

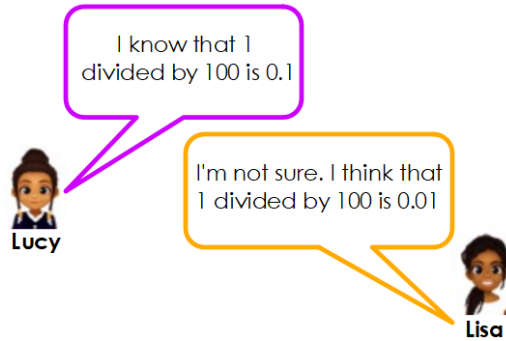
Year 4 maths – Summer 1 Week 4 beginning: 11.5.20

| Theme | Decimals Lesson 1 Dividing whole numbers by 100. | Decimals Lesson 2 Consolidation | Money Lesson 1 Writing amounts of money | Money Lesson 2 Comparing amounts of money | Money Lesson 3 Rounding amounts of money |
|---|--|---|---|--|--|
| Factual fluency (to aid fluency) | <u>What decimal numbers are shown?</u> | <u>Convert between decimals and fractions.</u> | <u>Express decimals as words.</u> | <u>Round decimals to the nearest whole number.</u> | <u>Put decimal numbers in order.</u> |
| <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 LINK</p> | <p>(Lesson 1 resources below) MAKING LINKS: Last week, we learnt how to round decimals, write decimals as a fraction and how to divide whole numbers by 10 and 100. Today we are going to investigate what happens to a whole number when we divide it by 100.</p> <p>THINK: (support below) In a maths lesson, Lucy and Lisa share their thinking about decimals.</p> <div style="border: 1px solid purple; padding: 5px; margin: 10px 0;"> <p>I know that 1 divided by 100 is 0.1</p> </div> <div style="border: 1px solid orange; padding: 5px; margin: 10px 0;"> <p>I'm not sure. I think that 1 divided by 100 is 0.01</p> </div> <p style="text-align: center;"> Lucy Lisa </p> <p>Who is correct? How do you know?</p> <p>SEE: (model below) Watch video here</p> <p>DO: Answer the questions below.</p> | <p>(Lesson 2 resources below) MAKING LINKS: Yesterday we learnt what happens to the place value of digits in a decimal number when we divide by 100. Today we are going to consolidate our decimals learning.</p> <p>THINK: (support below) Lucy and Lisa took part in a decimals quiz. They both wanted to win the star prize! Lucy answered more questions correctly than Lisa. Can you use your knowledge of decimals to explain to Lisa where she has gone wrong, and how she can get the correct answers next time?</p> <p>SEE: (model below)</p> <p>DO: Answer the questions below.</p> | <p>(Lesson 3 resources below) MAKING LINKS: We have spent the past three weeks learning about decimals. Today we are going to learn how to write amounts of money, making links to our decimals learning.</p> <p>THINK (support below): My friend went shopping. She took these coins with her:</p> <div style="text-align: center;"> </div> <p>She wants to buy this bottle of orange juice:</p> <div style="text-align: center;"> </div> <p>How much does the orange juice cost? How much money does my friend have? Does she have enough money to buy the juice? SEE (model below) Watch video to see how to convert to a decimal notation here</p> <p>DO: Answer the questions below.</p> | <p>(Lesson 4 resources below) MAKING LINKS: Yesterday you learnt how to write amounts of money. Today you will compare the value of different amounts of money.</p> <p>THINK (support below): My mum went to the supermarket to buy some fruit. She couldn't decide between pineapple or watermelon. Here are the prices for both:</p> <div style="text-align: center;"> = £1.40 = £2.10 </div> <p>Compare the prices of the fruit. Which is the cheapest/most expensive? Which one should my mum buy if she wants to save money?</p> <p>SEE (model below)</p> <p>DO: Answer the questions below.</p> | <p>(Lesson 5 resources below) MAKING LINKS: We have rounded whole numbers in Autumn term and been comparing different amounts of money. Today we will be rounding amounts of money.</p> <p>THINK: (support below) Sarah bought a cupcake, a sandwich and a drink. Before paying she wanted to estimate how much it would cost altogether.</p> <div style="text-align: center;"> = £2.50 = £2.10 = £1.80 </div> <p>What are these amounts rounded to the nearest pound? What is the estimated cost of the items altogether?</p> <p>SEE: (model below)</p> <p>DO: Answer the questions below.</p> |
| 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:



Who is correct? How do you know?

