

Maths

Addition, Subtraction,
Multiplication and Division

Estimation Reasoning

Aim

- I can solve reasoning questions involving estimation.

Success Criteria

- I can round numbers to a certain degree of accuracy.
- I can use mathematical language to explain my reasoning.

Estimation Reasoning 1a

What does the term 'estimation' mean?



Estimation Reasoning 1a

Erica goes to the shops.
She wants to estimate the total of her purchases.

SHOPPING LIST

- toilet rolls £6.48
- cleaning products £18.85
- bag of carrots £0.74
- broccoli £0.76
- bag of apples £2.87
- yoghurt £1.19
- carton of milk £1.49
- butter £2.95
- bread £2.84
- sandwich filler £2.73

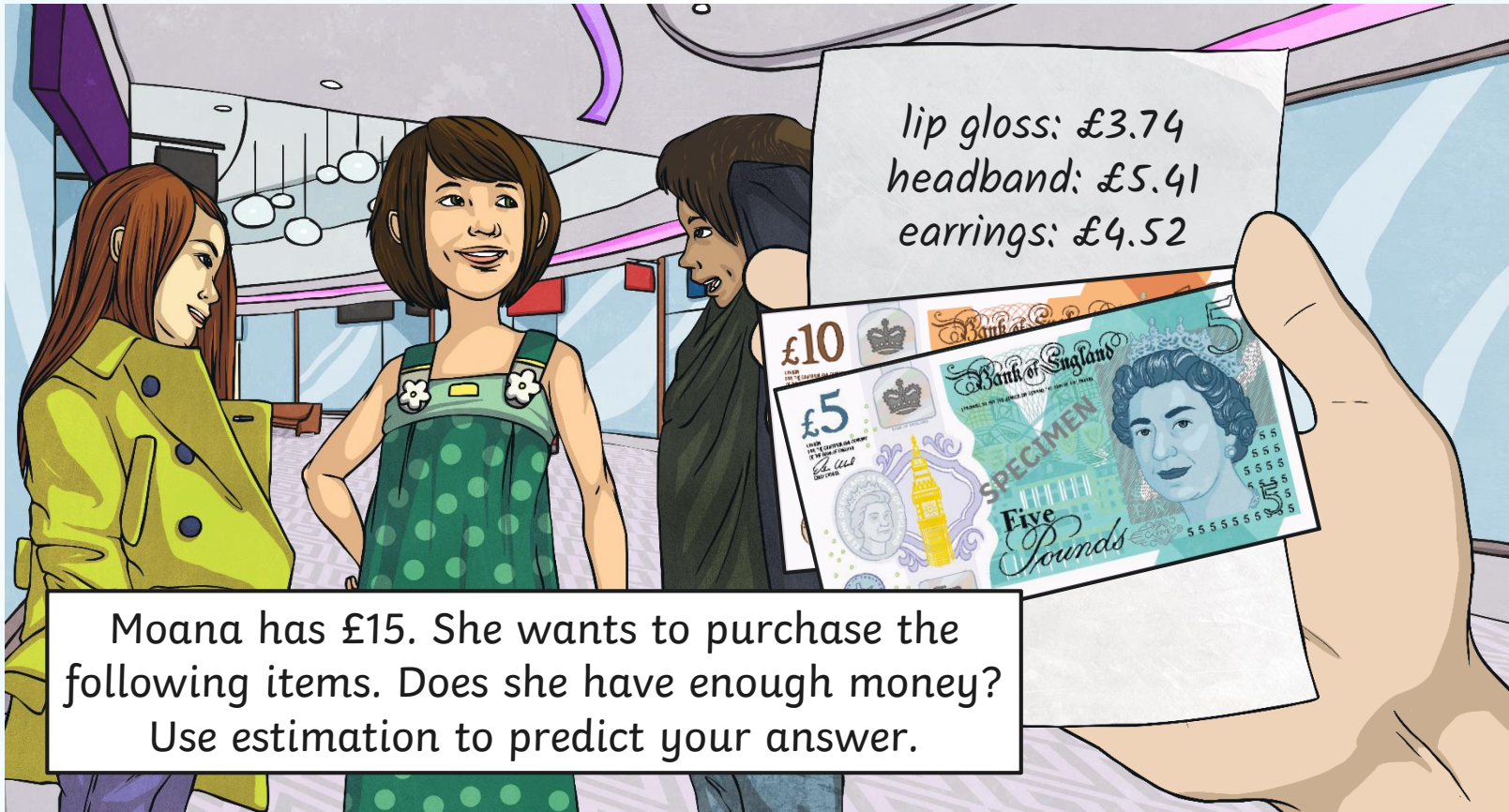
An estimated cost of her purchases is £38.

