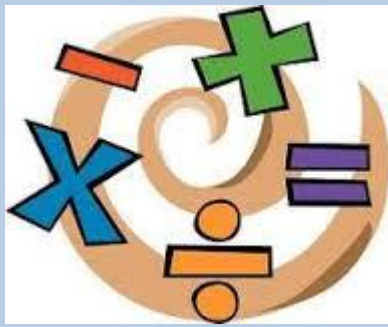


Welcome to maths at Abbey Park Middle School



**Abbey Park
Schools Federation**





Thinking is at the heart of Mathematics and therefore should be at the heart of Mathematical teaching and learning. At Abbey Park we believe that all children can do Maths (and do it well).



Aims of tonight's meeting

- To get an insight into how Maths is taught at APMS.
- To gain an understanding of the National Maths curriculum and expectations.
- To take away some ideas to support your children at home.

Progression of Times tables

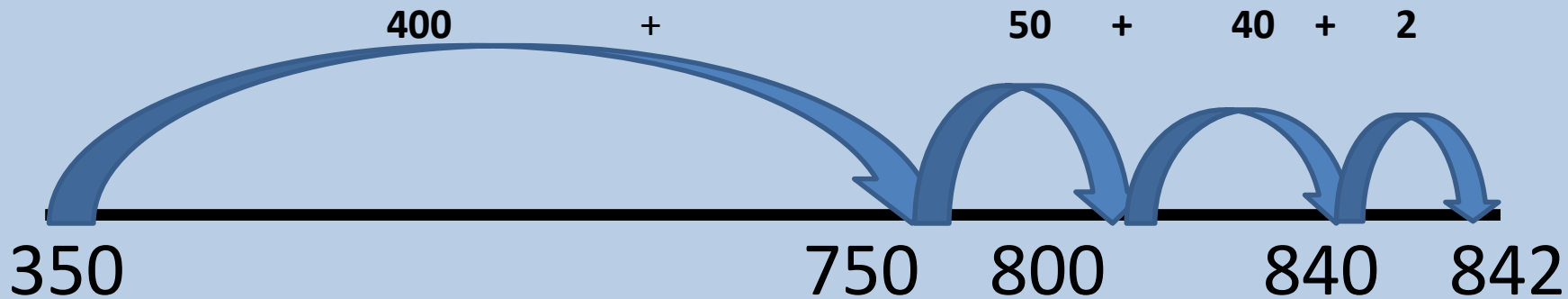
Year 2	Year 3	Year 4
Counting in multiples of 2s, 3s, 5s, 10s	Fluent 2s, 3s, 4s, 5s, 8s, 10s multiplication facts	Fluent in all times tables, up to 12 x 12, by the end of Year 4.

Progression of Addition & Subtraction

Year 3	Year 4	Year 5	Year 6
<ul style="list-style-type: none">•add and subtract numbers mentally, including:<ul style="list-style-type: none">•a three-digit number and 1s•a three-digit number and 10s•a three-digit number and 100s•add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction	<ul style="list-style-type: none">•add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate•estimate and use inverse operations to check answers to a calculation	<ul style="list-style-type: none">•add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)•add and subtract numbers mentally with increasingly large numbers	<ul style="list-style-type: none">• Pupils practise addition, subtraction, multiplication and division for larger numbers, using the formal written methods of columnar addition and subtraction, short and long multiplication, and short and long division

Different methods used for addition





$$350 + 492$$

300	50	
400	90	2
<hr/>		
800	40	2
<hr/>		
100		

$457 + 546 =$

Expanded method

There are 487 boys and 546 boys at APMS. How many children are there altogether?

5 4 6

4 8 7

1 3

1 2 0

9 0 0

1 0 3 3

$12,786 + 2,568 =$

12, 786 people visited Pershore Abbey last year.
The numbers increased by 2,568 this year.
How many people visited this year ?

$$\begin{array}{r} 12,786 \\ + 2,568 \\ \hline 15,354 \\ \hline \end{array}$$

1 1 1

Common misconceptions when place value hasn't been taught well.

9

$$56.38 + 24.7 =$$

A large grid of 10 columns and 10 rows, intended for students to show their working out for the addition problem. The grid is currently empty.A blue rectangular box for the final answer, currently empty.A small white square box for the mark, currently empty.

