Released March 2018

Years 3/4

Small Steps Guidance and Examples

Block 1 – Money

White Rose Maths

Year 3/4 – Yearly Overview

	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				Number: Multiplication and Division			Consolidation
Spring	Number: Multiplication and Division		Measurement: Length, Perimeter and Area		Number: Fractions				Year 3: Fractions Year 4: Decimals			Consolidation
Summer	Measurement: Money		Statistics		Measurement: Time			Geometry – Properties of Shapes		Year 3: Mass and Capacity Year 4: Position and Direction		Consolidation

Week 1 to 2 – Measurement: Money

Overview

Small Steps

Year 3	Year 4
Pounds and pence	Pounds and pence
Converting pounds and pence	Ordering amounts of money
	Using rounding to estimate money
Adding money	Four operations
Subtracting money	
Giving change	

Pounds & Pence

Notes and Guidance

Children need to know the value of each coin and note and understand what these values represent.

They should understand that money can be represented in different ways but still have the same value.

Children will need to be able to add coin values together to find the total amount.

Mathematical Talk

What is the value of the coin/note?

What does p mean?

Why do we have different values of coins and notes?

Varied Fluency

1 How much money does the jar contain?

The jar contains £_____ and ____ p

2 Complete the statements using < , > or =

£_____ and _____ p

£_____ and _____ p

£_____ and _____ p

£_____ and _____ p

3 What amount of money is represented on the number line? Give your answer in £ and p.

Pounds & Pence

Reasoning and Problem Solving

Charlotte has 85 p in her purse.

Which coins could Charlotte have in her purse?

Possible solutions:

- 50 p, 20 p, 10 p, 5 p
- 20 p, 20 p, 20 p, 20 p, 5 p
- 50 p, 10 p, 10 p, 10 p, 5 p

Roma had 5 **different** coins in his wallet.

What is the greatest amount of money he could have in his wallet?
What is the least?

£2 + £1 + 50 p + 20 p +10 p = £3 and 80p

1 p + 2 p + 5 p + 10 p + 20 p = 38 p

Pounds and Pence

Notes and Guidance

Children develop their understanding of pounds and pence. They write money as £.p for the first time as they are introduced to decimal notation for money. Once children are confident with this, they can move on to convert money.

Children can use models, such as the part-whole model, to recognise the total of an amount being partitioned in pounds and pence.

Mathematical Talk

How many pence make a pound?
How many pounds are in the purse? How many pence?
What is the total in the purse?
Why do we write a decimal point between the pounds and pence?
If I had 343 p how would I write this as pounds?
How can I partition my amounts in to pounds and pence?
Is there only one way to complete the part whole model?
How can I convert these amounts into pounds and pence?

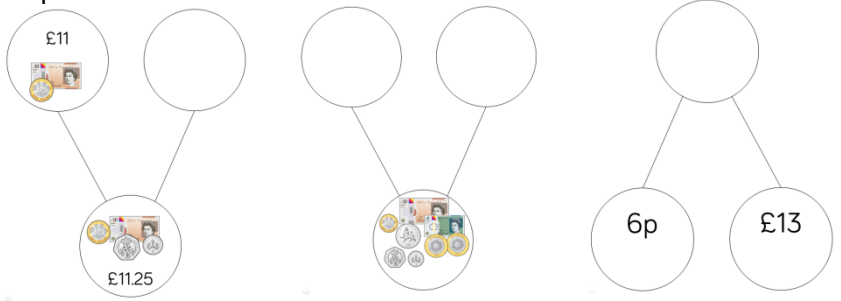
Varied Fluency

1 How much money is in each purse?

There is ____ pence
There is ____ pounds
There is £____ and ____ *p*
There is £___.____

There is ____ pence
There is ____ pounds
There is £____ and ____ *p*
There is £___.____

2 Complete the part whole models to show how many pounds and pence there are.



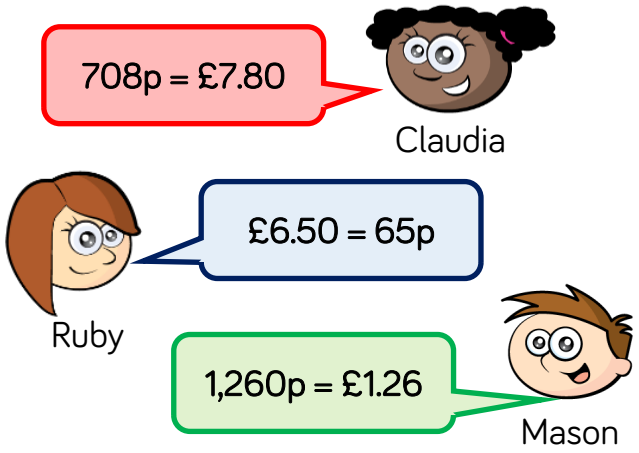
3 Convert these amounts to pounds and pence:

357p 307p 57p 370p

Pounds and Pence

Reasoning and Problem Solving

Some children are converting pence in to pounds.