Top Tip
If she wanted to purchase fewer items, she could have rounded each item to the nearest ten pence or fifty pence, to give a more accurate estimate.

Estimation Reasoning 1b



Working with a partner, use your reasoning skills to solve the first question on your Estimation Talk Partner Activity Sheet.



Estimation Reasoning 1b



Working with a partner, use your reasoning skills to solve the first question on your Estimation Talk Partner Activity Sheet.

Moana has enough money to purchase all of the items.

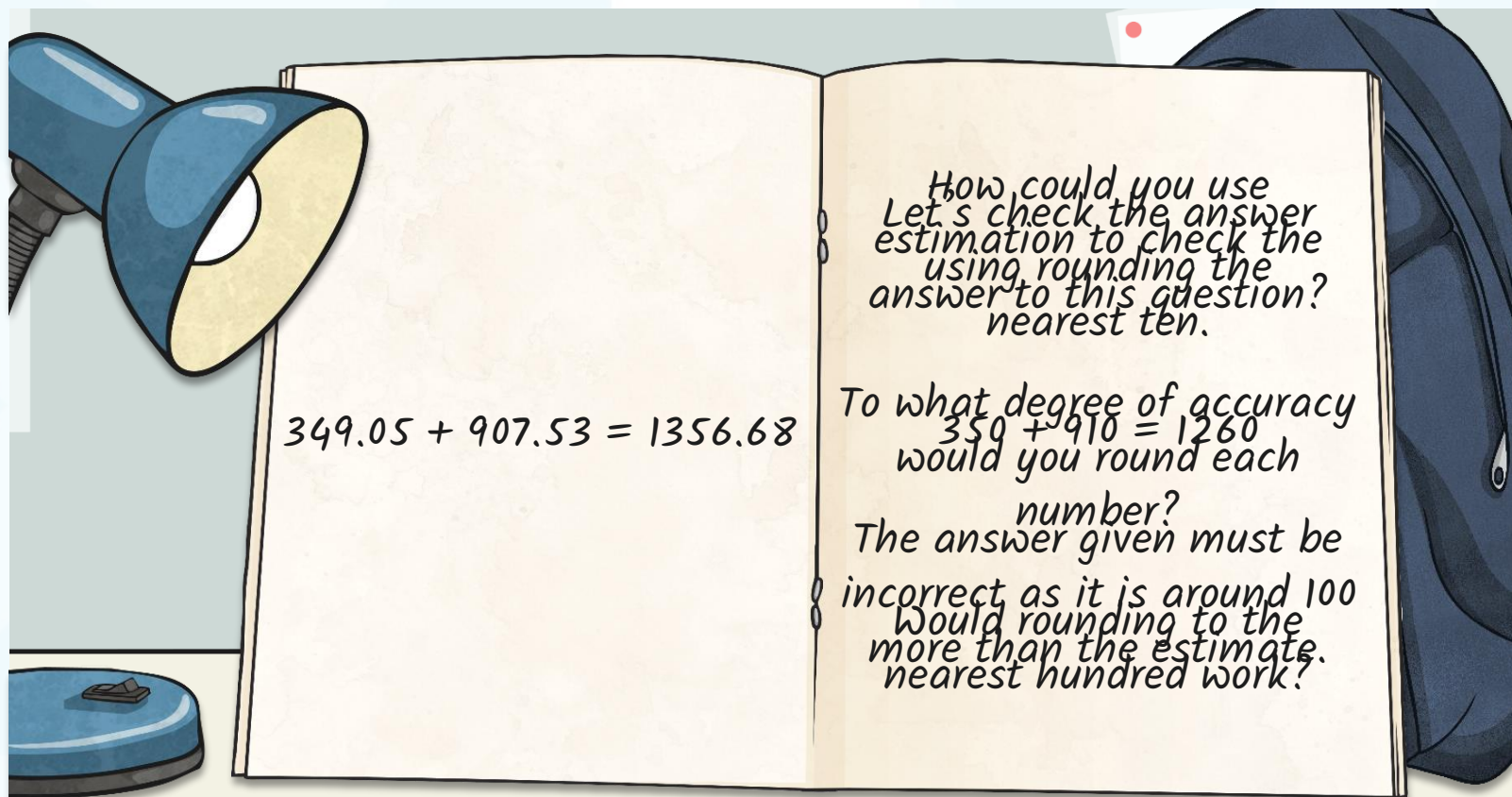
Moana has £15. She wants to purchase the following items. Does she have enough money? Use estimation to predict your answer.