1 mark

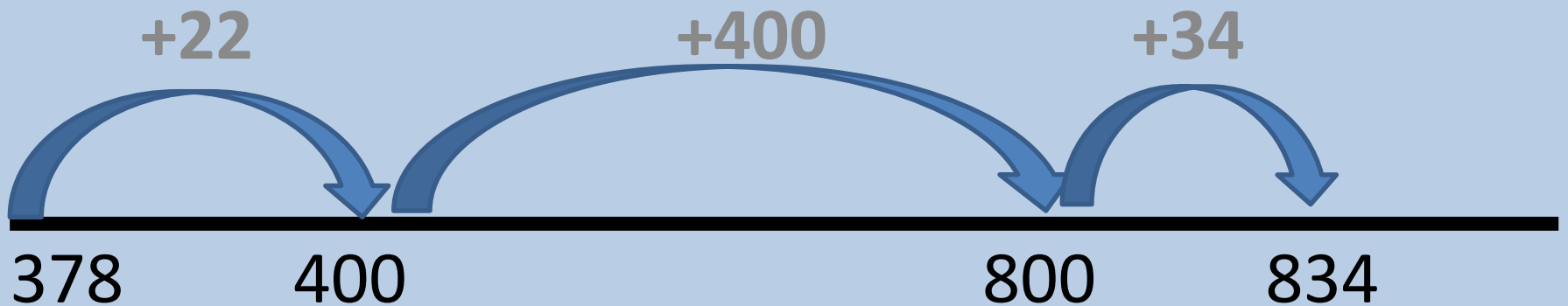
Different methods for subtraction



Counting on to subtract

$$834 - 378 = \boxed{}$$

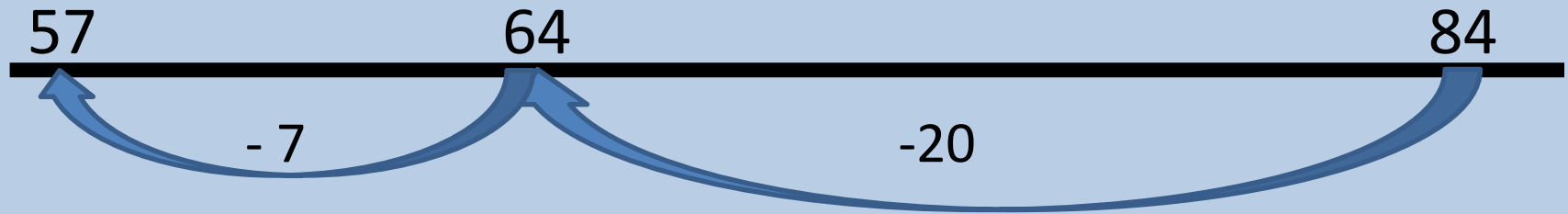
The library owns 834 books 378 are out on loan. How many are on the shelves?



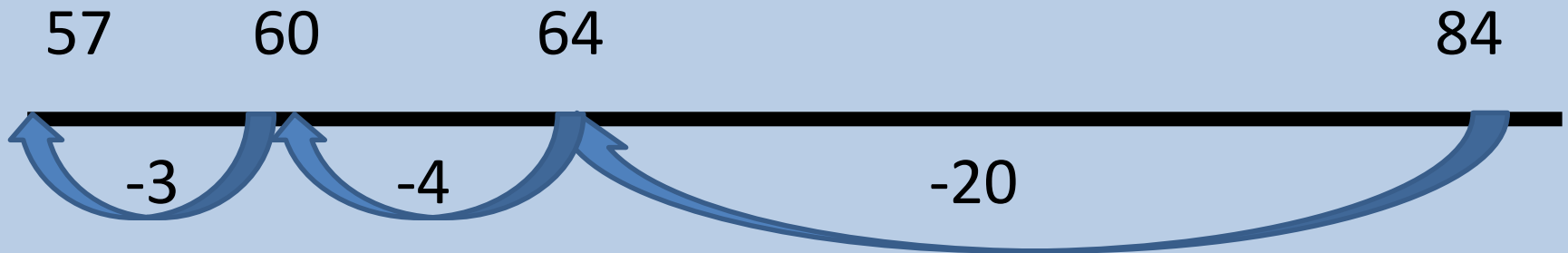
22	(400)
400	(800)
<u>34</u>	(834)

$$84 - 27 = \boxed{}$$

I cut 27cm off a ribbon measuring 84cm. How much is left?



or



$$836 - 254 = 582$$

700

~~800~~¹ 30 6

200 50 4

$$728 - 582 = 146$$

H	T	O	
7	2	8	-
5	8	2	

8 subtract 2 = 6

20 subtract 80 – can't be done.