SEE: VIDEO HERE

When we divide whole numbers by 100, we are making the number 100 times smaller. This means the place value of the digits in the number will change. We may also need to use zeros as place holders. Here is a Gattegno chart. It helps us to see patterns in numbers. We can use this chart to help us divide whole numbers by 100:

| | | | | | | | | | |
|------------|------|------|------|------|------|------|------|------|------|
| | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 |
| $\div 100$ | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
| $\div 10$ | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 0.1 | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 | 0.8 | 0.9 |
| | 0.01 | 0.02 | 0.03 | 0.04 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 |

We can also use a sliding place value chart to help us see what happens to whole numbers when we divide by 100.

| Hundreds | Tens | Ones | Tenths | Hundredths |
|----------|------|------|--------|------------|
| | | 1 | | |
| | | 0 | 1 | |
| | | 0 | 0 | 1 |

- When I divide a whole number by 10, the digits move one place to the right. I then have to include a 0 as a place holder.
- When I divide a whole number by 100, the digits move two places to the rights. As my digits have moved, I need to include my place holders.

DO:

For today's learning you will need a Gattegno chart or a place value chart. You can find them online [here](#) and [here](#) or you can make your own.

1. Using your Gattegno or place value chart, investigate the answers to these division calculations:

- $5 \div 100 =$
- $7 \div 100 =$
- $9 \div 100 =$
- $13 \div 100 =$
- $16 \div 100 =$
- $19 \div 100 =$
- $123 \div 100 =$
- $456 \div 100 =$
- $789 \div 100 =$

2. Write an instruction guide for Lucy to help her remember how to divide whole numbers by 100.

Deepening:

If you divide $760 \div 100$ by 10, which of these is the answer?

- $76 \div 10$
- $760 \div 100$
- $76 \div 100$

Explain how you know.

DAY 2 RESOURCES:



THINK:



Lucy and Lisa took part in a maths quiz to win a prize. Lucy answered more questions correctly than Lisa. Can you use your knowledge of decimals to explain where Lisa has gone wrong? How can she get the correct answers next time?

SEE:

Here are Lucy and Lisa's quiz answers:

|  Lucy's answers |  Lisa's answers |
|--|--|
| 1. $\frac{7}{10} = 7 \text{ tenths} = 0.7$ ✓ | 1. $\frac{7}{10} = 7 \text{ tenths} = 0.07$ |
| 2. $\frac{4}{100} = 4 \text{ hundredths} = 0.04$ ✓ | 2. $\frac{4}{100} = 4 \text{ hundredths} = 0.4$ |
| 3. In the number 25.98, the digit 5 is in the ones place. The digit 9 is in the tenths place. ✓ | 3. In the number 25.98, the digit 5 is in the tens place. The digit 9 is in the ones place. |
| 4. $5.34 > 5.3$ ✓ | 4. $5.34 < 5.3$ |
| 5. $7.42 \approx 7$ ✓ | 5. $7.42 \approx 8$ |
| 6. $0.25 = \frac{1}{4}$ ✓ | 6. $0.25 = \frac{2}{5}$ |
| 7. $5 \div 10 = 0.5$ ✓ | 7. $5 \div 10 = 0.05$ |
| 8. $14 \div 100 = 0.14$ ✓ | 8. $14 \div 100 = 1.4$ |

Look at question 1. Lisa thinks that 7 tenths is the same as 0.07. Using our knowledge of place value, I can see that Lisa has put the digit 7 in the hundredths place. She has recorded her answer as 7 hundredths and that is why it is incorrect.