lip gloss: £3.70
headband: £5.40
earrings: £4.50

$$\begin{array}{r} £3.70 \\ + £5.40 \\ + £4.50 \\ = £13.60 \end{array}$$

Estimation Reasoning 2a

Estimation can also be used to check the answer to a question.



Estimation Reasoning 2b



Working with a partner, use your reasoning skills to solve the second question on your Estimation Talk Partner Activity Sheet.

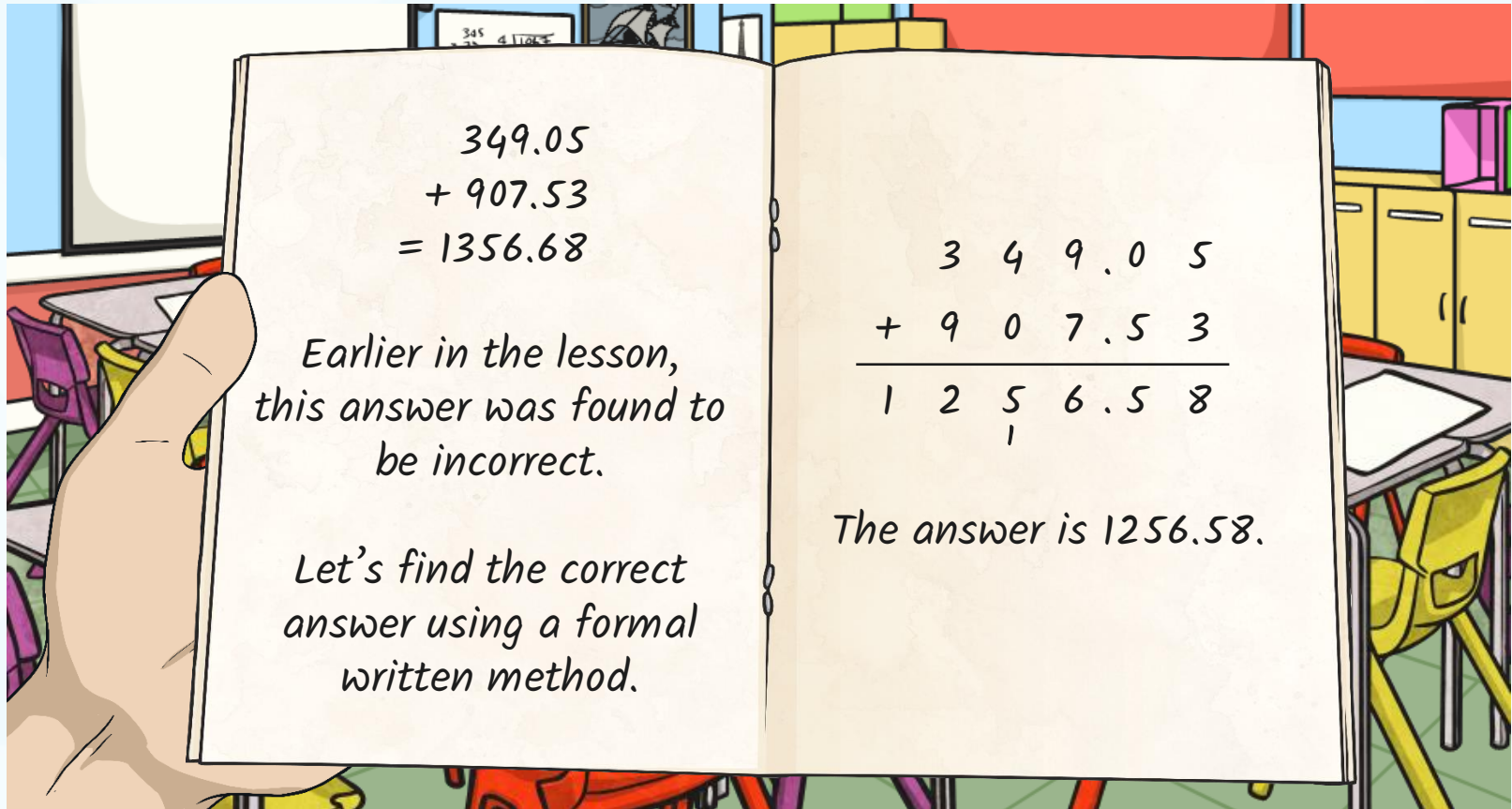
$$\begin{array}{r} 594\,949 \\ - 298\,489 \\ \hline = 319\,940 \end{array}$$