Here we teach children to *exchange*. They go over to the hundreds column and exchange one hundred for ten tens. Now they have 120 - 80

A typical SATS question in the calculation paper.

7

$$7,064 - 502 =$$

A grid for calculation with a blue box for the answer.

A small white box for marking.

1 mark

Different methods for multiplication



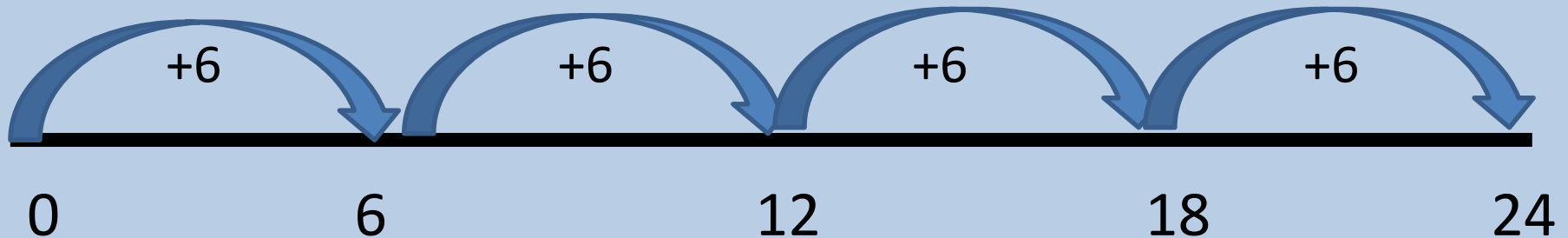
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$$4 \times 6 =$$

There are 4 cats. Each cat has 6 kittens.

How many kittens are there altogether?

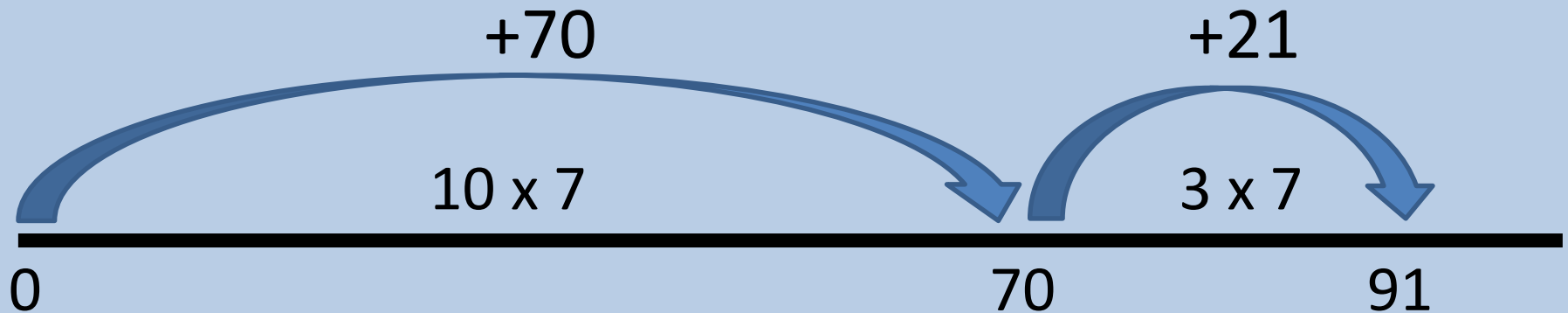


Children could count on in equal steps, recording each jump on an empty number line. This show 4 jumps of 6.

Chunking on a number line

$$13 \times 7 = \boxed{}$$

There are 13 biscuits in a packet. How many biscuits in 7 packets?



When numbers get bigger it is inefficient to do lots of small jumps. We split 13 into parts (10 and 3). This gives you two jumps (10×7 and 3×7).

$$6 \times 124 = \boxed{}$$

124 books were sold. Each book cost £6. How much money was taken?

		100		20		4
6		600	+	120	+	24

This is called the grid method . 124 is split into parts (100, 20 and 4) and each of these is multiplied by 6. The three answers are then added together.

$72 \times 34 = \boxed{}$

A cat is 72cm long. A tiger is 34 times longer. How long is the tiger?

