

Deconstructing Word Questions Year 6

Tim has read 75% of his book. He has 60 pages left to read. How many pages long is Tim's book?



$$60 \times 4 = 240 \text{ pages}$$

3 apples and 2 pears = £1.40
1 apple and 2 pears = 80p
What is the cost of an apple?
What is the cost of a pear?

$$A + A + A + P + P = £1.40$$

$$A + P + P = 80p$$

$$2 \text{ apples} = 60p$$

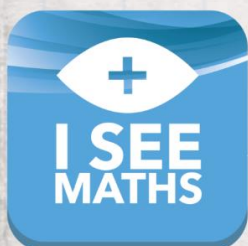
$$\text{apple} = 30p$$

$$\text{pear} = 25p$$

27 children are at a party. There are 3 more boys than girls. How many girls at the party?

B	12	3
G	12	

← 12 girls



By Gareth Metcalfe

Available for
digital download

DECONSTRUCTING WORD QUESTIONS

Year 6

[DOWNLOAD THE TASK BUILD-UP HERE](#)

Additive Reasoning Task Family: **More Than, Less Than**

Additive Reasoning Mini Sequence: **Money Transactions**

Multiplicative Reasoning Task Family: **Multi-Step Multiplicative**

Multiplicative Reasoning Task Family: **Scaling and Ratio**

Multiplicative Reasoning Task Family: **Interpreting Remainders**

Fractions Mini Sequence: **Missing Fraction**

Fractions Task Family: **Fractions of a Quantity**

Fractions Task Family: **Multi-Step Fractions**

Algebra Task Family: **Inverse**

Algebra Task Family: **Compare the Info**

Algebra Task Family: **Fixed Amount + Variable Amount**

Measures Task Family: **Multi-Step Measures**

Measures Task Family: **Hours and Minutes**

Measures Task Family: **Converting Units of Time**

Measures Task Family: **Area and Perimeter**

Measures Task Family: **Volume**

Measures Task Family: **Angle and Turn**

Measures Task Family: **Derive Coordinates**

Statistics Task Family: **Interpreting Graphs**

Statistics Task Family: **The Mean**

[Click here to see how the task families can be used](#)

Task Family: More Than, Less Than

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: choose correct bar model.



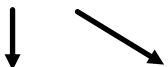
Task A: match question to bar model.



Build 2: questions shown with bar models.



Task B: complete the bar models.



Task C and/or **Task D:** sequences of questions.

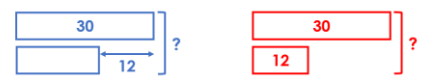
More Than, Less Than Build 1

Mike has 30 stickers.

Mike has 12 more stickers than James.

How many stickers do they have in total?

Which bar model represents the question?



More Than, Less Than Build 2

Max and Kam have £80 in total.

Max has £10 more than Kam.

How much money does Max have?



Answers:

Task A: Jen and Zara: D Joe and Dan: A Kam and Zoe: F Tom and Kelly: E
Max and Fred: C Fay and Joy: B

Task B: Write in the names, £3.50 as the difference and £5.50 in the lower bar. The answer is the total, **£14.50**.

Ola has £91, Kara has £91 - £28 = **£63** and Fay has £250 - (£91 + £63) = **£96** so Fay is the top bar, Ola is the second bar and Kara is the third bar.

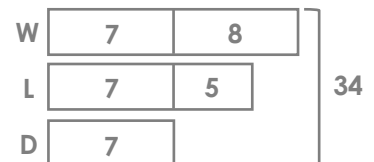
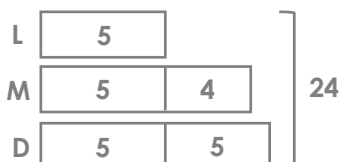
Label the difference, £7, and the total of £33. Dan has **£13**, Riley has £20.

Task C: 9 sweets more £30 15 girls, 12 boys 19 boys, 8 girls (f) 5 sweets

Task D: Leon has 5 stickers:

Kate has £26:

Rayton lost 12 matches:



More Than, Less Than

Task A

Cut out. Match each question to the appropriate bar model.

<p>Jen had £40. Zara £26. How much less money does Zara have than Jen?</p>	<p>Joe and Dan have £40. Joe has £26. How much money does Dan have?</p>	<p>Kam has £40. Zoe has £26. How much money do they have in total?</p>
<p>Tom and Kelly have £40. Kelly has £26 less than Tom. How much money does Tom have?</p>	<p>Max has £40. He has £26 more than Fred. How much money do they have altogether?</p>	<p>Fay and Joy have £40. Joy has £26 more than Fay. How much money does Fay have?</p>
<p>A</p>	<p>B</p>	<p>C</p>
<p>D</p>	<p>E</p>	<p>F</p>

More Than, Less Than

Task A

Cut out. Match each question to the appropriate bar model.

<p>Jen had £40. Zara £26. How much less money does Zara have than Jen?</p>	<p>Joe and Dan have £40. Joe has £26. How much money does Dan have?</p>	<p>Kam has £40. Zoe has £26. How much money do they have in total?</p>
<p>Tom and Kelly have £40. Kelly has £26 less than Tom. How much money does Tom have?</p>	<p>Max has £40. He has £26 more than Fred. How much money do they have altogether?</p>	<p>Fay and Joy have £40. Joy has £26 more than Fay. How much money does Fay have?</p>
<p>A</p>	<p>B</p>	<p>C</p>
<p>D</p>	<p>E</p>	<p>F</p>

More Than, Less Than

Task B

Question	Complete the bar model and answer:
<p>Jack has £3.50 less than Ben.</p> <p>Ben has £9.</p> <p>How much money do Jack and Ben have altogether?</p>	
<p>Ola, Kara and Fay have £250 in total.</p> <p>Ola has £91.</p> <p>Kara has £28 less than Ola.</p> <p>How much money does Fay have?</p>	
<p>Riley has £7 more than Dan.</p> <p>In total, Riley and Dan have £33.</p> <p>How much money does Dan have?</p>	

More Than, Less Than

Task B

Question	Complete the bar model and answer:
<p>Jack has £3.50 less than Ben.</p> <p>Ben has £9.</p> <p>How much money do Jack and Ben have altogether?</p>	
<p>Ola, Kara and Fay have £250 in total.</p> <p>Ola has £91.</p> <p>Kara has £28 less than Ola.</p> <p>How much money does Fay have?</p>	
<p>Riley has £7 more than Dan.</p> <p>In total, Riley and Dan have £33.</p> <p>How much money does Dan have?</p>	

More Than, Less Than

Task C

Question	Method and answer:
In total, Mo, Greg and Leo have 90 sweets. Greg has 29 sweets. Leo has 35 sweets. How many more sweets does Leo have than Mo?	
Lucy has £7.50. Zoe has three times as much money as Lucy. How much money do Lucy and Zoe have in total?	
There are 3 more boys than girls at the party. In total, there are 27 children at the party. How many girls at the party?	
There are 27 children in the hall. There are 11 more girls than boys in the hall. How many girls in the hall?	

More Than, Less Than

Task C

Question	Method and answer:
In total, Mo, Greg and Leo have 90 sweets. Greg has 29 sweets. Leo has 35 sweets. How many more sweets does Leo have than Mo?	
Lucy has £7.50. Zoe has three times as much money as Lucy. How much money do Lucy and Zoe have in total?	
There are 3 more boys than girls at the party. In total, there are 27 children at the party. How many girls at the party?	
There are 27 children in the hall. There are 11 more girls than boys in the hall. How many girls in the hall?	

More Than, Less Than

Task D

Question	Method and answer:
<p>Leon, Max and Dev have 24 stickers.</p> <p>Leon has 4 fewer stickers than Max and 5 fewer than Dev.</p> <p>How many stickers does Leon have?</p>	
<p>Dean has £5 less than Mike.</p> <p>Kate has £4 more than Mike.</p> <p>In total, Dean, Mike and Kate have £65.</p> <p>How much money does Kate have?</p>	
<p>Last season, Rayton Town played 34 football matches.</p> <p>They won 3 more matches than they lost.</p> <p>They lost 5 more matches than they drew.</p> <p>How many football matches did Rayton Town lose last season?</p>	

More Than, Less Than

Task D

Question	Method and answer:
<p>Leon, Max and Dev have 24 stickers.</p> <p>Leon has 4 fewer stickers than Max and 5 fewer than Dev.</p> <p>How many stickers does Leon have?</p>	
<p>Dean has £5 less than Mike.</p> <p>Kate has £4 more than Mike.</p> <p>In total, Dean, Mike and Kate have £65.</p> <p>How much money does Kate have?</p>	
<p>Last season, Rayton Town played 34 football matches.</p> <p>They won 3 more matches than they lost.</p> <p>They lost 5 more matches than they drew.</p> <p>How many football matches did Rayton Town lose last season?</p>	

Mini Sequence: Money Transactions

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Mini Sequence Suggested Route:

Build 1: two slow reveal prompts.

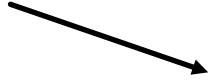


Task A: identify missing information/question.



Task B Version 1 or **Task B Version 2:**

sequences of questions that gradually increase in challenge, version 2 more difficulty in calculation.



Money Transactions

Build 1

Swimming Pool Prices

Adults: £6

Children: £3.50

Janet and her 3 children go swimming.

How much change does she get?

What information must be given?

Money Transactions

Build 1

missing information

How much change does he get?

Shirt

£18

Trousers

£26

missing question

missing information

Answers:

Task A: The amount of money Jen has. The cost of the oranges and pears.
How much more money does she need? The amount of change Tom was given.

Task B Version 1: (a) £84 (b) £1100 (c) £1.15 (d) 5 pizza slices

Task B Version 2: (a) £551 (b) 60p (c) 5 pizza slices
(d) 3 pizza slices or 2 pizza slices and 5 drinks or 1 pizza slice and 10 drinks or 15 drinks

Money Transactions

Task A

Question	Missing information/question:
Bananas cost 18p each. <div>missing information</div> How many bananas can Jen afford?	
Jay buys 3 oranges and 2 pears. <div>missing information</div> He pays with a £2 coin. How much change does he get?	
Holly has £5. She wants to buy two pineapples and three mangoes. Pineapples: £1.40 Mangoes: 90p <div>missing question</div>	
Tom bought 6 apples. Each apple cost the same amount. He paid with a £2 coin. <div>missing information</div> How much did each apple cost?	

Money Transactions

Task A

Question	Missing information/question:
Bananas cost 18p each. <div>missing information</div> How many bananas can Jen afford?	
Jay buys 3 oranges and 2 pears. <div>missing information</div> He pays with a £2 coin. How much change does he get?	
Holly has £5. She wants to buy two pineapples and three mangoes. Pineapples: £1.40 Mangoes: 90p <div>missing question</div>	
Tom bought 6 apples. Each apple cost the same amount. He paid with a £2 coin. <div>missing information</div> How much did each apple cost?	

Money Transactions

Task B Version 1

- (a) Brad's target is to raise £200 for the Animal Rescue Centre. He earned £82 doing a sponsored run and £34 by washing cars.

How much more does Brad have to raise?

- (b) Hannah had £6700. She sold her old car for £1900 and bought a new car for £7500.

How much money does Hannah have now?

Pizza Slices: £1.75

Drinks: 35p

- (c) Poppy buys 2 pizza slices and a drink. She pays with a £5 note.

How much change does she get?

- (d) Raja buys some pizza. He pays with a £10 note and gets £1.25 change.

How many pizza slices does he buy?

Money Transactions

Task B Version 1

- (a) Brad's target is to raise £200 for the Animal Rescue Centre. He earned £82 doing a sponsored run and £34 by washing cars.

How much more does Brad have to raise?

- (b) Hannah had £6700. She sold her old car for £1900 and bought a new car for £7500.

How much money does Hannah have now?

Pizza Slices: £1.75

Drinks: 35p

- (c) Poppy buys 2 pizza slices and a drink. She pays with a £5 note.

How much change does she get?

- (d) Raja buys some pizza. He pays with a £10 note and gets £1.25 change.

How many pizza slices does he buy?

Money Transactions

Task B Version 2

- (a) Jen had £5800. She sold her old car for £1750 and bought a new car for £6999.
How much money does Jen have now?

Pizza Slices: £1.75 Drinks: 35p

- (b) Kelsey wants 3 pizza slices and a drink.
She has a £5 note.
How much more money does she need?
- (c) Raja buys some pizza and 2 drinks. He pays with a £20 note and gets £10.55 change.
How many pizza slices does he buy?
- (d) Harry goes to the pizzeria. He pays with a £10 note and gets £4.75 change.
What could Harry have bought?
There are different possible answers.

Money Transactions

Task B Version 2

- (a) Jen had £5800. She sold her old car for £1750 and bought a new car for £6999.
How much money does Jen have now?

Pizza Slices: £1.75 Drinks: 35p

- (b) Kelsey wants 3 pizza slices and a drink.
She has a £5 note.
How much more money does she need?
- (c) Raja buys some pizza and 2 drinks. He pays with a £20 note and gets £10.55 change.
How many pizza slices does he buy?
- (d) Harry goes to the pizzeria. He pays with a £10 note and gets £4.75 change.
What could Harry have bought?
There are different possible answers.

Task Family: Multi-Step Multiplicative

Teacher Guide

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This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: slow reveal questions.



Task A: which answer? (explain the mistakes)



Task B Version 1 or Task B Version 2: multi-step questions, V1 has more scaffold than V2.



Build 2: slow reveal questions.



Task C and/or Task D: multi-step questions, for Task C choose the correct answer and explain the mistake.

Multi-Step Multiplicative Build 1

Lee has a 2 year-old son called Harvey.

Lee is **twice as tall** and **five times as heavy** as Harvey.

Lee is 170cm tall. **How tall is Harvey?** $170\text{cm} \div 2 = 85\text{cm}$

Multi-Step Question

Multi-Step Multiplicative Build 2

A circus is holding a concert for charity.

They can sell **250** tickets for the concert.

Adult tickets cost **£11**. Child tickets cost **£6**.

How many child tickets are sold?

What information must be given?

Answers:

Task A: Answer A Answer B Answer B Answer B

Task B Version 1: 1kg potatoes = £1.40, 1.5kg carrots = £2.40, total cost = **£3.80**

2kg carrots = £3.20, 3kg potatoes = £4.20, **£1 cheaper**

500g potatoes = 70p, £1.10 - £0.70 = 40p, 40p = **250g carrots**

Task B Version 1: 900g potatoes = £1.26, 600g carrots = £0.96, total cost = **£2.22**

1.5kg carrots = £2.40, 2.5kg potatoes = £3.50, **£1.10 cheaper**

600g potatoes = 84p, £2.04 - £0.84 = £1.20, £1.20 = **750g carrots**

Task C: Answer B is correct. For answer A, the mistake was there are 140 adults, not 250.
 Answer B is correct. The mistake for answer A is 500 people travel by car, so divide by 5.
 Answer A is correct. Answer B is incorrect because it gives the amount of money spent.
 Answer A is correct. Answer B is incorrect because £2.40 is the difference between the amounts spent, not the total spent.

Task D: $210 \times £17 = £3570$ $£4650 - £3570 = £1080$ $£1080 \div 9 = 120$ **child tickets**

$250 \times 5 = 1250$ $3000 - 1250 = 1750$ $1750 \div 60 = 29.17$ **30 coaches needed**

$£1.20 \times 3.5 = £4.20$ $£1.60 \times 1.5 = £2.40$ $£4.20 + £2.40 = £6.60$ $£10 - £6.60 = £3.40$

$£1.20 \times 3 = £3.60$ so Lee buys 300g chicken. $£1.60 \times 2.5 = £4$ so Zack buys 250g turkey.

300g - 250g = **50g more meat for Lee.**

Example answer: 200g chicken (costing £2.40) and 50g turkey (costing 80p).

Multi-Step Multiplicative

Task A

Question	Which Answer?
The length of a rectangle is 3 times as long as the width. The length of the rectangle is 12cm. What is the width of the rectangle?	<p>Answer A: $12\text{cm} \times 3 = 36\text{cm}$</p> <p>Answer B: $12\text{cm} \div 3 = 4\text{cm}$</p>
There are 6 girls at the party. There are 3 times as many boys as girls at the party. How many children are there at the party?	<p>Answer A: $6 \times 3 = 18$ children</p> <p>Answer B: $6 \times 3 + 6 = 24$ children</p>
David is awake twice as long as he is asleep. How many hours does David sleep for each week?	<p>Answer A: $24 \div 2 = 12$ hours $12 \times 7 = 84$ hours</p> <p>Answer B: $24 \div 3 = 8$ hours $8 \times 7 = 56$ hours</p>
At TJ Sports, tennis balls cost £2 each. At Sports Empire, tennis balls cost £6 for 4. How much cheaper is it to buy 12 tennis balls at Sports Empire than at TJ Sports?	<p>Answer A: $\pounds 24 + \pounds 18 = \pounds 42$</p> <p>Answer B: $\pounds 24 - \pounds 18 = \pounds 6$</p> <p>Answer C: $\pounds 24 - \pounds 12 = \pounds 12$</p>

Multi-Step Multiplicative

Task A

Question	Which Answer?
The length of a rectangle is 3 times as long as the width. The length of the rectangle is 12cm. What is the width of the rectangle?	<p>Answer A: $12\text{cm} \times 3 = 36\text{cm}$</p> <p>Answer B: $12\text{cm} \div 3 = 4\text{cm}$</p>
There are 6 girls at the party. There are 3 times as many boys as girls at the party. How many children are there at the party?	<p>Answer A: $6 \times 3 = 18$ children</p> <p>Answer B: $6 \times 3 + 6 = 24$ children</p>
David is awake twice as long as he is asleep. How many hours does David sleep for each week?	<p>Answer A: $24 \div 2 = 12$ hours $12 \times 7 = 84$ hours</p> <p>Answer B: $24 \div 3 = 8$ hours $8 \times 7 = 56$ hours</p>
At TJ Sports, tennis balls cost £2 each. At Sports Empire, tennis balls cost £6 for 4. How much cheaper is it to buy 12 tennis balls at Sports Empire than at TJ Sports?	<p>Answer A: $\pounds 24 + \pounds 18 = \pounds 42$</p> <p>Answer B: $\pounds 24 - \pounds 18 = \pounds 6$</p> <p>Answer C: $\pounds 24 - \pounds 12 = \pounds 12$</p>

Multi-Step Multiplicative

Task B Version 1

Potatoes: £1.40 per kg

Carrots: £1.60 per kg

Question	Method and Answer:
How much does 1kg of potatoes and 1.5kg of carrots cost?	<p>Step 1: 1kg potatoes =</p> <p>Step 2: 1.5kg carrots =</p> <p>Step 3:</p>
How much cheaper is 2kg of carrots than 3kg of potatoes?	<p>Step 1: 2kg carrots =</p> <p>Step 2: 3kg potatoes =</p> <p>Step 3:</p>
Tom buys 500g of potatoes and some carrots. He spends £1.10. How many grams of carrots does he buy?	<p>Step 1: 500g potatoes =</p> <p>Step 2: £1.10 –</p> <p>Step 3:</p>

