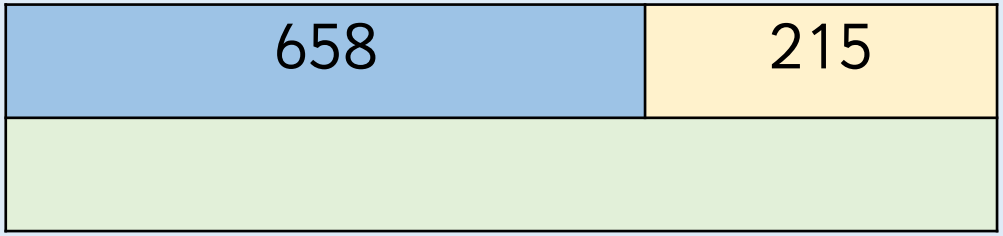
What happens when you have 10 ones and 10 tens?

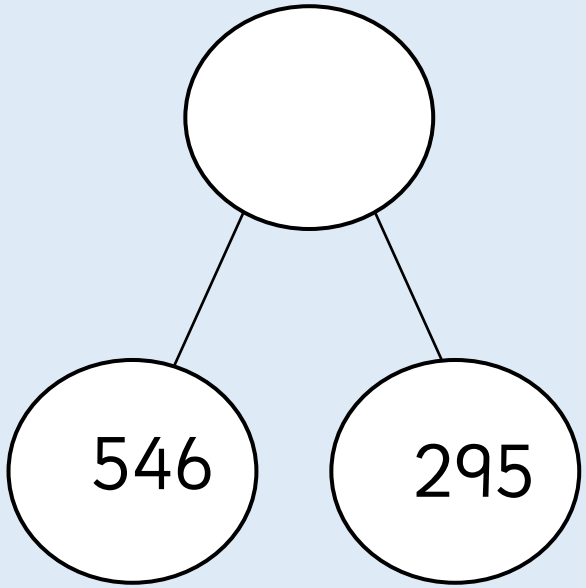
Activity 3

Add Two 3-Digit Numbers (2)

Use column addition to work out.







?

Why do we make both numbers when we add?

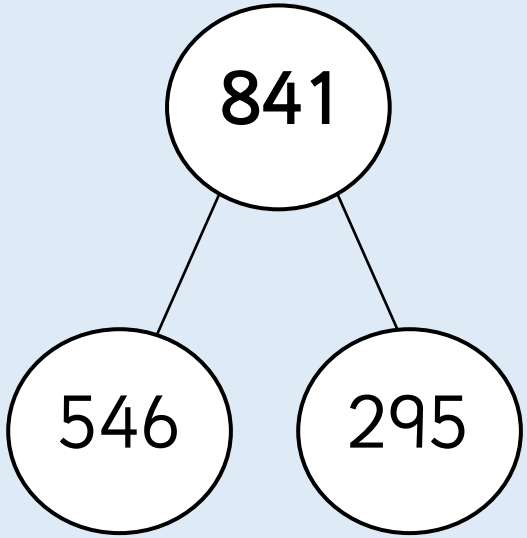
Activity 3

Add Two 3-Digit Numbers (2)

Use column subtraction to work out.

727	
349	378

	H	T	O
	3	4	9
+	3	7	8
	7	**2**	**7**
	1	1	



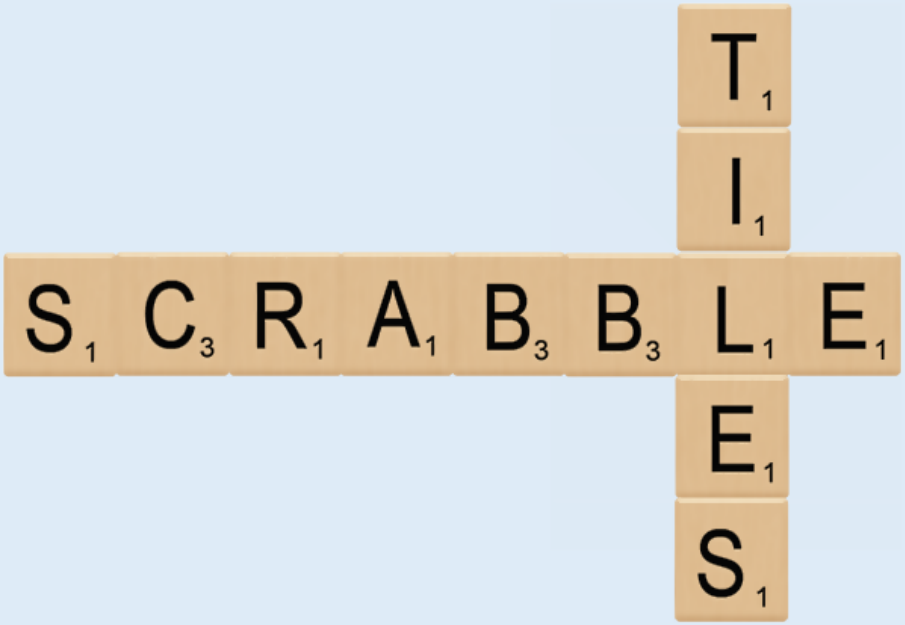
658	215
873	

	H	T	O
	6	5	8
+	2	1	5
	8	**7**	**3**
		1	

	H	T	O
	5	4	6
+	2	9	5
	8	**4**	**1**
	1	1	

Activity 4

Add Two 3-Digit Numbers (2)

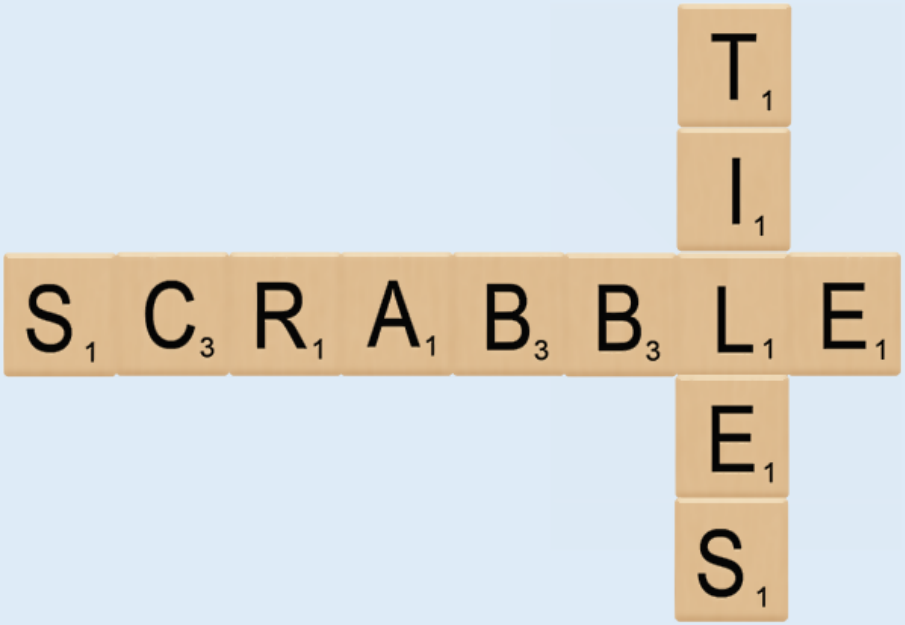


Zach and Esin finish their game of scrabble.

