

Interim framework statement: The pupil can reason about addition (e.g. pupil can reason that the sum of 3 odd numbers will always be odd).

Are the statements always true, sometimes true or never true?

Cut and stick the statements under the correct headings, using jottings and calculations to show your reasoning.

If two even numbers are added together the total is an even number.	If three even numbers are added together the total is an even number.	If an odd number is multiplied by an odd number you get an even number.	If an even number is halved you get an odd number.
If two odd numbers are added to an even number the total is an odd number.	If three odd numbers are added together the total is an odd number.	If two even numbers are added to an odd number the total is an even number.	If an odd number is subtracted from an even number you get an even number.

Interim framework statement: The pupil can reason about addition (e.g. pupil can reason that the sum of 3 odd numbers will always be odd).

Investigating Odd Numbers

1 3 5 7 9

Choose any pair of odd numbers to add. Try a few examples. What do you notice?

Now choose 3 odd numbers to add. Try a few examples. What do you notice?

What about adding 4 odd numbers together? What do you notice?

Have you noticed a pattern? Can you predict what might happen if you add 5 odd numbers?

Interim framework statement: The pupil can use multiplication facts to make deductions outside known multiplication facts (e.g. a pupil knows that multiples of 5 have one digit of 0 or 5 and uses this to reason that 18×5 cannot be 92 as it is not a multiple of 5).

Reasoning About Numbers

For each number sentence, circle a number that could reasonably correct. *You do not need to work out the answer!*

Write a sentence to explain why you chose that number.

$19 \times 5 =$	84	95	93
$19 \times 2 =$	35	33	38
$19 \times 10 =$	190	185	192
$28 + 38 =$	63	66	70
$47 + 45 =$	90	95	92

Interim framework statement: The pupil can work out mental calculations where regrouping is required (e.g. $52 - 27$; $91 - 73$).

Finding Missing Numbers

Using a numberline, can you find the missing numbers in the number sentences below?

$$42 + \square = 60$$

$$51 + \square = 70$$

$$67 + \square = 18$$

$$83 + \square = 100$$

Interim framework statement: The pupil can solve more complex missing number problems (e.g. $14 + \square - 3 = 17$; $14 + \Delta = 15 + 27$).

Solving Missing Number Problems

Using any methods you know, can you find the missing number to make the number sentences correct?

$$\square + 11 = 25 + 14$$

$$17 + 15 = \square + 12$$

$$8 + 18 + 5 = 3 + \square + 15$$

Interim framework statement: The pupil can determine remainders given known facts (e.g. given $15 \div 5 = 3$ and has a remainder of 0, pupil recognises that $16 \div 5$ will have a remainder of 1; knowing that $2 \times 7 = 14$ and $2 \times 8 = 16$, pupil explains that making pairs of socks from 15 identical socks will give 7 pairs and one sock will be left).



Pairs of Socks

How many socks are in a pair? Use this fact to help you solve the sock problems below!

5 pairs of socks = socks altogether

6 pairs of socks = socks altogether

If I have 11 socks, how many pairs of socks would I have? Would I have any left over?

9 pairs of socks = socks altogether

10 pairs of socks = socks altogether

If I have 19 socks, how many pairs of socks would I have?

6 pairs of socks = socks altogether

7 pairs of socks = socks altogether

If I have 13 socks, how many pairs of socks would I have?

Interim framework statement: The pupil can solve word problems that involve more than one step (e.g. which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?).

The pupil can find and compare fractions of amounts (e.g. $\frac{1}{4}$ of £20 = £5 and $\frac{1}{2}$ of £8 = £4 so $\frac{1}{4}$ of £20 is greater than $\frac{1}{2}$ of £8).

Problem solving with halves and quarters

Using your knowledge of finding halves and quarters, can you solve these problems? Stick the problems in your book and use jottings and calculations to show your working below.

I have 24 sweets in a bag. I share them with my friend. How many do we get each?	Tom has 30 marbles. He loses half of them in a game. How many does he have left?	Dad made 28 buns. He put half away in a tin. How many buns are left?	16 children went to a party. One quarter of them don't like pizza. How many children is that? How many DO like pizza?	There were 40 chocolates in a box. We ate one quarter of them. How many are left?
There are 32 balloons in a packet. We blew up half of them. How many is that?	Mum bought 12 apples. When she got home, she found that are quarter of them were bad. How many good apples were there?	There are 24 footballs in the sack. One quarter of them are flat. How many are not flat?	16 cars are in the car park. $\frac{1}{4}$ of them are red. How many cars are not red?	There are 20 children in Class 2. One quarter of them wear glasses. How many children don't wear glasses?