Multi-Step Multiplicative

Task B Version 1

Potatoes: £1.40 per kg

Carrots: £1.60 per kg

Question	Method and Answer:
How much does 1kg of potatoes and 1.5kg of carrots cost?	<p>Step 1: 1kg potatoes =</p> <p>Step 2: 1.5kg carrots =</p> <p>Step 3:</p>
How much cheaper is 2kg of carrots than 3kg of potatoes?	<p>Step 1: 2kg carrots =</p> <p>Step 2: 3kg potatoes =</p> <p>Step 3:</p>
Tom buys 500g of potatoes and some carrots. He spends £1.10. How many grams of carrots does he buy?	<p>Step 1: 500g potatoes =</p> <p>Step 2: £1.10 –</p> <p>Step 3:</p>

Multi-Step Multiplicative

Task B Version 2

Potatoes: £1.40 per kg

Carrots: £1.60 per kg

Question	Method and Answer:
How much does 900g of potatoes and 600g of carrots cost?	<p>Step 1: 900g potatoes =</p> <p>Step 2: 600g carrots =</p> <p>Step 3:</p>
How much cheaper is 1.5kg of carrots than 2.5kg of potatoes?	<p>Step 1:</p> <p>Step 2:</p> <p>Step 3:</p>
Tom buys 600g of potatoes and some carrots. He spends £2.04. How many grams of carrots does he buy?	<p>Step 1: 600g potatoes =</p> <p>Step 2: £2.04 –</p> <p>Step 3:</p>

Multi-Step Multiplicative

Task B Version 2

Potatoes: £1.40 per kg

Carrots: £1.60 per kg

Question	Method and Answer:
How much does 900g of potatoes and 600g of carrots cost?	<p>Step 1: 900g potatoes =</p> <p>Step 2: 600g carrots =</p> <p>Step 3:</p>
How much cheaper is 1.5kg of carrots than 2.5kg of potatoes?	<p>Step 1:</p> <p>Step 2:</p> <p>Step 3:</p>
Tom buys 600g of potatoes and some carrots. He spends £2.04. How many grams of carrots does he buy?	<p>Step 1: 600g potatoes =</p> <p>Step 2: £2.04 –</p> <p>Step 3:</p>

Multi-Step Multiplicative

Task C

For each question, **tick the correct answer.** Then, **explain the mistake.**

Question	Which answer? Explain the mistake.	
<p>A band held a concert for charity. Adult tickets = £15 Child tickets = £8 250 tickets were sold. 110 of these were child tickets. How much money was raised?</p>	<p>Answer A: $250 \times £15 = £3750$ $110 \times £8 = £880$ $£3750 + £880 = \textbf{£4630}$</p>	<p>Answer B: $110 \times £8 = £880$ $140 \times £15 = £2100$ $£2100 + £880 = \textbf{£2980}$</p>
	<p>Explain the Mistake:</p>	
<p>2000 people going to the match. Coaches can fit 60 people. Cars can fit 5 people. There are 25 coaches. How many cars are needed to take everyone to the match?</p>	<p>Answer A: $60 \times 25 = 1500$ $2000 - 1500 = 500$ 500 cars needed</p>	<p>Answer B: $2000 - 60 \times 25 = 500$ $500 \div 5 = 100$ 100 cars needed</p>
	<p>Explain the Mistake:</p>	
<p>Chicken costs £1.20 per 100g. Turkey costs £1.60 per 100g. Beth buys 400g of chicken. Lucy buys 250g of turkey. How much more does Beth spend than Lucy?</p>	<p>Answer A: $£1.20 \times 4 = £4.80$ $£1.60 \times 2.5 = £4$ $£4.80 - £4 = \textbf{80p}$</p>	<p>Answer B: $£1.20 \times 4 = £4.80$ $£1.60 \times 2.5 = £4$ $£4.80 + £4 = \textbf{£8.80}$</p>
	<p>Explain the Mistake:</p>	
<p>Chicken costs £1.20 per 100g. Turkey costs £1.60 per 100g. Tom buys chicken. Raja buys turkey. They buy the same amount of meat. Raja spends £2.40 more than Tom. How much chicken, in grams, does Tom buy?</p>	<p>Answer A: $£1.60 - £1.20 = 40p$ $240p \div 40p = 6$ $6 \times 100g = \textbf{600g}$</p>	<p>Answer B: $£1.20 \times 2 = £2.40$ $£2.40 = \textbf{200g}$</p>
	<p>Explain the Mistake:</p>	

Multi-Step Multiplicative

Task D

Question	Method and Answer:
<p>A band held a concert for charity. Adult tickets = £17 Child tickets = £9 The concert raised a total of £4650 210 adult tickets were sold. How many child tickets were sold?</p>	
<p>3000 people going to the match. Coaches can fit 60 people. Cars can fit 5 people. There are 250 cars. How many coaches are needed to take everyone to the match?</p>	
<p>Chicken costs £1.20 per 100g Turkey costs £1.60 per 100g Amy buys 350g of chicken and 150g of turkey. She pays with a £10 note. How much change does she get?</p>	
<p>Chicken costs £1.20 per 100g Turkey costs £1.60 per 100g Lee spends £3.60 on chicken. Zack spends £4 on turkey. How much more meat, in grams, does Lee get than Zack?</p>	
<p>Chicken costs £1.20 per 100g Turkey costs £1.60 per 100g Chen bought some chicken and some turkey. He spent £3.20. How much turkey and chicken, in grams, could Chen have bought?</p>	

Task Family: Scaling and Ratio

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: choose correct bar model.



Task A: match question to bar model.



Task B and/or **Task C:** questions with part-complete bar models (Task B) or no support (Task C).



Build 2: slow reveal questions with bar models.



Task D Version 1 or **Task D Version 2:** varied questions, V1 smaller number range than V2.



Scaling and Ratio **Build 1**

Max has **3** times as many conkers as Ben.
Altogether, they have **12** conkers.
How many conkers does Ben have?

Which picture represents the question?

M ☐ ☐ ☐ } 12

B ☐ } 12

Scaling and Ratio **Build 2**

There are **3** times as many children as adults at the park.
There are **18** more children than adults at the park.
How many adults at the park?

C ☐ ☐ ☐

A ☐ } 18

9 adults

Answers:

Task A: Top left: left bar model Top right: right bar model
Bottom left: right bar model Bottom right: left bar model

Task B: 5 left handed children (bar model shows a whole of 30 and 5 in each box)
18 penalties (bar model shows 12 is the value of two boxes, the value of each box is 6)
14 minutes (bar model shows 7 in each box, the difference is 14)

Task C: (a) 30 seeds (b) 27 seeds (c) 7 left-handed players (d) 6 left-handed players

Task D Version 1: 4 adults 2 adults 4 coins heads for every coin showing tails

Task D Version 2: 12 adults 27 adults 8 coins heads for every coin showing tails

Scaling and Ratio

Task A

Which bar model correctly represents each question?

<p>Jay played basketball. For every 3 shots he took, he scored 1 basket. Jay took 12 shots. How many baskets did Jay score?</p> <div> <div> <div>12 shots</div> <div> <div>4</div> <div>4</div> <div>4</div> </div> <div>miss</div> <div>score</div> </div> <div> <div>12 shots</div> <div> <div>3</div> <div>3</div> <div>3</div> <div>3</div> </div> <div>miss</div> <div>score</div> </div> </div>	<p>Kam played basketball. For every 3 shots he missed, he scored 1 basket. Kam took 12 shots. How many baskets did Kam score?</p> <div> <div> <div>12 shots</div> <div> <div>4</div> <div>4</div> <div>4</div> </div> <div>miss</div> <div>score</div> </div> <div> <div>12 shots</div> <div> <div>3</div> <div>3</div> <div>3</div> <div>3</div> </div> <div>miss</div> <div>score</div> </div> </div>
<p>There is 1 adult for every 4 children on the school trip. 40 people go in total. How many adults go on the school trip?</p> <div> <div> <div>C</div> <div> <div>10</div> <div>10</div> <div>10</div> </div> <div>A</div> <div>10</div> </div> <div>40</div> <div> <div>C</div> <div> <div>8</div> <div>8</div> <div>8</div> <div>8</div> </div> <div>A</div> <div>8</div> </div> <div>40</div> </div>	<p>For every 3 children inside, there are 2 children outside. 60 children are inside. How many children are outside?</p> <div> <div> <div>60</div> <div> <div>In</div> <div> <div>20</div> <div>20</div> <div>20</div> </div> <div>Out</div> <div> <div>20</div> <div>20</div> </div> </div> <div> <div>60</div> <div> <div>12</div> <div>12</div> <div>12</div> <div>12</div> <div>12</div> </div> <div>inside</div> <div>outside</div> </div> </div> </div>

Scaling and Ratio

Task A

Which bar model correctly represents each question?

<p>Jay played basketball. For every 3 shots he took, he scored 1 basket. Jay took 12 shots. How many baskets did Jay score?</p> <div> <div> <div>12 shots</div> <div> <div>4</div> <div>4</div> <div>4</div> </div> <div>miss</div> <div>score</div> </div> <div> <div>12 shots</div> <div> <div>3</div> <div>3</div> <div>3</div> <div>3</div> </div> <div>miss</div> <div>score</div> </div> </div>	<p>Kam played basketball. For every 3 shots he missed, he scored 1 basket. Kam took 12 shots. How many baskets did Kam score?</p> <div> <div> <div>12 shots</div> <div> <div>4</div> <div>4</div> <div>4</div> </div> <div>miss</div> <div>score</div> </div> <div> <div>12 shots</div> <div> <div>3</div> <div>3</div> <div>3</div> <div>3</div> </div> <div>miss</div> <div>score</div> </div> </div>
<p>There is 1 adult for every 4 children on the school trip. 40 people go in total. How many adults go on the school trip?</p> <div> <div> <div>A</div> <div> <div>10</div> <div>10</div> <div>10</div> </div> <div>C</div> <div>10</div> </div> <div>40</div> <div> <div>A</div> <div> <div>8</div> <div>8</div> <div>8</div> <div>8</div> </div> <div>C</div> <div>8</div> </div> <div>40</div> </div>	<p>For every 3 children inside, there are 2 children outside. 60 children are inside. How many children are outside?</p> <div> <div> <div>60</div> <div> <div>In</div> <div> <div>20</div> <div>20</div> <div>20</div> </div> <div>Out</div> <div> <div>20</div> <div>20</div> </div> </div> <div> <div>60</div> <div> <div>12</div> <div>12</div> <div>12</div> <div>12</div> <div>12</div> </div> <div>inside</div> <div>outside</div> </div> </div> </div>

Scaling and Ratio

Task B

Question	Complete the bar model and answer:
<p>For every 5 right-handed children in the class, there is 1 left-handed child. There are 30 children in the class.</p> <p>How many are left-handed children are there in the class?</p>	<p>RH <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>]</p> <p>LH <input type="text"/>]</p>
<p>For every 3 penalties that Fred takes, he scores 2 goals. Last season, Fred scored 12 penalties.</p> <p>How many penalties did Fred take?</p>	<p><input type="text"/> <input type="text"/> <input type="text"/></p>
<p>It takes Zara three times as long to walk to school as Rose. It takes Rose 7 minutes to walk to school.</p> <p>How much longer does it take Zara to walk to school than Rose?</p>	<p>Z <input type="text"/> <input type="text"/> <input type="text"/></p> <p>R <input type="text"/></p>

Scaling and Ratio

Task B

Question	Complete the bar model and answer:
<p>For every 5 right-handed children in the class, there is 1 left-handed child. There are 30 children in the class.</p> <p>How many are left-handed children are there in the class?</p>	<p>RH <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>]</p> <p>LH <input type="text"/>]</p>
<p>For every 3 penalties that Fred takes, he scores 2 goals. Last season, Fred scored 12 penalties.</p> <p>How many penalties did Fred take?</p>	<p><input type="text"/> <input type="text"/> <input type="text"/></p>
<p>It takes Zara three times as long to walk to school as Rose. It takes Rose 7 minutes to walk to school.</p> <p>How much longer does it take Zara to walk to school than Rose?</p>	<p>Z <input type="text"/> <input type="text"/> <input type="text"/></p> <p>R <input type="text"/></p>

Scaling and Ratio

Task C

- (a) For every 3 seeds that Hannah plants, 2 grow.
Hannah plants 45 seeds.
How many seeds grow?
- (b) Kara plants some seeds. For every 3 seeds that grow, 2 seeds do not grow. Kara plants 45 seeds.
How many seeds grow?
- (c) At the tennis club, there are 6 times as many right-handed players as left-handed players.
There are 42 right-handed players at tennis club.
How many left-handed players are there at the tennis club?
- (d) At the cricket club, there are 6 times as many right-handed players as left-handed players.
There are 42 players at the cricket club.
How many left-handed players are there at the cricket club?

Scaling and Ratio

Task C

- (a) For every 3 seeds that Hannah plants, 2 grow.
Hannah plants 45 seeds.
How many seeds grow?
- (b) Kara plants some seeds. For every 3 seeds that grow, 2 seeds do not grow. Kara plants 45 seeds.
How many seeds grow?
- (c) At the tennis club, there are 6 times as many right-handed players as left-handed players.
There are 42 right-handed players at tennis club.
How many left-handed players are there at the tennis club?
- (d) At the cricket club, there are 6 times as many right-handed players as left-handed players.
There are 42 players at the cricket club.
How many left-handed players are there at the cricket club?

Scaling and Ratio

Task D Version 1

Question	Drawings/calculations and answer:
<p>There are 6 times as many children as adults on the school trip.</p> <p>There are 20 more children than adults on the school trip.</p> <p>How many adults are there on the school trip?</p>	
<p>At first, there were 3 times as many adults as juniors at the tennis club.</p> <p>Then, 8 juniors joined the tennis club.</p> <p>Now there are the same number of adults as juniors.</p> <p>How many adults at the tennis club?</p>	
<p>There were 12 coins on the table.</p> <p>Twice as many coins were showing heads as tails.</p> <p>Tom picked up two of the tails coins.</p> <p>Now, for every coin showing tails, how many coins are showing heads?</p>	

Scaling and Ratio

Task D Version 1

Question	Drawings/calculations and answer:
<p>There are 6 times as many children as adults on the school trip.</p> <p>There are 20 more children than adults on the school trip.</p> <p>How many adults are there on the school trip?</p>	
<p>At first, there were 3 times as many adults as juniors at the tennis club.</p> <p>Then, 8 juniors joined the tennis club.</p> <p>Now there are the same number of adults as juniors.</p> <p>How many adults at the tennis club?</p>	
<p>There were 12 coins on the table.</p> <p>Twice as many coins were showing heads as tails.</p> <p>Tom picked up two of the tails coins.</p> <p>Now, for every coin showing tails, how many coins are showing heads?</p>	

Scaling and Ratio

Task D Version 2

Question	Drawings/calculations and answer:
<p>There are 6 times as many children as adults on the school trip.</p> <p>There are 60 more children than adults on the school trip.</p> <p>How many adults are there on the school trip?</p>	
<p>At first, there were 3 times as many adults as juniors at the tennis club.</p> <p>Then, 18 juniors joined the tennis club.</p> <p>Now there are the same number of adults as juniors.</p> <p>How many adults at the tennis club?</p>	
<p>There were 20 coins on the table.</p> <p>Four times as many coins were showing heads as tails.</p> <p>Tom picked up two of the tails coins.</p> <p>Now, for every coin showing tails, how many coins are showing heads?</p>	

Scaling and Ratio

Task D Version 2

Question	Drawings/calculations and answer:
<p>There are 6 times as many children as adults on the school trip.</p> <p>There are 60 more children than adults on the school trip.</p> <p>How many adults are there on the school trip?</p>	
<p>At first, there were 3 times as many adults as juniors at the tennis club.</p> <p>Then, 18 juniors joined the tennis club.</p> <p>Now there are the same number of adults as juniors.</p> <p>How many adults at the tennis club?</p>	
<p>There were 20 coins on the table.</p> <p>Four times as many coins were showing heads as tails.</p> <p>Tom picked up two of the tails coins.</p> <p>Now, for every coin showing tails, how many coins are showing heads?</p>	

Task Family: Interpreting Remainders

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: slow reveal questions.



Task A: odd one out.



Build 2: slow reveal question.



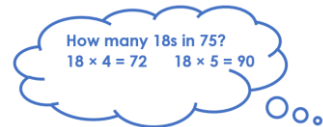
Task B and/or Task C: sequences of questions.



Task D: question with multiple answers.

Interpreting Remainders Build 1

75 children going on a school trip.
18 children can be seated on a bus.
 buses needed.



Interpreting Remainders Build 2

Zara is making drinks.
 She has litres of juice.
 There is ml of juice in each drink.

How many drinks can Zara make?

Answer: 11 drinks

The hidden numbers could be... and...

Answers:

Task A: Question B rounds up to 5. For questions A and C the answer is a decimal, 4.75. Question A rounds down to 6 booklets. For questions B and C, round up to 7.

Task B: (a) 5 boxes (b) 5 boxes (c) 6 boxes (d) 11 boxes (e) 10 footballs (f) 18 cars
 Extend example answer: Four footballs cost £70. How much does each football cost?

Task C: 13 boxes £12.50 12 servings 400 to 415 pieces of paper

Task D: 112→125 cupcakes: with 112 + 13 cupcakes, the next box would still not be full.
 105→112 cupcakes: with 112 – 7 cupcakes, 14 boxes would be needed to hold them all.

Interpreting Remainders

Task A

Read the sets of 3 questions. **Which question is the odd one out?**

Question A: Four friends have lunch at the café. It costs £19 in total and they share the bill equally. **How much money does each person pay?**

Question B: 19 people are going to the match. 4 people can fit in each car. **How many cars are needed?**

Question C: 19cm of ribbon is cut into four equal pieces. **How long is each piece of ribbon?**

Question A: Tom is making booklets. Each booklet must have 12 sheets of paper. **How many booklets can Tom make with 80 pieces of paper?**

Question B: 80 children are going to the theatre. 12 children can fit in each minibus. **How many minibuses are needed for all the children?**

Question C: Cupcakes are packed in boxes of 12. The bakery has made 80 cupcakes. **How many boxes are needed to hold all the cupcakes?**

Interpreting Remainders

Task A

Read the sets of 3 questions. **Which question is the odd one out?**

Question A: Four friends have lunch at the café. It costs £19 in total and they share the bill equally. **How much money does each person pay?**

Question B: 19 people are going to the match. 4 people can fit in each car. **How many cars are needed?**

Question C: 19cm of ribbon is cut into four equal pieces. **How long is each piece of ribbon?**

Question A: Tom is making booklets. Each booklet must have 12 sheets of paper. **How many booklets can Tom make with 80 pieces of paper?**

Question B: 80 children are going to the theatre. 12 children can fit in each minibus. **How many minibuses are needed for all the children?**

Question C: Cupcakes are packed in boxes of 12. The bakery has made 80 cupcakes. **How many boxes are needed to hold all the cupcakes?**

Interpreting Remainders

Task B

- (a) Cupcakes are packed in boxes of 6.
The bakery has made 30 cupcakes.
How many full boxes can be made?
- (b) Cupcakes are packed in boxes of 6.
The bakery has made 32 cupcakes.
How many full boxes can be made?
- (c) Cupcakes are packed in boxes of 6.
The bakery has made 32 cupcakes.
How many boxes are needed to hold all of the cupcakes?
- (d) Cupcakes are packed in boxes of 6.
The bakery has made 64 cupcakes.
How many boxes are needed to hold all of the cupcakes?
- (e) Mr Jackson has £64 to spend on footballs.
Footballs cost £6 each.
How many footballs can he afford?
- (f) 70 people are going to the match.
4 people can fit in each car.
How many cars are needed for all the people?