Now look at question 4. Lisa says that 5.34 is less than 5.3. I know this is incorrect because Lisa has only looked at the digits in the ones and tenths places. If she looked at the hundredths place too, she would notice that 5.34 is actually greater in value than 5.3.

DO:

Look carefully at Lisa's quiz answers. For each one, explain where she has gone wrong and what she needs to do to get each answer correct. Question 1 and Question 4 have been done for you.

Remember to write in full sentences.

Deepening:

Imagine I have 2 blank discs. If each disc can be labelled 1 or 0.1, I can label and combine the two discs to make three possible numbers:

$$1 + 1 = 2$$

$$1 + 0.1 = 1.1$$

$$0.1 + 0.1 = 0.2$$

Now imagine I have 6 blank discs. If each disc can be labelled 1 or 0.1, how many different numbers can I now make (using all 6 discs each time)?

DAY 3 RESOURCES:

THINK:



How much does the orange juice cost?
 How much money does my friend have?
 Does she have enough money to buy the orange juice?

SEE: VIDEO HERE (explaining how to write decimal notations with similar amounts)

There are 10 x 10p coins in £1:

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| £1 | | | | | | | | | |
| 10p | 10p | 10p | 10p | 10p | 10p | 10p | 10p | 10p | 10p |

We can see that 10p is the same as one tenth of one pound.
 We could write 10p as a fraction to show that it is one tenth of a pound $\frac{1}{10}$ but we **do not** write money as a fraction.

Instead, we write money as a decimal number.
 Important! When we write amounts of money in pounds and pence, we ALWAYS include a digit in the tenths and hundredths places.

| | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| £1 | | | | | | | | | |
| 10p | 10p | 10p | 10p | 10p | 10p | 10p | 10p | 10p | 10p |

My friend has 5 x 10p coins.
 $5 \times 10p = 50p$
 50p is 5 tenths of a pound: £0.50
 We put a zero in the hundredths place as a place holder because when we write amounts of money in pounds and pence, we ALWAYS write digits in the tenths and hundredths places.

My friend also has £1.
 $£1.00 + £0.50 = £1.50$
 My friend has £1.50.
 The orange juice costs £1.30.
 I can see that £1.50 is greater than £1.30.
 My friend **does** have enough money to buy the orange juice.

Similarly, there are 100 x 1p coins in £1.
 1p is one hundredth of £1.
 I know that one hundredth written as a decimal is 0.01.
 So when I write amounts of money, my answer would look like this: £0.01

| | | | | | | | | | |
|----|----|----|----|----|----|----|----|----|----|
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |
| 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p | 1p |

DO:

1. Write the amount of money in pounds (£)



2. Draw the coins you would need to make these amounts
- a) £1.45
 - b) £3.72
 - c) £2.05
 - d) £0.20

Is there more than one way?

Deepening:

Twinkle sweets cost 9p each. If I buy seven Twinkle sweets, how much change will I get from £1?

Use a formal written method to record your thinking.







DAY 4 RESOURCES:

THINK:



**Compare the prices of the fruit.
Which is the cheapest? Which digit should you look at first?**





SEE:

| | Pounds £'s | Tenths £0.10's | Hundredths £0.01's |
|---|---|---|-----------------------|
|  |  |  | |
|  |  |  | |

When comparing amounts of money, you should look at the pounds column first because we always look at the place with the highest value. Remember that there are ten 10p in £1.

In this example, the watermelon has £2 which is more than the pineapple which has £1.



| Pounds £1's | Tenths £0.10's | Hundredths £0.01's |
|----------------|---|---|
| |  |  |
| |  |  |

When comparing these two amounts of money, there are no pounds so I need look to the next place, the tenths place because it has a higher value than the hundredths place.
I know that 50p is greater than 20p. So, 1. is the least amount of money.

