

Autumn Scheme of Learning

Year 2

#MathsEveryoneCan

2019-20



	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12
Autumn	Number: Place Value			Number: Addition and Subtraction				Measurement: Money		Number: <u>Multiplication and Division</u>		
Spring	Number: <u>Multiplication and Division</u>		Statistics		Geometry: Properties of Shape			Number: Fractions		Measurement: Length and Height	Consolidation	
Summer	Geometry: Position and Direction			Problem solving and efficient methods		Measurement: Time		Measurement: Mass, Capacity and Temperature		Investigations		

White

**Rose
Maths**

Autumn - Block 3

Money

Overview

Small Steps

NC Objectives

- Count money – pence
- Count money – pounds (notes and coins)
- Count money – notes and coins
- Select money
- Make the same amount
- Compare money
- Find the total
- Find the difference
- Find change
- Two-step problems

Recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value.

Find different combinations of coins that equal the same amounts of money.

Solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change.

Count Money - Pence

Notes and Guidance

This block introduces the £ and p symbols for the first time.

Children will count in 1 p, 2 p, 5 p and 10 p coins. Children can also use related facts to count in 20 p coins.

Children do not convert between pounds and pence, therefore children will need to recognise the 50 p coin but they will not count up in 50 p coins.

Mathematical Talk

- What is different about the coins you have counted?
- Is the group with the most coins always the biggest amount? Why?
- What do you notice about the totals?
- Are silver coins always worth more than copper coins?
- What different ways can you count the coins?
- Which is the quickest way?

Varied Fluency

Count the money.

 = ___ p







 = ___ p

 = ___ p

___ p = 

___ p = 

Use <, > or = to compare the money.

	<input type="radio"/>	
	<input type="radio"/>	
	<input type="radio"/>	

Count the money.

 = ___ p

 = ___ p

Count Money - Pence

Reasoning and Problem Solving

Jack selects four of these coins.



He can use the coins more than once.

What total could he make?

What is the lowest total?

What is the greatest total?

Example answers:

20 p, 10 p, 10 p and 1 p makes 41 p.

5 p, 5 p, 5 p and 5 p makes 20 p.

1 p, 20 p, 5 p and 2 p makes 28 p.

The lowest total would be 1 p, 1 p, 1 p and 1 p, makes 4 p.

The greatest total would be 20 p, 20 p, 20 p and 20 p makes 80 p.

Draw coins to make the statements correct.



For the first one, any answer showing less than 30 p on the right is correct. E.g. two 10 p coins.

For the second one, any answer showing less than 25 p on the left. E.g. three 2 p coins.

Count Money - Pounds

Notes and Guidance

Children will continue counting but this time it will be in pounds, not pence. The £ symbol will be introduced. Children must be aware that both coins and notes are used to represent amounts in pounds. Children will count in £1, £2, £5, £10 and £20s. In this year group, children work within 100, therefore they will not count in £50s.

Mathematical Talk

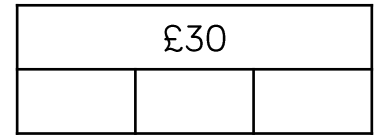
- Do the notes have a greater value than the coins?
- Which is the hardest to count? Which is the easiest? Why?
- What do you notice about the amounts?
- Does it matter which side the equals sign is?
- Can you find the total in a different way?

Varied Fluency

Count the money.



Complete the bar models.



Match the money to the correct total.



£25

£60

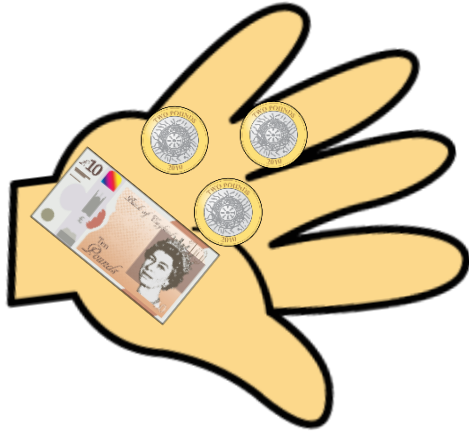
£10

Which is the odd one out? Explain why.

Count Money - Pounds

Reasoning and Problem Solving

Ron thinks he has £13



Is he correct?
Explain your answer.

No, because three
£2 coins make £6
£10 and £6 is
equal to £16

He has mistaken
his £2 coins for £1
coins.

Explain the mistake.