Extend: Write a question using the calculation $70 \div 4$ where the answer is 17.5

Interpreting Remainders

Task B

- (a) Cupcakes are packed in boxes of 6.
The bakery has made 30 cupcakes.
How many full boxes can be made?
- (b) Cupcakes are packed in boxes of 6.
The bakery has made 32 cupcakes.
How many full boxes can be made?
- (c) Cupcakes are packed in boxes of 6.
The bakery has made 32 cupcakes.
How many boxes are needed to hold all of the cupcakes?
- (d) Cupcakes are packed in boxes of 6.
The bakery has made 64 cupcakes.
How many boxes are needed to hold all of the cupcakes?
- (e) Mr Jackson has £64 to spend on footballs.
Footballs cost £6 each.
How many footballs can he afford?
- (f) 70 people are going to the match.
4 people can fit in each car.
How many cars are needed for all the people?

Extend: Write a question using the calculation $70 \div 4$ where the answer is 17.5

Interpreting Remainders

Task C

Question	Calculation and Answer:
<p>The farmer packs 150 eggs into boxes. Each box can hold 12 eggs.</p> <p>How many boxes are needed to hold all of the eggs?</p>	
<p>12 friends go to a restaurant for a birthday celebration. They spend £150 and share the bill equally.</p> <p>How much money does each person pay?</p>	
<p>There is 750g of cereal in a box. Each serving of cereal is 60g.</p> <p>How many full servings of cereal per box?</p>	
<p>James is making booklets. There are 16 pieces of paper per booklet. James can make 25 booklets.</p> <p>How many pieces of paper could James have?</p> <p>Note: There is more than one possible answer.</p>	

Interpreting Remainders

Task C

Question	Calculation and Answer:
<p>The farmer packs 150 eggs into boxes. Each box can hold 12 eggs.</p> <p>How many boxes are needed to hold all of the eggs?</p>	
<p>12 friends go to a restaurant for a birthday celebration. They spend £150 and share the bill equally.</p> <p>How much money does each person pay?</p>	
<p>There is 750g of cereal in a box. Each serving of cereal is 60g.</p> <p>How many full servings of cereal per box?</p>	
<p>James is making booklets. There are 16 pieces of paper per booklet. James can make 25 booklets.</p> <p>How many pieces of paper could James have?</p> <p>Note: There is more than one possible answer.</p>	

Interpreting Remainders

Task D

Cupcakes are packed in boxes of 14.
8 boxes can be filled with the cupcakes.
How many cupcakes could there be?

- Level 1: Find an answer*
- Level 2: Find different answers*
- Level 3: Find all the answers*

Cupcakes are packed in boxes of 8.
14 boxes can be filled with the cupcakes.
How many cupcakes could there be?

- Level 1: Find an answer*
- Level 2: Find different answers*
- Level 3: Find all the answers*

Interpreting Remainders

Task D

Cupcakes are packed in boxes of 14.
8 boxes can be filled with the cupcakes.
How many cupcakes could there be?

- Level 1: Find an answer*
- Level 2: Find different answers*
- Level 3: Find all the answers*

Cupcakes are packed in boxes of 8.
14 boxes can be filled with the cupcakes.
How many cupcakes could there be?

- Level 1: Find an answer*
- Level 2: Find different answers*
- Level 3: Find all the answers*

Interpreting Remainders

Task D

Cupcakes are packed in boxes of 14.
8 boxes can be filled with the cupcakes.
How many cupcakes could there be?

- Level 1: Find an answer*
- Level 2: Find different answers*
- Level 3: Find all the answers*

Cupcakes are packed in boxes of 8.
14 boxes can be filled with the cupcakes.
How many cupcakes could there be?

- Level 1: Find an answer*
- Level 2: Find different answers*
- Level 3: Find all the answers*

Mini Sequence: Missing Fraction

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Mini Sequence Suggested Route:

Build 1: questions with visual representations

↓
Task A Version 1 or Task A Version 2:
calculations and explain method

↓
Task B Version 1 or Task B Version 2: questions
in context, V2 more complex than V1.

Missing Fraction

$$\frac{3}{4} + \frac{1}{8} = \frac{\quad}{\quad}$$

Build 1

Convert **one / two** of the fractions into equivalent fractions.

$\frac{3}{4}$
 $\frac{1}{8}$

+

$\frac{6}{8} + \frac{1}{8} =$

Answers:

Task A Version 1: $\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$ (convert one fraction) $\frac{5}{15} + \frac{3}{15} = \frac{8}{15}$ (convert two fractions)

$\frac{5}{10} + \frac{4}{10} + \frac{1}{10} = 1$ (convert two fractions) $\frac{3}{6} + \frac{2}{6} + \frac{1}{6} = 1$ (convert one fraction)

Task A Version 2: $\frac{3}{12} + \frac{5}{12} = \frac{8}{12}$ (convert one fraction) $\frac{15}{40} + \frac{16}{40} = \frac{31}{40}$ (convert two fractions)

$\frac{3}{12} + \frac{2}{12} + \frac{7}{12} = 1$ (convert two fractions)

Extend: 3 answers: $\frac{1}{3} + \frac{1}{4} + \frac{5}{12} = 1$ $\frac{1}{3} + \frac{2}{4} + \frac{2}{12} = 1$ $\frac{2}{3} + \frac{1}{4} + \frac{1}{12} = 1$

Task B Version 1: $\frac{4}{10}$ $\frac{1}{12}$ 4 hours

Task B Version 2: $\frac{9}{20}$ $\frac{8}{30}$ 7 hours

Missing Fraction

Task A Version 1

Question:	Method:	Workings/Answer:
$\frac{\boxed{3}}{\boxed{8}} + \frac{\boxed{1}}{\boxed{4}} = \frac{\boxed{}}{\boxed{}}$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{1}}{\boxed{3}} + \frac{\boxed{1}}{\boxed{5}} = \frac{\boxed{}}{\boxed{}}$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{1}}{\boxed{2}} + \frac{\boxed{2}}{\boxed{5}} + \frac{\boxed{}}{\boxed{}} = 1$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{1}}{\boxed{2}} + \frac{\boxed{2}}{\boxed{6}} + \frac{\boxed{}}{\boxed{}} = 1$	Convert one / two of the fractions into equivalent fractions.	

Missing Fraction

Task A Version 1

Question:	Method:	Workings/Answer:
$\frac{\boxed{3}}{\boxed{8}} + \frac{\boxed{1}}{\boxed{4}} = \frac{\boxed{}}{\boxed{}}$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{1}}{\boxed{3}} + \frac{\boxed{1}}{\boxed{5}} = \frac{\boxed{}}{\boxed{}}$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{1}}{\boxed{2}} + \frac{\boxed{2}}{\boxed{5}} + \frac{\boxed{}}{\boxed{}} = 1$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{1}}{\boxed{2}} + \frac{\boxed{2}}{\boxed{6}} + \frac{\boxed{}}{\boxed{}} = 1$	Convert one / two of the fractions into equivalent fractions.	

Missing Fraction

Task A Version 2

Question:	Method:	Workings/Answer:
$\frac{\boxed{1}}{\boxed{4}} + \frac{\boxed{5}}{\boxed{12}} = \frac{\boxed{}}{\boxed{}}$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{3}}{\boxed{8}} + \frac{\boxed{2}}{\boxed{5}} = \frac{\boxed{}}{\boxed{}}$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{1}}{\boxed{4}} + \frac{\boxed{1}}{\boxed{6}} + \frac{\boxed{}}{\boxed{}} = 1$	Convert one / two of the fractions into equivalent fractions.	

Extend: **Level 1:** An answer **Level 2:** Different answers **Level 3:** All possible answers

$$\frac{\boxed{}}{\boxed{3}} + \frac{\boxed{}}{\boxed{4}} + \frac{\boxed{}}{\boxed{}} = 1$$

Missing Fraction

Task A Version 2

Question:	Method:	Workings/Answer:
$\frac{\boxed{1}}{\boxed{4}} + \frac{\boxed{5}}{\boxed{12}} = \frac{\boxed{}}{\boxed{}}$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{3}}{\boxed{8}} + \frac{\boxed{2}}{\boxed{5}} = \frac{\boxed{}}{\boxed{}}$	Convert one / two of the fractions into equivalent fractions.	
$\frac{\boxed{1}}{\boxed{4}} + \frac{\boxed{1}}{\boxed{6}} + \frac{\boxed{}}{\boxed{}} = 1$	Convert one / two of the fractions into equivalent fractions.	

Extend: **Level 1:** An answer **Level 2:** Different answers **Level 3:** All possible answers

$$\frac{\boxed{}}{\boxed{3}} + \frac{\boxed{}}{\boxed{4}} + \frac{\boxed{}}{\boxed{}} = 1$$

Missing Fraction

Task B Version 1

Question:	Answer:
<p>Mike and Dan ate some cake.</p> <p>Mike ate $\frac{1}{5}$ of the cake.</p> <p>Dan ate $\frac{4}{10}$ of the cake.</p> <p>What fraction of the cake is left?</p>	
<p>Zara grows carrots, peas and leeks.</p> <p>$\frac{2}{3}$ of her garden is used for carrots.</p> <p>$\frac{1}{4}$ of the garden is used for peas.</p> <p>What fraction is left for leeks?</p>	
<p>On 1st June, for $\frac{1}{3}$ of the day it was dark.</p> <p>For $\frac{1}{2}$ of the day it was light and cloudy.</p> <p>For the rest of the day it was sunny.</p> <p>How many hours of sunshine on 1st June?</p>	

Missing Fraction

Task B Version 1

Question:	Answer:
<p>Mike and Dan ate some cake.</p> <p>Mike ate $\frac{1}{5}$ of the cake.</p> <p>Dan ate $\frac{4}{10}$ of the cake.</p> <p>What fraction of the cake is left?</p>	
<p>Zara grows carrots, peas and leeks.</p> <p>$\frac{2}{3}$ of her garden is used for carrots.</p> <p>$\frac{1}{4}$ of the garden is used for peas.</p> <p>What fraction is left for leeks?</p>	
<p>On 1st June, for $\frac{1}{3}$ of the day it was dark.</p> <p>For $\frac{1}{2}$ of the day it was light and cloudy.</p> <p>For the rest of the day it was sunny.</p> <p>How many hours of sunshine on 1st June?</p>	

Missing Fraction

Task B Version 2

Question:	Answer:
<p>Jen and Nadia ate some cake.</p> <p>Jen ate $\frac{1}{4}$ of the cake.</p> <p>Nadia ate $\frac{3}{10}$ of the cake.</p> <p>What fraction of the cake is left?</p>	
<p>Mo grows potatoes, onions and carrots.</p> <p>$\frac{2}{5}$ of his garden is used for potatoes.</p> <p>$\frac{1}{6}$ of the garden is used for onions.</p> <p>What fraction is left for carrots?</p>	
<p>On 2nd June, for $\frac{1}{3}$ of the day it was dark.</p> <p>For $\frac{3}{8}$ of the day it was light and cloudy.</p> <p>For the rest of the day it was sunny.</p> <p>How many hours of sunshine on 2nd June?</p>	

Missing Fraction

Task B Version 2

Question:	Answer:
<p>Jen and Nadia ate some cake.</p> <p>Jen ate $\frac{1}{4}$ of the cake.</p> <p>Nadia ate $\frac{3}{10}$ of the cake.</p> <p>What fraction of the cake is left?</p>	
<p>Mo grows potatoes, onions and carrots.</p> <p>$\frac{2}{5}$ of his garden is used for potatoes.</p> <p>$\frac{1}{6}$ of the garden is used for onions.</p> <p>What fraction is left for carrots?</p>	
<p>On 2nd June, for $\frac{1}{3}$ of the day it was dark.</p> <p>For $\frac{3}{8}$ of the day it was light and cloudy.</p> <p>For the rest of the day it was sunny.</p> <p>How many hours of sunshine on 2nd June?</p>	

Task Family: Fractions of a Quantity

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: questions answered with bar models.



Task A: match question to correct bar model.



Build 2: 'which bar model?' prompts.



Task B: match 6 questions to 6 bar models.



Task C: questions with part-complete bar models.



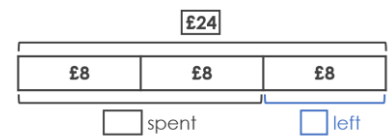
Task D: sequence of questions, including ratio examples.

Fractions of a Quantity Build 1

Ben had £24.

Then, he spent $\frac{2}{3}$ of his money on a t-shirt.

How much money did Ben have left?



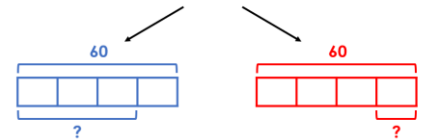
Fractions of a Quantity Build 2

Zara's book is 60 pages long.

Zara has read $\frac{3}{4}$ of her book.

How many pages does Zara have left to read?

Which bar model represents the question?



Answers:

Task A: Top left: left bar model Top right: right bar model
Bottom left: right bar model Bottom right: left bar model

Task B: Kam: B Jo: C Max: D Zoe: F Roy: A Fay: E

Task C: (a) Bar model to show $\frac{3}{5}$ spent, answer = £30

(b) Bar model to show whole of 30 and $\frac{2}{5}$ tails, answer = 20 coins show tails

(c) Bar model to show $\frac{3}{5} = 30$ pages, answer = 50 pages

Task D: (a) 84 (b) 70 (c) 60 (d) 350g (e) 70 left-handed children (f) 252 pages
(g) 1050g (h) 1050 women

Extension: the answers are the same as $\frac{5}{7}$ is equivalent to a ratio of 5:2

Fractions of a Quantity

Task A

Which bar model correctly represents each question?

<p>There are 12 children at the beach. $\frac{3}{4}$ of these children are girls. How many girls at the beach?</p> <div> <div> <div>12</div> </div> <div>OR</div> <div> <div>?</div> </div> </div>	<p>Sam plays tennis. This year, he won $\frac{2}{3}$ of his matches. Sam won 12 matches. How many tennis matches did Sam play?</p> <div> <div> <div>12</div> </div> <div>OR</div> <div> <div>?</div> </div> </div>
<p>Lucy's book is 200 pages long. Lucy has read $\frac{3}{4}$ of her book. How many pages does Lucy have left?</p> <div> <div> <div>200</div> </div> <div>OR</div> <div> <div>200</div> </div> </div>	<p>6 children in the class are left-handed. This is $\frac{1}{5}$ of the children in the class. How many right-handed children in the class?</p> <div> <div> </div> <div>OR</div> <div> <div>?</div> </div> </div>

Fractions of a Quantity

Task A

Which bar model correctly represents each question?

<p>There are 12 children at the beach. $\frac{3}{4}$ of these children are girls. How many girls at the beach?</p> <div> <div> <div>12</div> </div> <div>OR</div> <div> <div>?</div> </div> </div>	<p>Sam plays tennis. This year, he won $\frac{2}{3}$ of his matches. Sam won 12 matches. How many tennis matches did Sam play?</p> <div> <div> <div>12</div> </div> <div>OR</div> <div> <div>?</div> </div> </div>
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Fractions of a Quantity

Task B

Cut out. Match each question to the appropriate bar model.

<p>Kam had £60. He spent $\frac{3}{4}$ of his money on a coat. What did the coat cost?</p>	<p>Jo spent $\frac{1}{4}$ of her money at the shop. She had £60 left. How much did Jo spend?</p>	<p>Max spent $\frac{1}{4}$ of his money on a £60 pram. How much money did Max have?</p>
<p>Zoe had £60. She spent $\frac{3}{4}$ of her money on a bike. How much money did she have left?</p>	<p>Roy spent $\frac{3}{4}$ of his birthday money on a £60 toy robot. How much birthday money did Roy have?</p>	<p>Fay spent £60 at the shop. She has $\frac{3}{4}$ of her money left. How much money does Fay have left?</p>
<p>A</p>	<p>B</p>	<p>C</p>
<p>D</p>	<p>E</p>	<p>F</p>

Fractions of a Quantity

Task B

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<p>Zoe had £60. She spent $\frac{3}{4}$ of her money on a bike. How much money did she have left?</p>	<p>Roy spent $\frac{3}{4}$ of his birthday money on a £60 toy robot. How much birthday money did Roy have?</p>	<p>Fay spent £60 at the shop. She has $\frac{3}{4}$ of her money left. How much money does Fay have left?</p>
<p>A</p>	<p>B</p>	<p>C</p>
<p>D</p>	<p>E</p>	<p>F</p>

Fractions of a Quantity

Task C

Question	Complete the bar model and answer:
<p>(a) Tom has £30. He spends $\frac{3}{5}$ of his money on a toy.</p> <p>How much does the toy cost?</p>	<p>£30</p>
<p>(b) There are 30 coins on the table.</p> <p>$\frac{3}{5}$ are showing heads.</p> <p>How many are showing tails?</p>	<p>heads</p>
<p>(c) Jo has read $\frac{3}{5}$ of her book.</p> <p>She has read 30 pages.</p> <p>How many pages long is Jo's book?</p>	

Fractions of a Quantity

Task C

Question	Complete the bar model and answer:
<p>(a) Tom has £30. He spends $\frac{3}{5}$ of his money on a toy.</p> <p>How much does the toy cost?</p>	<p>£30</p>
<p>(b) There are 30 coins on the table.</p> <p>$\frac{3}{5}$ are showing heads.</p> <p>How many are showing tails?</p>	<p>heads</p>
<p>(c) Jo has read $\frac{3}{5}$ of her book.</p> <p>She has read 30 pages.</p> <p>How many pages long is Jo's book?</p>	

Fractions of a Quantity

Task D

(a) $\frac{1}{5}$ of 420 = (b) $\frac{1}{6}$ of 420 = (c) $\frac{1}{7}$ of 420 =

(d) 6 plums weigh 420g. Zack eats one plum.

What is the weight of the remaining plums?

(e) $\frac{5}{6}$ of the 420 children in the school are right-handed.

How left-handed children are there in the school?

(f) Joy has read $\frac{2}{5}$ of her 420-page book.

How many pages does she have left to read?

(g) Adam used $\frac{5}{7}$ of the sugar from the pack in the cake.

There were 420g sugar left in the pack.

How many grams of sugar are there in the cake?

(h) For every 5 women at the concert, there were 2 men.

There were 420 men at the concert.

How many women were there at the concert?

Extension: Compare questions (g) and (h).

Fractions of a Quantity

Task D

(a) $\frac{1}{5}$ of 420 = (b) $\frac{1}{6}$ of 420 = (c) $\frac{1}{7}$ of 420 =

(d) 6 plums weigh 420g. Zack eats one plum.

What is the weight of the remaining plums?

(e) $\frac{5}{6}$ of the 420 children in the school are right-handed.

How left-handed children are there in the school?

(f) Joy has read $\frac{2}{5}$ of her 420-page book.

How many pages does she have left to read?

(g) Adam used $\frac{5}{7}$ of the sugar from the pack in the cake.