	70	2	
30	2100	60	=2160
4	280	8	= 288
			<hr/>
			2448
			1

This method also works for long multiplication. Again split up the numbers and multiply each part. Add across the rows, then add those answers together.

Example of short multiplication

Richard needs 4 pieces of wood, each measuring 32cm, to build his frame. How much wood does he need altogether?

$$\begin{array}{r} 32 \\ \times 4 \\ \hline 128 \\ \hline \end{array}$$

Example of long multiplication

There will be 19 coaches arriving in Pershore this Saturday, each coach is full and holds 38 people, including the bus driver. How many people will be arriving by coach on Saturday?

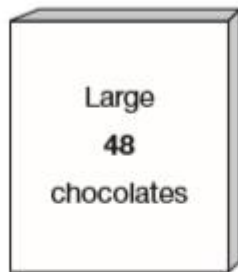
$$\begin{array}{r} 38 \\ \times 19 \\ \hline 342 \\ \hline 380^7 \\ \hline 722 \\ \hline 1 \end{array}$$

A typical SATS question on reasoning paper 2

8

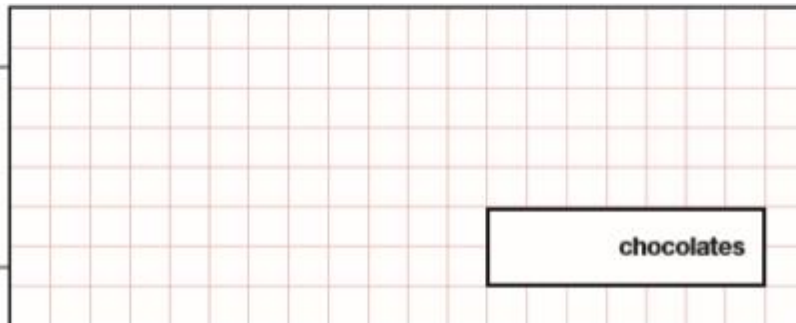
Ken buys 3 large boxes and 2 small boxes of chocolates.

Each large box has 48 chocolates. Each small box has 24 chocolates.



How many **chocolates** did Ken buy altogether?