Can you spot their mistakes?

Claudia = £7.08 she has not recognised the 0 as 0 ten pence
Ruby = 650 p she has ignored the 0 and not recognised it is 0 pence
Mason = £12.60 he has done the same as Ruby.

Jenny has these coins:

She picks three coins at a time.
Decide whether the statements will be always, sometimes or never true.

- She can make a total which ends in 2
- She can make an odd amount
- She can make an amount greater than £6
- She can make a total which is a multiple of 5

Can you think of your own always, sometimes, never statements?

- Never – she can have a total with £2 but not one that ends in 2 as there is no 2p
- Sometimes e.g. £3.05
- Never – she can only choose three coins so the largest amount she can make is £5
- Always

Converting Pounds & Pence

Notes and Guidance

Children convert between pounds and pence using the knowledge that £1 = 100 p

Children group pence to make pounds when counting money. They apply their place value knowledge and use their number bonds to 100

Mathematical Talk

How many pennies are there in £1?
How can this fact help us to convert between pounds and pence?

Explain what you need to do to convert pounds to pence.
Explain how you convert pence to pounds.

Varied Fluency

1 What is the total of the coins shown?

There is ☐ p.

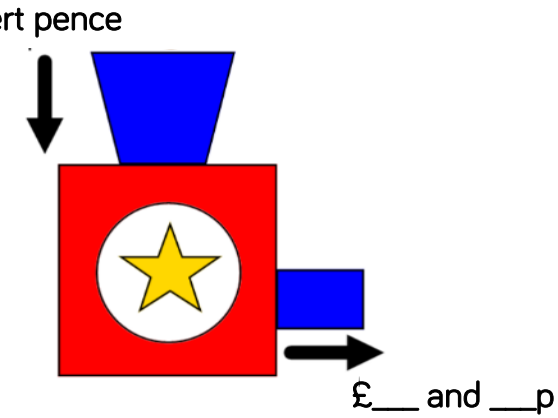
We know that there are 100 p in £1

110 – 100 = ☐

So there is £ ☐ and ☐ p

2 Here is a money-converting machine.
Money in pence goes in the top and comes out in pounds and pence.

- If 147 p went in, what would come out?
- If £9 and 62 p came out, what went in?



Converting Pounds & Pence

Reasoning and Problem Solving

Zaveun has 202 p.
Show all the possible combinations of coins he may have.

£2 and 2 p
£2, and 1 p and 1 p
£1 and £1 and 2 p
£1 and £1 and 1 p and 1 p
Children may work systematically to find more solutions.

Ajay thinks that he has £10 and 3p.
Is he correct?

Explain it.

Ajay is incorrect because he has £12 and 1 p. Ajay has counted 3 coins and thought they were worth the same value. They are not worth the same, all are worth 1 but two are £ and 1 is p.

Daisy thinks there is more than £5 but less than £6. Is she correct?

Convince me.

She is incorrect. There is £6 and 30 p. A sensible way to group this would be to group 50, 20, 20 10 to make £1. £5 + £1 = £6, 20 + 10 = 30 so we have £6 and 30 p.

Ordering Money

Notes and Guidance

Children use their knowledge of £1 = 100p to compare prices. Children begin by ordering prices represented in the same format e.g. 4,562p and 4,652p or £45.62 and £46.52 and relate this to place value knowledge.

Once children understand this they look at totals that include mixed pounds and pence and also totals represented as £.p

Mathematical Talk

What does the digit ___ represent in money?
What place value does it have? How many pounds/pence is it equivalent to?
How can this help us decide which amount is larger/smaller?
Can we think of an amount which could go in between these amounts?
What does ascending/descending mean?