DO:

1. Write each amount in pounds and then compare the amounts.



£_____ is greater than £_____



£_____ is greater than £_____

2. Use coins at home to compare. Put a collection of coins into two groups. Which group is greater? Record your answers.

Deepening:

Convert these amounts of money into pounds. Use < or > to compare them.

- a. £3.50 and 345p
- b. 78p and £7.08
- c. 120p and £0.22
- d. 236p and £23.06

DAY 5 RESOURCES:

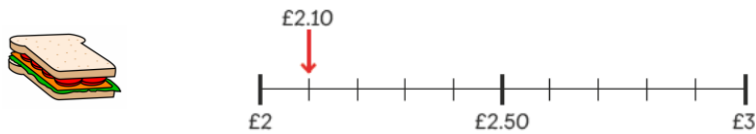
THINK:



What is each item rounded to the nearest pound?

What is the estimated total of the items altogether?

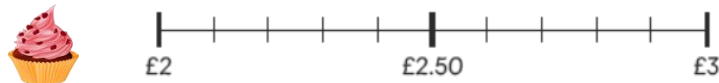
SEE:



£2.10 is in between £2 and £3, so we put these amounts at either end of the number line. As we learnt earlier this week, there are 10 x 10p in £1 so each increment (jump) on the number line is worth 10p. We can see that £2.10 is closer to £2 than £3 so we can say the cost of the sandwich is approximately equal to £2 when rounded to the nearest pound. We write the answer like this: £2.10 ≈ **£2**.



£1.80 is in between £1 and £2, so we put these amounts at either end of the number line. Remember, there are 10 x 10p in £1 so each increment on the number line is worth 10p. We can see that £1.80 is closer to £2 than £1 so we can say the cost of the sandwich is approximately equal to £2 when rounded to the nearest pound. We write the answer like this: £1.80 ≈ **£2**.

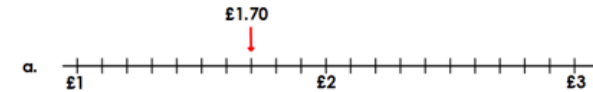


£2.50 is exactly halfway between £2 and £3. We know that when we see a 5 in the tenths place, we need to round up to the next whole pound. We can say that the price of the cupcake is approximately equal to £3. We write the answer like this: £2.50 ≈ **£3**.

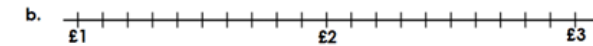
Sarah estimates that the cost of all three items ≈ **£7** **£2** + **£2** + **£3** = **£7**

DO:

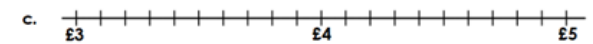
Round each amount to the nearest pound (£).



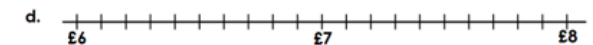
£1.70 ≈



£2.35 ≈



£3.90 ≈



£6.50 ≈

Now show the position of each amount by drawing an arrow on each number line.

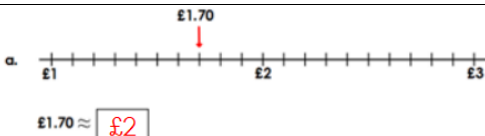
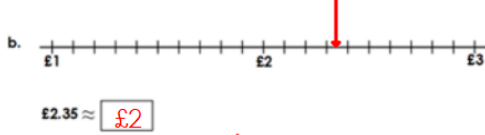
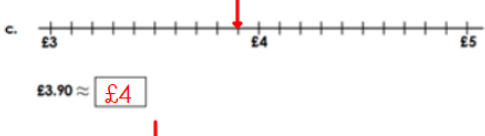
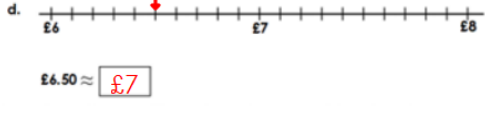
Deepening:

My friend raised £517 for a charity. He rounded this amount to the nearest £1000 and said that he had raised £1000 for the charity.

