



Maths

Calculation Policy

Money

2024

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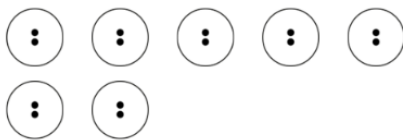
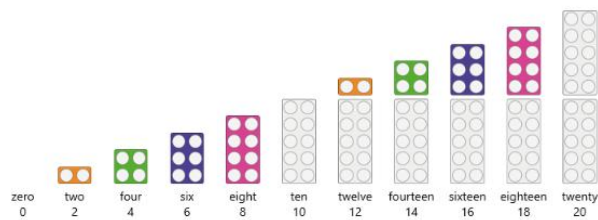
EYFS

0 → I can say numbers in words in a sequence

Year One and Two (Both taught in Year Two)

[ncetm_spine2_segment01_y1.pdf](#)

0 → I can count efficiently in groups of two



'Seven groups of two.'



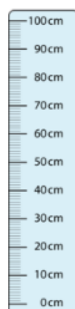
'Ten groups of two.'

0 → I can count efficiently in groups of ten

How many pencils are there?
Count in groups of ten.

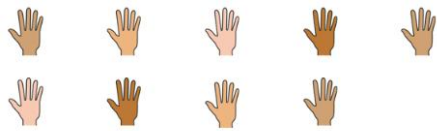


ninety
90



0 → I can count efficiently in groups of five

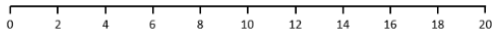
1000	2000	3000	4000	5000	6000	7000	8000	9000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9



'Nine groups of five.'

➡ I can count efficiently in groups of two, five and ten

Counting in 2s



- What numbers can you see on the number line?
- Let's count along the number line in multiples of...
- Can you start in different places?
- What's the next multiple of... after...? What's the multiple of... before...?
- Can you count backwards as well as forwards?

➡ I can explain the value of a 1p coin in pence

Group of pennies:



- There are three one-penny coins; the total value is three p.

or

- There are three one-penny coins; the total value is three pence.

➡ I can recognise and explain the value of 2p, 5p and 10p coin

Different denominations:

Coin	Heads	Tails	Pre-money token
1p			
2p			
5p			
10p			

- Show and describe each coin.
- Ask children to describe the value of each coin using the stem sentence:
'This is a ___-pence coin. It has a value of ___ p.'

➡ I can explain that a single coin can be worth several pennies

0 ➡ I can use knowledge of the value of coins to solve problems

0 ➡ I can calculate the total value of coins to solve problems

0 ➡ I can calculate the total value of the coins in a set of 2p coins

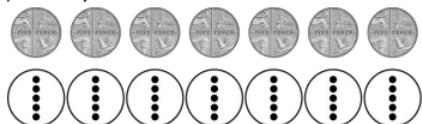
Finding the value of a set of 2 p coins – coins and pre-money tokens:



- 'One two-pennies, two two-pennies, three two-pennies...'
- 'Two p, four p, six p...'
- 'There are nine coins.'
- 'Each coin has a value of two p.'
- 'This is eighteen p.'

0 ➡ I can calculate the total value of the coins in a set of 5p coins

Finding the value of a set of 5 p coins – coins and pre-money tokens:



- 'One five-pennies, two five-pennies, three five-pennies...'
- 'Five p, ten p, fifteen p...'
- 'There are seven coins.'
- 'Each coin has a value of five p.'
- 'This is thirty-five p.'

0 ➡ I can calculate the total value of the coins in a set of 10p coins

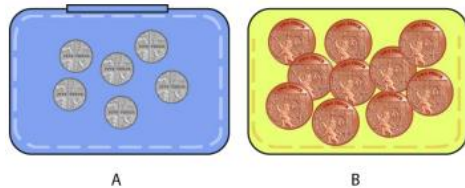
Finding the value of a set of 10 p coins – coins and pre-money tokens:



- 'One ten-pennies, two ten-pennies, three ten-pennies...'
- 'Ten p, twenty p, thirty p...'
- 'There are nine coins.'
- 'Each coin has a value of ten p.'
- 'This is ninety p.'

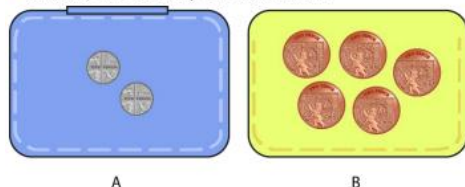
0 ➡ I can compare sets of 2p, 5p and 10p coins

Which purse would you rather have?



