



Learning Intention – I can relate number facts

Children should be encouraged to link related number

Facts which are also known as number families.

$$7 + 4 = 11$$

$$4 + 7 = 11$$

These are known as twin sums

$$11 - 7 = 4$$

$$11 - 4 = 7$$

Children also learn 'stories' of a given number e.g.

1	0	+	0	=	1	0		1	0	-	0	=	1	0	
	9	+	1	=	1	0		1	0	-	1	=	9		
	8	+	2	=	1	0		1	0	-	2	=	8		
	7	+	3	=	1	0		1	0	-	3	=	7		
	6	+	4	=	1	0		1	0	-	4	=	6		
	5	+	5	=	1	0		1	0	-	5	=	5		
	4	+	6	=	1	0		1	0	-	6	=	4		
	3	+	7	=	1	0		1	0	-	7	=	3		
	2	+	8	=	1	0		1	0	-	8	=	2		
	1	+	9	=	1	0		1	0	-	9	=	1		
0	+	1	0	=	1	0		1	0	-	1	0	=	0	



Learning Intention -I can work out addition calculations using formal methods – 2 digit numbers add 2 digit numbers.

Step 1
35 add 28

		T	U	
		3	5	
	+	2	8	

Step 2
Add the units (U), 5 units and 8 units give 13 units. Exchange 10 units for 1 ten (T). Write the 3 in the units column of the answer and carry the 1 ten as shown.

		T	U	
		3	5	
	+	2	8	
			3	
		1		

Step 3
Add the tens. 3 tens and 2 tens and 1 ten gives 6 tens. Write the 6 in the tens column of the answer. The answer is 63.

		T	U	
		3	5	
	+	2	8	
		6	3	
		1		



Learning Intention – I can subtract tens and units by exchanging.			
Step 1 43 take away 27		T	U
		4	3
	-	2	7
Step 2 Subtracts the units (U), 3 take away 7, you cannot do. Exchange 1 ten (T) for 10 units. You now have 3 tens and 13 units.		T	U
		4	3
	-	2	7
Step 3 13 take away 7 leaves 6. 3 take away 2 leaves 1. The answer is 16.		T	U
		4	3
	-	2	7
		1	6
Children should be encouraged to use a ruler between the calculation and answer.			



Learning Intention – I can subtract hundreds, tens and units by exchanging.
(A)

Step 1

Subtract the units.
1 take away 6, I cannot do.
Exchange 1 ten for 10 units.
I now have 0 tens and 11 units.
11 take away 6 leaves 5 units.

	H	T	U	
	3	1	1	
-	1	2	6	
			5	

Step 2

Subtract the tens.
0 take away 2, I cannot do.
Exchange 1 hundred for 10 tens.
I now have 2 hundreds and 10 tens.
10 take away 2 leaves 8 tens.

	H	T	U	
	3	1	1	
-	1	2	6	
		8	5	

Step 3

Subtract the hundreds.
2 take away 1 leaves 1 hundred.
The answer is 185.

	H	T	U	
	3	1	1	
	1	2	6	
	1	8	5	



Learning Intention – I can subtract hundreds, tens and units by exchanging.
(B)

Step 1

Subtract the units. 0 take away 3, I cannot do.
Exchange 1 ten for 10 units, I cannot do.
Exchange 1 hundred for 10 tens, giving 3 hundreds and 10 tens.

	H	T	U	
	4	0	0	
-	1	4	3	

Step 2

Exchange 1 ten for 10 units.
10 take away 3 leaves 7 units.

	H	T	U	
	4	0	0	
-	1	4	3	
			7	

Step 3

Subtract the tens. 9 tens take away 4 tens leaves 5 tens.
Subtract the hundreds. 3 hundreds take away 1 hundred leaves 2 hundreds.

	H	T	U	
	4	0	0	
-	1	4	3	
	2	5	7	



Learning Intention – I can divide tens and units

Step 1
97 divided by 2.

	2	9	7	

Step 2
Share the tens.
9 divided by 2 is 4 remainder 1.
Put 4 in the tens column of the answer and put 1 next to the 7 units to make 17 units.

		4		
	2	9	7	

Step 3
Share the units.
17 divided by 2 is 8 remainder 1.
Put 8 in the units column of the answer and write Remainder 1 (r1).
The answer is 48r1

	4	8	R1	
	2	9	7	



Learning Intention – I can multiply tens and units by tens and units (long multiplication)					
<p>Step 1 Multiply 37 by 8 8 times 7 is 56, put 6 units down and carry 5 tens. 8 times 3 is 24 and add 5 tens making 29, put down 9 tens and 2 hundreds.</p>			3	7	
		x	2	8	
		2	9	6	
<p>Step 2 Multiply by 20 (2x20) Put 0 in the units column then multiply by 2, 2 times 7 is 14, put 4 in tens column and carry 1 hundred. 2 times 3 is 6 add 1 hundred is 7, put 7 in hundreds column.</p>			3	7	
		x	2	8	
		2	9	6	
		7	4	0	
<p>Step 3 Add the previous two answers together (296 + 740) to give final answer. 37 times 28 is 1036.</p>			3	7	
		x	2	8	
		2	9	6	
		7	4	0	
		1	0	3	6



Learning Intention – I can use 24 hour time.