Zach scored 247 points and Esin scored 184 points.

What was the total amount of points scored?

Activity 4 Add Two 3-Digit Numbers (2)



Zach and Esin finish their game of scrabble.

Zach scored 247 points and Esin scored 184 points.

What was the total amount of points scored?

247 + 184 = 431 total points

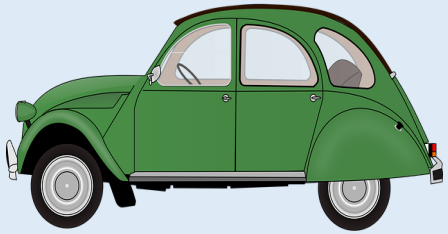
Activity 5

Add Two 3-Digit Numbers (2)

Car A drives 345 miles.

Car B drives 50 miles more.

How many miles were travelled altogether?

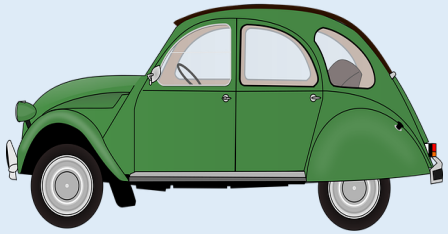


Activity 5 Add Two 3-Digit Numbers (2)

Car A drives 345 miles.

Car B drives 50 miles more.

How many miles were travelled altogether?

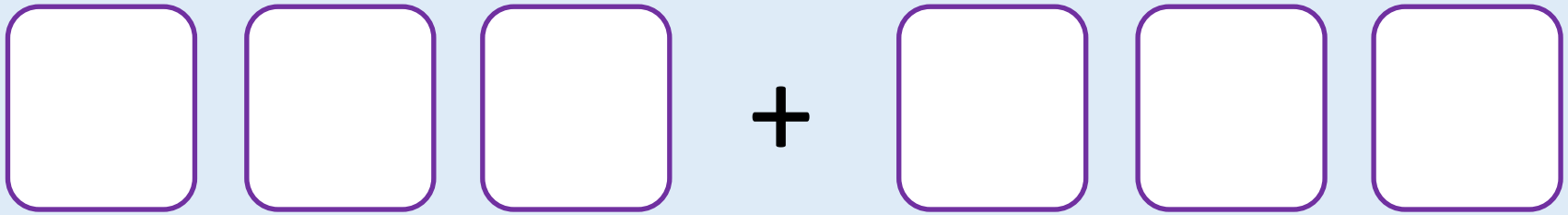


345 + 395 = 740 miles

Reasoning 1

Add Two 3-Digit Numbers (2)

Roll a 1 – 6 dice.
Fill in a box each time you roll.



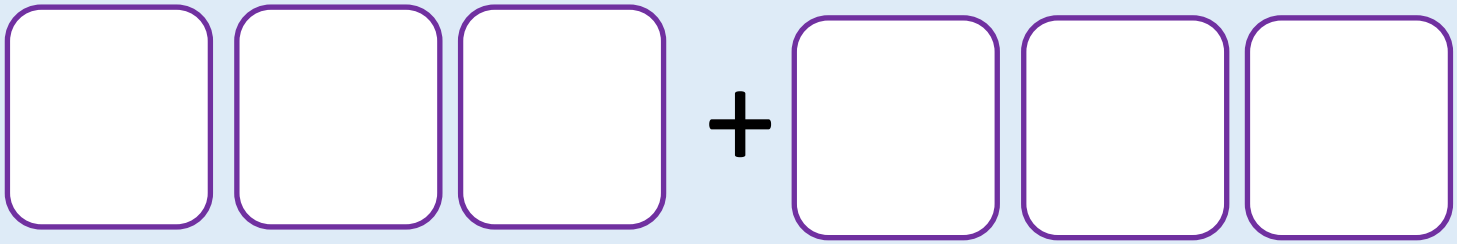
Can you make the total:

- An odd number
- An even number
- A multiple of 5
- The greatest possible number
- The smallest possible number

Reasoning 1

Add Two 3-Digit Numbers (2)

Roll a 1 – 6 dice.
Fill in a box each time you roll.



Can you make the total:

- An odd number
- An even number
- A multiple of 5
- The greatest possible number
- The smallest possible number

Discuss the rules with the children and what they would need to roll to get them e.g. to get an odd number. Only one of the ones should be odd because if both ones have an odd number, it will make an even.

Reasoning 2

Add Two 3-Digit Numbers (2)

Complete the statements to make them correct.

587 + 468 ◯ 587 + 568

436 + 368 ◯ 435 + 369

491 + 500 = 501 + _____

Explain why you do not have to work out the answers to compare them.

Reasoning 2 Add Two 3-Digit Numbers (2)

Complete the statements to make them correct.

587 + 468 < 587 + 568

436 + 368 = 435 + 369

491 + 500 = 501 + 490

In the first one we start with the same number, so the one we add more will be greater.
In the second 435 is one less than 436 and 369 is one more than 368, so the total will be the same.
In the last one 501 is 10 more than 491, so we need to add 10 less than 500.

Discuss

Add Two 3-Digit Numbers (2)

Where would these digits go on the place value chart? Why?

Why do we make both numbers when we add?

Can you represent ___ using the equipment?

Can you draw a picture to represent this?

Why is it important to put the digits in the correct column?