There were 420g sugar left in the pack.

How many grams of sugar are there in the cake?

(h) For every 5 women at the concert, there were 2 men.

There were 420 men at the concert.

How many women were there at the concert?

Extension: Compare questions (g) and (h).

Task Family: Multi-Step Fractions

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: two questions answered with bar models.



Task A: compare the minimally different questions.



Build 2: two questions answered with bar models



Task B: sequence of questions, small variation to spot patterns, small number range.



Task C: sequence of questions, more variation.



Task D: extension challenge.

Multi-Step Fractions **Spot the Difference** **Build 1**

Oliver had £45.
He spent $\frac{1}{3}$ of his money on a watch.
He spent £12 on a cap.
How much money does he have left?

£45		
£15	£15	£15
£12	£18	

Freddy had £45.
He spent £12 on a cap.
He spent $\frac{1}{3}$ of the remaining money on a watch.
How much money does he have left?

£45	
£12	£33

Multi-Step Fractions **Build 2**

There were some stickers in a pack.
Zara used $\frac{2}{3}$ of the stickers.
There were 10 stickers left.
How many stickers were in the pack?

30 stickers	
used	left
	10

Kelly had some money.
Kelly spent $\frac{2}{3}$ of her money on a coat.
She spent £5 on a scarf.
Kelly had £10 left.
How much money did Kelly have?

£45	
coat	scarf & left
	£15

Answers:

Task A: Both questions involve the same fractions and quantities. For question 2, the calculation of the value of $\frac{1}{3}$ will be based on the number of chocolates left, not the original number of chocolates.

Q1: Norley won 14 matches Q2: 16 chocolates left

The answer to Q1 is smaller than the answer to Q2 because of the difference of the part subtracted ($\frac{1}{3}$ of 30 > $\frac{1}{3}$ of 24).

Task B: (a) 22 stickers (b) 24 stickers (c) 6 sweets (d) 60 sweets

Extend example answer: Raj gave $\frac{1}{4}$ of the sweets to his sister and ate 20 sweets.

Task C: (a) £19 (b) 48 raisins (c) 28 stickers (d) £68 (e) £12

Task D: There could be 40, 48 or 56 raisins in the bowl (Meg could eat 5, 6 or 7 raisins)

Multi-Step Fractions

Task A

Compare the questions: *What's the same? What's Different?*

Q1: Norley played 30 hockey matches.

They lost 6 and drew $\frac{1}{3}$ of their matches.

How many matches did Norley win?

Q2: The Taylor family had a box of 30 chocolates.

On Friday, they ate 6 chocolates.

On Saturday, they ate $\frac{1}{3}$ of the chocolates that were left.

How many chocolates were there in the box on Sunday?

'The answer to Q1 is **larger/smaller** than the answer to Q2 because...

Multi-Step Fractions

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Multi-Step Fractions

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How many chocolates were there in the box on Sunday?

'The answer to Q1 is **larger/smaller** than the answer to Q2 because...

Multi-Step Fractions

Task B

- (a) Sam had 40 stickers.
He gave $\frac{1}{4}$ of his stickers to Jack and 8 stickers to Mo.
How many stickers did Sam have left?
- (b) Nadia had 40 stickers. She gave 8 stickers to Helen.
She gave $\frac{1}{4}$ of the stickers that were left to Sara.
How many stickers did Nadia have left?
- (c) There were 15 sweets in a packet. Max ate 6 sweets.
Max gave $\frac{1}{3}$ of the remaining sweets to Hassan.
How many sweets does Max have left?
- (d) There are 15 sweets in a packet.
Ruby has 6 packets of sweets.
She gives $\frac{1}{3}$ of the sweets to Lena.
How many sweets does Ruby have left?

Extend: Replace the red words with a number/fraction. Do in different ways.

Raj had 48 sweets. He gave a fraction of the sweets to his sister. He ate some sweets. There were 16 sweets left.

Multi-Step Fractions

Task B

- (a) Sam had 40 stickers.
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Extend: Replace the red words with a number/fraction. Do in different ways.

Raj had 48 sweets. He gave a fraction of the sweets to his sister. He ate some sweets. There were 16 sweets left.

Multi-Step Fractions

Task C

- (a) Harry had £30. He spent $\frac{1}{6}$ of his money on a hat.
He spent £6 on gloves.
How much money does Harry have left?
- (b) Tom had a box of raisins.
He ate $\frac{3}{4}$ of the raisins. There were 12 raisins left.
How many raisins were there in the box to start with?
- (c) Kate had some stickers. She was given 20 more stickers.
Kate used $\frac{3}{4}$ of her stickers. She had 12 stickers left.
How many stickers did Kate have to start with?
- (d) Joy had some money. She spent £20 on a helmet.
Then Joy spent $\frac{3}{4}$ of the rest of her money on a scooter.
She had £12 left.
How much money did Joy have to start with?
- (e) Amir spent $\frac{2}{5}$ of his money on a t-shirt.
He spent £10 on a pair of jeans.
Amir had £8 left.
What was the price of the t-shirt?

Multi-Step Fractions

Task C

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He spent £10 on a pair of jeans.
Amir had £8 left.
What was the price of the t-shirt?

Multi-Step Fractions

Task D

There were less than 60 raisins in a bowl.

Lena ate $\frac{1}{2}$ of the raisins.

Charlotte ate $\frac{3}{4}$ of the raisins that were left.

Meg ate the remaining raisins.

Meg ate more than 4 raisins.

Question 1: Who ate more raisins, Lena or Charlotte?

Question 2: How many raisins could have been in the bowl?

Level 1: I can find an answer

Level 2: I can find different answers

Level 3: I know how many answers there are

Multi-Step Fractions

Task D

There were less than 60 raisins in a bowl.

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Level 1: I can find an answer

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Multi-Step Fractions

Task D

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Meg ate the remaining raisins.

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Question 2: How many raisins could have been in the bowl?

Level 1: I can find an answer

Level 2: I can find different answers

Level 3: I know how many answers there are

Task Family: Inverse

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: questions represented with bar models.



Task A: fluency questions written in a sequence.



Build 2: two questions, highlighting effect of the order of the calculations.



Task B: sequence of questions, children explain relationships.



Task C: question with multiple possible answers.

Answers:

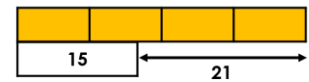
Task A: (a) Example answer: 2 and 20 (b) Example answer: 7 and 2
(c) 20 (d) 2 (e) 35 (f) 35

Task B: (a) 7 (b) 7 (c) 11 (d) 99

Task C: Largest: 180 (divide by 6, subtract 3) Smallest: 4 (multiply by 6, add 3)

Inverse Build 1

My number was
I multiply my number by 4
Then I subtract 15
Now my number is 21



Inverse Build 2

Jen thinks of a number.

She multiplies her number by 3
Then she adds 2
Now Jen's number is

She adds 2
Then she multiplies her number by 3
Now Jen's number is



Inverse

Task A

- (a) My number was . I add **3**. Then I multiply by **4**. Now my number is
- (b) My number was . I subtract **3**. Then I divide by **2**. Now my number is
- (c) My number was . I add **4**. Then I divide by **2**. Now my number is **12**.
- (d) My number was . I add **4**. Then I multiply by **2**. Now my number is **12**.
- (e) My number was **15**. I multiply by **4**. Then I subtract **25**. Now my number is
- (f) My number was . I add **25**. Then I divide by **4**. Now my number is **15**.

Inverse

Task A

- (a) My number was . I add **3**. Then I multiply by **4**. Now my number is
- (b) My number was . I subtract **3**. Then I divide by **2**. Now my number is
- (c) My number was . I add **4**. Then I divide by **2**. Now my number is **12**.
- (d) My number was . I add **4**. Then I multiply by **2**. Now my number is **12**.
- (e) My number was **15**. I multiply by **4**. Then I subtract **25**. Now my number is
- (f) My number was . I add **25**. Then I divide by **4**. Now my number is **15**.

Inverse

Task A

- (a) My number was . I add **3**. Then I multiply by **4**. Now my number is
- (b) My number was . I subtract **3**. Then I divide by **2**. Now my number is
- (c) My number was . I add **4**. Then I divide by **2**. Now my number is **12**.
- (d) My number was . I add **4**. Then I multiply by **2**. Now my number is **12**.
- (e) My number was **15**. I multiply by **4**. Then I subtract **25**. Now my number is
- (f) My number was . I add **25**. Then I divide by **4**. Now my number is **15**.

Inverse

Task B

(a) I chose a number. I multiplied my number by 3, then added 5.
Now, my number is 26. **What number did I choose?**

(b) I chose a number. I multiplied my number by 3, then added 6.
Now, my number is 27. **What number did I choose?**

(c) I chose a number. I multiplied my number by 3, then subtracted 6.
Now, my number is 27. **What number did I choose?**

(d) I chose a number. I divided my number by 3, then subtracted 6.
Now, my number is 27. **What number did I choose?**

'The answer to question is **the same/larger/smaller** than question because...'

Inverse

Task B

(a) I chose a number. I multiplied my number by 3, then added 5.
Now, my number is 26. **What number did I choose?**

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(d) I chose a number. I divided my number by 3, then subtracted 6.
Now, my number is 27. **What number did I choose?**

'The answer to question is **the same/larger/smaller** than question because...'

Inverse

Task C

My number was

I **multiply/divide** my number by **6**

I **add/subtract 3**

Now my number is **27**

What is the **smallest number** that could go in the blue box?

What is the **largest number** that could go in the blue box?

To make the number in the blue box as large as possible...

Inverse

Task C

My number was

I **multiply/divide** my number by **6**

I **add/subtract 3**

Now my number is **27**

What is the **smallest number** that could go in the blue box?

What is the **largest number** that could go in the blue box?

To make the number in the blue box as large as possible...

Inverse

Task C

My number was

I **multiply/divide** my number by **6**

I **add/subtract 3**

Now my number is **27**

What is the **smallest number** that could go in the blue box?

What is the **largest number** that could go in the blue box?

To make the number in the blue box as large as possible...

Task Family: Compare the Info

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This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: worked example question.



Task A: two questions with scaffold prompts.



Build 2: two example questions with different surface features – compare the questions.



Task B Version 1 or Task B Version 2: questions with different surface features, more challenge in calculation for version 2.



Task C: extension questions.

Compare the Info Build 1

The patterns are made with identical rectangles and semi-circles.

Pattern A = 50

One extra rectangle, 20 more → Pattern B = 70

= 20

Compare the Info Build 2

The towers are made with identical squares and identical rectangles.

11cm 11cm 11cm 36cm 11cm 11cm 47cm

Calculate the height of a rectangle and the height of a square.

= 11cm

= 7

Answers:

Task A: Pattern A has one more square than Pattern B and 18 more. First step is the **square**.

Square = 18, Triangle = 14

Calculation B has two more diamonds than Calculation A and 8 more. First step is the diamond. Diamond = 4, Star = 13

Task B Version 1: Apple = 30p, Pear = 25p

Square = 8 Triangle = 11

Length = 9cm Width = 5cm

Task B Version 2: Apple = 36p, Pear = 24p

Square = 7 Triangle = 17

Length = 8.5cm Width = 5.5cm

Task C:

Question A: Banana = 28p **Orange = 32p**

Question B: Impossible to answer: we know 3 chocolate bars cost 50p more than 2 packets of crisps. This does not allow us to calculate the cost of a drink.

Question C: Width = 6cm, **Length = 17cm**

Question D: Impossible to answer. Circle + Square = 17, but this does not enable us to calculate the individual values of each shape.

Compare the Info

Task A



Pattern A = 50



Pattern B = 32

$$\square = \quad \triangle =$$

Spot the differences between the patterns:

The first step is to calculate the value of the **square/triangle**.

Calculation A: $\star + \diamond = 17$

$$\star = \quad \diamond =$$

Calculation B: $\diamond + \diamond + \star + \diamond = 25$

Spot the differences between the calculations:

The first step is to calculate the value of the **star/diamond**.

Compare the Info

Task A



Pattern A = 50



Pattern B = 32

$$\square = \quad \triangle =$$

Spot the differences between the patterns:

The first step is to calculate the value of the **square/triangle**.

Calculation A: $\star + \diamond = 17$

$$\star = \quad \diamond =$$


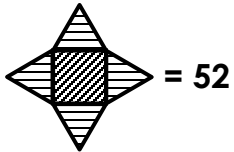


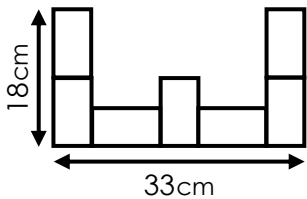
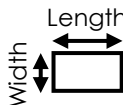
Calculation B: $\diamond + \diamond + \star + \diamond = 25$

Spot the differences between the calculations:

The first step is to calculate the value of the **star/diamond**.


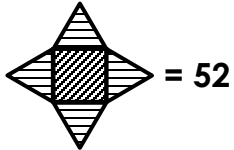


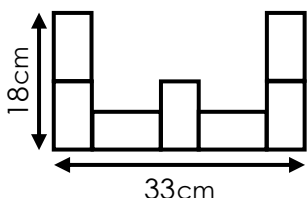
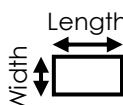
Compare the Info

Task B Version 1

Question	Calculations and answer:
<p>3 apples and 2 pears cost £1.40</p> <p>2 apples and 2 pears cost £1.10</p> <p>What is the cost of a pear?</p>	<p><i>Clue: Start by calculating the cost of an apple</i></p>
<p>Pattern A</p>  = 30 <p>Pattern B</p>  = 52 <p> =  =</p>	<p><i>Clue: Pattern B has ___ more triangles than Pattern A</i></p>
<p>The rectangles are identical.</p>  <p>Length =</p> <p>Width =</p> 	<p><i>Choose: Start by calculating the length OR width</i></p>





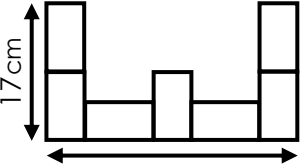
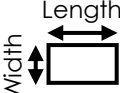
Compare the Info

Task B Version 1

Question	Calculations and answer:
<p>3 apples and 2 pears cost £1.40</p> <p>2 apples and 2 pears cost £1.10</p> <p>What is the cost of a pear?</p>	<p><i>Clue: Start by calculating the cost of an apple</i></p>
<p>Pattern A</p>  = 30 <p>Pattern B</p>  = 52 <p> =  =</p>	<p><i>Clue: Pattern B has ___ more triangles than Pattern A</i></p>
<p>The rectangles are identical.</p>  <p>Length =</p> <p>Width =</p> 	<p><i>Choose: Start by calculating the length OR width</i></p>




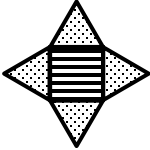
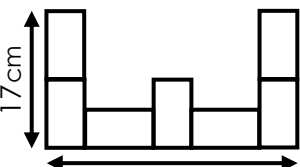
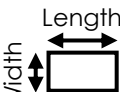
Compare the Info

Task B Version 2

Question	Calculations and answer:
<p>3 apples and 2 pears cost £1.56</p> <p>2 pears and 1 apple costs 84p</p> <p>What is the cost of a pear?</p>	
<p>Pattern A</p>  <p>= 24</p> <p>  =  = </p> <p>Pattern B</p>  <p>= 75</p>	
<p>The rectangles are identical.</p>  <p>17cm</p> <p>33.5cm</p> <p>Length =</p> <p>Width =</p>  <p>Length</p> <p>Width</p>	

Compare the Info

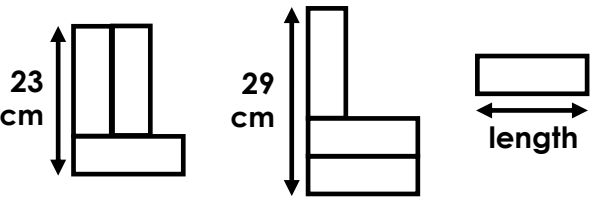








Task B Version 2

Question	Calculations and answer:
<p>3 apples and 2 pears cost £1.56</p> <p>2 pears and 1 apple costs 84p</p> <p>What is the cost of a pear?</p>	
<p>Pattern A</p>  <p>= 24</p> <p>  =  = </p> <p>Pattern B</p>  <p>= 75</p>	
<p>The rectangles are identical.</p>  <p>17cm</p> <p>33.5cm</p> <p>Length =</p> <p>Width =</p>  <p>Length</p> <p>Width</p>	

Compare the Info

Task C

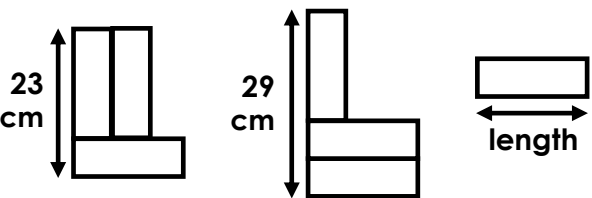








Find the question(s) that **can't be answered**. Answer the other questions.

<p>Question A: 5 bananas cost £1.40 2 bananas and 2 oranges cost £1.20 What is the cost of an orange?</p>	<p>Question B: 3 chocolate bars and a drink = £1.80 2 packets of crisps and a drink = £1.30 What is the cost of a drink?</p>
<p>Question C: <i>The rectangles are identical.</i> Calculate the length of a rectangle.</p> 	<p>Question D:  +  = 17  +  +  +  = 34  =  =</p>

Compare the Info

Task C

Find the question(s) that **can't be answered**. Answer the other questions.

<p>Question A: 5 bananas cost £1.40 2 bananas and 2 oranges cost £1.20 What is the cost of an orange?</p>	<p>Question B: 3 chocolate bars and a drink = £1.80 2 packets of crisps and a drink = £1.30 What is the cost of a drink?</p>
<p>Question C: <i>The rectangles are identical.</i> Calculate the length of a rectangle.</p> 	<p>Question D:  +  = 17  +  +  +  = 34  =  =</p>

Task Family: Fixed Amount + Variable Amount

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: explain mistakes, then answers shown.



Task A: 'which answer?' questions.



Build 2: questions shown with bar models.



Task B: questions, progressive challenge.



Build 3: discussion prompt.



Task C: questions, progressive challenge.



Task D: extension, children create questions.

Answers:

Task A: Answer B Answer C Answer F

Question 2 is the odd one out as you multiply both numbers. For question 1 and question 3, one number is multiplied and the other number is added.

Task B: (a) $(£8 + £3) \times 7 = £11$ (b) $(30 \times £0.15) + £1.95 = £6.45$ (c) $(£52 - £4) \div \boxed{6} = £8$
 (d) 5 balls (6 balls would cost £76) (e) **Clara's Cycles: £27, Beth's Bikes: £27.50**

Task C: (a) Non-members: $12 \times £7.50 = £90$ Members: $(12 \times £4) + £50 = £98$
 (b) You save money being a swimming pool member if you swim 15 times per year
 (c) Members pay £3.50 less per session. To cover the £50 fee and save £20, Lara went swimming $£3.50 \times 20 = £70$, so 20 times.

Task D: Children use the examples given on the task to help write their own questions.

Fixed Amount + Variable Amount Build 1

At the bike shop, it costs **£6** to hire a bike plus **£4** for each hour that it is used.

