

Year 4 maths – Summer 1 Week 5 beginning: 18.5.20

Theme	Money Lesson 4 Solving problems involving money (addition)	Money Lesson 5 Solving problems involving money (subtraction)	Money Lesson 6 Solving problems involving money (multiplication 1 of 2)	Money Lesson 7 Solving problems involving money (multiplication 2 of 2)	Money Lesson 8 Estimating amounts of money																		
Factual fluency (to aid fluency)	Practise adding 2 3-digit numbers	Subtract numbers with up to 3 digits	Practise your multiplication skills here!	Have a go at these multiplication word problems.	Solve money problems using price lists																		
<p>Problem/activity of the day</p> <p style="color: red;">Remember, just like in class, you can still show the depth of your knowledge</p> <p>LINK</p>	<p>(Lesson 1 resources below) MAKING LINKS: Last week, we learnt how to write, compare and round amounts of money. Today we are going to solve problems involving adding amounts of money.</p> <p>THINK: (support below) Bob goes to a toy shop. He wants to buy these 3 toys.</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">£2.63</div> <div style="border: 1px solid black; padding: 2px;">£2.80</div> <div style="border: 1px solid black; padding: 2px;">£1.26</div> </div> <p>Bob has £7.00. Can he afford all the toys he wishes to buy?</p> <p>SEE: (model below) For support with formal methods of addition with regrouping/renaming click here.</p> <p>DO: Answer the questions below.</p>	<p>(Lesson 2 resources below) MAKING LINKS: Yesterday we learnt how to add amounts of money. Today we are going to learn how to subtract amounts of money and solve 2-step word problems.</p> <p>THINK: (support below) Ben went to a cafe for his birthday tea. He had burger and chips for £5.65 and a milkshake for £1.70.</p>  <p>How much change did Ben receive from a £10 note?</p> <p>SEE: (model below) For support with formal methods of subtraction with regrouping/renaming click here.</p> <p>DO: Answer the questions below.</p>	<p>(Lesson 3 resources below) MAKING LINKS: This week, we have learnt how to add amounts of money and subtract to find change. Today we are learning to use the expanded method of multiplication to multiply amounts of money.</p> <p>THINK (support below): Sophie buys snacks and drinks for a party of 6.</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">£1.26</div> <div style="border: 1px solid black; padding: 2px;">£2.09</div> <div style="border: 1px solid black; padding: 2px;">£1.67</div> </div> <p>She buys 3 bottles of juice, 3 packets of crisps and 6 packets of nuts. How much does Sophie spend altogether?</p> <p>SEE (model below) Watch video here</p> <p>DO: Use the expanded method for multiplication to solve the problems below. Watch out for Questions 9 and 10 – you may have to do something different!</p>	<p>(Lesson 4 resources below) MAKING LINKS: Yesterday we learnt how to use the expanded method of multiplication to multiply amounts of money. Today we are going to continue using this method, but we are also going to learn how to find change.</p> <p>THINK (support below): A Year 4 teacher challenged the children in her class to make a fruit salad. Henry went to the shop and bought 2 pineapples, 3 bananas and 2 oranges. How much did Henry spend? How much change did he receive from £6?</p> <div style="display: flex; justify-content: space-around; align-items: center;">    </div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">£1.28</div> <div style="border: 1px solid black; padding: 2px;">77p</div> <div style="border: 1px solid black; padding: 2px;">29p</div> </div> <p>SEE (model below)</p> <p>DO: Use the expanded method for multiplication to calculate how much each child spent. Use the formal written method for subtraction to find out how much change each child received.</p>	<p>(Lesson 1 resources below) MAKING LINKS: Last week, we learnt how to round amounts of money. Today we are going use our rounding skills to estimate total amounts of money.</p> <p>THINK (support below): Lisa and Bob's families went out for dinner together. When they were given the bill, Lisa's Mum asked how much the total was approximately so that it was easier to split.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Bill</th> </tr> </thead> <tbody> <tr><td>Fish cakes</td><td style="text-align: right;">£6.90</td></tr> <tr><td>Samosas</td><td style="text-align: right;">£5.40</td></tr> <tr><td>Chicken curry</td><td style="text-align: right;">£8.90</td></tr> <tr><td>Seabass</td><td style="text-align: right;">£16.90</td></tr> <tr><td>Prawn curry</td><td style="text-align: right;">£13.90</td></tr> <tr><td>Salad</td><td style="text-align: right;">£7.50</td></tr> <tr><td>2 chips</td><td style="text-align: right;">£6.00</td></tr> <tr><td>4 rice</td><td style="text-align: right;">£15.80</td></tr> </tbody> </table> <p>Bob worked out that it was approximately £76.00 but Lisa said it was about £82.00 Who was correct?</p> <p>SEE: (model below)</p> <p>DO: Answer the questions below.</p>	Bill		Fish cakes	£6.90	Samosas	£5.40	Chicken curry	£8.90	Seabass	£16.90	Prawn curry	£13.90	Salad	£7.50	2 chips	£6.00	4 rice	£15.80
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Methods, tips, clues & checks	Day 1 resources and answers (below)	Day 2 resources and answers (below)	Day 3 resources and answers (below)	Day 4 resources and answers (below)	Day 5 resources and answers (below)																		