Subtract 3-digits from 3-digits

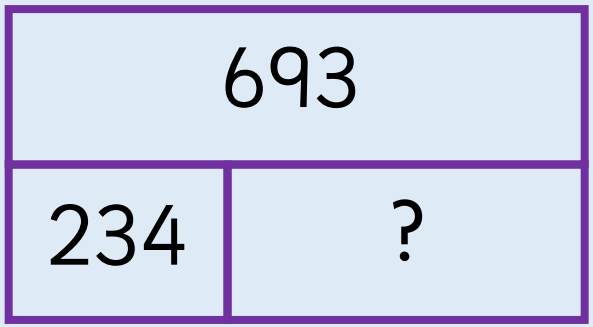
3

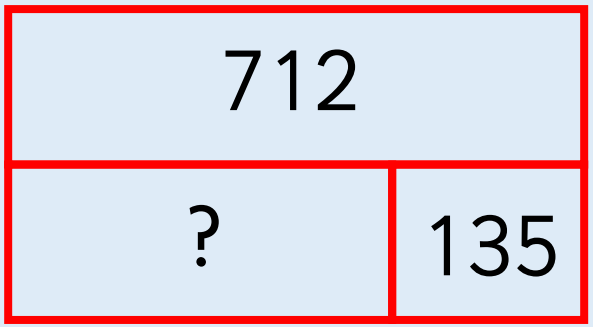
Fluency Teaching Slides

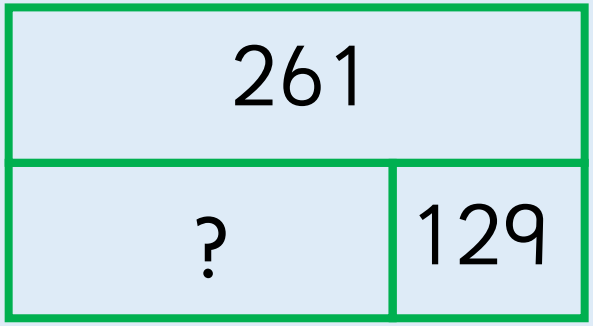
www.masterthecurriculum.co.uk

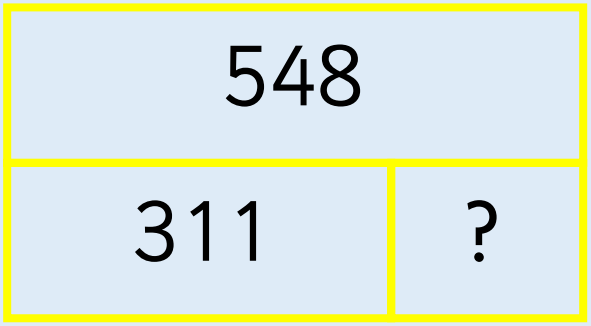
Activity 1 Subtract 3-digits from 3-digits

Using a counting on, find the missing value on the bar models.





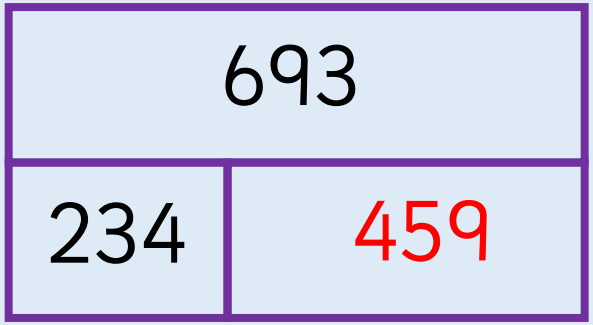


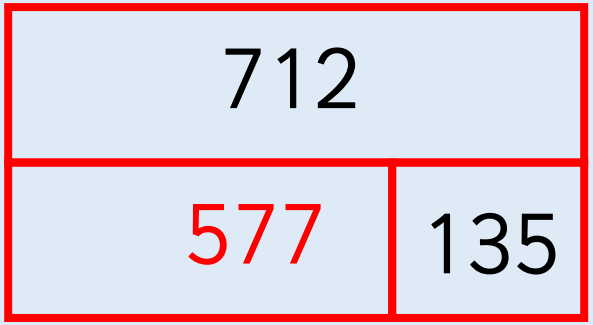


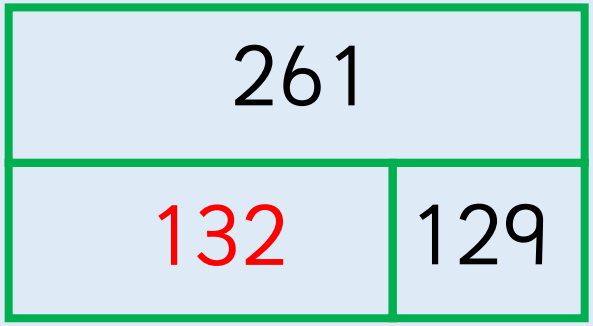
? How could you check if your answer is correct?

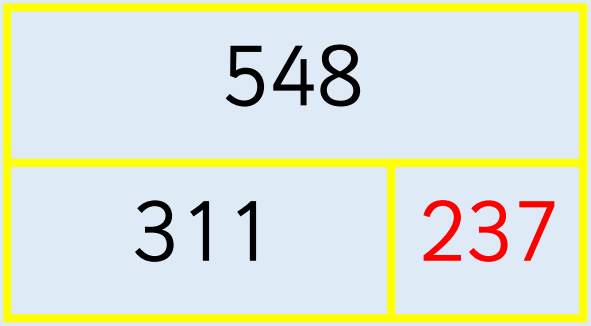
Activity 1 Subtract 3-digits from 3-digits

Using a counting on, find the missing value on the bar models.









Activity 2 Subtract 3-digits from 3-digits

There are 436 children in Oakwood Primary School.

212 of them are girls.

How may are boys?

Show your answer on the place value grid.

Hundreds	Tens	Ones

?

Which strategy would you use and why?

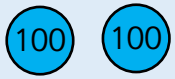
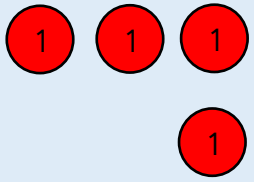
Activity 2 Subtract 3-digits from 3-digits

There are 436 children in Oakwood Primary School.

212 of them are girls.

How may are boys?

Show your answer on the place value grid.

Hundreds	Tens	Ones
		

Activity 3 Subtract 3-digits from 3-digits

There are 673 children in Brentside Primary School

431 of them have a school dinner.

The rest have a packed lunch.

How may children have a packed lunch?

Show your answer on the place value grid.

Hundreds	Tens	Ones

Activity 3 Subtract 3-digits from 3-digits

There are 673 children in Brentside Primary School

431 of them have a school dinner.

The rest have a packed lunch.

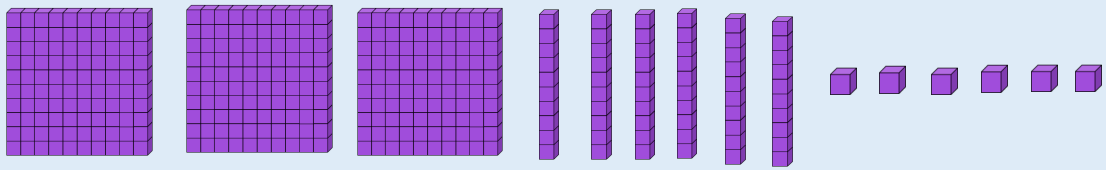
How may children have a packed lunch?

Show your answer on the place value grid.

Hundreds	Tens	Ones
100 100	10 10 10 10	1 1

Activity 4 Subtract 3-digits from 3-digits

Start with:



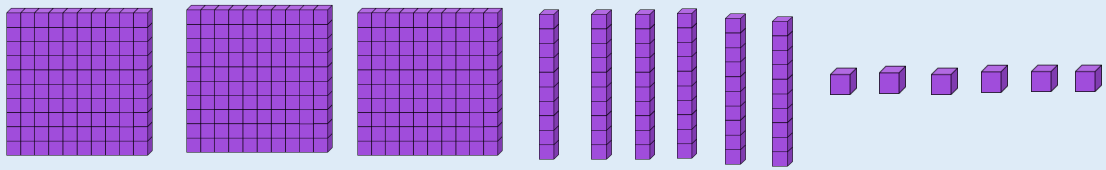
Then subtract 234.