£2, £4, £6, £7, £8, £10

£7 is the mistake.
It is an odd
number. The 2
times table are all
even.

When counting in
£2s, we would say
£2, £4, £6, £8, £10

Count Money – Notes & Coins

Notes and Guidance

In this step, children will build on counting by bringing pounds and pence together.

Decimal notation is not used until KS2 therefore children will write the total using 'and' e.g. £5 and 30 p rather than £5.30

Children will not count across £1. They will count the pounds and pence separately before putting them together.

Mathematical Talk

How did you work out the total amount of money?

What strategy did you use to count the money when there is pounds and pence?

Explain what to do when the pounds and pence are mixed up.

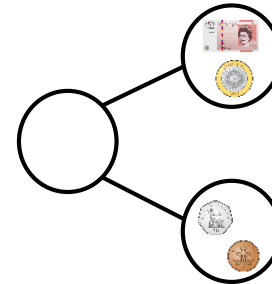
Varied Fluency

How much money is there altogether?



There is £___ and ___p.

Complete the part-whole model.



What's the same and what's different about the parts?

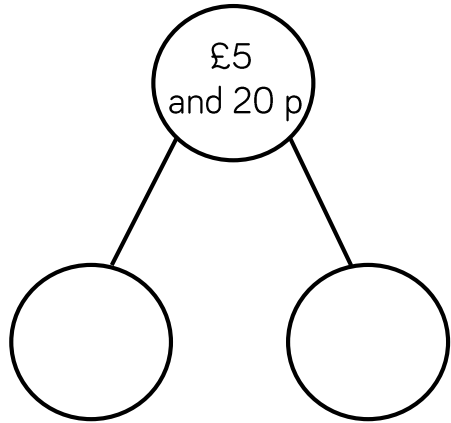
Fill in the gaps to make the statements correct.

- £10 + £5 + 50 p = £___ and ___p
- £20 + £2 + 10 p + 10 p + 2 p = £___ and ___p
- £5 + £___ + 50 p + 20 p + 20 p + 1 p = £10 and ___p

Count Money – Notes & Coins

Reasoning and Problem Solving

How many ways can you complete the part-whole model by drawing money?



Mo has the following coins.



He thinks he has 51 p.

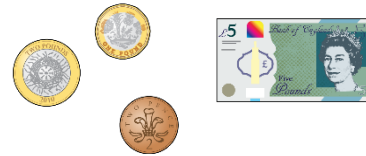
Explain his mistake.

Example answers:



Mo thinks the 5 p is a 50 p coin. He has 6 p. Alternatively, he has combined the 5 and 1 from each coin.

Here are some coins and a note.



Amir says, "There is 10 p".

Dexter says, "There is £10".

Are either of them correct?

Explain why.

No, Amir and Dexter have taken the digits 2, 2, 5 and 1 and added them together.

The coins are a mix of pounds and pence so need to be counted separately.

Select Money

Notes and Guidance

Children select coins to make an amount, from a set of coins given to them. They will use these practically, draw them and write the abstract amounts.

They will continue to use both pounds and pence to embed previous learning.

Children are continuing to work on recognising money by selecting the correct coins or notes from a wide range.

Mathematical Talk

How do you know you have made 56 p?
 Is your answer the same as your partner?
 Can you find any other ways to make this amount?

Does it matter if you say pence or pounds first?

Does this change the total?

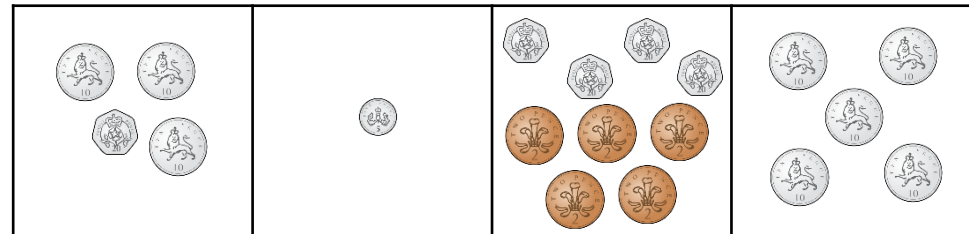
Can you show this amount in a different way?

Varied Fluency

Circle 56 p.



Which does **not** show 50 p?



Draw money on the purses to match the amounts.



£21 and 32 p

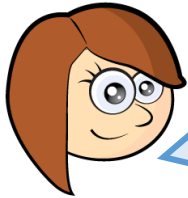


£13 and 40 p

Select Money

Reasoning and Problem Solving

Rosie says,



I have 43 p in silver coins.