See below for resources to support you to THINK-SEE-DO

DAY 1 RESOURCES:

THINK:

Bob wants to buy these toys. He has £7.00. Can he buy them all?



DO:



How much did each child spend at the beach? Remember to use **partitioning** and **column method** to help you and record your workings.

Top tip:

- partition the pounds (£) and pence
- add the pounds (£)
- use column addition to add the pence
- add the pounds and pence together again (remember 100p = £1)

SEE:

We need to find the TOTAL amount of the 3 toys. We need to find the most efficient and accurate way of working this out. It can help us to combine methods. Today we will look at using **partitioning and column methods**. We start by adding the 2 amounts which may be the trickiest to add - the amounts which have digits in all place value positions. **These are the YO-YO at £2.63 and the FOOTBALL at £1.26.**

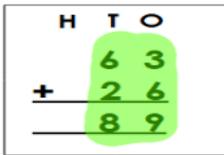
1. First, partition the amounts into £ and pence:



2. Next, add the £ together:

$$£2 + £1 = £3$$

3. Now, use the column method to add the pence. Remember to line up your digits in the correct place value columns and start with the ones



4. Then we recombine the £ and pence:

$$£3 \text{ and } 89\text{p} = £3.89$$

$$+ = £3.89$$

Now we know the YOYO and the FOOTBALL cost a total amount of £3.89. We still need to add the cost of the DRUM to find the final total. So we will add £3.89 and £2.80 together using the same methods:

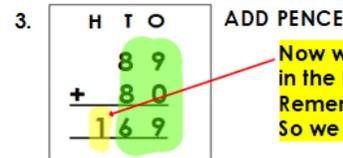


PARTITION

2. ADD POUNDS (£)

$$£3 + £2 = £5$$

*For support with formal methods of addition with regrouping/renaming click [here](#).



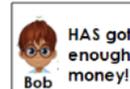
ADD PENCE

Now we have 100 pence in the hundreds. Remember 100p = £1 So we have £1.69

4. RECOMBINE TOTAL £ AND PENCE

$$£5 \text{ and } £1.69 = £6.69$$

$$+ + = £6.69$$



DAY 2 RESOURCES:

THINK:

Ben went to a cafe for his birthday tea. He had burger and chips for £5.65 and a milkshake for £1.70.



How much change did he receive from a £10 note?

SEE: This is a 2-step problem. To solve it we need to complete the steps in the correct order.

Step 1: How much did Ben spend?

Step 2: How much change did he get from £10?