Varied Fluency

1 Identify which amount is the largest in each pair.

3,589p	3,598p
4,056p	4,506p

£53.89	£53.98
£54.04	£54.06

What's the same? What's different?

2 Write the amounts as pence, then compare using <, > or =

6,209p ◯ £60.09

£0.54 ◯ 54p

Write the amounts as pounds, then compare using <, > or =

62p ◯ £6.02

£5,010 ◯ 5,010p

What's the same? What's different?

3 Order the amounts in ascending order.

130p £0.32 132p £13.20

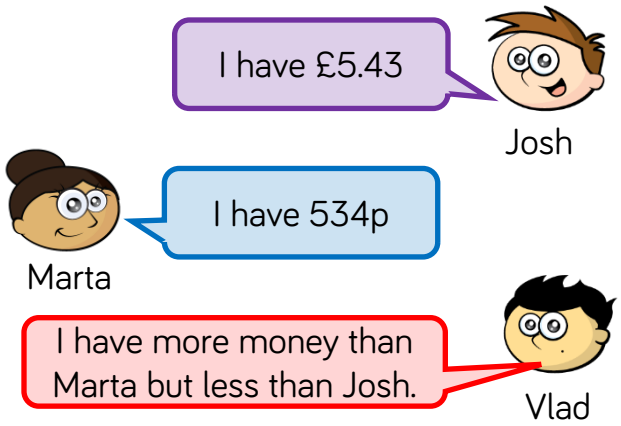
Order the amounts in descending order.

257p £2.50 2,057p £25.07

Ordering Money

Reasoning and Problem Solving

Josh, Marta and Vlad are buying toys.



How much money could Vlad have?
Explain your answer.

Vlad could have anything from £5.35 to £5.42
Children may record this as 535p to 54 p

What would you rather have, five 50p coins or twelve 20p coins?
Explain your answer fully.

I would rather have five 50 pence because
50 × 5 = 250p
20 × 12 = 240p

Jamal has these digits cards.

He makes a total that is more than three pounds but less than six pounds.

How many prices can he make?

Can you order your prices in ascending or descending order?

£3.24, £3.26,
£3.42, £3.46
£3.62, £3.64
£4.23, £4.26
£4.32, £4.36
£4.62, £4.63

Reverse order for descending order.

Estimating Money

Notes and Guidance

Children round decimals to the nearest pound. They approximate a total of two amounts and move on to approximating more than two amounts..

Children discuss under estimating and over estimating and link this to rounding down or up and apply it to real life scenarios such as buying food in the supermarket.

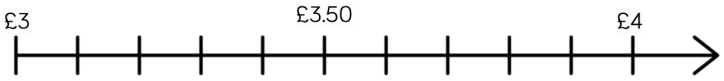
Mathematical Talk

If I have ____ what whole numbers/pounds does this come in between? Where will it go on the number line? Which pound is it nearer to?
What does approximately mean?
How can we complete the number line to make it accurate?
What will each item round to? How much will they total altogether?
If I had ___ amount would I have enough to buy the items?

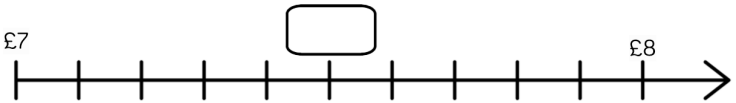
Varied Fluency

1 Place the amounts on the number line and round to the nearest pound.

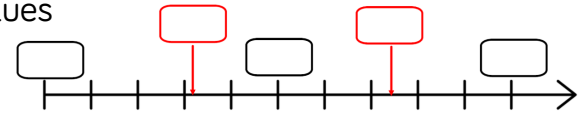
- £3.67
- £3.21
- £3.87



- £7.54
- £7.45
- 701p



Choose your own values to make the number line accurate.



2 Complete the estimate by rounding each amount and adding the rounded amounts.

Item 1	Item 2	Approximate
 £5.63	 £1.76	
 £3.05	 £11.54	

3 Jenny has £15 to spend at the theme park. She rides on the roller coaster which costs £4.34 She rides on the big wheel which costs £3.85 How much change will she approximately have?

Estimating Money

Reasoning and Problem Solving

Three children buy toys. Can you work out who buys what?
Tommy buys a toy which rounds to £5 but gets change from £5
Amira buys two toys which total approximately £25
Eve's toy costs £0.05 more than what it rounds to.

Tommy – car
Amira – computer game and rugby ball
Eve – panda

If you had £30, what combinations could you buy and what change would you approximately get?