No, because 3 pence can only be made with copper coins.

Do you agree?

Explain why.

Annie and Ron both claim to have 90 p.

Annie has 3 coins and Ron has 4 coins.

Could they be correct?

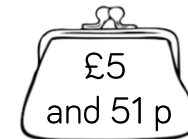
Which coins could they have?

Yes, they can because:
 Annie = 50 p, 20 p, 20 p.
 Ron = 50 p, 20 p, 10 p, 10 p.

Use the money to fill the purses.

You can only use each coin or note once.

Cross them out once you have used them.



Example answer:



£10 and 15 p



£5 and 51 p

Circle the odd one out.

23 p = 20 p, 2 p, 1 p

25 p = 20 p, 5 p

28 p = 20 p, 8 p

Explain your answer.

28 p = 20 p, 8 p is because if you are using coins there is not an 8 p coin. Children may give other answers.

Make the Same Amount

Notes and Guidance

Children explore the different ways of making the same amount. As before, they will not count pence over into pounds.

Examples need to be modelled where pounds and pence are together but children need to continue to be encouraged to count the pounds and pence separately.

Mathematical Talk

Can the same amount be made using different coins?
 How did you compare the amounts?
 How is your way different to a partner?

Can you swap a coin/note for others and still make the same amount?

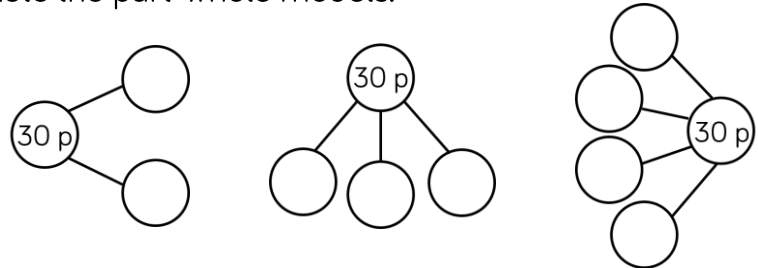
What is the smallest amount of coins you can use to make ___?

Varied Fluency

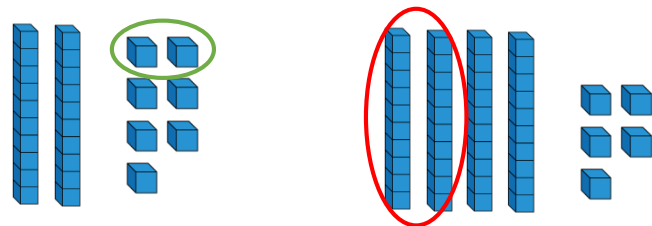
Match the amounts.



Complete the part-whole models.



The Base 10 represents money. What coin is represented by each circle?



Make the Same Amount

Reasoning and Problem Solving

Make 50 p three ways using the coins below.

You can use the coins more than once.



Example answers:

20 p, 20 p, 10 p

10 p, 10 p, 10 p,

10 p, 5 p, 5 p

1 p (50 times)

How many ways can you make 10 p using only copper coins?

Did you use a strategy?

Example answers:

2 p, 2 p, 2 p, 2 p, 2 p

2 p, 2 p, 2 p, 2 p, 1 p, 1 p

Compare Money

Notes and Guidance

Children compare two different values in either pounds or pence.

Children will see examples with both pounds and pence, but they will only focus on one of these - the other must be the same e.g. £3 and 10 p > £2 and 10 p where 10 p is the constant.

Children recap comparing vocabulary such as greater/less than and use the inequality symbols.

Mathematical Talk

What do you notice about the amounts you have compared?

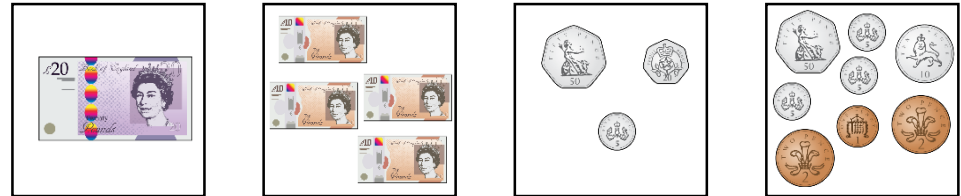
What's the same? What's different?

How do you know who has the most, when they both have 64?