Comparing sets – example 2 (same quantity, different denominations):

• Which purse would you rather have?



- 'Can you draw another purse with the same amount of money in?'
- 'And another?'

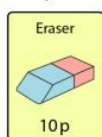
Continue to use the language from previous steps to describe each set of coins, for example:

- 'There are five coins.'
- 'Each coin has a value of two p.'
- 'This is ten p.'

➡ I can relate this to real-life contexts

➡ I can work out how many coins are needed to make a value of 10p

'How many pennies would you need to buy this eraser?'



- 'The eraser costs ten p.'
- 'Each coin has a value of one p.'



- 'One penny, two pennies, three pennies... ten pennies.'
- 'One p, two p, three p... ten p.'
- 'So I need ten coins.'

- 'The ___ costs ___ p.'
- 'Each coin has a value of ___ p.'

Repeat for 2p coins then 5p coins and 10p coins

➡ I can work out how many coins are needed to make a total value of 20p

Same as previous

0→ I can use the knowledge of the value of coins to solve problems

0→ I can recognise the different types of coins up to £1
20p, 50p

Build upon children's understanding that a coin has a value which is independent of its size, shape, colour and mass

0→ I can count efficiently in 20ps

0→ I can count efficiently in 50ps

0→ I can combine amounts to make a particular value

Connect to children's prior learning: consolidate coin recognition of 1p, 2p, 5p and 10p coins initially before moving onto the different denominations.

Look at the calculation below.

$$8p + 2p + 20p + 20p = 50p$$

Although mathematically correct, you may need to spend time discussing the denominations of the coins with the children. For example, we do not have an 8p coin, but any value can be made of existing denominations of coins.

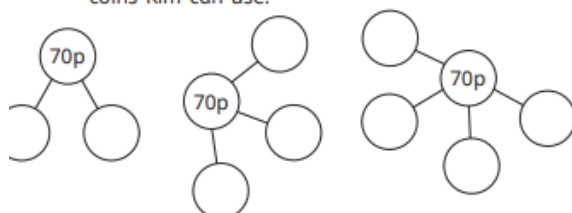
What do the children notice about making 88p in the fewest number of coins?

0→ I can find different combinations of coins that equal the same amounts of money

1 Kim is making 70p in different ways.



a) Complete the part-whole models to show the coins Kim can use.



b) Can you make 70p in any other ways?

0→ I can identify pound coins and use their symbols accurately

Build upon children's understanding that a one pound coin has a value of 100 p which can also be written as £1.00. It is important that children do not write the £ and p together: 100p, £1.00, but not £1.00p. Some children may confuse one pence and one pound. It is helpful to avoid saying that one pound is one hundred times bigger than one penny as children may think this refer to the coin size rather than the value.

0→ I can count efficiently in £1s

0→ I can count efficiently in £2s

If suitable:

0→ I can identify notes and use their symbols accurately

0→ I can combine amounts to make a particular value (*including all types of coins*)

0→ I can find different combinations of coins that equal the same amounts of money (*including all types of coins*)

0→ I can compare amount of money

0→ I can calculate with money

Ron has this money in his hand.



He has 29p in his pocket.

How much money does Ron have altogether?

Year Three and Four (Both taught in Year Four)

0→ I can count efficiently in groups of two

0→ I can count efficiently in groups of ten

0→ I can count efficiently in groups of five

0→ I can count efficiently in groups of two, five and ten

0→ I can explain the value of a 1p coin in pence

0→ I can recognise and explain the value of 2p, 5p and 10p coin

0→ I can explain that a single coin can be worth several pennies

0→ I can use knowledge of the value of coins to solve problems

0→ I can calculate the total value of coins to solve problems

0→ I can calculate the total value of the coins in a set of 2p coins

- 0 ➡ I can calculate the total value of the coins in a set of 5p coins
- 0 ➡ I can calculate the total value of the coins in a set of 10p coins
- 0 ➡ I can compare sets of 2p, 5p and 10p coins
- 0 ➡ I can relate this to real-life contexts
- 0 ➡ I can work out how many coins are needed to make a value of 10p
- 0 ➡ I can work out how many coins are needed to make a total value of 20p
- 0 ➡ I can use the knowledge of the value of coins to solve problems
- 0 ➡ I can recognise the different types of coins up to £1
20p, 50p
- 0 ➡ I can count efficiently in 20ps
- 0 ➡ I can count efficiently in 50ps
- 0 ➡ I can combine amounts to make a particular value
- 0 ➡ I can find different combinations of coins that equal the same amounts of money
- 0 ➡ I can identify pound coins and use their symbols accurately
- 0 ➡ I can count efficiently in £1s
- 0 ➡ I can count efficiently in £2s

