

# Add and subtract decimals

## Notes and guidance

In Year 5, children added and subtracted numbers with up to 3 decimal places. In this small step, children revise the methods used for adding and subtracting numbers with different numbers of decimal places and numbers where exchanging between columns is needed.

Use place value counters in a place value chart alongside the formal written method to help children with their understanding. Begin with the smallest place value column when adding or subtracting, while at each stage asking: “Can you make an exchange?” Care must be taken when numbers have the same number of digits, but belong in different place value columns, for example  $1.23 + 45.6$ . The use of zero placeholders can support with this. Bar models and part-whole models can be used alongside concrete resources to help children understand what calculation needs to take place.

## Things to look out for

- Children may not line up digits in the correct place value columns.
- When an exchange is needed in addition, children may forget to add the exchanged number.
- Children may forget to put the decimal point in their answer.

## Key questions

- How can you represent this question using place value counters?
- Do you have enough \_\_\_\_\_ to make an exchange?
- Do you need to exchange any \_\_\_\_\_?
- What are 10 tenths/10 hundredths/10 thousandths equal to?
- If there are not enough tenths/hundredths/thousandths for the subtraction, what do you need to do?

## Possible sentence stems

- \_\_\_\_\_ added to \_\_\_\_\_ is equal to \_\_\_\_\_
- \_\_\_\_\_ subtract \_\_\_\_\_ is equal to \_\_\_\_\_
- \_\_\_\_\_ tenths added to \_\_\_\_\_ tenths is equal to \_\_\_\_\_ tenths.

I do/do not need to make an exchange because ...

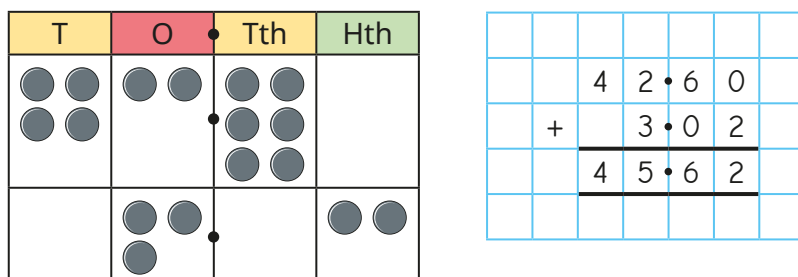
## National Curriculum links

- Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

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## Key learning

- Whitney is working out  $42.6 + 3.02$  using a place value chart.



Use Whitney's method to work out the calculations.

$$503.6 + 25.35$$

$$56.95 - 32.8$$

$$31.67 + 1.319$$

$$249.45 - 18.3$$

- Ron is finding the total of 0.64 and 0.27

I will need to exchange 10 hundredths for 1 tenth.



How does Ron know this?

Use a place value chart and counters to find the total of 0.64 and 0.27

- Use a place value chart and counters to complete the calculations.

$$0.46 + 0.28$$

$$0.73 - 0.29$$

$$1.067 + 0.274$$

$$23.517 - 12.187$$

- Use place value counters to show that  $1.035 + 0.18 = 1.215$

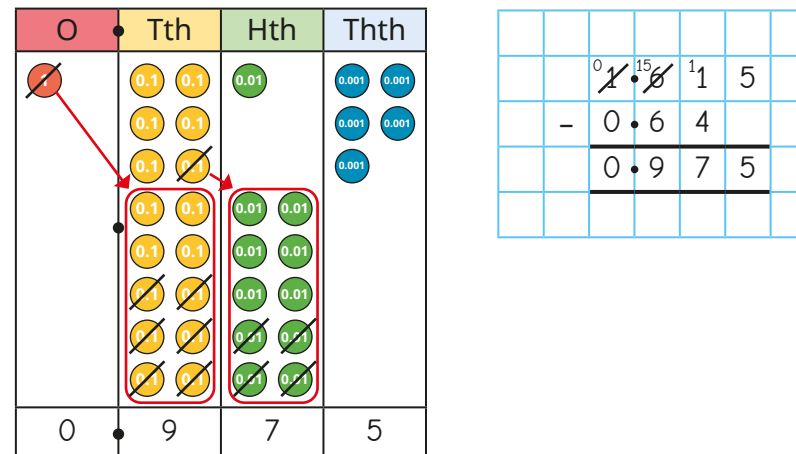
- Use a place value chart to help work out the calculations.

$$0.468 + 1.25$$

$$5.687 + 0.97$$

$$15.027 + 9.58$$

- Esther uses place value counters to work out  $1.615 - 0.64$



Use Esther's method to work out the calculations.

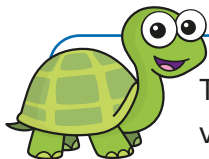
$$0.468 - 0.28$$

$$5.71 - 0.815$$

$$16.904 - 7.85$$

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## Reasoning and problem solving



Tiny has represented  $16.53 + 5.485$  on a place value chart.

T	O	Tth	Hth	Thths
●	●● ●● ●●	●● ●● ●	●● ●	
●● ●● ●	●● ●●	●● ●● ●● ●● ●●	●● ●● ●	

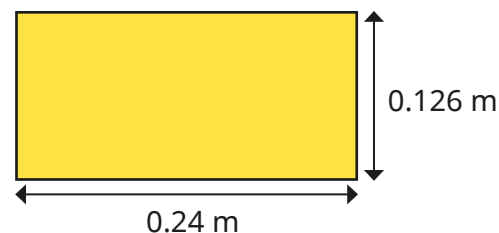
What mistake has Tiny made?

Represent the calculation correctly.

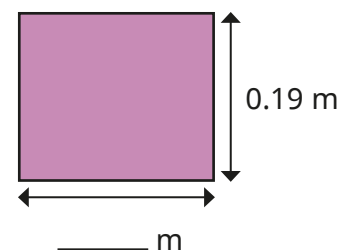
What is the correct answer?

22.015

Work out the perimeter of this shape.



This rectangle has a perimeter of 0.866 m.



Work out the missing length.