How much does it cost to hire a bike for 5 hours?

Explain the Mistake:

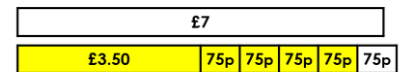
$£6 \times 5 + £4 = £34$

Fixed Amount + Variable Amount Build 2

Make Your Own Pizza
£3.50 for the pizza base
75p per topping

Amy has £7.

How many toppings can she afford?



Amy can afford 4 toppings.

Fixed Amount + Variable Amount Build 3

Gym Prices:
£8 per session for non-members
£5 per session for members
Membership: £20 per year

You save money by being a member of the gym if...

Fixed Amount + Variable Amount

Task A

Question	Which Answer?
<p>Mrs Evans bought 8 footballs online. They cost £7 each plus a £5 postage fee. What was the total cost?</p>	<p>Answer A: $£7 + £5 = £12$ $£12 \times 8 = £96$</p> <p>Answer B: $£7 \times 8 = £56$ $£56 + £5 = £61$</p>
<p>It costs £6 per hour to hire a bike and £3 per hour to hire a helmet. How much does it cost to hire a bike and a helmet for 4 hours?</p>	<p>Answer C: $£6 + £3 = £9$ $£9 \times 4 = £36$</p> <p>Answer D: $£6 \times 4 = £24$ $£24 + £3 = £27$</p>
<p>Membership at the tennis club costs £15 per year. Members can hire a tennis court for £6 per match. How much does it cost to play 8 tennis matches?</p>	<p>Answer E: $£15 \times 8 + £6 = £126$</p> <p>Answer F: $£6 \times 8 + £15 = £63$</p>

Which question is the **odd one out**? Explain why.

Fixed Amount + Variable Amount

Task A

Question	Which Answer?
<p>Mrs Evans bought 8 footballs online. They cost £7 each plus a £5 postage fee. What was the total cost?</p>	<p>Answer A: $£7 + £5 = £12$ $£12 \times 8 = £96$</p> <p>Answer B: $£7 \times 8 = £56$ $£56 + £5 = £61$</p>
<p>It costs £6 per hour to hire a bike and £3 per hour to hire a helmet. How much does it cost to hire a bike and a helmet for 4 hours?</p>	<p>Answer C: $£6 + £3 = £9$ $£9 \times 4 = £36$</p> <p>Answer D: $£6 \times 4 = £24$ $£24 + £3 = £27$</p>
<p>Membership at the tennis club costs £15 per year. Members can hire a tennis court for £6 per match. How much does it cost to play 8 tennis matches?</p>	<p>Answer E: $£15 \times 8 + £6 = £126$</p> <p>Answer F: $£6 \times 8 + £15 = £63$</p>

Which question is the **odd one out**? Explain why.

Fixed Amount + Variable Amount

Task B

- (a) To go surfing, each child needs surfboard and a wetsuit.
It costs £8 to hire a surfboard and £3 to hire a wetsuit.

How much does it cost for 7 children to go surfing?

- (b) Tom prints 30 of his photos at the online store. It costs 15p to print each photo. It costs £1.95 to post the photos.

How much does Tom pay in total?

- (c) Some friends go to a show. Each ticket costs £8. They pay £4 to park at the theatre. In total, it costs the friends £52.

How many friends go to the show?

- (d) Mr Jones has £75 to spend on rugby balls. At the online store, the delivery fee is £4. Each rugby ball costs £12.

How many rugby balls can Mr Jones buy?

- (e) At Clara's Cycles, it costs £9 per hour to hire a bike.
At Beth's Bikes, it costs £8 plus £6.50 per hour to hire a bike.
Jade wants to hire a bike for 3 hours.

Which shop will cost the least?

Fixed Amount + Variable Amount

Task B

- (a) To go surfing, each child needs surfboard and a wetsuit.
It costs £8 to hire a surfboard and £3 to hire a wetsuit.

How much does it cost for 7 children to go surfing?

- (b) Tom prints 30 of his photos at the online store. It costs 15p to print each photo. It costs £1.95 to post the photos.

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Jade wants to hire a bike for 3 hours.

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Fixed Amount + Variable Amount

Task C

Swimming Pool Membership: £50 per year

Swim Session: £4 per session (members) or £7.50 per session (non-members)

- (a) Jim goes swimming once a month.
Explain why it is cheaper for Jim not to be a swimming pool member.
- (b) **Complete the statement:** 'You save money being a swimming pool member if...'
- (c) Lara saves £20 by being a swimming pool member.
How many times does Lara go swimming?
- (d) Kam and Ben go swimming the same number of times. Kam is a swimming pool member. Ben is not a member. Ben pays £9.50 more than Kam for the swimming sessions. **How many times do Kam and Ben each go swimming?**

Fixed Amount + Variable Amount

Task C

Swimming Pool Membership: £50 per year

Swim Session: £4 per session (members) or £7.50 per session (non-members)

- (a) Jim goes swimming once a month.
Explain why it is cheaper for Jim not to be a swimming pool member.
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How many times does Lara go swimming?
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Fixed Amount + Variable Amount

Task C

Swimming Pool Membership: £50 per year

Swim Session: £4 per session (members) or £7.50 per session (non-members)

- (a) Jim goes swimming once a month.
Explain why it is cheaper for Jim not to be a swimming pool member.
- (b) **Complete the statement:** 'You save money being a swimming pool member if...'
- (c) Lara saves £20 by being a swimming pool member.
How many times does Lara go swimming?
- (d) Kam and Ben go swimming the same number of times. Kam is a swimming pool member. Ben is not a member. Ben pays £9.50 more than Kam for the swimming sessions. **How many times do Kam and Ben each go swimming?**

Fixed Amount + Variable Amount

Task D

Option A: Buy the XC3 mobile phone for **£250**. Then, there is a **£8** monthly fee for unlimited calls and data.

Option B: Buy the XC3 mobile phone for **£60**. Then, there is a **£22** monthly fee for unlimited calls and data.

Write 3 questions based on this information.

Examples:

*How much does an XC3 mobile phone cost using Option **A/B** for ____ months?*

*How much cheaper is it to buy the XC3 mobile phone using Option **A/B** for ____ months?*

Jack wants a XC3 mobile phone for ____ months. Which option is cheaper?

Fixed Amount + Variable Amount

Task D

Option A: Buy the XC3 mobile phone for **£250**. Then, there is a **£8** monthly fee for unlimited calls and data.

Option B: Buy the XC3 mobile phone for **£60**. Then, there is a **£22** monthly fee for unlimited calls and data.

Write 3 questions based on this information.

Examples:

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Fixed Amount + Variable Amount

Task D

Option A: Buy the XC3 mobile phone for **£250**. Then, there is a **£8** monthly fee for unlimited calls and data.

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*How much cheaper is it to buy the XC3 mobile phone using Option **A/B** for ____ months?*

Jack wants a XC3 mobile phone for ____ months. Which option is cheaper?

Task Family: Multi-Step Measures

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: slow reveal prompt.



Task A and/or **Task B:** give missing information or question, Task B more challenging.



Build 2: multi-step slow reveal prompt.



Task C and/or **Task D:** explain mistakes and answer questions.



Task E: open-ended challenge.

Multi-Step Measures Build 1

There is a **2km** relay race at the park.

How far does each person run?

What information must be given?

Multi-Step Measures Build 2

Maria is baking cakes.

Maria has **1.2kg** of butter.

180g of butter is needed to make a cake.

How many cakes can she make?

$1.2\text{kg} \times 1000 = 1200\text{g}$	$180\text{g} \times 5 = 900\text{g}$
<u>Maria can make 6 cakes</u>	$180\text{g} \times 6 = 1080\text{g}$
	$180\text{g} \times 7 = 1260\text{g}$

Answers:

Task A Example Answers: Apples cost 25p each.
Each jug holds 2 litres of water.
How many bowls of cereal can be made?
A 2m piece of ribbon is cut into strips.

Task B: Kara swims 800m each day.
How much flour is left over?
Each booklet is made using 12 pieces of paper.

Task C: 50mm = 5cm. Answer = 60 strips.
The answer should not be given as a remainder. Answer: 6 cups.
There are not 100 seconds in a minute. Answer: 1.8 litres.
 $5000 \div 12 = 12.5$ laps.

Task D: (a) 6 litres (b) 1500ml or 1.5 litres (c) 300ml (d) 1250ml

Task E Example Answers: 5 children, 2 litres of water, 150ml each
20 children, 6.25 litres, 250ml each

Multi-Step Measures

Task A

Question	Missing information/question:
<p>Kam has £2.</p> <p>missing information</p> <p>How many apples can he afford?</p>	
<p>A cup holds 300ml of water.</p> <p>missing information</p> <p>How many cups of water can be made with 4 jugs of water?</p>	
<p>There is 1.5kg of cereal in the box.</p> <p>Each bowl of cereal is 200g.</p> <p>missing question</p>	
<p>missing information</p> <p>Each strip of ribbon is 25cm long.</p> <p>How many strips of ribbon are there?</p>	

Multi-Step Measures

Task A

Question	Missing information/question:
<p>Kam has £2.</p> <p>missing information</p> <p>How many apples can he afford?</p>	
<p>A cup holds 300ml of water.</p> <p>missing information</p> <p>How many cups of water can be made with 4 jugs of water?</p>	
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<p>missing information</p> <p>Each strip of ribbon is 25cm long.</p> <p>How many strips of ribbon are there?</p>	

Multi-Step Measures

Task B

Question	Missing information/question:
<p>Kara wants to swim a total of 4km. She goes swimming once per day.</p> <p>missing information</p> <p>How many days does it take Kara?</p> <p>Answer: 5 days</p>	
<p>To make a loaf of bread, you need 450g of flour. Peter had 2kg of flour. He made 3 loaves of bread.</p> <p>missing question</p> <p>Answer: 650g</p>	
<p>Jess is making booklets. She has 100 pieces of paper.</p> <p>missing information</p> <p>How many booklets can she make?</p> <p>Answer: 8 booklets</p>	

Multi-Step Measures

Task B

Question	Missing information/question:
<p>Kara wants to swim a total of 4km. She goes swimming once per day.</p> <p>missing information</p> <p>How many days does it take Kara?</p> <p>Answer: 5 days</p>	
<p>To make a loaf of bread, you need 450g of flour. Peter had 2kg of flour. He made 3 loaves of bread.</p> <p>missing question</p> <p>Answer: 650g</p>	
<p>Jess is making booklets. She has 100 pieces of paper.</p> <p>missing information</p> <p>How many booklets can she make?</p> <p>Answer: 8 booklets</p>	

Multi-Step Measures

Task C

Question	Spot the Mistakes. Calculate the answers:
A piece of ribbon is 3m long. It is cut into 50mm strips. How many strips of ribbon now?	$3\text{m} \times 100 = 300\text{cm}$ $300\text{cm} \div 50\text{cm} = 6$ Answer: 6 strips
Mr Rushden has a 2 litre bottle of water. How many 300ml cups can he fill?	$2 \text{ litres} \times 1000 = 2000\text{ml}$ $2000 \div 300 = 6 \text{ remainder } 200$ Answer: 6 remainder 200
A machine pours 150ml juice every 5 seconds. How much juice, in litres, does it pour each minute?	$10 \text{ secs} = 300\text{ml}$ $100 \text{ secs} = 3000\text{ml}$ Answer: 3 litres
A running track is 400m per lap. Zara did a 5km run on the track. How many laps did Zara run?	$5\text{km} \times 1000 = 5000\text{m}$ $5000 \div 400 = 14$ Answer: 14 laps

Multi-Step Measures

Task C

Question	Spot the Mistakes. Calculate the answers:
A piece of ribbon is 3m long. It is cut into 50mm strips. How many strips of ribbon now?	$3\text{m} \times 100 = 300\text{cm}$ $300\text{cm} \div 50\text{cm} = 6$ Answer: 6 strips
Mr Rushden has a 2 litre bottle of water. How many 300ml cups can he fill?	$2 \text{ litres} \times 1000 = 2000\text{ml}$ $2000 \div 300 = 6 \text{ remainder } 200$ Answer: 6 remainder 200
A machine pours 150ml juice every 5 seconds. How much juice, in litres, does it pour each minute?	$10 \text{ secs} = 300\text{ml}$ $100 \text{ secs} = 3000\text{ml}$ Answer: 3 litres
A running track is 400m per lap. Zara did a 5km run on the track. How many laps did Zara run?	$5\text{km} \times 1000 = 5000\text{m}$ $5000 \div 400 = 14$ Answer: 14 laps

Multi-Step Measures

Task D

- (a) There are 30 children in the class.
Miss Nixon pours each child 200ml of juice.
There is no juice left.
How much juice, in litres, did Miss Nixon have?
- (b) There are 30 children in the class.
Mr Roberts has 6 litres of juice.
On sports day, each child will have a 250ml drink.
How much more juice does Mr Roberts need?
- (c) There are 25 children in the class.
Mr Rose has 8 litres of juice.
He gives each child the same amount to drink.
There is half a litre of juice left over.
How much juice is each child given?
- (d) There are 15 children at football club.
The coach has 8 litres of water.
He pours each child a 450ml drink.
How much water is left over?

Multi-Step Measures

Task D

- (a) There are 30 children in the class.
Miss Nixon pours each child 200ml of juice.
There is no juice left.
How much juice, in litres, did Miss Nixon have?
- (b) There are 30 children in the class.
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How much more juice does Mr Roberts need?
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Mr Rose has 8 litres of juice.
He gives each child the same amount to drink.
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How much juice is each child given?
- (d) There are 15 children at football club.
The coach has 8 litres of water.
He pours each child a 450ml drink.
How much water is left over?

Multi-Step Measures

Task E

Fill the boxes to give **two different possible answers**:

Answer A:

children at running club.

There are litres of water.

Each child has a ml drink.

There are **1.25 litres** of water left.

Answer B:

children at running club.

There are litres of water.

Each child has a ml drink.

There are **1.25 litres** of water left.

Extend: Write a multi-step question involving measures. In your question, use two different units of measure.

Multi-Step Measures

Task E

Fill the boxes to give **two different possible answers**:

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Multi-Step Measures

Task E

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Answer B:

children at running club.

There are litres of water.

Each child has a ml drink.

There are **1.25 litres** of water left.

Extend: Write a multi-step question involving measures. In your question, use two different units of measure.

Task Family: Hours and Minutes

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: questions with visual representations.

↓ ↘
Task A and/or **Task B:** select the correct answer and explain the mistakes.

↓
Build 2: train timetable questions modelled.

↓
Task C: single-step and multi-step questions.

↓
Build 3: introduction to time zone questions.

↓
Task D: extension task, calculations involving flight lengths and time zone conversions.

Answers:

Task A: 9:35pm 2 minutes 15 seconds 1:30pm 1 hour 40 minutes

Task B: 7:55pm 44:38 3:25pm 1:48

Task C: 36 minutes 1 hour 52 minutes 13:49 Arrive for the 12:11 train

Task D: Rome 4:25pm 11:55am 2 hours 35 minutes 5:30 (the next day)

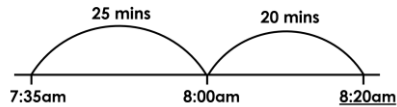
Hours and Minutes Build 1

Stan wakes up at 7:35am.

Mike wakes up $\frac{3}{4}$ hour after Stan.

At what time does Mike wake up?

Answer:



Hours and Minutes Build 2

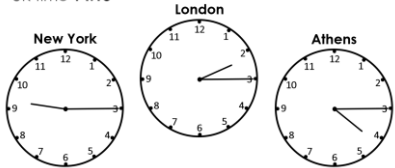
Here are two train timetables:

Sheffield	7:13	8:13	9:01	York	7:34	9:15	10:56
Doncaster	7:42	8:40	9:30	Malton	7:59	9:40	11:21
York	8:09	9:07	9:57	Seamer	8:16	9:57	11:38
Durham	8:57	9:54	10:46	Eastfield	8:22	10:03	12:14
Newcastle	9:18	10:15	11:08				

Kate gets the 8:13 train from Sheffield. She is travelling to Seamer. How long is Kate's journey?

Hours and Minutes Build 3

These clocks show the time in different cities at UK time 14:15



Hours and Minutes

Task A

<p>Mike looked at his watch $1\frac{1}{2}$ hours ago. The time was 8:05pm.</p> <p>What is the time now?</p>	<p><i>Which answer?</i></p> <div> <div>6:35pm</div> <div>9:35pm</div> <div>9:55pm</div> </div>
<p>Frank ran the 800m race in 1 minutes 58 seconds. He was 17 seconds faster than Karl.</p> <p>What was Karl's time for the race?</p>	<p><i>Which answer?</i></p> <div> <div>1 minute 41 seconds</div> <div>2 minutes 15 seconds</div> </div>
<p>The cricket match finished 4:20pm. It was 2 hours 50 minutes long.</p> <p>At what time did the cricket match start?</p>	
<p>Mia started driving at 4:45pm. She arrived at 6:25pm.</p> <p>How long, in hours and minutes, was her journey?</p>	

Extend: For the ‘Which answer?’ questions, explain the mistakes.

Hours and Minutes

Task A

<p>Mike looked at his watch $1\frac{1}{2}$ hours ago. The time was 8:05pm.</p> <p>What is the time now?</p>	<p><i>Which answer?</i></p> <div> <div>6:35pm</div> <div>9:35pm</div> <div>9:55pm</div> </div>
<p>Frank ran the 800m race in 1 minutes 58 seconds. He was 17 seconds faster than Karl.</p> <p>What was Karl's time for the race?</p>	<p><i>Which answer?</i></p> <div> <div>1 minute 41 seconds</div> <div>2 minutes 15 seconds</div> </div>
<p>The cricket match finished 4:20pm. It was 2 hours 50 minutes long.</p> <p>At what time did the cricket match start?</p>	
<p>Mia started driving at 4:45pm. She arrived at 6:25pm.</p> <p>How long, in hours and minutes, was her journey?</p>	

Extend: For the ‘Which answer?’ questions, explain the mistakes.

Hours and Minutes

Task B

<p>Adam watched a film. It finished at 9:10pm. The film was 75 minutes long.</p> <p>At what time did the film start?</p>	<p><i>Which answer?</i></p> <div> <div>7:55pm</div> <div>8:35pm</div> <div>9:85pm</div> <div>10:35pm</div> </div>
<p>Lara ran a 10km race. Her time was 46:18. Karen finished 1 minute 40 seconds before Lara.</p> <p>What was Karen's race time?</p>	
<p>A chicken took 1 hour 45 mins to cook. The chicken was taken out of the oven at 5:10pm. The oven was set at 200°C.</p> <p>At what time was the chicken put in the oven?</p>	
<p>Lucy ran a half-marathon in 2 hours. Afterwards, she said 'I want to reduce my time by 10%.'</p> <p>What is Lucy's target time?</p>	<p><i>Which answer?</i></p> <div> <div>1:80</div> <div>1:40</div> <div>1:48</div> <div>2:12</div> </div>

Extend: For the 'Which answer?' questions, explain the mistakes.