Show
your
method



2 marks

Different methods for Division

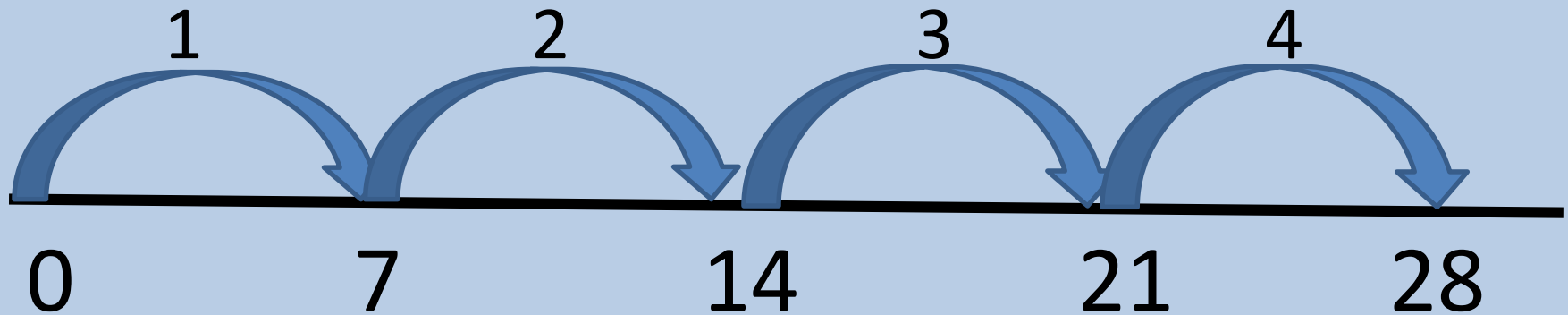


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$$28 \div 7 = \square$$

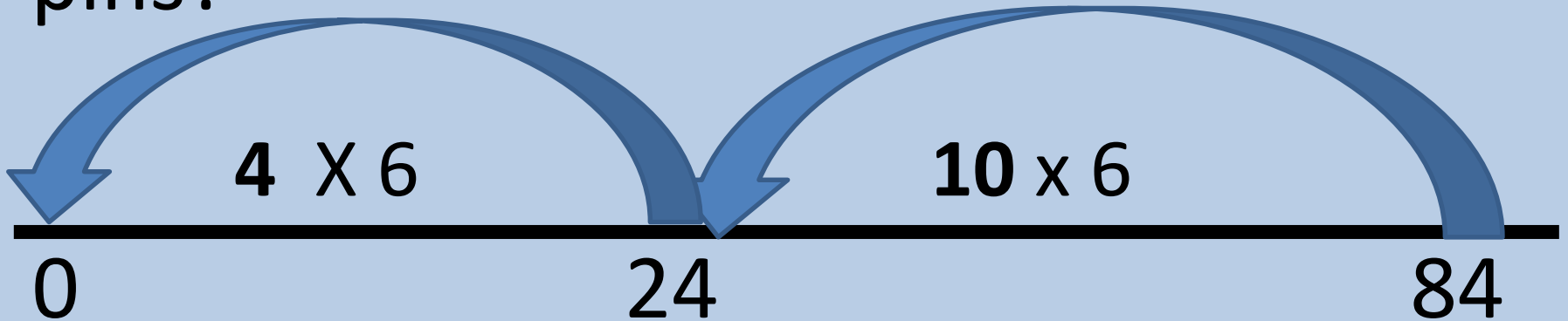
A chew bar costs 7p. How many can I buy with 28p?



To work out how many jumps there are in 28, draw jumps of 7 along a number line. This shows you need jumps of 7 to reach 28.

$$84 \div 6 = \square$$

I need 6 drawing pins to put up a picture.
How many pictures can I put up with 64 pins?



It would take a long time to jump back in bigger 'chunks'. A jump of 10 lots of 6 takes you to 24. Then you need another 4 lots of 6 to take you to 0. Altogether that is **14** lots of 6.

Bus stop method (or short division)

The Apple store has 4 shelves to display the new iPhones. They have 84 iPhones to showcase on the shelves. How many iPhones should they put on one shelf?

$$\begin{array}{r} 4 \overline{) 84} \end{array}$$

$$184 \div 7 = \boxed{}$$

I need 184 chairs for a concert. I arrange them in rows of 7. How many rows do I need?

$$\begin{array}{r} 7 \overline{) 184} \\ \underline{-140} \\ 44 \\ \underline{-42} \\ 2 \end{array}$$

$$7 \times \mathbf{20}$$

$$7 \times \mathbf{6}$$

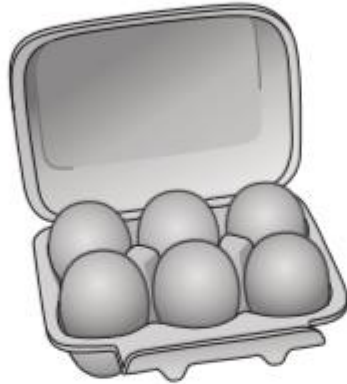
$$=26 \text{ r}2$$

This method is known as chunking. In this example you are taking chunks of 7. First subtract 140 (20 lots of 7) and you are left with 44. Then subtract (6 lots of 7) to leave 2. Altogether that is 26 lots of 7 with a remainder of 2.

7

A farmer is packing eggs.

Each box holds **six** eggs.



The farmer has 980 eggs to pack.

How many boxes can the farmer **fill** using 980 eggs?

full boxes

1 mark

How many eggs will be left over?

left over

1 mark

End of KS2 SATs

- At the end of KS2 (Year 6) children will take their end of KS2 SATs.
- This is done in school, the papers are administered at the same time across the country.
- The children are expected to complete 2 Reading papers, 3 Maths papers and 2 English, Grammar, Punctuation and Spelling papers. These are spread out throughout the week.
- The Maths SATs consist of an arithmetic paper and 2 reasoning papers.
- The Arithmetic paper contains 36 questions. Children will have 30 minutes to complete.
- The Reasoning paper 1 consists of 23 and Reasoning paper 2 consists of 21 questions. The children have 40 minutes to complete this.
- Monday 11th May – English, Grammar, Punctuation and Spellings, papers 1 and 2.
- Tuesday 12th May – English Reading
- Wednesday 13th May – Maths Papers 1 and 2 (Arithmetic and Reasoning)
- Thursday 14th May- Maths Paper 3 (Reasoning)
- Results are released in July.

Have a look at the papers
Any Qs? Surprises?