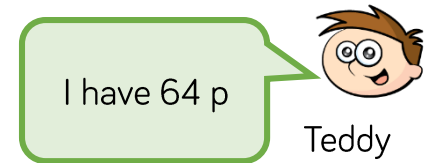
Can you add a value that will go in between the greatest and the least?

Varied Fluency

Circle the box with the greatest amount.



Who has the most? Who has the least? How do you know?



Use <, > or = to compare the amounts.



Compare Money

Reasoning and Problem Solving

Annie has three coins in her hand.

Jack says,



I have more than you because I have a 50 pence coin.

Is he correct?

Explain why.

It depends on the coins Annie has.

Children explore and show e.g.

$$20 \text{ p}, 20 \text{ p}, 20 \text{ p} > 50 \text{ p}$$

$$5 \text{ p}, 2 \text{ p}, 2 \text{ p} < 50 \text{ p}$$

True or False?

5 copper coins can be worth more than 1 silver coin.

Four 5 pence coins are worth more than two 10 pence coins.



Do you agree? Explain why.

Only true when 5 p is the silver coin.

Children should explore different true and false answers.

No, they are equal to each other. They both make 20 p.

Find the Total

Notes and Guidance

Children will build on their knowledge of addition to add money including:

- 2-digit and 2-digit
- 2-digit and ones
- 2-digit and tens
- 3-single digits

Children will be encouraged to use different methods to add the amounts of money, such as count on, partitioning and regrouping.

Mathematical Talk

How did you find the missing amounts? Share your strategies with a friend.

Was your method different to a friend?

What is the most efficient method? Why?

Can you write a worded question for a friend?

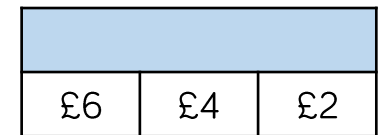
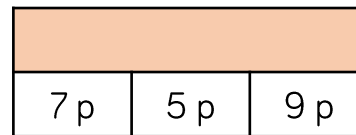
What was the greatest amount you found?

Varied Fluency

Complete the table.

Pounds	Pence	Total
£4	25 p	£___ and ___p
£2		£2 and 40 p
	65 p	£20 and 65 pence
		£15 and 20 p
	55 pence	

Complete the bar models.



Amir buys bread and eggs.



How much does he spend?

Find the Total

Reasoning and Problem Solving

Dexter has these coins and notes.



He makes an amount greater than £20 but less than £30

Draw the money he could have used.
You can use each coin or note more than once.

How many different ways can you find?

Possible answers:

£10, £10 and £5 makes £25

£10, £5, £5, £2 makes £22

Etc.

Here is a shopping list.

Item	Price
Rubber	20 p
Ruler	18 p
Pencil	32 p
Crayon	27 p
Pen	45 p
Glue	36 p

- I spend exactly 50 p. Which two items did I buy?
- I bought two of the same item and it cost me 90 p. What was the item?
- Choose two items. How many different amounts can you make?
- What is the closest you can get to 65 p?

The ruler and the pencil as 18 p and 32 p makes 50 p.

Two pens as 45 p and 45 p makes 90 p.

Children to explore the totals that can be made by adding two items together.

The rubber and the pen would cost 65 p as 20 p and 45 p sum to 65 p.

Find the Difference

Notes and Guidance

Children expand their knowledge of addition and subtraction strategies by specifically finding the difference between two amounts.

In this step, children should see both counting on and counting back being modelled to them.

They need to discuss which is the most efficient for different questions.

Mathematical Talk

Which costs more? How do you know?
How can you work out how much more?

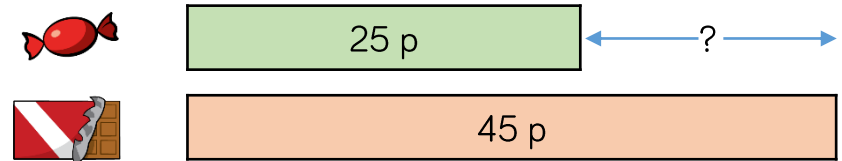
What's the difference?

How much less?/How many fewer?

What method did you use to work this out?

Varied Fluency

- Work out the difference between the cost of a bag of sweets and a bar of chocolate.



- Find the difference between the amounts of money Amir and Mo have.



- Alex has £2 and 15 p.
Rosie has £2 and 40 p.

How much more money does Rosie have than Alex?

Find the Difference

Reasoning and Problem Solving



I have 57 p.