Copy and complete the column subtraction.

−	2	3	4

Activity 4 Subtract 3-digits from 3-digits

Start with:



Then subtract 234.

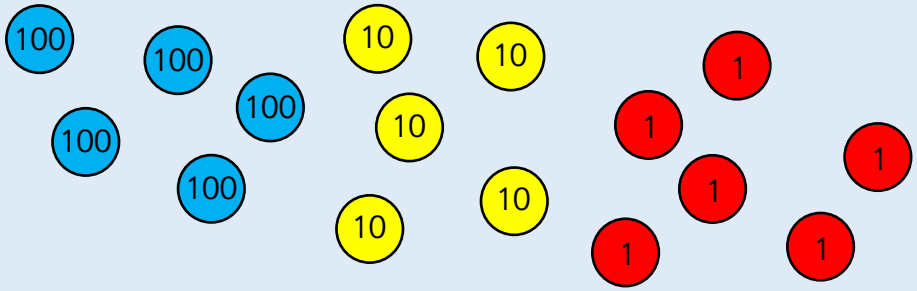
Copy and complete the column subtraction.

	3	6	6
−	2	3	4
	1	3	2

Activity 5

Subtract 3-digits from 3-digits

Start with:



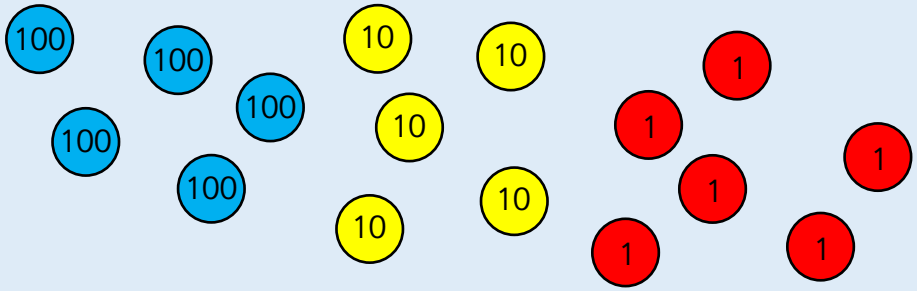
Then subtract 345.

Copy and complete the column subtraction.

−	3	4	5

Activity 5 Subtract 3-digits from 3-digits

Start with:



Then subtract 345.

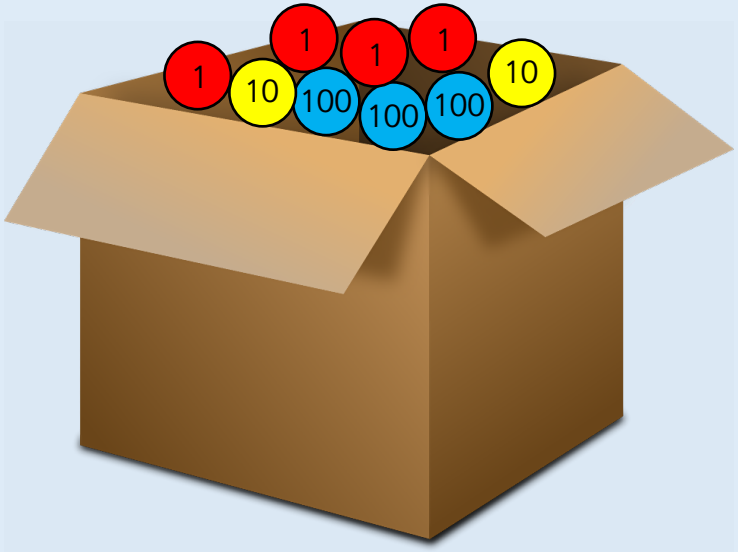
Copy and complete the column subtraction.

	5	5	6
−	3	4	5
	2	1	1

Reasoning 1

Subtract 3-digits from 3-digits

The value of the counters altogether is 436, but the box contains some.

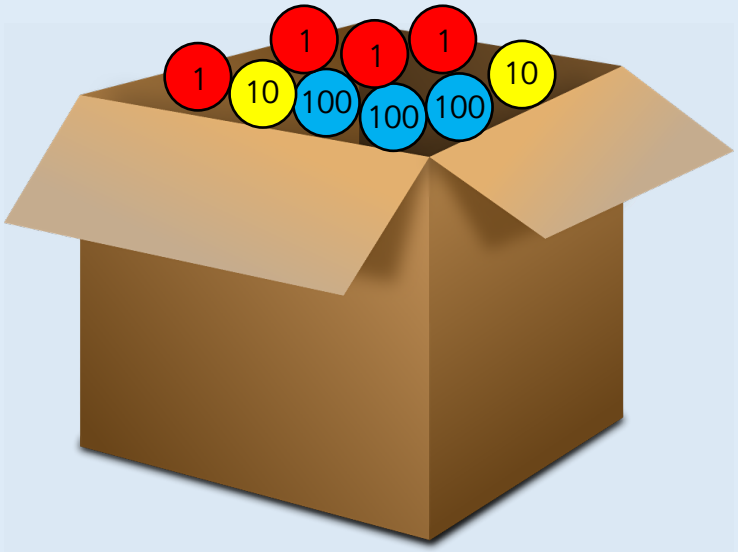


How many different ways can you make the missing amount?

Reasoning 1

Subtract 3-digits from 3-digits

The value of the counters altogether is 436, but the box contains some.



436 – 324 = 112

Possible answer:
One 100, one 10 and two 1s.

Eleven 10s and two 1s.

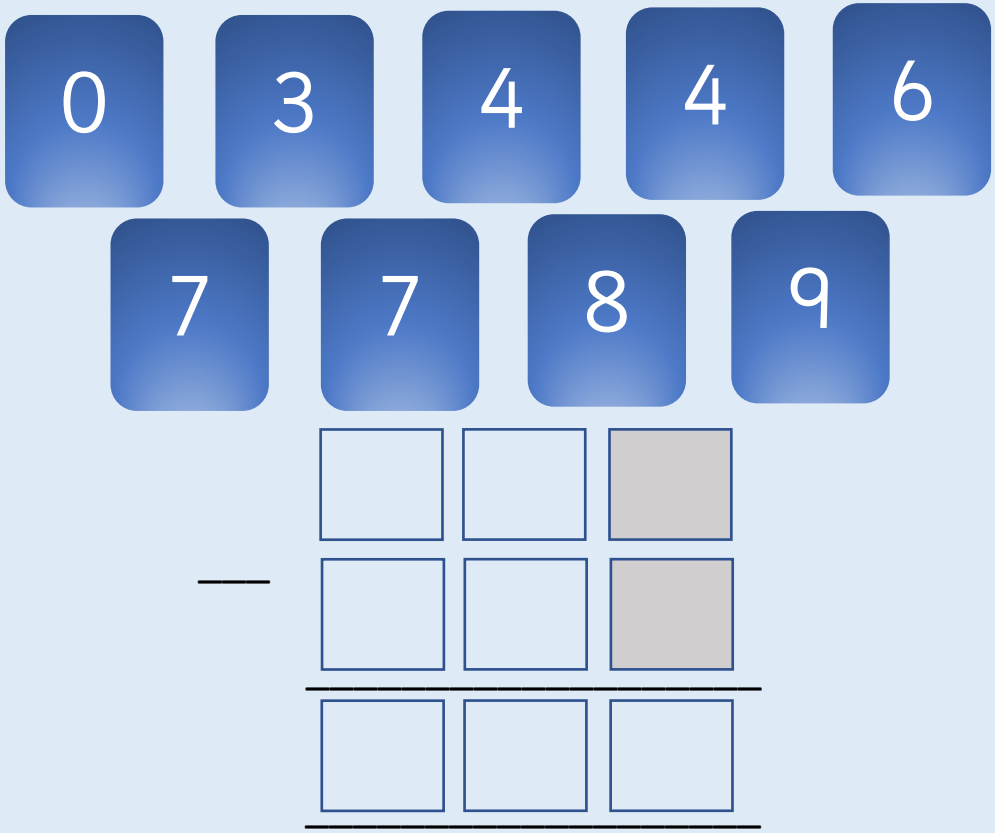
112 ones etc.