$$\begin{array}{r} \overset{4}{\$} \overset{18}{9} \overset{1}{4}.9\,0\,0 \\ - 2\,9\,8.5\,0\,0 \\ \hline 2\,9\,6.4\,0\,0 \end{array}$$

The answer is incorrect.

Estimation Reasoning 3a

Once an answer has been highlighted as incorrect, the next step is to provide the correct answer.



Reasoning Practice



In pairs, have a go at solving the reasoning questions on your Estimation Reasoning Activity Sheet.

Independent Activity

I can solve reasoning questions involving estimation.

Shahid has completed his homework. Use estimation to check his answers and correct those that are found to be incorrectly calculated.

A roll of wrapping paper costs £1.43. Mahir has £10 to spend on wrapping paper. What is the greatest number of rolls he can buy? <u>Eight</u>	A shop sells sheets of stickers. On each sheet, there are 26 rows and 11 columns of labels. How many stickers are there altogether on 20 sheets? <u>400</u>	soft toy: £7.85 colouring book: £8.20 Ruby buys two soft toys and a colouring book. How much change will she receive from 2 twenty-pound notes? <u>£16.10</u>
Caroline buys 15 candles for £9. How much does each candle cost? <u>20p</u>	Randolph saves £3.90 each week. How much has he saved after 17 weeks? <u>£51</u>	Fill in the missing digits. $294 \times \boxed{3} 5 = 73 \boxed{9} 0$

Reasoning Answers



Line 1

A roll of wrapping paper costs £1.43. Mahir has £10 to spend on wrapping paper. What is the greatest number of rolls he can buy?

Eight

The answer is incorrect. He can buy six rolls.

A shop sells sheets of stickers. On each sheet, there are 26 rows and 11 columns of labels. How many stickers are there altogether on 20 sheets?

400

The answer is incorrect. There are 5720 stickers altogether.

soft toy: £7.85
colouring book: £8.20
Ruby buys two soft toys and a colouring book. How much change will she receive from 2 twenty-pound notes?

£16.10

The answer is correct.

Reasoning Answers



Line 1

Caroline buys 15 candles for £9. How much does each candle cost?

30p

The answer is incorrect. Each candle costs 60p.

Randolph saves £3.90 each week. How much has he saved after 17 weeks?

£51

The answer is incorrect. Randolph has saved £66.30.

Fill in the missing digits.

$$294 \times \boxed{3}5 = 73\boxed{9}0$$

The answer is incorrect.

$$294 \times 25 = 7350$$

Reasoning Answers



Line 3

Find the total of
492.59, 59.30 and
392.95.

844.84

*The answer is
incorrect. The total is
944.84.*

What is the difference
between 23 592 and
94 592?

71 000

The answer is correct.

Amil and Rikard
want to buy one of
each toy. Amil
rounds the price of
each toy to the
nearest £10 and adds
them together. Rikard
adds the exact price
of each toy together.
What is the difference
between Amil's and
Rikard's total?