1. $\begin{matrix} \text{£}5.65 & \text{£}1.70 \\ \text{£}5 & \text{£}1 \\ & 65\text{p} & 70\text{p} \end{matrix}$

2. $\text{£}5 + \text{£}1 = \text{£}6$

3.
$$\begin{array}{r} \text{H T O} \\ 65 \\ + 70 \\ \hline 135 \end{array}$$

4. $\text{£}6 \text{ and } \text{£}1.35 = \text{£}7.35$

Ben spent **£7.35** in total

We now know that Ben spent **£7.35**. How much change did he receive from **£10.00**? We need to find the difference between the two amounts by subtracting **£7.35** from **£10.00**.

Our calculation is $\text{£}10.00 - \text{£}7.35$

We can use **partitioning** to help us again by **subtracting the £ first**.



Now we have **£3.00** left with **35p** still to take away. We can use a **numberline** or **column method** to help us here.

To use the numberline I count back 35p in increments or 'chunks' from **£3.00**:



To use the column method I will convert all amounts to the same unit. Here I have converted the £ to pence: $\text{£}3.00 = 300$ pence.

H T O

$$\begin{array}{r} 2 \text{ } 0 \text{ } 0 \\ - 3 \text{ } 5 \\ \hline 2 \text{ } 6 \text{ } 5 \end{array}$$

Note that as I have 0 tens and 0 ones, I have to rename TWICE before I can subtract my ones*

Remember this is 265p which will be £2.65

Both my numberline and column method answers tell me that $\text{£}3.00 - 35\text{p} = \text{£}2.65$ or 265p

- We subtracted the pounds: $\text{£}10.00 - \text{£}7.00 = \text{£}3.00$
- We subtracted the pence: $\text{£}3.00 - \text{£}0.35 = \text{£}2.65$
- The final answer was: $\text{£}10.00 - \text{£}7.35 = \text{£}2.65$

Ben received **£2.65** in change

DO:

POTIONS

Felix Felicis £5.80	Wartcap Powder £2.90
Draught of Living Death £4.15	Amostentia £1.40
Pepperup Potion £1.66	Essence of Dillany £3.30
Wolfshane Potion £2.42	Begoar £4.55
Skele-Gro £6.20	Bubotuber Pus £3.95
Flesh-Eating Slug Repellent £2.55	Veritaserum £2.70

It's potion shopping day at Hogwarts! Help calculate the costs and change in these 2-step problems.

Remember:

- Step 1 → find the total cost of the items (addition)
- Step 2 → work out the change the person received (subtraction)

- Harry bought some Wolfshane Potion and Essence of Dillany. How much change did he have from a £10 note?
- Hermione bought some Veritaserum and a Draught of Living Death. How much change did she receive from a £10 note?
- Ron bought some Pepperup Potion and some Amostentia. How much change did he receive from a £5 note?
- Dumbledore needed some Flesh-Eating Slug Repellent and some Felix Felicis. What was his change from a £10 note?
- Hagrid popped in for some Skele-Gro and Wolfshane Potion. He paid with a £10 note. What was his change?

*For support with formal methods of subtraction with regrouping/renaming click [here](#).

DAY 3 RESOURCES:

THINK:

Sophie buys snacks and drinks for a party of 6. She buys 3 bottles of juice, 3 packets of crisps and 6 packets of nuts. How much does Sophie spend altogether?



SEE: VIDEO HERE

We can use the expanded method for multiplication to help us calculate how much money Sophie spent. We calculate the total cost of each item (multiplication) and then we add these together to find the total amount of money spent on all the items:

$$\begin{array}{r} \times 126 \\ \hline 3 \\ 18 \\ + 60 \\ \hline 300 \\ \hline 378 \end{array}$$

$$\begin{array}{r} \times 209 \\ \hline 3 \\ 27 \\ + 00 \\ \hline 600 \\ \hline 627 \end{array}$$

$$\begin{array}{r} 1 \\ \times 167 \\ \hline 6 \\ 42 \\ + 360 \\ \hline 600 \\ \hline 1002 \end{array}$$

$$\text{Juice} = \text{£}3.78 + \text{Crisps} = \text{£}6.27 + \text{Nuts} = \text{£}10.02$$

$$\text{£}3.78 + \text{£}6.27 + \text{£}10.02 = \text{£}20.07.$$

Sophie spent **£20.07** on snacks.