How many different ways can you make the missing amount?

Reasoning 2

Subtract 3-digits from 3-digits

Use the digit cards to complete the calculation.

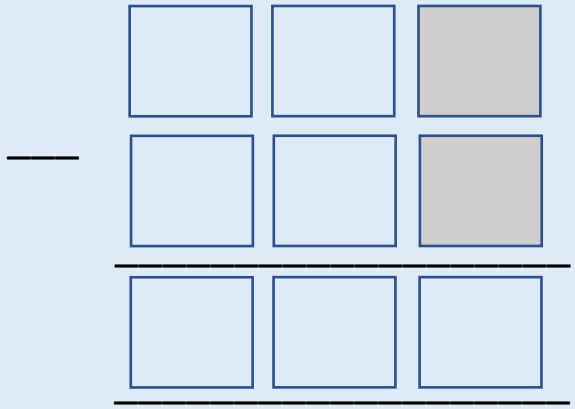


The digits in the shades boxes are odd.
Is there more than one answer?

Reasoning 2

Subtract 3-digits from 3-digits

Use the digit cards to complete the calculation.



Possible answers:

987 – 467 = 520

879 – 473 = 406

The digits in the shades boxes are odd.
Is there more than one answer?

Discuss

Subtract 3-digits from 3-digits

Which strategy would you use and why?

How would you check your answer is correct?

Does it matter which number is at the top of the calculation?

Subtract 3-digits from 3-digits

3

Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 Subtract 3-digits from 3-digits (2)

Complete the subtraction calculation using counters.

$$224 - 118 =$$

Hundreds	Tens	Ones
100 100	10 10	1 1 1 1

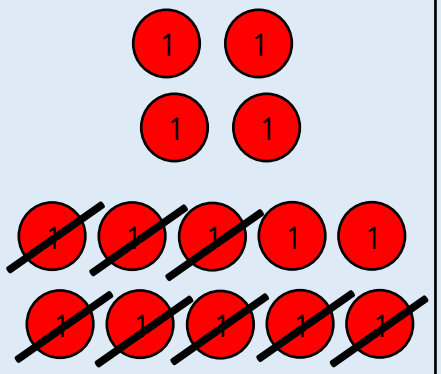
?

Why do you have to exchange a ten?
What do you exchange it for?

Activity 1 Subtract 3-digits from 3-digits (2)

Complete the subtraction calculation using counters.

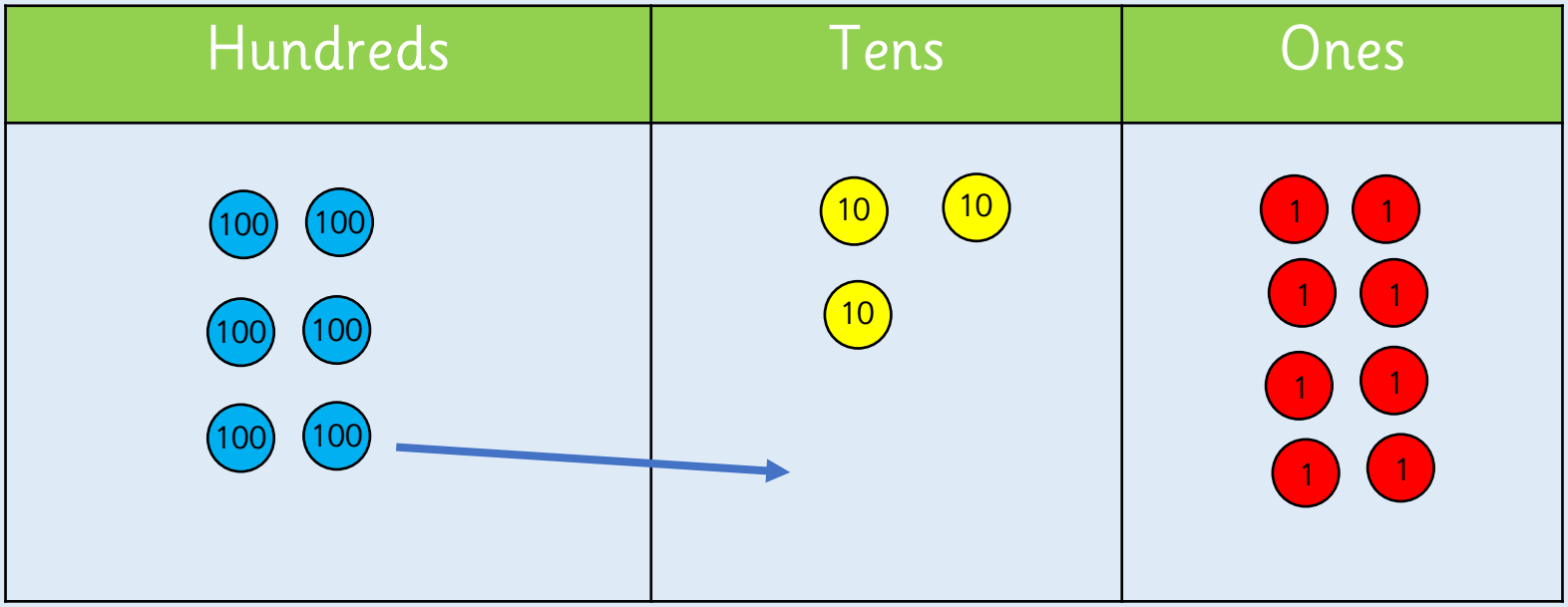
224 – 118 = 106

Hundreds	Tens	Ones
		

Activity 2 Subtract 3-digits from 3-digits (2)

Complete the subtraction calculation using counters.