If suitable:

- 0 ➡ I can identify notes and use their symbols accurately
- 0 ➡ I can combine amounts to make a particular value (*including all types of coins*)
- 0 ➡ I can find different combinations of coins that equal the same amounts of money (*including all types of coins*)
- 0 ➡ I can compare amount of money
- 0 ➡ I can calculate with money

Mastery materials writing frame

0 I can recognise that one penny is one hundredth of a pound

In preparation for using decimal notation, look at the relationship between 1 p, 10 p and £1, using the coins. Alongside exchanging, for example, a £1 coin for ten 10 p coins (and vice versa), encourage children to use the generalised statements:

- **'Ten groups of ten pence is equal to one pound, so ten pence is one tenth of a pound.'**
- **'One hundred groups of one penny is equal to one pound, so one penny is one hundredth of a pound.'**
- **'Ten groups of one penny is equal to ten pence, so one penny is one tenth of ten pence.'**



£1 (or 100p)	10p	1p
2	4	0

£	2	.	4	0

£2.40

'Two pounds forty'

or

'Two pounds and forty pence'

- **'“2.40” represents two and four additional tenths, or two and forty additional hundredths.'**
- **'“£2.40” represents two whole pounds and four additional groups of ten pence, or two whole pounds and forty additional pennies.'**
- **'The “4” represents four additional groups of ten pence. Ten pence is one tenth of a pound, so the four groups of ten are shown in the tenths place.'**

Start to use the generalised statement:
'The number to the left of the decimal point represents the number of whole pounds. The number to the right of the decimal point represents the number of additional pennies.'

0 I use calculation strategies for addition to efficiently add commonly used prices

See addition calculation policy for more support

Adjusting one addend by one penny:

$$£3.45 + 99\text{ p}$$

- Number line



- Linked equations

$$\begin{array}{lcl}
 £3.45 + 99\text{ p} & = & £4.44 \\
 £3.45 + £1.00 & = & £4.45
 \end{array}$$

← - 1 p

Encourage children to describe the steps, using the following stem sentences:

- **'First we add: ___ plus ___ is equal to ___.'**
- **'...then we adjust: ___ minus ___ is equal to ___.'**

Ask children 'Why do we need to adjust?' encouraging them to answer 'Because we have added too much.'

- 'First we add: **three** pounds forty-five plus one pound is equal to **four** pounds forty-five...'
- '...then we adjust: four pounds forty-**five** minus one penny is equal to four pounds forty-**four**.'

Adjusting both addends by one penny – linked equations:

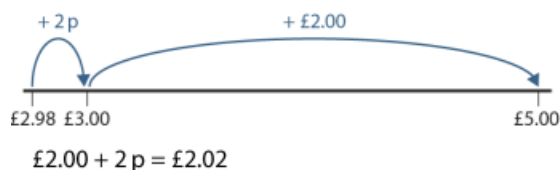
$$\begin{array}{rcl} \pounds 1.99 & + & \pounds 1.99 = \boxed{\pounds 3.98} \\ \pounds 2 & + & \boxed{\pounds 2} = \boxed{\pounds 4} \end{array} \quad \begin{array}{c} \curvearrowleft \\ - 2 \text{ p} \end{array}$$

$$\begin{array}{rcl} \pounds 3.99 & + & \pounds 1.99 = \boxed{\pounds 5.98} \\ \pounds 4 & + & \pounds 2 = \pounds 6 \end{array} \quad \begin{array}{c} \curvearrowleft \\ - 2 \text{ p} \end{array}$$

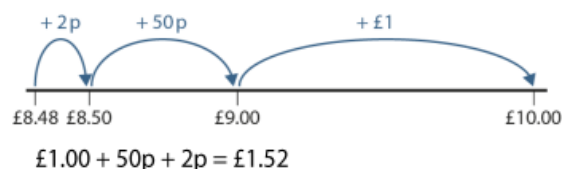
➡ I can use 'finding the difference' for subtraction as an efficient method for calculating change

See subtraction calculation policy for more support

- 'I had £5.00 and I spent £2.98 on football cards. How much money did I have left?'



- 'I had £10 and I spent £8.48 on books. How much money did I have left?'