Interim framework statement: The pupil can solve word problems that involve more than one step (e.g. which has the most biscuits, 4 packets of biscuits with 5 in each packet or 3 packets of biscuits with 10 in each packet?).

Problem solving with more than one step

Can you solve these problems? Read them carefully and stick the problems in your book, using jottings and calculations to show your working below.



Mum buys some pizzas for my party and cuts each one into quarters. If she buys 6 pizzas and cuts them all into quarters, how many pieces does she cut? If there are 8 children at the party, how many pieces do they each eat?

My grandmother gave me £5 for the sweet shop and I bought 3 bags of sweets for 60p each and 2 lollies for 20p each. How much will it cost me in total? How much change will I get back?




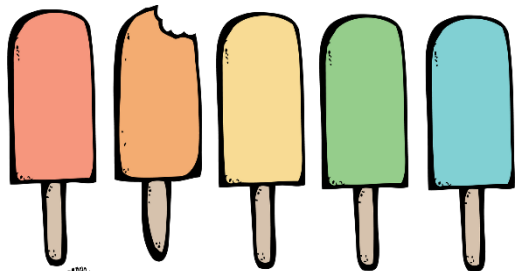

How many more apples are needed when you buy 6 bags of 5 apples and you need 32 apples for a school trip?

Interim framework statement: The pupil can recognise the relationships between addition and subtraction and can rewrite addition statements as simplified multiplication statements (e.g. $10 + 10 + 10 + 5 + 5 = 3 \times 10 + 2 \times 5 = 4 \times 10$).

Making Amounts in Different Ways

I have £1.00 to spend. I buy a mixture of ice creams, lollies and ice pops when the Ice Cream Van stops in my street. Can you show three different ways I could spend exactly £1.00?

Hint: Use your times tables facts to help you.

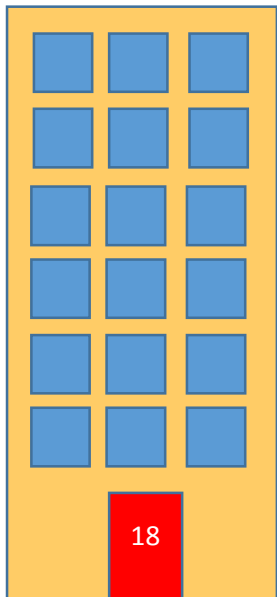
Ice Cream Van Price List		
Ice Creams 10p	Lollies 5p	Ice Pops 2p
		

Interim framework statement: The pupil can recognise the relationships between addition and subtraction and can rewrite addition statements as simplified multiplication statements (e.g. $10 + 10 + 10 + 5 + 5 = 3 \times 10 + 2 \times 5 = 4 \times 10$).

The Array Challenge

The city's builders need your help to design a group of new buildings. Building 1 needs 18 windows, Building 2 needs 20 windows and Building 3 needs 24 windows. Can you find *all the different ways* the windows could be organised and write number sentences to match? Use cubes or counters to show this practically.

eg. 18

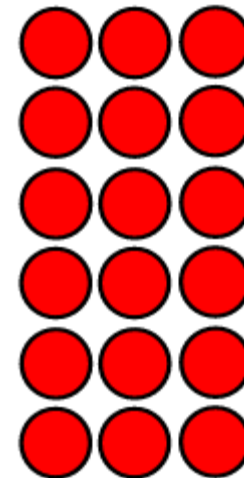


$$6 \times 3 = 18$$

$$3 \times 6 = 18$$

$$3 + 3 + 3 + 3 + 3 + 3 = 18$$

$$6 + 6 + 6 = 18$$



Interim framework statement: The pupil can find and compare fractions of amounts (e.g. $\frac{1}{4}$ of £20 = £5 and $\frac{1}{2}$ of £8 = £4 so $\frac{1}{4}$ of £20 is greater than $\frac{1}{2}$ of £8).

Can I calculate and compare fractions?

Read each statement carefully and circle the correct answer.
Use the space below each for your jottings or working out.

Which is greater...	$\frac{1}{2}$ of 16	or	$\frac{1}{4}$ of 20?
Which is longer...	$\frac{1}{4}$ of 1 metre	or	$\frac{1}{2}$ of 60cm?
Who has more...?	Tom has $\frac{1}{2}$ of £10	and	Ben has $\frac{1}{4}$ of £24
Which is greater...	$\frac{1}{2}$ of 100	or	$\frac{3}{4}$ of 80?
Which is shorter...	$\frac{1}{2}$ of 30cm	or	$\frac{1}{4}$ of 60cm?