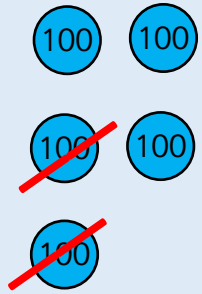
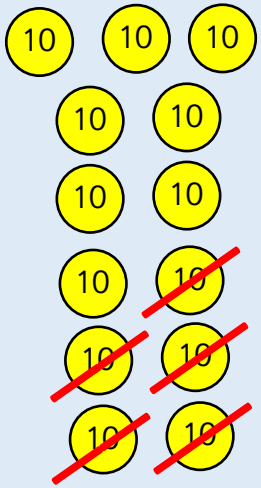
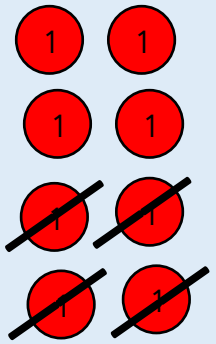
638 - 254 =



Activity 2 — Subtract 3-digits from 3-digits (2)

Complete the subtraction calculation using counters.

638 - 254 = 384

Hundreds	Tens	Ones
		

Activity 3 Subtract 3-digits from 3-digits (2)

Complete the column subtraction showing exchanges.

	H	T	O
	2	5	2
-	1	3	5

	H	T	O
	6	7	3
-	5	8	1

	H	T	O
	6	9	5
-	2	4	8

? How would you teach somebody else to use column subtraction with exchange?

Activity 3

Subtract 3-digits from 3-digits (2)

Complete the column subtraction showing exchanges.

	H	T	O
	2	$^{4}\cancel{5}$	$^{1}2$
-	1	3	5
	1	1	7

	H	T	O
	$^{5}\cancel{6}$	$^{1}7$	3
-	5	8	1
		9	2

	H	T	O
	6	$^{8}\cancel{9}$	$^{1}5$
-	2	4	8
	4	4	7

Reasoning 1

Subtract 3-digits from 3-digits (2)

Work out the missing digits.

	H	T	O
	5	?	3
-	2	1	8
	3	1	5

	H	T	O
	?	0	?
-	2	?	8
	2	4	6

Reasoning 1

Subtract 3-digits from 3-digits (2)

Work out the missing digits.

	H	T	O
	5	3	3
-	2	1	8
	3	1	5

	H	T	O
	5	0	4
-	2	5	8
	2	4	6

Reasoning 2 — Subtract 3-digits from 3-digits (2)

Esin is working out 506 – 389.

Here is her working out:

Esin

	H	T	O
	~~5~~ ^{4}	0	^{1}6
-	3	8	9
			7

	H	T	O
	~~5~~ ^{3} ^{4}	^{1}0	^{1}6
-	3	8	9
	0	2	7

Explain her mistake.

What should be the answer?

Reasoning 2 Subtract 3-digits from 3-digits (2)

Esin is working out 506 – 389.

Esin

Here is her working out:

	H	T	O
	~~5~~ ^{4}	0	^{1}6
-	3	8	9
			7

	H	T	O
	~~5~~ ^{3} ^{4}	^{1}0	^{1}6
-	3	8	9
	0	2	7

Explain her mistake.
What should be the answer?

Esin has exchanged from the hundred column to the ones so there are 106 ones in the ones column. She should have exchanged 1 hundred for 10 tens and then 1 ten for 10 ones. 506 – 289 = 117

Discuss

Subtract 3-digits from 3-digits (2)

Which method would you use for this calculation and why?

What happens when you can't subtract 9 from 7? 50 from 30 etc.

How would you teach somebody else to use column subtraction with exchange?

Why do we exchange?

When do we exchange?

Estimate Answers

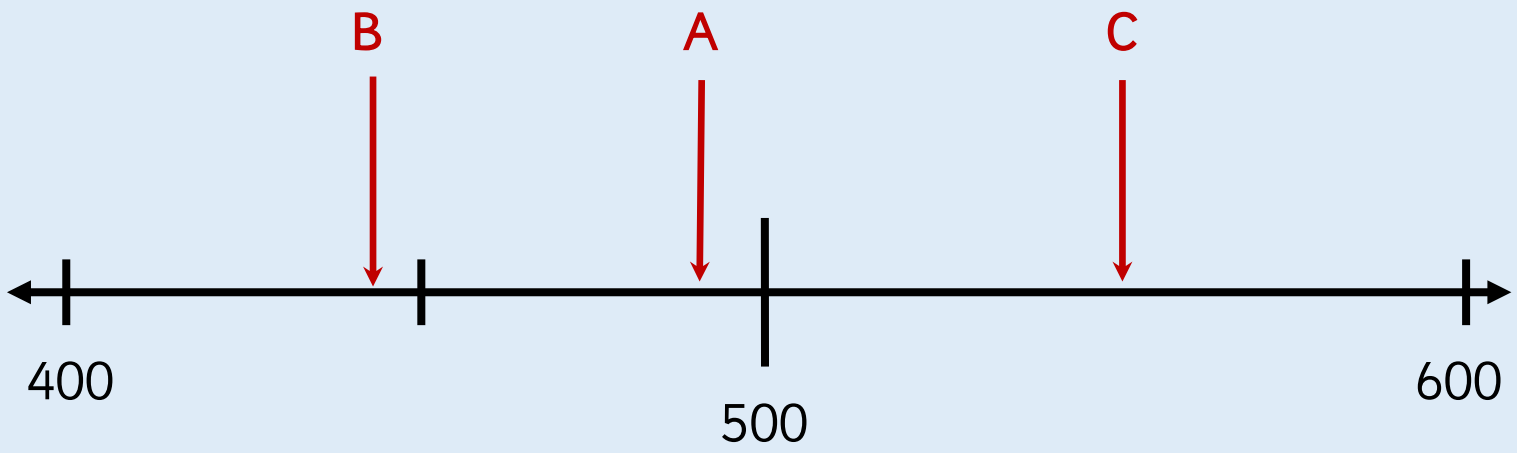
3

Fluency Teaching Slides

www.masterthecurriculum.co.uk

Activity 1 Estimate Answers

Estimate the position of arrows A, B and C on the number line.