➡ I can use the formal written methods of addition and subtraction for money

See addition calculation policy for more support

Column addition:

'I buy two magazines. One costs £1.37 and the other costs £2.45. How much do I spend altogether?'

?	
£1.37	£2.45

$$\begin{array}{r} \pounds 1.37 \\ + \pounds 2.45 \\ \hline \pounds 3.82 \\ \hline 1 \end{array}$$

use similar generalised sentences to those used in the hundredths segment

- 'Ten pennies is equal to ten pence.'
- 'Ten groups of ten pence is equal to one pound.'

- 'I want to buy two games, one for £24.55 and the other for £17.82. How much will I spend altogether?'

$$\begin{array}{r}
 £ \quad 24.55 \\
 + \quad £ \quad 17.82 \\
 \hline
 £ \quad 42.37 \\
 \hline
 1 \quad 1
 \end{array}$$

Once the children are confident with laying out and completing the calculations described in the previous step, extend to examples with:

- 'I want to buy a book that costs £5.60 and a game that costs £27.05. How much will I spend altogether?'

$$\begin{array}{r}
 £ \quad \quad 5.60 \\
 + \quad £ \quad 27.05 \\
 \hline
 £ \quad 32.65 \\
 \hline
 1
 \end{array}$$

- addends greater than ten pounds
- addends with different numbers of digits
- addends with some digits equal to zero
- more than two addends
- regrouping to the left of the decimal point, as well as regrouping in the left-most digit.

Throughout, encourage children to describe and reason about the value of the digits.

- 'I bought the following items. How much did I spend altogether?'

- chair: £50.35
- desk: £83.25
- lamp: £25.10

$$\begin{array}{r}
 £ \quad \quad 50.35 \\
 £ \quad \quad 83.25 \\
 + \quad £ \quad \quad 25.10 \\
 \hline
 £ \quad 158.70 \\
 \hline
 1 \quad \quad \quad 1
 \end{array}$$

Column subtraction:

- 'I have saved £6.53 and my brother has saved £4.38. How much more money have I saved than my brother?'

£6.53	
£4.38	?

$$\begin{array}{r} \text{£ } 6.53 \\ - \text{£ } 4.38 \\ \hline \text{£ } 2.15 \end{array}$$

- 'The game I want to buy costs £29.50. I have saved £18.94. How much more do I need to save before I can buy the game?'

$$\begin{array}{r} \text{£ } 29.50 \\ - \text{£ } 18.94 \\ \hline \text{£ } 10.56 \end{array}$$

(In this example, a common error is for children to ignore the zero in the £29.50 and not spot the need to exchange before subtracting the 4 p of the £18.94.)

- 'I need £12.50 to enter a swimming competition, but I only have £7.08. How much more money do I need?'

$$\begin{array}{r} \text{£ } 12.50 \\ - \text{£ } 7.08 \\ \hline \text{£ } 5.42 \end{array}$$

- 'One pound is equal to ten groups of ten pence.'
- 'Ten pence is equal to ten pennies.'

Extend to:

- quantities greater than ten pounds
- subtrahends with fewer digits than the minuend (e.g. £12.50 – £7.08); encourage children to reason about the 'empty' columns and describe how they are subtracting zero in those cases
- examples with some digits equal to zero (including exchange through a zero)
- exchange to the left of the decimal point.

➔ I can find change when purchasing several items using the part part whole model

Tim had £1.00. He bought a pencil for 20 p and a pen for 50 p. How much money does he have left?

£1		
?	50 p	20 p

Repeated subtraction:



£1		
?	50 p	20 p

80 p

$$\text{£}1.00 - 20 \text{ p} = 80 \text{ p}$$

$$80 \text{ p} - 50 \text{ p} = 30 \text{ p}$$

or

$$\text{£}1.00 - 20 \text{ p} - 50 \text{ p} = 30 \text{ p}$$

Adding first:



£1	
?	50 p + 20 p

↓

£1	
?	70 p

$$20 \text{ p} + 50 \text{ p} = 70 \text{ p}$$

$$\text{£}1.00 - 70 \text{ p} = 30 \text{ p}$$

Year Five and Six - recap of previous years

- 0 ➡ I can recognise that one penny is one hundredth of a pound
- 0 ➡ I use calculation strategies for addition to efficiently add commonly used prices
- 0 ➡ I can use 'finding the difference' for subtraction as an efficient method for calculating change
- 0 ➡ I can use the formal written methods of addition and subtraction for money
- 0 ➡ I can find change when purchasing several items using the part part whole model