Hours and Minutes

Task B

<p>Adam watched a film. It finished at 9:10pm. The film was 75 minutes long.</p> <p>At what time did the film start?</p>	<p><i>Which answer?</i></p> <div> <div>7:55pm</div> <div>8:35pm</div> <div>9:85pm</div> <div>10:35pm</div> </div>
<p>Lara ran a 10km race. Her time was 46:18. Karen finished 1 minute 40 seconds before Lara.</p> <p>What was Karen's race time?</p>	
<p>A chicken took 1 hour 45 mins to cook. The chicken was taken out of the oven at 5:10pm. The oven was set at 200°C.</p> <p>At what time was the chicken put in the oven?</p>	
<p>Lucy ran a half-marathon in 2 hours. Afterwards, she said 'I want to reduce my time by 10%.'</p> <p>What is Lucy's target time?</p>	<p><i>Which answer?</i></p> <div> <div>1:80</div> <div>1:40</div> <div>1:48</div> <div>2:12</div> </div>

Extend: For the 'Which answer?' questions, explain the mistakes.

Hours and Minutes

Task C

Trains from Manchester to Coventry:

Manchester	9:58	10:48	11:31
Crewe	10:35	11:25	12:08
Birmingham	11:32	12:23	13:05
Coventry	11:54	12:45	13:27

Trains from Birmingham to Milton Keynes:

Birmingham	11:28	11:56	12:32
Rugby	12:11	12:39	13:15
Northampton	12:45	13:13	13:49
Milton Keynes	12:59	13:27	14:03

Question	Calculations/answer:
Karen gets to Crewe station at 11:32. She is travelling to Coventry. How long does she have to wait to board the next train?	
Ben gets the first train from Manchester to Coventry. How long does the journey take?	
Zoe gets the 10:48 train from Manchester. She is travelling to Northampton. At what time will she arrive?	
Raja is travelling from Rugby to Milton Keynes. He needs to be in Milton Keynes by 13:15 at the latest. At what time will he need to arrive at Rugby train station?	

Extend: Write two questions based on the train timetables.

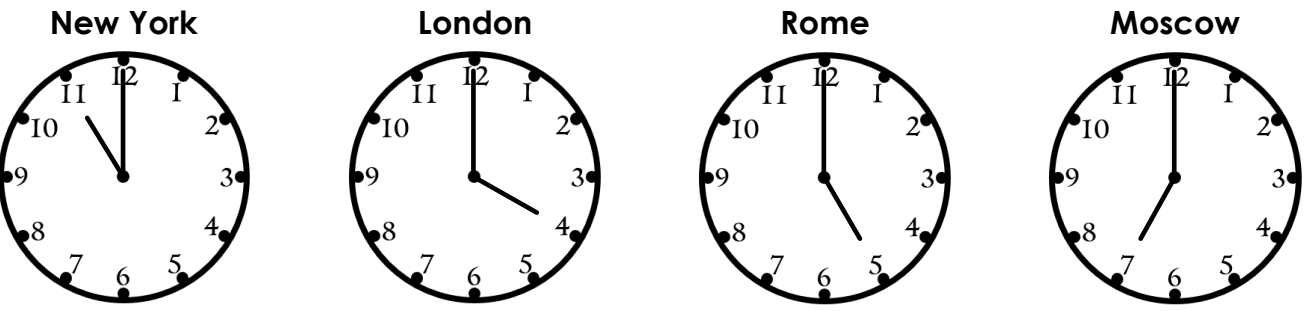
[INFORMATION] How long does the journey take?

[INFORMATION] At what time will she arrive?

Hours and Minutes

Task D

These clocks show the time in each city when it is 4pm in the UK:



Question	Calculations/answer:
<p>When the time is 8:30am in New York, the time is 2:30pm in which city?</p>	
<p>Martha's flight from London to Moscow departed at 9:40am. The flight time is 3 hours 45 minutes.</p> <p>When Martha arrives, what is the time in Moscow?</p>	
<p>Kate arrives in New York at 2:10pm local time after an 8 hour 15 minute flight from Rome.</p> <p>What was the departure time of the flight in Rome?</p>	
<p>The time in Rome was 17:45 when the flight departed. It arrived in London at 18:20 local time.</p> <p>How long, in hours and minutes, is the flight?</p>	
<p>Henry's 9-hour flight from New York to Moscow departs at 13:30 local time.</p> <p>What will the time be in Moscow when he lands?</p>	

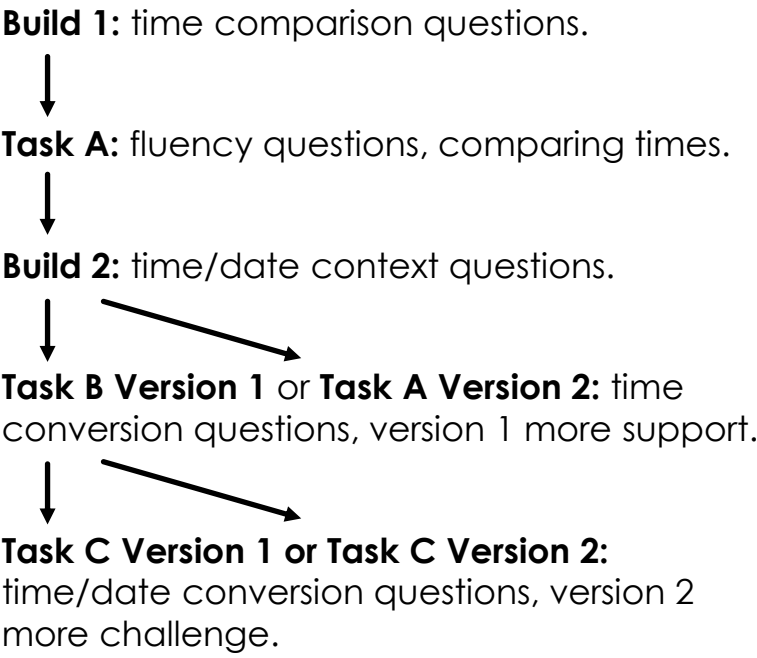
Task Family: Converting Units of Time

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:



Converting Units of Time

Build 1

The blue line represents 1 day

The red line represents

Converting Units of Time

Build 2

What will the date be 1 week after 25th October?

6 days later is the last day in October

Answer: 1st November

What was the date 1 week before 2nd October?

Days:

January: 31

February: 28-29

March: 31

April: 30

May: 31

June: 30

July: 31

August: 31

September: 30

October: 31

November: 30

December: 31

Answers:

Task A: Left column: 2 hours > 100 minutes, 72 hours = 3 days, 2 years > 100 weeks
 Right column: 240 seconds = 4 minutes, 12 weeks < 3 months, 1 hour > 3000 seconds
 Extend: February = 672 hours or 696 hours on a leap year; March = 744 hours, answers in that range.

Task B Version 1: (a) 1 hour 40 minutes, (b) 6000 seconds (a) 3600 minutes, (b) $2\frac{1}{2}$ days
 1st March

Task B Version 2: (a) 2 hours 10 minutes, (b) 7800 seconds (a) 3600 minutes, (b) 26th May
 30th May

Task C Version 1: Jack 11th May 195 minutes

Task C Version 2: Kim by 5 minutes 46 seconds 27th March $28\frac{1}{2}$ hours

Converting Units of Time

Task A

Use the symbols $< = >$ to compare the lengths of time:

2 hours 100 minutes

240 seconds 4 minutes

72 hours 3 days

12 weeks 3 months

2 years 100 weeks

1 hour 3000 seconds

Extend: hours is longer than February but shorter than March.

Converting Units of Time

Task A

Use the symbols $< = >$ to compare the lengths of time:

2 hours 100 minutes

240 seconds 4 minutes

72 hours 3 days

12 weeks 3 months

2 years 100 weeks

1 hour 3000 seconds

Extend: hours is longer than February but shorter than March.

Converting Units of Time

Task A

Use the symbols $< = >$ to compare the lengths of time:

2 hours 100 minutes

240 seconds 4 minutes

72 hours 3 days

12 weeks 3 months

2 years 100 weeks

1 hour 3000 seconds

Extend: hours is longer than February but shorter than March.

Converting Units of Time

Task A

Use the symbols $< = >$ to compare the lengths of time:

2 hours 100 minutes

240 seconds 4 minutes

72 hours 3 days

12 weeks 3 months

2 years 100 weeks

1 hour 3000 seconds

Extend: hours is longer than February but shorter than March.

Converting Units of Time

Task B Version 1

Question	Calculations and answers:
<p>A film is 100 minutes long.</p> <p>(a)How long is the film in hours and minutes?</p> <p>(b)How long is the film in seconds?</p>	<p><i>1 minute = 60 seconds 1 hour = 60 minutes</i></p>
<p>Jo posted a letter. 60 hours later, the letter was delivered.</p> <p>(a)How many minutes did it take to deliver the letter?</p> <p>(b)How many days did it take to deliver the letter?</p>	<p><i>1 hour = 60 minutes 1 day = 24 hours</i></p>
<p>Harry received a letter on 5th June. It was posted 96 hours ago.</p> <p>What was the date when the letter was posted?</p>	<p><i>1 day = 24 hours 2 days = 48 hours</i></p>

Converting Units of Time

Task B Version 1

Question	Calculations and answers:
<p>A film is 100 minutes long.</p> <p>(a)How long is the film in hours and minutes?</p> <p>(b)How long is the film in seconds?</p>	<p><i>1 minute = 60 seconds 1 hour = 60 minutes</i></p>
<p>Zara posted a letter. 60 hours later, the letter was delivered.</p> <p>(a)How many minutes did it take to deliver the letter?</p> <p>(b)How many days did it take to deliver the letter?</p>	<p><i>1 hour = 60 minutes 1 day = 24 hours</i></p>
<p>Harry received a letter on 5th March. It was posted 96 hours ago.</p> <p>What was the date when the letter was posted?</p>	<p><i>1 day = 24 hours 2 days = 48 hours</i></p>

Converting Units of Time

Task B Version 2

Question	Calculations and answers:
<p>A film is 130 minutes long.</p> <p>(a)How long is the film in hours and minutes?</p> <p>(b)How long is the film in seconds?</p>	
<p>Jo posted a letter at 8pm on 23rd May. 60 hours later, the letter was delivered.</p> <p>(a) How many minutes did it take to deliver the letter?</p> <p>(b) What was the date when the letter was delivered?</p>	
<p>Lee received a letter on 3rd June. It was posted 96 hours ago.</p> <p>What was the date when the letter was posted?</p>	

Converting Units of Time

Task B Version 2

Question	Calculations and answers:
<p>A film is 130 minutes long.</p> <p>(a)How long is the film in hours and minutes?</p> <p>(b)How long is the film in seconds?</p>	
<p>Jo posted a letter at 8pm on 23rd May. 60 hours later, the letter was delivered.</p> <p>(a) How many minutes did it take to deliver the letter?</p> <p>(b) What was the date when the letter was delivered?</p>	
<p>Lee received a letter on 3rd June. It was posted 96 hours ago.</p> <p>What was the date when the letter was posted?</p>	

Converting Units of Time

Task C Version 1

Question	Calculations and answers:
<p>Jack ran the marathon in 3 hours 25 minutes. Kam ran the marathon in 206 minutes.</p> <p>Who finished the marathon first, Jack or Kam?</p>	
<p>It is 27th April. It is Amy's birthday in two weeks.</p> <p>What date is Amy's birthday?</p>	<p>April has ____ days.</p>
<p>At 8:45pm on 31st December, how many minutes until it is the New Year?</p>	

Converting Units of Time

Task C Version 1

Question	Calculations and answers:
<p>Jack ran the marathon in 3 hours 25 minutes. Kam ran the marathon in 206 minutes.</p> <p>Who finished the marathon first, Jack or Kam?</p>	
<p>It is 27th April. It is Amy's birthday in two weeks.</p> <p>What date is Amy's birthday?</p>	<p>April has ____ days.</p>
<p>At 8:45pm on 31st December, how many minutes until it is the New Year?</p>	

Converting Units of Time

Task C Version 2

Question	Calculations and answers:
<p>Kim ran the marathon in 3 hours 17 minutes 19 seconds, Freya finished in 203 minutes 5 seconds.</p> <p>Who finished first, Kim or Freya? And by how many seconds?</p>	
<p>It is 10th April. It was Mike's birthday a fortnight ago.</p> <p>What date is Mike's birthday?</p>	
<p>At 7:30am on 30st December, how many hours until it is the New Year?</p>	

Converting Units of Time

Task C Version 2

Question	Calculations and answers:
<p>Kim ran the marathon in 3 hours 17 minutes 19 seconds, Freya finished in 203 minutes 5 seconds.</p> <p>Who finished first, Kim or Freya? And by how many seconds?</p>	
<p>It is 10th April. It was Mike's birthday a fortnight ago.</p> <p>What date is Mike's birthday?</p>	
<p>At 7:30am on 30st December, how many hours until it is the New Year?</p>	

Task Family: Area and Perimeter

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: slow reveal prompt.



Task A: questions, rank by difficulty.



Build 2: multi-step slow reveal prompt.



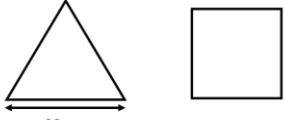
Task B: 'which answer?' questions.



Task C: multi-step questions.

Area and Perimeter Build 1

The equilateral triangle and the square have the same *What could the information be?*



12cm

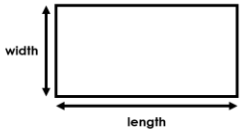
What could the question be?

What is the

Area and Perimeter Build 2

The length of the rectangle is double its width.

The area of the rectangle is cm² *Give a possible area*



width

length

What is the perimeter of the rectangle?

Answers:

Task A: Top left: 24cm Top right: 65cm² Bottom left: 15cm Bottom right: 6cm

Task B: Answer B (Answer A is perimeter)

Answer B (Answer A only adds two sides of the rectangle)

Answer A (Answer B doubles the perimeter, but two sides join in the middle)

Answer A (Answer B is the perimeter)

Answer B (Answer A gives the length of two sides of the rectangle)

Task C: $5 \times 8 = 40\text{cm}$

$5 \times 15 = 75\text{cm}^2$

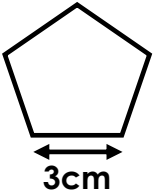
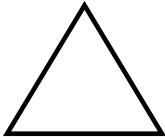
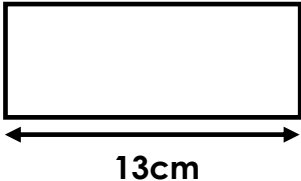

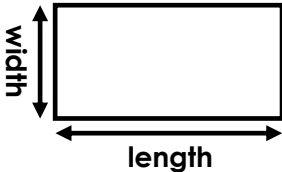
True: If positioned on the top row in the middle or on the right

False: Doubling the perimeter quadruples the area

Draw a rectangle with dimensions 12×2

Area and Perimeter

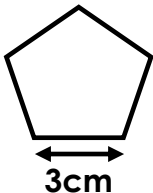
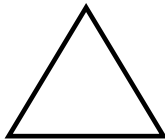
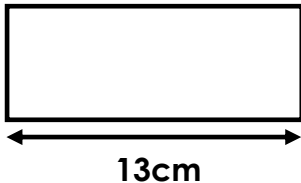

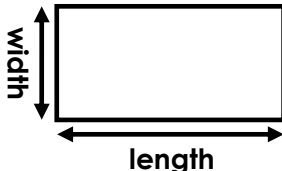
Task A

<p>The regular pentagon and the triangle have the same perimeter.</p> <p>What is the perimeter of the triangle?</p> <div>   </div>	<p>A rectangle has a perimeter of 36cm^2.</p> <p>What is the area of the rectangle?</p> <div>  </div>
<p>A square has an area of 36cm^2.</p> <p>What is the perimeter of the square?</p> <div>  </div>	<p>The length of a rectangle is double its width. It has a length of 6cm.</p> <p>What is the perimeter of the rectangle?</p> <div>  </div>

Extend: Rank the questions from **easiest to hardest**. Explain your choices.

Area and Perimeter

Task A

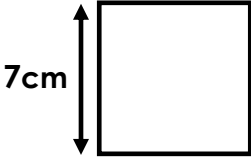
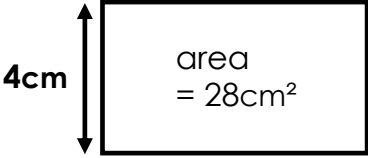

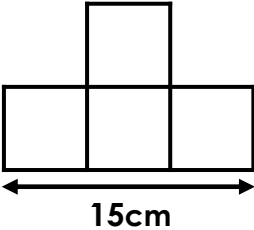
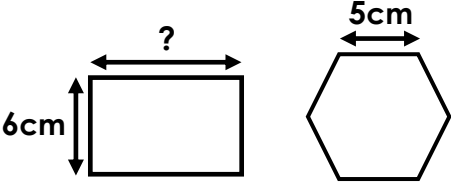
<p>The regular pentagon and the triangle have the same perimeter.</p> <p>What is the perimeter of the triangle?</p> <div>   </div>	<p>A rectangle has a perimeter of 36cm^2.</p> <p>What is the area of the rectangle?</p> <div>  </div>
<p>A square has an area of 36cm^2.</p> <p>What is the perimeter of the square?</p> <div>  </div>	<p>The length of a rectangle is double its width. It has a length of 6cm.</p> <p>What is the perimeter of the rectangle?</p> <div>  </div>

Extend: Rank the questions from **easiest to hardest**. Explain your choices.

Area and Perimeter

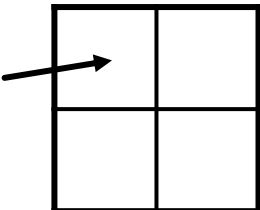
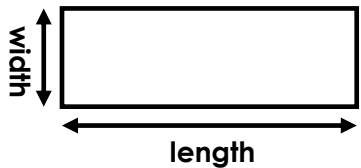
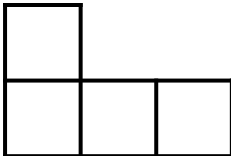
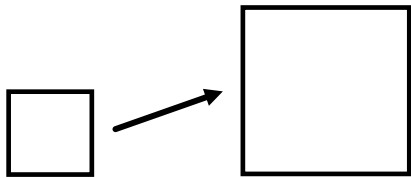

Task B

For each question, **tick the correct answer** and for the incorrect answer, **explain the mistake**.