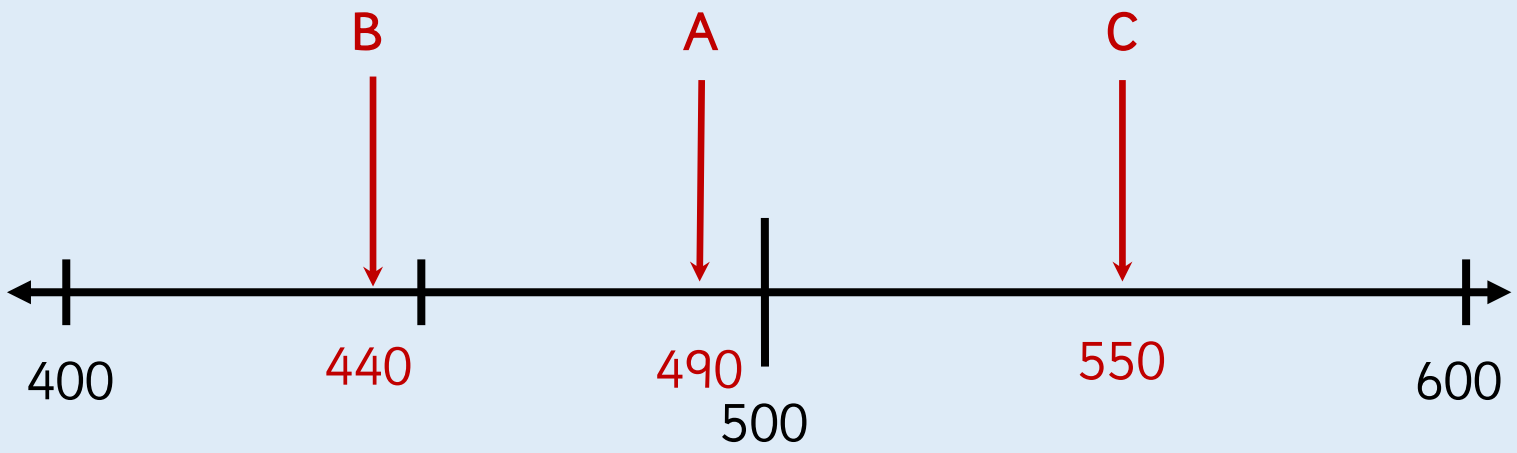


?

What would you estimate this to be?
Why did you choose this number?

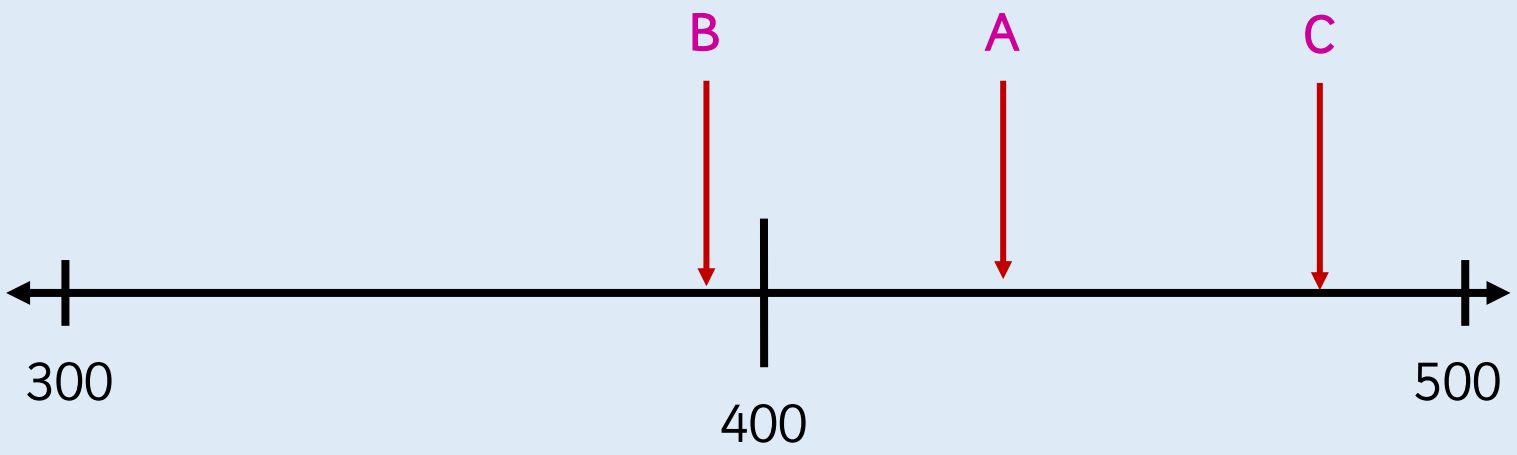
Activity 1 Estimate Answers

Estimate the position of arrows A, B and C on the number line.



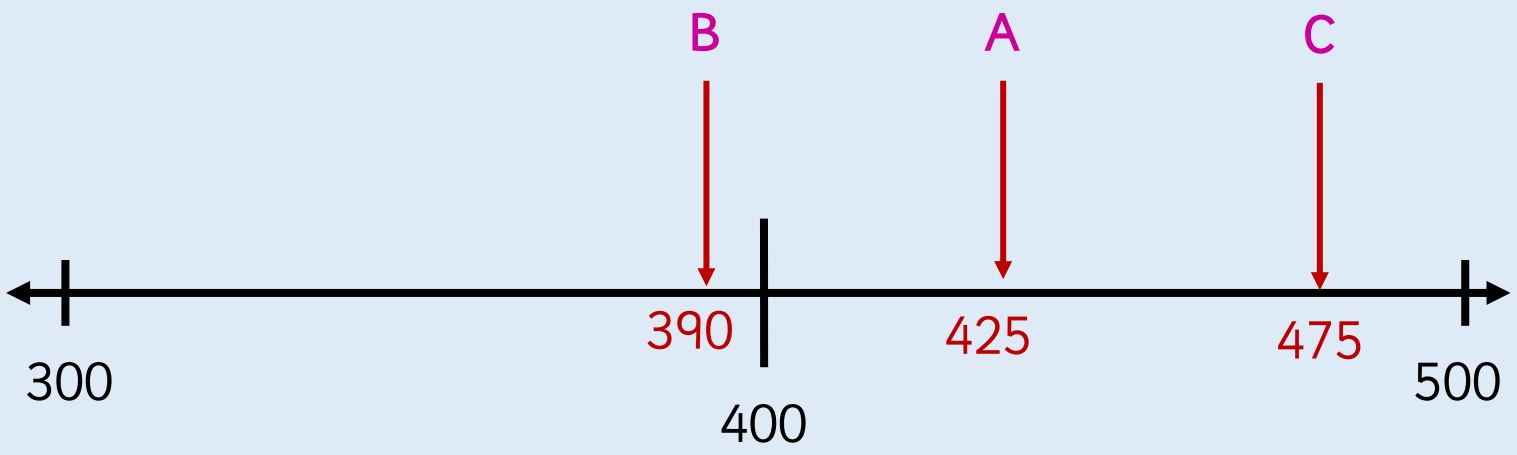
Activity 2 Estimate Answers

Estimate the position of arrows A, B and C on the number line.



Activity 2 Estimate Answers

Estimate the position of arrows A, B and C on the number line.



Activity 3 Estimate Answers

Which of these numbers is a sensible estimation to the number of flowers?

200

1,000

780

Activity 3 Estimate Answers

Which of these numbers is a sensible estimation to the number of flowers?

200

1,000

780

Activity 4 Estimate Answers

Which of these numbers is a sensible estimation to the number of shells?

110

104

100

Activity 4 Estimate Answers

Which of these numbers is a sensible estimation to the number of shells?

110 ✓

104

100

Activity 5 Estimate Answers

Which of these numbers is a sensible estimation to the number of blackberries?

4

400

420

Activity 5 Estimate Answers

Which of these numbers is a sensible estimation to the number of blackberries?