Whitney

I have 2 silver coins and 1 bronze coin.



Mo

Example answers:

Mo could have more by:

- 50 p, 20 p, 1 p
- 50 p, 20 p, 2 p

Mo could have the same by:

- 50 p, 5 p, 2 p

Mo could have less by:

- 5 p, 5 p, 1 p
- 20 p, 10 p, 2 p

What could Mo have?

Work out the difference between the amounts.

How many different answers can you find?

Jack has 2 p.

Eva has 10 p.

Both of them have a 2 p coin.

What **other** coins could Eva have?

- 4 × 2 p
- 3 × 2 p and 2 × 1 p
- 2 × 2 p and 4 × 1 p
- 1 × 2 p and 6 × 1 p
- 8 × 1 p
- 5 p and 2 p and 1 p
- 5 p and 3 × 1 p

Find Change

Notes and Guidance

Children build on their subtraction skills by finding change from a given amount. They need to identify amounts from the coins given, write the calculations and choose efficient methods.

In this step, children will be introduced to converting £1 to 100 p to be able to subtract from £1. This links to their number bond knowledge to 100.

Mathematical Talk

How much does Dora have? How do you know?
Can you write a calculation to work out how much she will have left?

Why is it important to use the £ or p symbol?

What strategy did you use to find the change?
Did you use concrete objects to help?

Varied Fluency

- Dora has these coins.



She spends 53 p.
What money will she have left? What coins could it be?

- Write the calculation and find the amount of change.



32 p



_____ - _____ = _____

- Ron spends 65 p in the shop.
He pays with a £1 coin.

How much change will he receive?

Find Change

Reasoning and Problem Solving

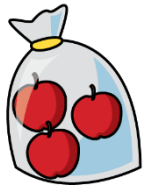
I have 20 p.

My change is more than 5 p but less than 10 p.

What could I have bought?



Sweet: 7 p



Apples: 18 p



Chocolate: 12 p



Banana: 4 p

Example answers:

Chocolate bar or a sweet and banana.

I paid for my shopping with one coin.

Here is my change.



What could I have paid with and how much would the item have been?

Could have paid with a 20 p coin and it would have cost 3 p.

Could have paid with a 50 p coin and it would have cost 33 p.

Could have paid with a £1 coin and it would have cost 83 p.

Could have paid with a £2 coin and it would have cost £1 and 83 p.

Two-step Problems

Notes and Guidance

Children draw together all of the skills they have used in this block and consolidate their previous addition and subtraction learning.

Children may need some scaffolding to see the different steps.

Bar modelling is really useful to see the parts and wholes, and supports children in choosing the correct calculation.

Mathematical Talk

Where does the £33 go in the bar model?
How can you find the total?

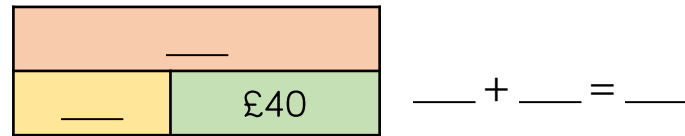
Here is a one step problem. Can you think of a second step?

Can you write your own two step word problem?

Did you use a concrete or pictorial representation to help you?

Varied Fluency

- Rosie has £33 in her money bank, and gets £40 more. Fill in the bar model and write a calculation to show her total.



- She then buys a top for £25. Complete the bar model and write a calculation to show what she has left.



- Amir has these coins.



- He spends 54 p. How much does he have left?

- A scarf is £12 and a bag is £25. Whitney buys one of each and pays with a £50 note. How much change will she receive?

Two-step Problems

Reasoning and Problem Solving

Ghost Train: 90 p

Annie finds a 20 p coin.

She puts it with her other three 20p coins.

Does Annie have enough to ride the ghost train?

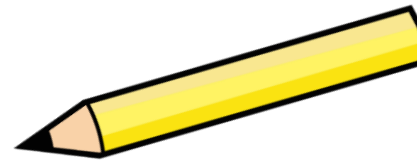
Explain why.

No, because she only has 80 p.

She would need 10 p more.

$$90 \text{ p} > 80 \text{ p}$$

Alex has 90 pence.
She bought a rubber for 30 pence and wants to buy a pencil.



Pencil: 70 p

The shopkeeper will not sell her the pencil.

Explain why.

$$90 \text{ p} - 30 \text{ p} = 60 \text{ p}$$

$$70 \text{ p} > 60 \text{ p}$$

She does not have enough money to buy the pencil.