Various answers

Tamzin buys a hat and gloves.
She estimates how much she'll spend.

£4 + £5 = £9

What could the actual price of the hat and gloves been?

Hat
£3.50 - £4.49
Gloves
£4.50 - £5.49

Tamzin has £12.
She says she has enough money to buy three hats.
Do you agree?
Explain why.

It depends. If the hat costs less than £4 she will but if the hat could cost more e.g. £4.49 still rounds to £4 but this will be more than £12 if she buys three.

Adding Money

Notes and Guidance

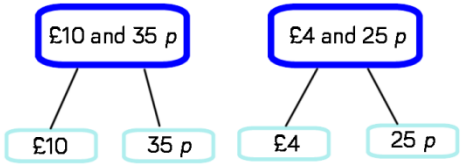
Children build on their understanding of different coins and their knowledge of converting.
Children use their understanding of the value of each coin before they start to add across a pound boundary.
When adding across a pound boundary children should be encouraged to look for number bonds (E.g. 70 p and 30 p), or ways to partition numbers differently to make a pound.

Mathematical Talk

What number facts could you use to calculate mentally?
What would be the most efficient way to group the coins? (E.g. 20 p + 20 p + 10 p = 50) Can you group any of the coins to make a pound?
Can you partition any of the amounts to help you? Do we need to think of a different way to partition?
How many different ways can you make a pound?

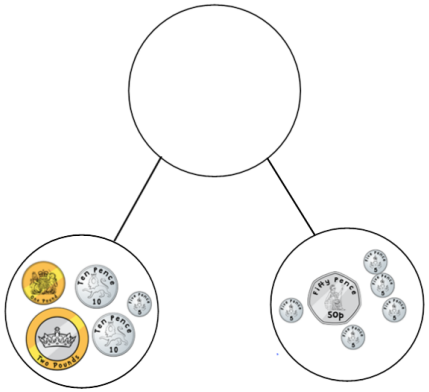
Varied Fluency

1 Find the total of: £10 and 35 p and £4 and 25 p.



Add the pounds then add the pence.

2 Complete the part-whole model.



3 Represent the bar model with a calculation and solve it.

Adding Money

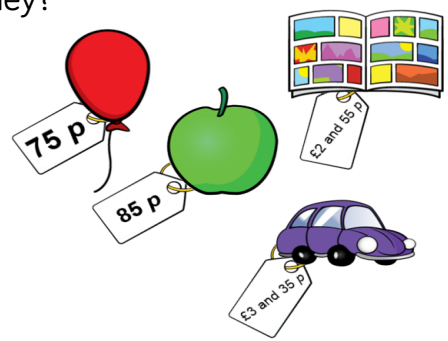
Reasoning and Problem Solving

Emma and Kate bought these muffins. Muffins cost 35 p each. Emma bought three times as many muffins as Kate.

How much did they each spend?
How much did they spend altogether?
How much more did Emma spend than Kate?

Emma spent 105 p
£1 and 5 pence
Kate spent 35 p
Altogether they spent £1 and 40 p
Emma spent 70 p more.

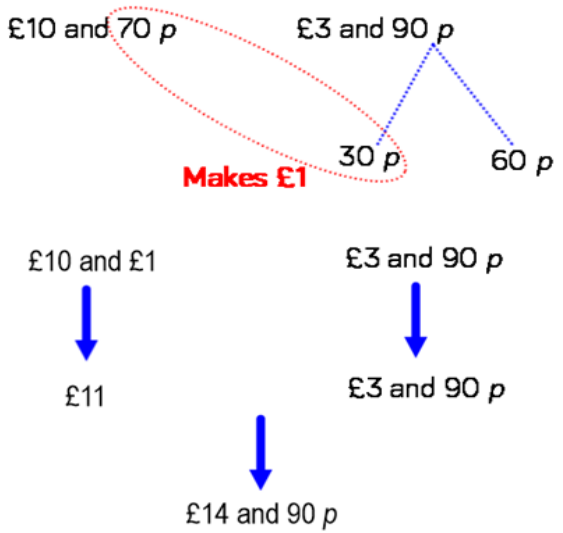
Which 4 items could Penny buy if she only had £5 and wanted to spend all of her money?



Magazine, 2 apples and a balloon = £5

Ross used the following method to find the total of £10 and 70 p and £3 and 90 p.