4

400

420

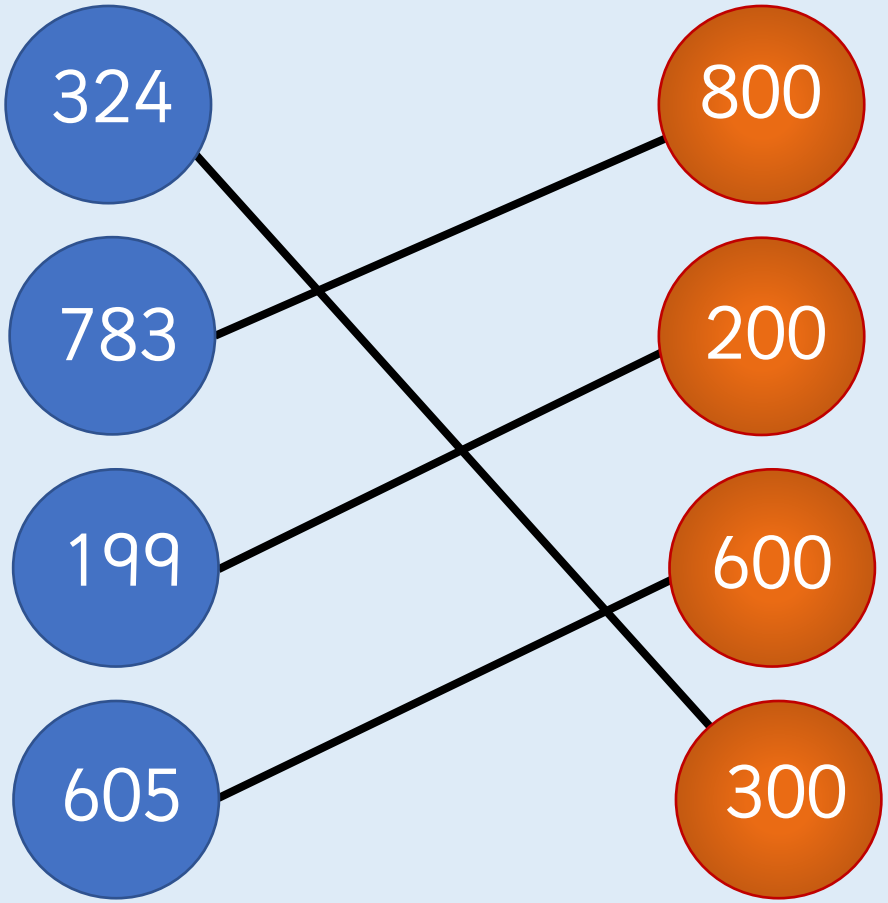
Activity 6 Estimate Answers

Match each answer to its "near number".

324	800
783	200
199	600
605	300

Activity 6 Estimate Answers

Match each answer to its "near number".



Reasoning 1 Estimate Answers

Lenna

I estimate 192 – 95 will be 100 because I will subtract 100 from 200.

Is this a good estimate? Why?

Are there any other ways she could have estimated?

Reasoning 1 Estimate Answers

Lenna

I estimate 192 – 95 will be 100 because I will subtract 100 from 200.

Is this a good estimate? Why?

Are there any other ways she could have estimated?

Yes, because she found two numbers close to the original numbers.

She could have rounded to the nearest 10 and calculated.

200 – 100 (=100)

Reasoning 2 Estimate Answers

Use the number cards to make different calculations with an estimated answer of 70.

121	33	48	41
398	328	255	

Reasoning 2 Estimate Answers

Use the number cards to make different calculations with an estimated answer of 70.

121 33 48 41

398 328 255

Possible answers:

121 – 48
(120 – 50)

41 + 33
(40 + 30)

398 – 328
(400 – 330)

Discuss

Estimate Answers

What would you estimate this to be?

Why did you choose this number?

What is/isn't this a sensible estimation to an answer?

How did they work out this answer?

Could you do it in a different/better way?

Check Answers

3

Fluency Teaching Slides

Activity 1 Check Answers

Use a subtraction number sentence to check the answer to the addition.

$26 + 51 = 77$

$34 + 12 = 46$

$14 + 24 = 38$

How can you tell if your answer is sensible?

Activity 1 Check Answers

Use a subtraction number sentence to check the answer to the addition.

26 + 51 = 77	77 – 26 = 51
34 + 12 = 46	46 – 12 = 34
14 + 24 = 38	38 – 14 = 24

Activity 2 Check Answers

Use a subtraction number sentence to check the answer to the subtraction.

$56 - 14 = 42$

$38 - 18 = 20$

$67 - 15 = 52$

Activity 2 Check Answers

Use a subtraction number sentence to check the answer to the subtraction.

56 – 14 = 42

42 +14 = 56

38 – 18 = 20

20 + 18 = 38

67 – 15 = 52

52 – 15 = 67

Activity 3

Check Answers

Tia

Tia bakes 87 cookies for the cookie sale at school.

63 are sold.

How many cookies does she have left?

Show your answer using a bar model and then check your answer by using an addition.

?

Does it help to check your answer if you spot which numbers are near to multiples of 10?

Activity 3 Check Answers

Tia bakes 87 cookies for the cookie sale at school.

63 are sold.

How many cookies does she have left?

Show your answer using a bar model and then check your answer by using an addition.

87	
63	**24**

	H	T	O
		2	4
+		6	3
		8	7

Activity 4 Check Answers

Write all the calculations you can make using these cards.

730	310	420	=	+	–

Activity 4 Check Answers

Write all the calculations you can make using these cards.

730	310	420	=	+	–

310	+	420	=	730
730	–	310	=	420
730	–	420	=	310

Reasoning 1 Check Answers

If I add two numbers together, I can check my answer by using a subtraction of the same numbers after
e.g. check 54 + 12,
I can do 12 - 54

Lenna

Do you agree? Explain why.

Reasoning 1 Check Answers

Lenna

If I add two numbers together, I can check my answer by using a subtraction of the same numbers after
e.g. check 54 + 12,
I can do 12 - 54

Do you agree? Explain why.

No, because you cannot have part subtract part.

You need to find the whole and this needs to be at the start of the subtraction then you subtract a part to check the remaining part.

Reasoning 2 Check Answers

I completed an addition and then used the inverse to check my calculation.

When I checked my calculation, the answer was 360.

One of the other numbers was 465.

What could the calculation be?

_____ + _____ = _____

_____ - _____ = 360

Reasoning 2 Check Answers

I completed an addition and then used the inverse to check my calculation.

When I checked my calculation, the answer was 360.

One of the other numbers was 465.

What could the calculation be?

_____ + _____ = _____

_____ - _____ = 360

Possible answers:

465 – 105 = 360
825 – 465 = 360

So the calculation could have been:

360 + 105 = 465
360 + 465 = 825

Discuss

Check Answers

How can you tell if your answer is sensible?

Does knowing if a number is close to a multiple of 100 help when adding and subtracting 3-digit numbers?

Does it help?

Does it help to check your answer if you spot which numbers are near to multiples of 10?

How does counting 10s, 50s and 100s help?