Remember to:

- ✓ Multiply the ones first
- ✓ Multiply the tens
- ✓ Multiply the ones
- ✓ Add the amounts together
- ✓ Don't forget the decimal point when writing the total as an amount of money!

DO:



How much did each person spend?
Solve each problem using the expanded method of multiplication.

Remember to:

- ✓ Multiply the ones first
- ✓ Multiply the tens
- ✓ Multiply the ones
- ✓ Add the amounts together

Don't forget the decimal point and the £ sign when writing the total as an amount of money!

Don't forget that 100p = £1

Remember to record your calculations.

1. Arjun buys 2 boxes of eggs.
2. Millie buys 2 bags of flour.
3. Leon buys 3 bags of flour.
4. Gemma buys 3 bags of flour and 1 pint of milk.
5. Adrian buys 3 pints of milk.
6. Joanne buys 2 pints of milk and 2 bags of sugar.

DAY 4 RESOURCES:

THINK:



£1.28



77p



29p

A Year 4 teacher challenged the children in her class to make a fruit salad. Henry went to the shop and bought 2 pineapples, 3 bananas and 2 oranges for his fruit salad.

**How much did Henry spend?
How much change did he receive out of £6?**

SEE:

Step 1:

First, I need to calculate the cost of each item of fruit. Then, I need to add these totals together to find out the total amount that Henry spent on fruit. I can use my learning from yesterday to help me with these calculations.

$$\begin{array}{r} \times 128 \\ \hline 2 \\ 16 \\ + 40 \\ \hline 200 \\ 256 \end{array}$$

$$\begin{array}{r} \times 77 \\ \hline 3 \\ 21 \\ + 210 \\ \hline 231 \end{array}$$

$$\begin{array}{r} \times 29 \\ \hline 2 \\ 18 \\ + 40 \\ \hline 58 \end{array}$$

Step 2: Once I have calculated the total cost of each item, I need to add them together to find the total price Henry paid for his fruit:
£2.56 + £2.31 + £0.58 = £5.45

2 pineapples = £2.56

3 bananas = £2.31

2 oranges = £0.58

Step 3: Henry spent £5.45 on fruit for his fruit salad. I need to subtract this amount from £6.00.

$$\begin{array}{r} 59 \\ \cancel{6} \cancel{0} \overset{1}{0} \\ - \\ \hline 545 \\ \hline 055 \end{array}$$

£6.00 - £5.45 = £0.55 or 55p

Henry received 55p change from £6.

DO:



Remember to follow the steps:

Step 1 → Find the total cost of each fruit (multiplication)

Step 2 → Find the total cost of all the fruits - if they bought more than one type of fruit (addition)

Step 3 → Find the amount of change (subtraction)

- Rodrigo has £10. He buys 2 watermelons. How much does he spend? How much change does he receive?
- Nadia has £10. She buys 2 bags of apples and a pineapple. How much does she spend? How much change does she receive?
- Sam has £15. He buys 2 punnets of strawberries. How much does he spend? How much change does he receive?
- Naomi has £15. She buys 3 bags of apples and a watermelon. How much does she spend? How much change does she receive?

DAY 5 RESOURCES:

THINK:

The bill comes to approximately £76.00.

Bill

Fish cakes	£6.90
Samosas	£5.40
Chicken curry	£8.90
Seabass	£16.90
Prawn curry	£13.90
Salad	£7.50
2 chips	£6.00
4 rice	£15.80

I think the total is approximately £82.00.

Bob

Lisa

SEE:

To find the approximate total of the bill we need to round each price to the *nearest pound*. Last week you learnt how to round amounts of money. You can at look the tenths digit in each of these amounts and decide whether they round up or down.