Question	Which answer is correct? Explain the mistake.
<p>What is the area of the square?</p> 	<p>Answer A: $7\text{cm} \times 4 = 28\text{cm}$</p> <p>Answer B: $7\text{cm} \times 7\text{cm} = 49\text{cm}^2$</p>
<p>What is the perimeter of the rectangle?</p> 	<p>Answer A: $28\text{cm} \div 4 = 7\text{cm}$ $7\text{cm} + 4\text{cm} = 11\text{cm}$</p> <p>Answer B: $28\text{cm} \div 4 = 7\text{cm}$ $(7\text{cm} + 4\text{cm}) \times 2 = 22\text{cm}$</p>
<p>A rectangle is made with two squares. Each square has a perimeter of 12cm. What is the perimeter of the rectangle?</p> 	<p>Answer A: $12\text{cm} \div 4 = 3\text{cm}$ $3\text{cm} \times 6\text{cm} = 18\text{cm}$</p> <p>Answer B: $12\text{cm} \times 2 = 24\text{cm}$</p>
<p>What is the area of the shape?</p> 	<p>Answer A: $15\text{cm} \div 3 = 5\text{cm}$ $5\text{cm} \times 5\text{cm} \times 4 = 100\text{cm}^2$</p> <p>Answer B: $15\text{cm} \div 3 = 5\text{cm}$ $5\text{cm} \times 10 = 50\text{cm}$</p>
<p>Both shapes have the same perimeter. What is the length of the rectangle?</p> 	<p>Answer A: $5\text{cm} \times 6 = 30\text{cm}$ $30\text{cm} - 12\text{cm} = 18\text{cm}$</p> <p>Answer B: $5\text{cm} \times 6 = 30\text{cm}$ $30\text{cm} - 12\text{cm} = 18\text{cm}$ $18\text{cm} \div 2 = 9\text{cm}$</p>

Area and Perimeter

Task C

Question	Answer and workings or explanation
<p>The area of each small square is 25cm^2. What is the perimeter of the big square?</p> <div> <div>Area = 25cm^2</div>  <div>not to scale</div> </div>	
<p>The length of the rectangle is 3 times as long as the width. Its perimeter is 40cm. What is the area of the rectangle?</p> <div>  <div>not to scale</div> </div>	
<p>True or False: 'It's possible to add a square to this shape without increasing its perimeter.'</p> 	
<p>True or False: 'If you double the perimeter of a square, the area is also doubled.'</p> <div>  </div>	
<p>Draw a rectangle with the same area and a larger perimeter than the rectangle below:</p> <div>  </div>	

Task Family: Volume

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: introductory examples and terminology.



Task A: intro task, making cuboids with cubes.



Build 2: slow reveal example questions.



Task B: questions, select the correct answer and explain mistakes.




Task C: reasoning and problem-solving tasks.



Task D: multi-step extension question.

Volume Build 1



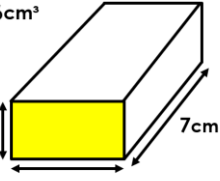
The cuboid is made using **30 cubes**.

What are the dimensions of the cuboid?

dimensions
 $2 \times 3 \times 5 = 30$

Volume Build 2

Cuboid volume: 56cm^3



What could the question be?

Answers:

Task A: Example dimensions: $1 \times 2 \times 24$ $6 \times 4 \times 2$ $8 \times 3 \times 2$ $2 \times 2 \times 12$

Task B: 64cm^3 8cm 8cm^3

Task C: Cube A = 64cm^3 , Cube B = 125cm^3 , **Difference = 61cm^3**

Example dimensions: $20\text{cm} \times 5\text{cm} \times 6\text{cm}$ $12\text{cm} \times 10\text{cm} \times 5\text{cm}$ $25\text{cm} \times 4\text{cm} \times 6\text{cm}$
 True: Doubling one dimension of a cuboid doubles the volume ($2 \times 2 \times 3 = 12$, $2 \times 2 \times 6 = 12$)

Task D: The area of each square = $54 \div 6 = 9\text{cm}^2$, therefore the length of each square is 3cm . To calculate the volume: $3\text{cm} \times 3\text{cm} \times 3\text{cm} = \mathbf{27\text{cm}^3}$

Volume

Think of different cuboids than can be made with 48 cubes.

Give the **dimensions** of the cuboids.

Answer 1: $\square \times \square \times \square = 48$

Task A



dimensions
 $2 \times 3 \times 5 = 30$

Can one cube be made with 48 small cubes?

Volume

Think of different cuboids that can be made with 48 cubes.

Give the **dimensions** of the cuboids.

Answer 1: $\square \times \square \times \square = 48$

Task A



dimensions
 $2 \times 3 \times 5 = 30$

Can one cube be made with 48 small cubes?

Volume

Think of different cuboids that can be made with 48 cubes.

Give the **dimensions** of the cuboids.

Answer 1: $\square \times \square \times \square = 48$

Task A

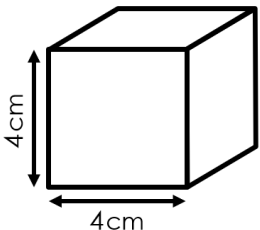
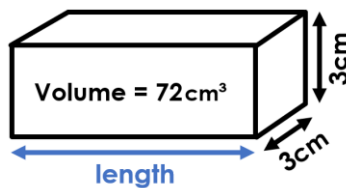
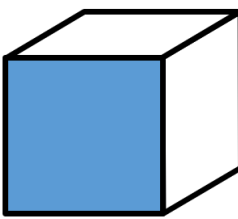


dimensions
 $2 \times 3 \times 5 = 30$

Can one cube be made with 48 small cubes?

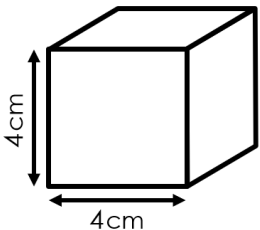
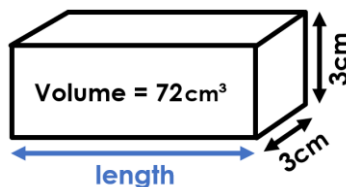
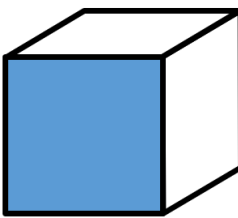
Volume

Task B

Question	Which answer? Show calculations:
<p>What is the volume of the cube?</p> 	<p>16cm³</p> <p>64cm³</p>
<p>Volume = 72cm³</p>  <p>What is the length of the cuboid?</p>	<p>24cm</p> <p>8cm</p>
<p>The area of blue face is 4cm²</p> <p>What is the volume of the cube?</p> 	<p>8cm³</p> <p>16cm³</p> <p>24cm³</p>

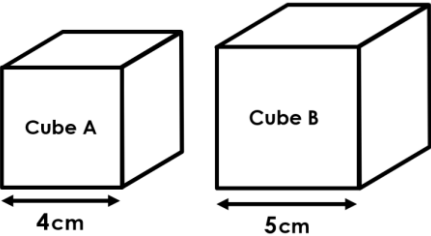
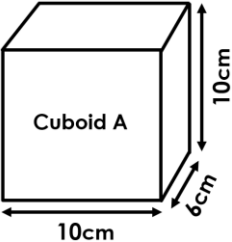
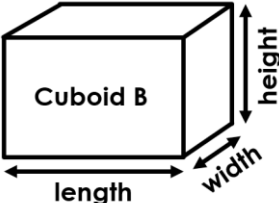
Volume

Task B

Question	Which answer? Show calculations:
<p>What is the volume of the cube?</p> 	<p>16cm³</p> <p>64cm³</p>
<p>Volume = 72cm³</p>  <p>What is the length of the cuboid?</p>	<p>24cm</p> <p>8cm</p>
<p>The area of blue face is 4cm²</p> <p>What is the volume of the cube?</p> 	<p>8cm³</p> <p>16cm³</p> <p>24cm³</p>

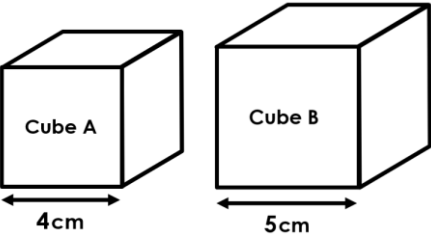
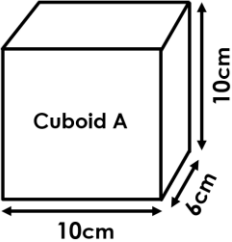
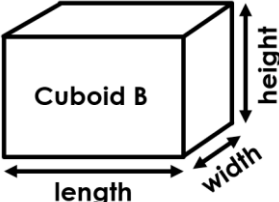
Volume

Task C

Question and Calculations/Answers:	
	<p>How much larger is the volume of Cube B than Cube A?</p>
	<p>Give the dimensions of a cuboid that has the same volume as Cuboid A:</p>
	<p>My cuboid is double the length of Cuboid B but has the same width and height. True or False: 'My cuboid's volume is double Cuboid B'</p>

Volume

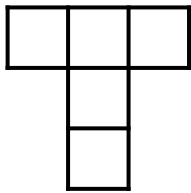
Task C

Question and Calculations/Answers:	
	<p>How much larger is the volume of Cube B than Cube A?</p>
	<p>Give the dimensions of a cuboid that has the same volume as Cuboid A:</p>
	<p>My cuboid is double the length of Cuboid B but has the same width and height. True or False: 'My cuboid's volume is double Cuboid B'</p>

Volume

Task D

The net of a cube has an area of 54cm^2 .



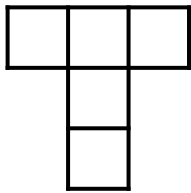
The net is made into a cube.

What is the volume of the cube?

Volume

Task D

The net of a cube has an area of 54cm^2 .



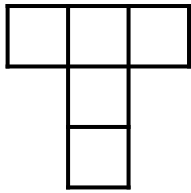
The net is made into a cube.

What is the volume of the cube?

Volume

Task D

The net of a cube has an area of 54cm^2 .



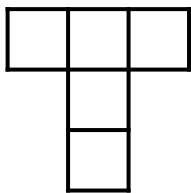
The net is made into a cube.

What is the volume of the cube?

Volume

Task D

The net of a cube has an area of 54cm^2 .



The net is made into a cube.

What is the volume of the cube?

Task Family: Angle and Turn

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: clockwise/anticlockwise turn questions.



Task A: clockwise/anticlockwise turn questions, multiple possible answers.



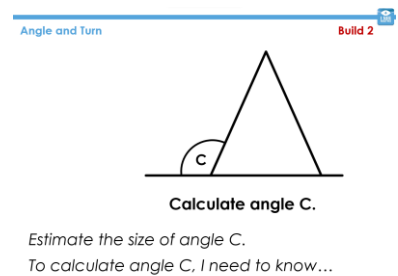
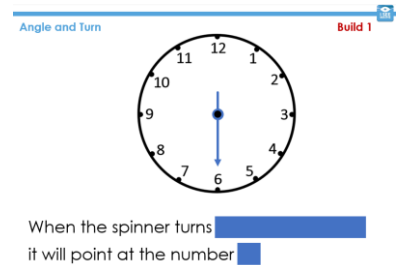
Build 2: missing angle questions.



Task B: missing angle questions, children rank the questions by difficulty.



Task C: reasoning and multi-step questions.



Answers:

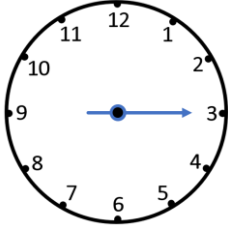
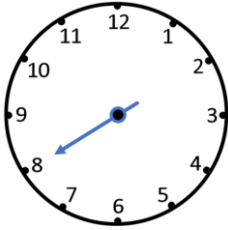
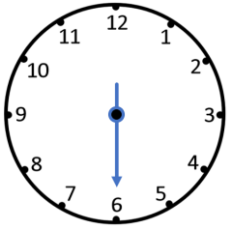
Task A: Example answers: 90° clockwise 270° anticlockwise 450° clockwise
 Example answers: 330° clockwise 30° anticlockwise 390° anticlockwise
 Example answers: 61° clockwise 271° anticlockwise 425° clockwise

Task B: A = 114° (the 55° and 59° angles are redundant information)
 B = 60° (the isosceles triangle is redundant information)
 C = 54°

Task C: Angle B can't be calculated as there are two unknown angles in the triangle.
 270° clockwise and 450° anticlockwise turns point in the same direction, so a 540° clockwise turn is the odd one out.
 Triangle 1: 40°, **70°**, **70°** Triangle 2: 40°, **40°**, **100°**

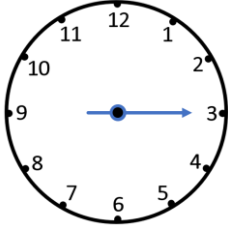
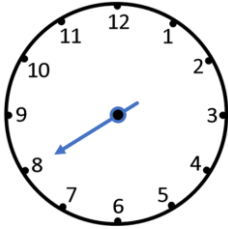
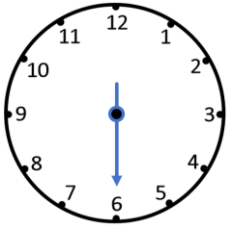
Angle and Turn

Task A

Question	Different Possible Answers:
 <p>After a spin, the arrow points at 6.</p>	<div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div>
 <p>After a spin, the arrow points at 7.</p>	<div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div>
 <p>After a spin, the arrow points in between 8 and 9.</p>	<div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div>

Angle and Turn

Task A

Question	Different Possible Answers:
 <p>After a spin, the arrow points at 6.</p>	<div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div>
 <p>After a spin, the arrow points at 7.</p>	<div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div>
 <p>After a spin, the arrow points in between 8 and 9.</p>	<div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div> <div><input type="text"/> <small>o</small> clockwise / anticlockwise turn.</div>

Angle and Turn

Task B

Question B:

isosceles triangle

equilateral triangle

$B =$

Question A:

$A =$

Question C:

rectangle

$C =$

Rank the questions by difficulty (easiest to hardest). Explain your choices.

Angle and Turn

Task B

Question B:

isosceles triangle

equilateral triangle

$B =$

Question A:

$A =$

Question C:

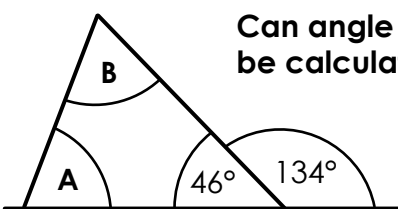
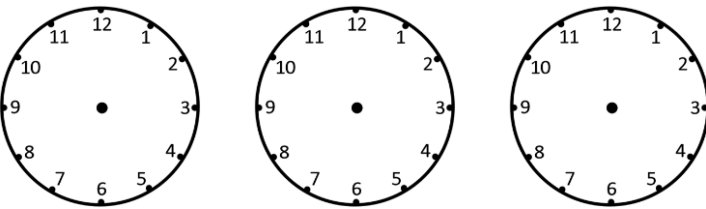
rectangle

$C =$

Rank the questions by difficulty (easiest to hardest). Explain your choices.

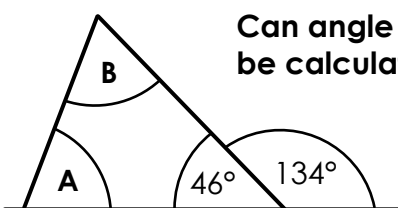
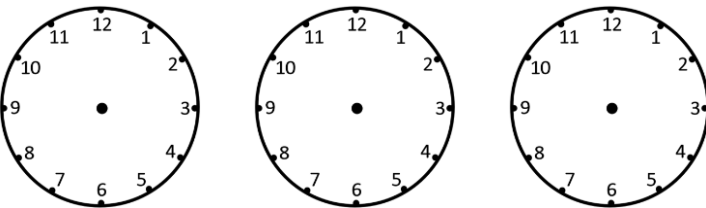
Angle and Turn

Task C

Question	Answers and explanations:
 <p>Can angle B be calculated?</p>	
<p>270° clockwise turn 450° anticlockwise turn 540° clockwise turn</p> <p>Which one is the odd one out?</p>	
<p>One of the angles of an isosceles triangle is 40°.</p> <p>What could the other two angles be?</p> <p><i>There are two possible answers.</i></p>	

Angle and Turn

Task C

Question	Answers and explanations:
 <p>Can angle B be calculated?</p>	
<p>270° clockwise turn 450° anticlockwise turn 540° clockwise turn</p> <p>Which one is the odd one out?</p>	
<p>One of the angles of an isosceles triangle is 40°.</p> <p>What could the other two angles be?</p> <p><i>There are two possible answers.</i></p>	

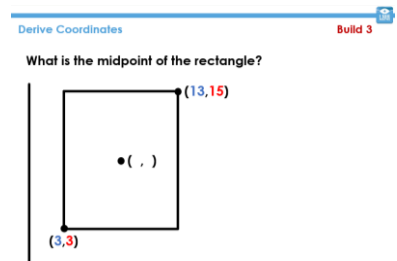
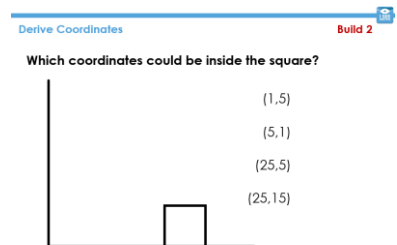
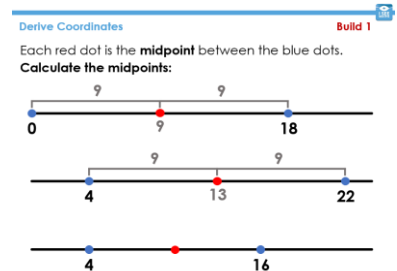
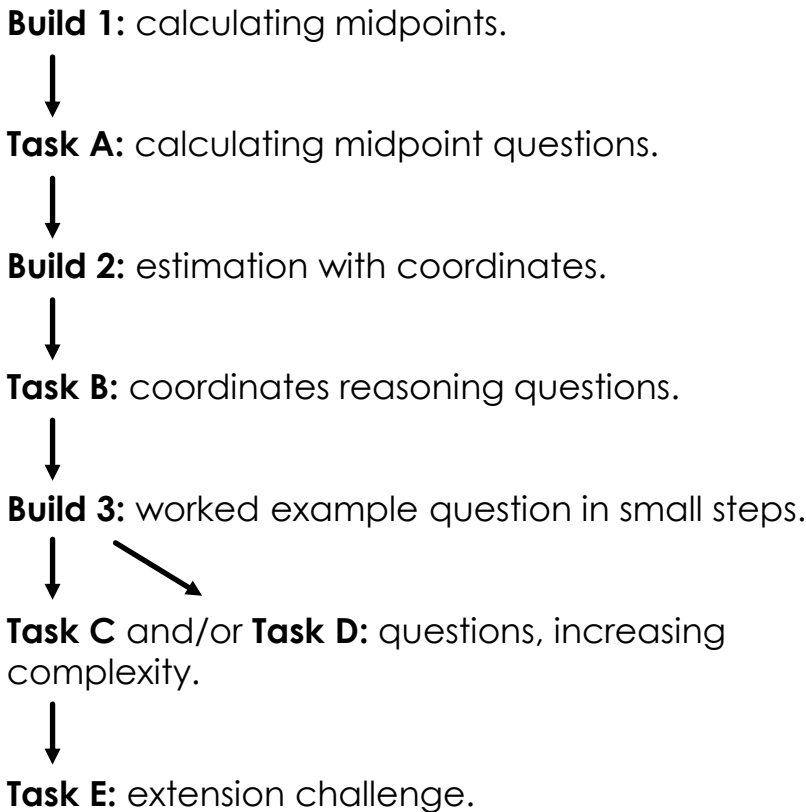
Task Family: Derive Coordinates

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:



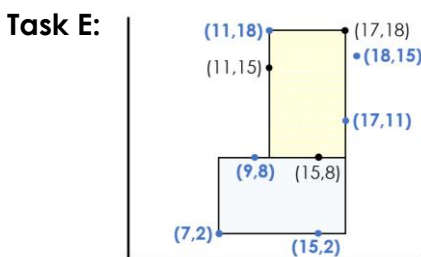
Answers:

Task A: Left column: 6 9 10 Right column: 8, 5, 3

Task B: Top left: Not (7,7) or (6,14) as x is greater than y. Top right: Example inside (4,7)
Bottom left: Not (5,0) as y is more than 0. Not (2,5) or (7,2) as x = 5.
Bottom right: (6,11) is above, (3,6) is to the left, (5,1) is below.