Can you spot and explain his mistake?



Ross has added the original amount of £3 and 90 p but he partitioned 90 p to use the 30 p when making a pound. Therefore, he would only have £3 and 60 p left.

Four Operations

Notes and Guidance

Children solve simple problems, involving all four operations, with money.
Children are not expected to formally add with decimals in Year 4 but could explore methods, such as partitioning and recombining to add money. They should use prior knowledge of converting as well to help them.
Children could explore different strategies for solving problems.

Mathematical Talk

Can we represent this problem with a bar model?

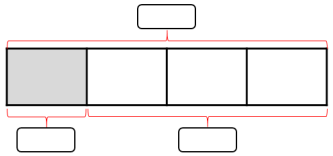
What operation will we use?

Is there an alternative way to answer this question?

What key information do we know?

Varied Fluency

1 Emma has £48. She spends one quarter of her money. How much does she have left?
Use the bar model to help.



2 In the sale, I bought some clothes for half price.

- Jumper £14
- Scarf £7
- Hat £2.50
- T-shirt £6.50

How much would the clothes have been full price?
How much would have I paid altogether full price?
How much do I pay in the sale? How much have I saved?

3 A family is going bowling.
How much does it cost for 1 child and 1 adult at peak time?
How much does it cost for 1 adult, 2 children off peak?

Tickets	Peak	Off Peak
Adult	£8	£6
Child	£4.20	£5.30

Four Operations

Reasoning and Problem Solving

A class has £100 to spend on books.

Book Prices

Hardback = £8
Paperback = £4

How many books could they buy for £100? How many different ways can you find to do this?

Children may explore this systematically e.g.
8 × 12 = 96 (12 hardbacks)
4 × 1 = 4 (1 paperback) etc.
Or they may start with paperback
4 × 25 = 100 (25 paperback) etc.

Hazel buys a teddy bear for £6.00, a board game for £4.00, a cd for £5.50 and a box of chocolates for £2.50
She has some discount vouchers. She can either get £10.00 off or half price on her items. Which voucher would save her more?
Explain your thinking.

Total = £18
18 – 10 = 8
1/2 of 18 = 9
18 – 9 = 9
£10 would save more.

Kim bought a chocolate bar and a drink. The cost of them both together is in one of the boxes below.

£1.85	75p	£1.56	£1.27	£1.60
£1.74	£2.25	£1.00	90p	£1.25
£1.80	80p	£2.10	£1.45	£1.20
£1.44	£3.06	£1.50		

Using the clues can you work out which price in the boxes is correct?
1. You need more than three coins to make this amount.
2. If they paid using a coin with the highest value, they would get change.
3. The chocolate bar cost more than 50p
4. You could pay without using any copper coins
5. The chocolate bar cost exactly half the amount of the drink.

£1.80
Chocolate bar 60p
Drink £1.20
Using clues 2, 3 & 5 we can work out the total cost would be between £1.50 and £2.00, then we can use the other clues to eliminate other values e.g. clue 4 allows us to eliminate values that are not a multiple of 5.

Subtracting Money

Notes and Guidance

Children develop their knowledge of the value of coins from Year 2 and use number lines to solve subtraction problems involving money.
They continue to make connections between place value and money.
Children use a number line to count on to help finding change. They may also explore other methods and compare which is most efficient.

Mathematical Talk

How many more to the next ten?

When is the partitioning method not efficient?

Which number should I place on the number line first?

Shall we count on or back on the number line?

Varied Fluency

1 Calculate £3 and 50 p subtract £2 and 10 p

£3 - £2 = £1
50 p – 10 p = 40 p
£1 + 40 p = £1 and 40 p

£3	and 50 p
- £2	and 10 p
£1	and 40 p

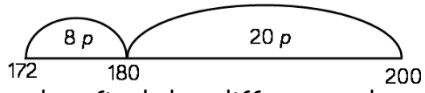
Use this method to calculate:

£4 and 20 p - £2 and 10 p

£6 and 35 p - £4 and 20 p

£21 and 40 p - £14 and 15 p

2 George has £1 and 72 p. Hannah has £2.
How much more money does Hannah have?



Use this method to find the difference between £4 and 20p and £1 and 60 p

3 In a sale, a t-shirt is £1 and 90 p cheaper than usual. How much does it cost during the sale?

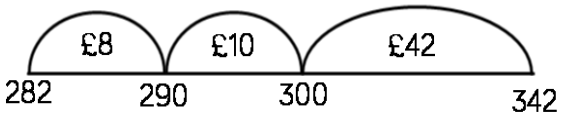
£5 and 30 *p*

£4
~~£5~~ and 1 30 p
- £1 and 90 p
£ and p

Subtracting Money

Reasoning and Problem Solving

Dan saved £342 in his bank account.
He spent £282.
Does the subtraction below show how much he has left?