Bill

Fish cakes	£6.90
Samosas	£5.40
Chicken curry	£8.90
Seabass	£16.90
Prawn curry	£13.90
Salad	£7.50
2 chips	£6.00
4 rice	£15.80

The samosas are £5.40 and are closer to £5.00 than £6.00. So we round this price **down** to £5.00

£5.40

£5 £5.50 £6

$£5.40 \approx £5.00$

Bill

Fish cakes	£6.90
Samosas	£5.40
Chicken curry	£8.90
Seabass	£16.90
Prawn curry	£13.90
Salad	£7.50
2 chips	£6.00
4 rice	£15.80

The chips do not need to be rounded as they are already in whole pounds.

All of the other items on the menu round **up** to the next pound as their tenths digits are 5 or more.

We can see that the fish cakes at $£6.90 \approx £7.00$

Bill

Fish cakes	£6.90
Samosas	£5.40
Chicken curry	£8.90
Seabass	£16.90
Prawn curry	£13.90
Salad	£7.50
2 chips	£6.00
4 rice	£15.80

This includes the **seabass**, the prawn curry and the rice which all have pounds in the tens position as well as the ones. We still look at the tenths value when we are rounding to the nearest pound. $£16.90 \approx £17.00$

£16 £16.50 £17

£16.90

Once you have decided whether to round **up** or **down** based on the tenths digit, you can record your answers:

Fish cakes	£6.90	\approx	£ 7.00
Samosas	£5.40	\approx	£ 5.00
Chicken curry	£8.90	\approx	£ 9.00
Seabass	£16.90	\approx	£17.00
Prawn curry	£13.90	\approx	£14.00
Salad	£7.50	\approx	£ 8.00
2 chips	£6.00	\approx	£ 6.00
4 rice	£15.80	\approx	£16.00

Add the rounded totals: £82.00



DO:

Remember the steps

Step 1 → Round each amount to the nearest pound (remember to look at the pence, 50p and above will round to the next pound)

Step 2 → Add the rounded amount together to find an estimate

1. Mark buys a chicken for £5.05 and some yoghurt for £2.82. To the nearest pound, how much does Mark spend?
2. Annabelle buys a T-shirt for £6.25, a pair of shorts for £7.89 and a pair of trainers for £12.65. To the nearest pound, how much does Annabelle spend?
3. In the toy shop, Charlotte buys a teddy bear for £11.55, a rocket for £3.29 and some face paint for £5.09. What is the approximate total cost of her items to the nearest pound?
4. For his Mum's birthday, Archie buys a birthday card for £3.79, a bunch of flowers for £7.39 and some chocolates for £5.50. To the nearest pound, how much does Archie spend?
5. Khashan buys a toy car for £4.39, a magazine for £4.72 and an ice cream for £2.69. How much does he spend, to the nearest pound?



ANSWERS:

DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
<ol style="list-style-type: none">1. £4.502. £5.703. £4.204. £4.755. £6.95	<ol style="list-style-type: none">1. Harry spent £5.72 and received £4.28 change.2. Hermione spent £6.85 and received £3.15 change.3. Ron spent £3.06 and received £1.94 change.4. Dumbledore spent £8.35 and received £1.65 change.5. Hagrid spent £8.62 and received £1.38 change.	<ol style="list-style-type: none">1. Arjun - £3.302. Millie - £5.563. Leon - £8.344. Gemma - £10.335. Adrian - £5.976. Joanne - £10.10	<ol style="list-style-type: none">1. Rodrigo spent £6.58 and received £3.42 change.2. Nadia spent £8.75 and received £1.25 change.3. Sam spent £11.50 and received £3.50 change.4. Naomi spent £11.24 and received £3.76 change.	<ol style="list-style-type: none">1. Mark spent £8.00 to the nearest pound2. Annabelle spent £27.00 to the nearest pound3. Charlotte spent £20.00 to the nearest pound4. Archie spent £17.00 to the nearest pound5. Khasan spent £12.00 to the nearest pound.