When writing 24-hour time e.g 17.15

- four digits are always used
- the first two digits show the hours
- the last two digits show the minutes

To change 12 hour times to 24 hour times

5.20pm – add 12 to hours and miss out the pm = 17.20

7.50am – put 0 before 7 and miss out the am = 07.50

10.15am – miss out the am

12 Midnight is 00.00 12 Noon is 12.00

In timetables the dot(s) between hours and minutes are often missed out (1835).

Digital clocks often have two dots between hours and minutes (18:35).



Learning Intention – I can use simple percentages.

Percent means 'out of every 100'

The symbol for percent is %

So 25% is 25 out of 100.

Common percentages and their link to fractions.

100% = one whole = 1

50% = one half = $\frac{1}{2}$

25% = one quarter = $\frac{1}{4}$

10% = one tenth =

To find a percentage of a quantity

50% of 40

= $\frac{1}{2}$ of 40

=20

25% of 40

= $\frac{1}{4}$ of 40

=10

10% of 40

= $\frac{1}{10}$ of 40

=4



Learning Intention – I can compare fractions, decimals and percentages.

Fraction	Decimal	Percentage	Fraction	Decimal	Percentage
$\frac{1}{1}$	1.0	100%	$\frac{1}{2}$	0.5	50%
$\frac{1}{3}$	0.33	33.3%	$\frac{1}{10}$	0.1	10%
$\frac{1}{4}$	0.25	25%	$\frac{3}{4}$	0.75	75%

When converting between fractions, decimals and percentages use

Fraction	Divide top number by bottom number	Decimal	Multiply by 100	Percentage
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Learning Intention – I can use scale.



Scale 1cm to 50cm

1cm on the drawing represents 50m in true length.
So the true length is

$$\begin{aligned} &5\text{cm} \times 50 \\ &= 250\text{cm} \\ &= 2.5\text{m} \end{aligned}$$

The true length of the car is 2.5m

Draw a rectangular sports field to scale using **1cm to 10m**
Where the true length is 80m and the breadth is 60m.

Length

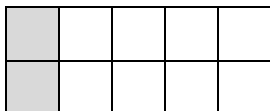
10m	1cm
80m	$80 \div 10 = 8\text{cm}$

Breadth

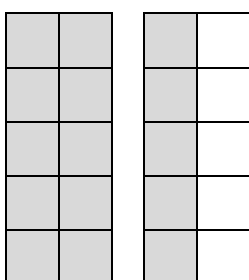
10m	1cm
60m	$60 \div 10 = 6\text{cm}$



Learning Intention – I can use decimal notation for tenths and multiply and divide by 10.



2/10 or 0.2 coloured
8/10 or 0.8 not coloured



1 4/10 or 1.4 coloured
6/10 or 0.6 not coloured

Multiplying decimals by 10

$$4.5 \times 10 = 45$$

To multiply by 10 move each digit one place to the **left**.

Dividing decimals by 10

$$45 \div 10 = 4.5$$

To divide by 10 move each digit one place to the **right**.
 (45 is actually 45.0 however the .0 is not necessary.)



Learning Intention – I can use ratio.

Ratio is a way of comparing two or more quantities.

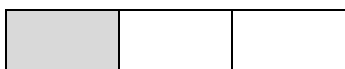
The ratio tells us how to do the sharing.



Ratio – shaded to unshaded 4 : 6



Ratio – shaded to unshaded 3 : 5



Ratio – shaded to unshaded 1 : 2

Ratio can be simplified in the same way as a fraction

e.g. $\frac{4}{6}$ can be simplified by 2 as 4 and 6 are both multiples of 2 $\frac{2}{3}$

4:6 can be simplified to 2:3 in the same way



Learning Intention – I can find equivalent fractions.

Example		=		=	
	$\frac{1}{2}$	=	$\frac{2}{4}$	=	$\frac{4}{8}$

These 3 fractions look different but all have the same Value (**equivalent fractions**).
 Equivalent fractions are found by multiplying or dividing the **TOP** and the **BOTTOM** by the **SAME NUMBER**.

By Multiplying

$$\begin{array}{r} 2 \text{ (x2)} \quad 4 \\ = \\ 3 \text{ (x2)} \quad 6 \end{array}$$

By Dividing

$$\begin{array}{r} 15 \text{ (}\div 5\text{)} \quad 3 \\ = \\ 20 \text{ (}\div 5\text{)} \quad 4 \end{array}$$

This is also called simplifying.