£42 + £10 + £8 = £58

Explain your answer.

The subtraction does not show the amount he has left because he has incorrectly calculated the final addition sentence.

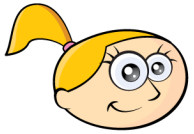
Three children are calculating a subtraction.

£4 and 20p minus £2 and 50p

Aisha

£4 - £2 = £2
20 p – 50 p = 30 p
£2 + 30 p = £2 and 30 p

Leila



£3
~~£4~~ and 1 20 p
- £1 and 50 p
£2 and 70 p

Simon

Whose method is the most efficient?
Whose method is the least efficient?
Explain why.

Children should see that Aisha's method is the least efficient as she has calculated the subtraction incorrectly. They can then give their own opinion on which of the other methods is the most efficient.

Giving Change

Notes and Guidance

Children use their subtraction skills with money to calculate change. They continue to use a number line and a part whole model to support their calculations.

Children apply previous skills and knowledge to contextual problems.

Mathematical Talk

What do we mean by 'change' in the context of money?

Why do we partition to give change?

Which method do you find most effective?

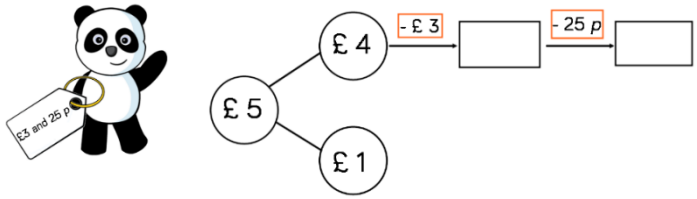
Varied Fluency

1 Gayle buys a chocolate bar for 37 p, she pays with a 50 p coin. What change will she receive?

Use this method to calculate:

- Sam has £1. He buys a lollipop for 55 p. How much change does he receive?
- Daniel has a five pound note. He buys a magazine for £3 and 60 p. How much change does he get?

2 Jo buys a teddy which costs £3 and 25 p. He pays using a £5 note. What change will he receive?

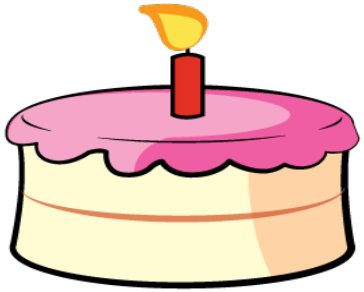


3 Neil buys a bike for £339 and 78 p. He hands the cashier £400. What change will he receive?

Giving Change

Reasoning and Problem Solving

Jill spends £2 and 76 p on a cake in the shop.

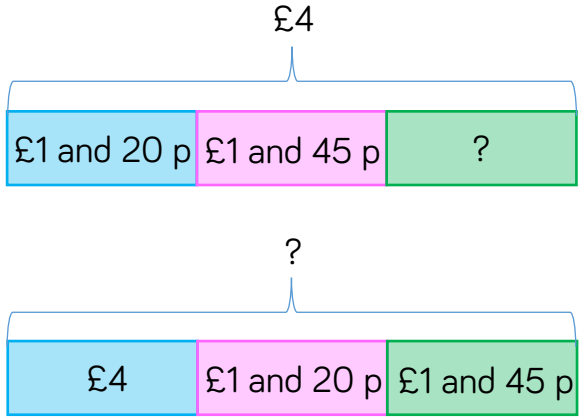


She pays with a £5 note. How much change does she get?

If the shopkeeper gives her 6 coins in her change, what coins might they be?

Possible Answers:
£2 and 24p
£1.00 £1.00, 10p, 10p, 2p, 2p
£1.00, £1.00, 10p, 10, 5p, 1p
Etc.

Sam goes to the shop with £4
He buys a book for £1 and 20 p and a pencil that costs £1 and 45 p.
How much change does he get?
Which bar model represents the problem?



The first bar model as the whole is £4 and the change forms the part.