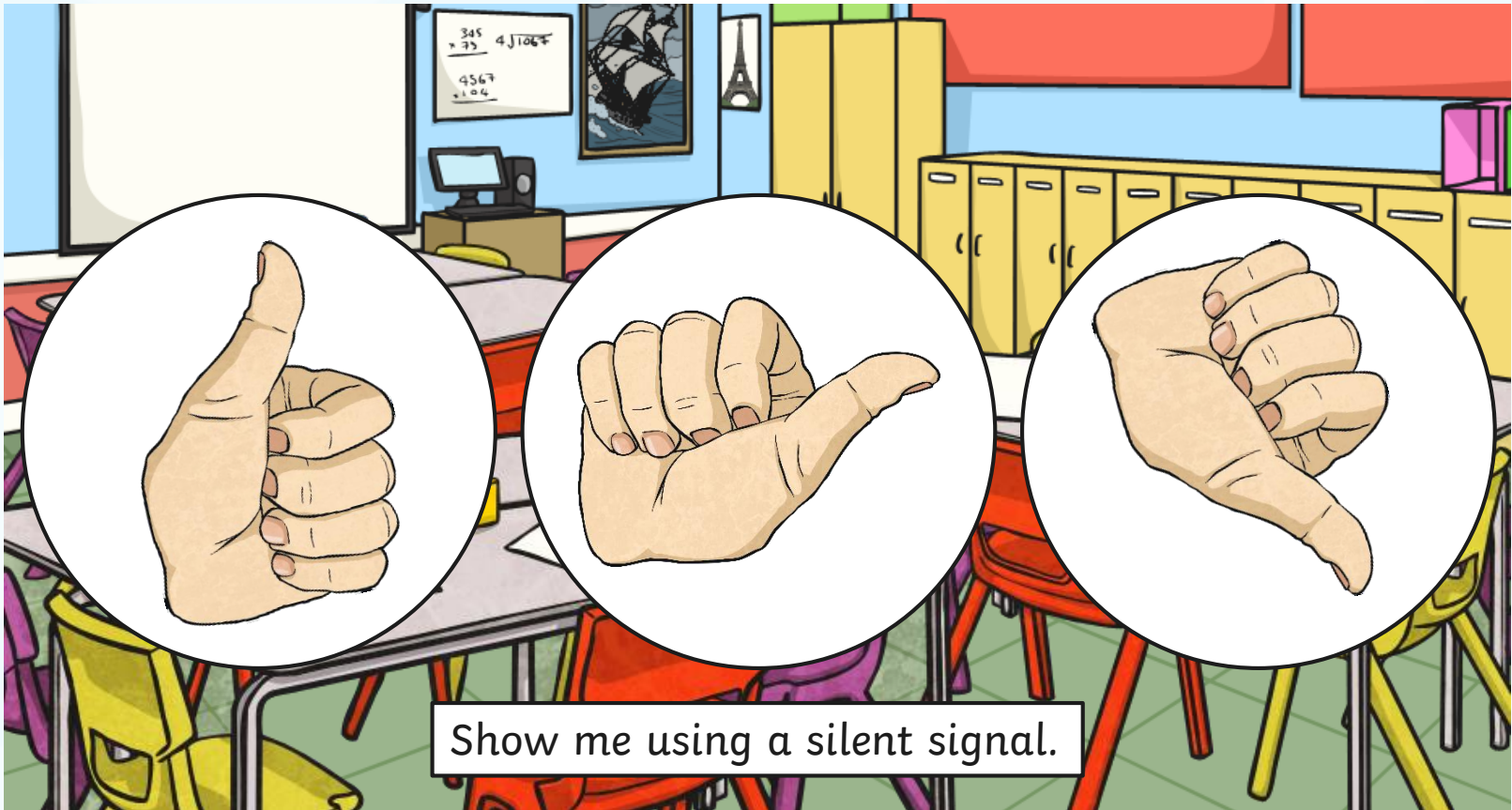
£2.26

The answer is correct.

Reasoning Answers



How confident do you feel about solving reasoning questions involving estimation?



Show me using a silent signal.

Aim



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