Do you think it is reasonable to round £517 to the nearest £1000? Explain your thinking.



ANSWERS:

| DAY 1 | DAY 2 | DAY 3 | DAY 4 | DAY 5 | | | | | | | | |
|---|---|-------|-------|-------|-----|---|---|---|---|--|---|--|
| <p>Question 1</p> <p>a. 0.05 b. 0.07 c. 0.09 d. 0.13 e. 0.16 f. 0.19 g. 1.23 h. 4.56 i. 7.89</p> <p>Question 2 Answers will vary – send to your teacher for checking!</p> <p>Deepening: $760 \div 100$</p> <p>Step 1: $760 \div 100 = 7.6$ Step 2: $7.6 \div 10 = 0.76$</p> <p>$76 \div 10 = 7.6$ this does not equal 0.76 so cannot be the right answer.</p> <p>$760 \div 100 = 7.6$ this also does not equal 0.76 so this answer cannot be correct.</p> <p>$76 \div 100 = 0.76$ so this is the correct answer.</p> | <p>Question 1 Lisa has put the digit 7 in the hundredths place instead of the tenths place. $\frac{7}{10} = 0.7$ not 0.07.</p> <p>Question 2 Lisa has put the digit 4 in the tenths place instead of the hundredths place. $\frac{4}{100}$ is the same as 0.04</p> <p>Question 3</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>T</th> <th>O</th> <th>Tth</th> <th>Hth</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>5</td> <td>9</td> <td>8</td> </tr> </tbody> </table> <p>The digit 5 is in the ones place, not the tenths place and the digit 9 is in the tenths place, not the hundredths place.</p> <p>Question 4 5.34 is greater than 5.3.</p> <p>Question 5 $7.42 \approx 7$. Lisa should look at the tenths place and see 4 tenths is less than 5 tenths, we round down to 7 rather than round up to 8.</p> <p>Question 6 $0.25 = \frac{1}{4}$. Lisa has made the mistake of putting the digits from the decimal into a fraction.</p> <p>Question 7 $5 \div 10 = 0.5$</p> <p>Question 8 $14 \div 100 = 0.14$</p> <p>Deepening: There are 7 possible numbers that could be made using the 6 discs: 6, 5.1, 4.2, 3.3, 2.4, 1.5, 0.6</p> | T | O | Tth | Hth | 2 | 5 | 9 | 8 | <p>Question 1</p> <p>a. £0.27 b. £2.60 c. £1.51</p> <p>Question 2 Share your answers with your teacher.</p> <p>Deepening: 1 Twinkle sweet = £0.09 If I buy 7 Twinkle sweets I need to multiply £0.09 by 7 to find the total cost:</p> $\begin{array}{r} 0910 \\ - 0000 \\ \hline 0630 \end{array}$ <p>£0.09 x 7 = £0.63</p> <p>Now I need to subtract £0.63 from £1.</p> $\begin{array}{r} 0910 \\ - 0630 \\ \hline 0280 \end{array}$ <p>I have £0.37 change.</p> | <p>Question 1 £1.40 is greater than £1.20 £2.50 is greater than £2.</p> <p>Question 2 You will all have different answers for this question.</p> <p>Deepening:</p> <p>a. £3.50 > £3.45 b. £0.78 < £7.08 c. £1.20 > £0.22 d. £2.36 < £23.06</p> | <p>DAY 5</p> <p>a. </p> <p>b. </p> <p>c. </p> <p>d. </p> <p>Deepening: If my friend was rounding £517 to the nearest £1000, it would be reasonable because £500 is exactly between £0 and £1000.</p> <p>However, it would make more sense for my friend to round the amount of money to the nearest £10.</p> <p>£517 rounded to the nearest £10 is £520.</p> <p>It would be more reasonable to say that £517 ≈ £520.</p> |
| T | O | Tth | Hth | | | | | | | | | |
| 2 | 5 | 9 | 8 | | | | | | | | | |