Task C: A: (8,5) B: (16,0) C: (11,8) D: (19,3) E: (9,7) F: (18,4) G: (6,10) H: (12,4)

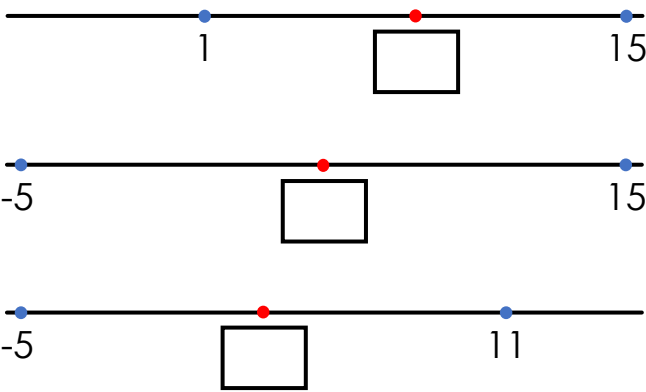
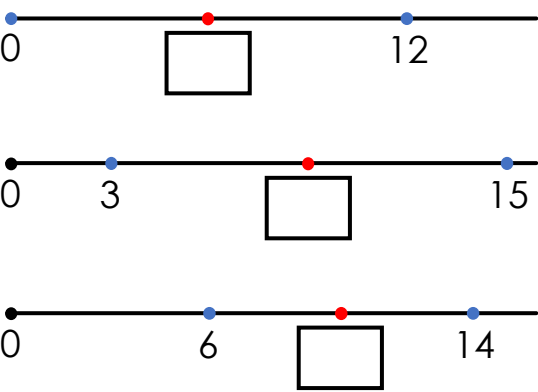
Task D: Top question, example answers top: Edge (f,g) Inside (h,i) Outside (u,l)
Bottom question: J: (g,k) K: (s,b) Example answers edge (a,s) outside (k,m)



Derive Coordinates

Task A

Each red dot is the **midpoint** between the blue dots. **Calculate the midpoints:**

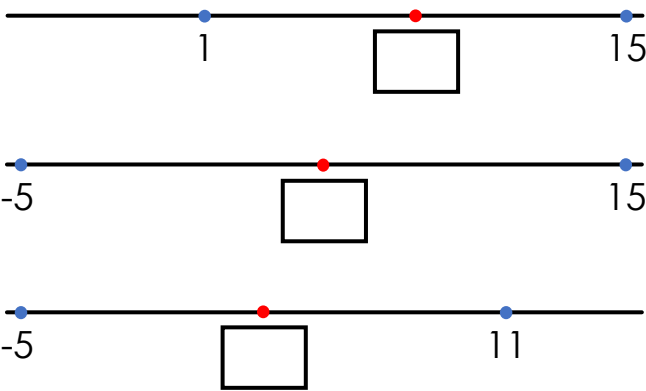
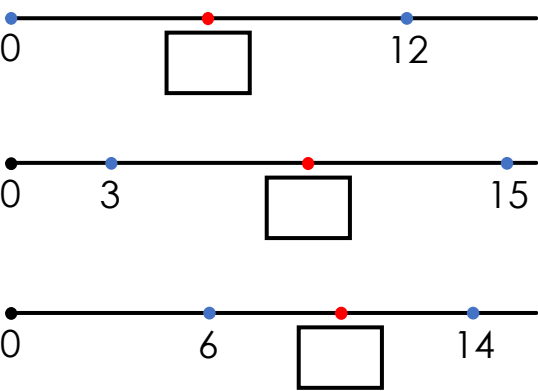


'The method for calculating a midpoint is...'

Derive Coordinates

Task A

Each red dot is the **midpoint** between the blue dots. **Calculate the midpoints:**

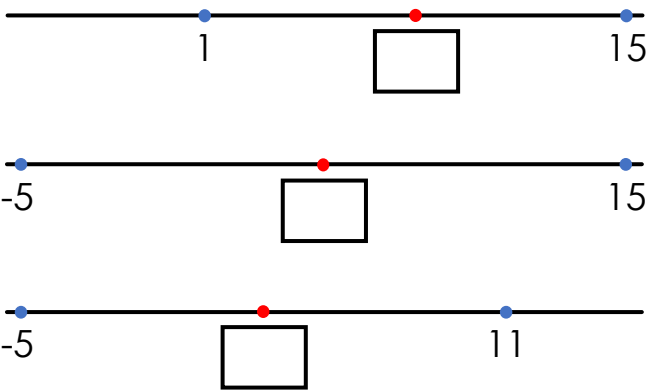
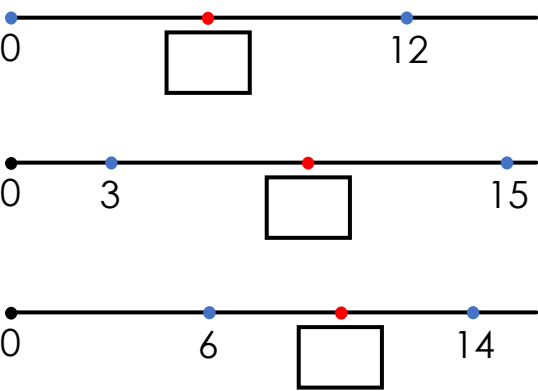


'The method for calculating a midpoint is...'

Derive Coordinates

Task A

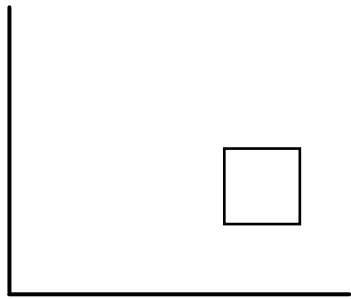
Each red dot is the **midpoint** between the blue dots. **Calculate the midpoints:**



'The method for calculating a midpoint is...'

Derive Coordinates

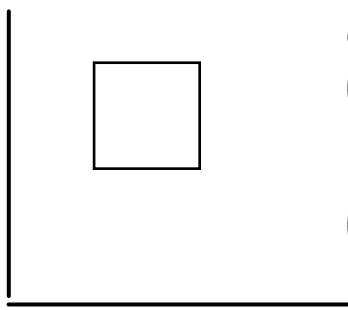
Which of these coordinates could be inside the square?



- (10,4)
- (24,10)
- (7,7)
- (6,14)
- (4,2)

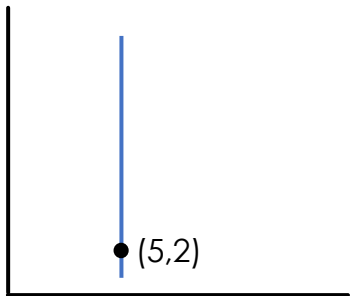
Task B

Write 2 coordinates that could be in the square and 2 coordinates that are not in the square.



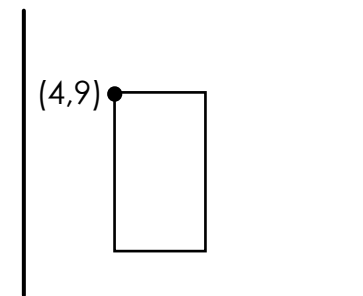
- Could be in square:
 (,) (,)
- Not in square:
 (,) (,)

Which of these coordinates could be on the blue line?



- (5,0)
- (2,5)
- (5,5)
- (5,8)
- (7,2)

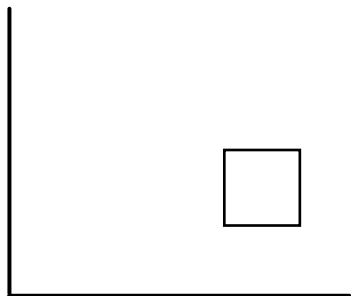
Which of these coordinates are outside of the rectangle?



- (7,7)
- (6,11)
- (4,7)
- (3,6)
- (5,1)

Derive Coordinates

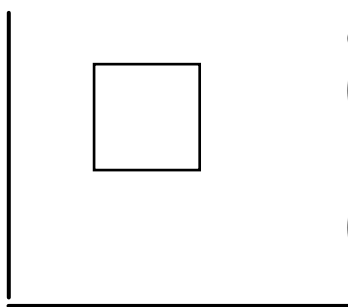
Which of these coordinates could be inside the square?



- (10,4)
- (24,10)
- (7,7)
- (6,14)
- (4,2)

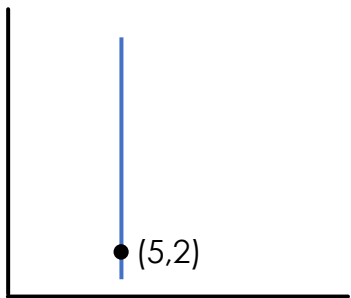
Task B

Write 2 coordinates that could be in the square and 2 coordinates that are not in the square.



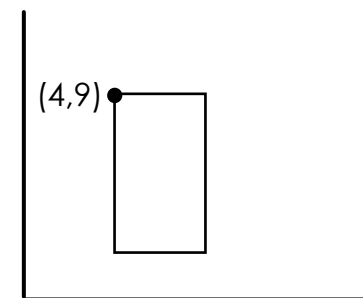
- Could be in square:
 (,) (,)
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 (,) (,)

Which of these coordinates could be on the blue line?



- (5,0)
- (2,5)
- (5,5)
- (5,8)
- (7,2)

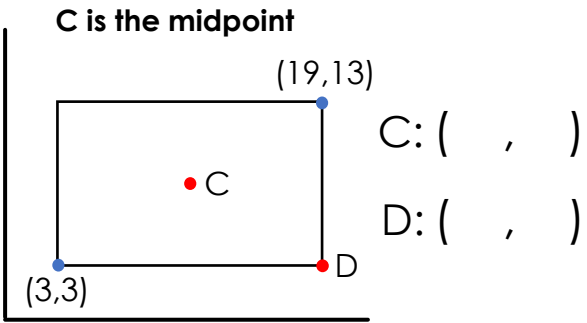
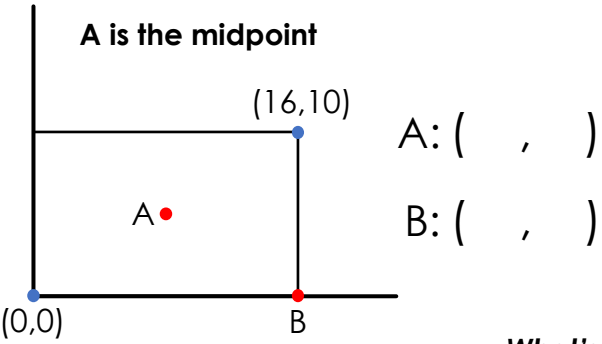
Which of these coordinates are outside of the rectangle?



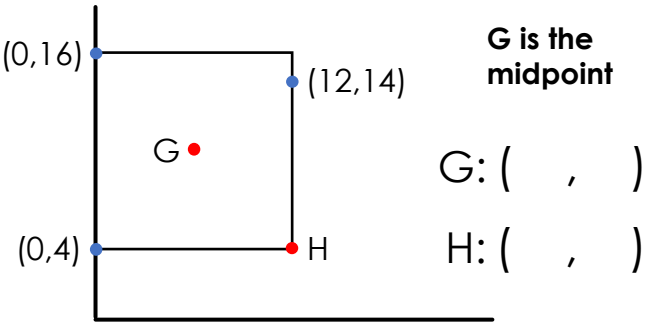
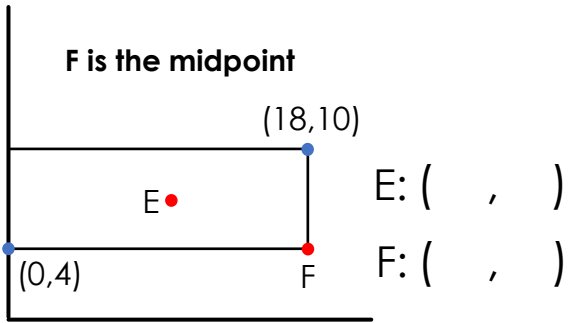
- (7,7)
- (6,11)
- (4,7)
- (3,6)
- (5,1)

Derive Coordinates

Task C



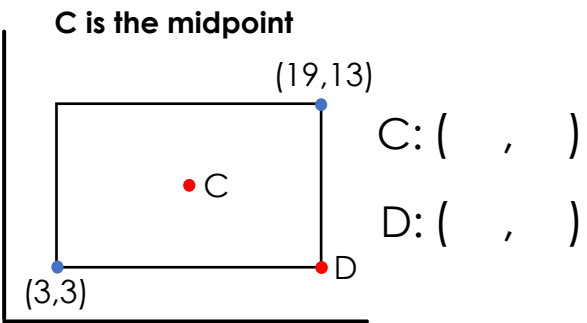
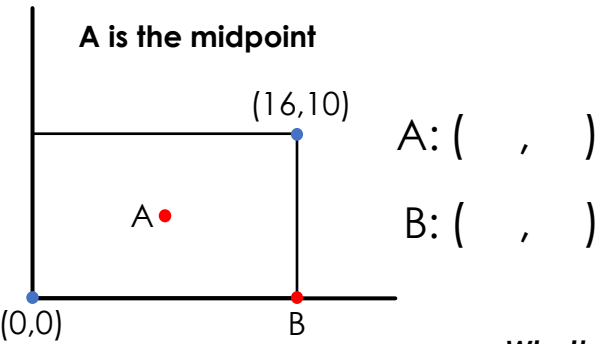
What's the same?
What's different?



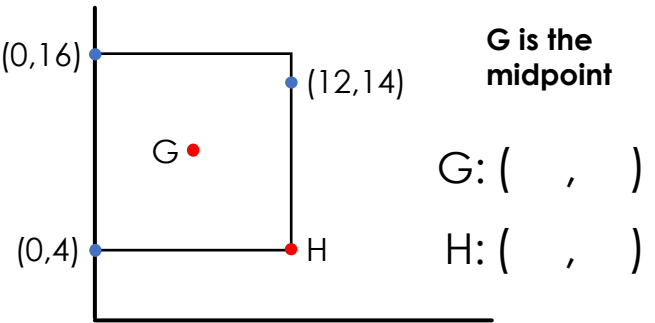
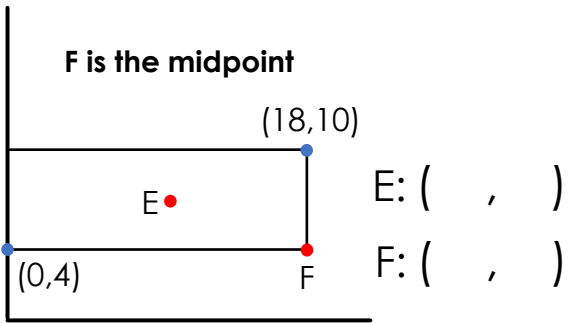
What's the same?
What's different?

Derive Coordinates

Task C



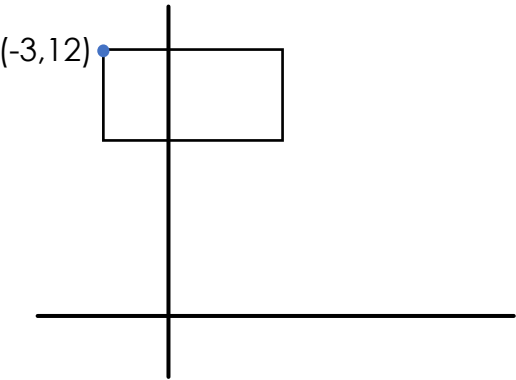
What's the same?
What's different?



What's the same?
What's different?

Derive Coordinates

Task D



Two coordinates on the **edge** of the rectangle:

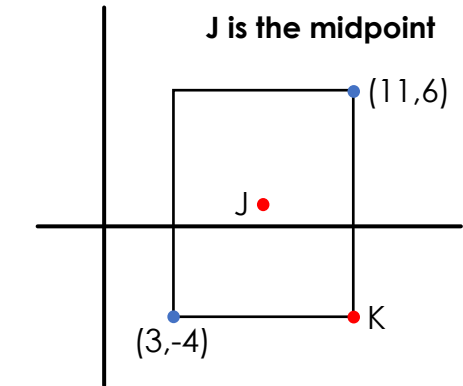
(,) (,)

Two coordinates on the **inside** of the rectangle:

(,) (,)

Two coordinates on the **outside** of the rectangle:

(,) (,)



J: (,)

K: (,)

Two coordinates on the **edge** of the rectangle:

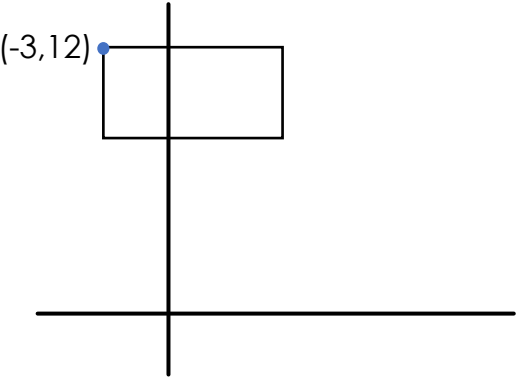
(,) (,)

Two coordinates on the **outside** of the rectangle:

(,) (,)

Derive Coordinates

Task D



Two coordinates on the **edge** of the rectangle:

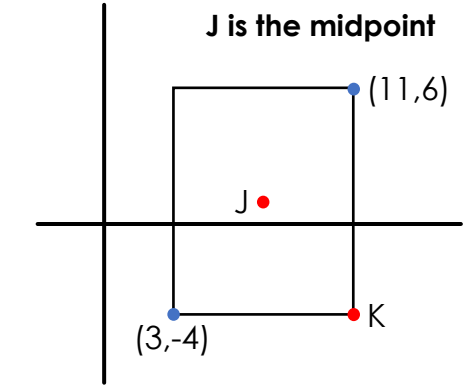
(,) (,)

Two coordinates on the **inside** of the rectangle:

(,) (,)

Two coordinates on the **outside** of the rectangle:

(,) (,)



J: (,)

K: (,)

Two coordinates on the **edge** of the rectangle:

(,) (,)

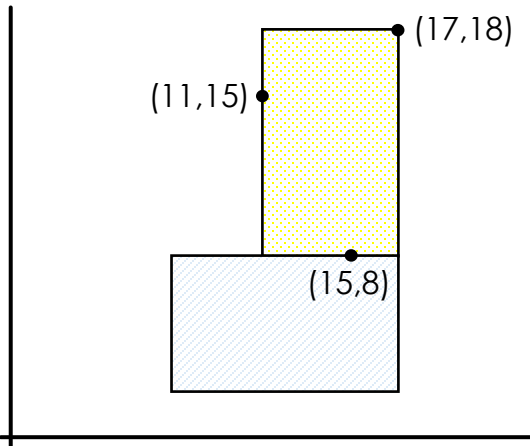
Two coordinates on the **outside** of the rectangle:

(,) (,)

Derive Coordinates

Task E

The rectangles are identical sizes.



Plot the coordinates:

(11,18) (15,2)

(17,11) (9,8)

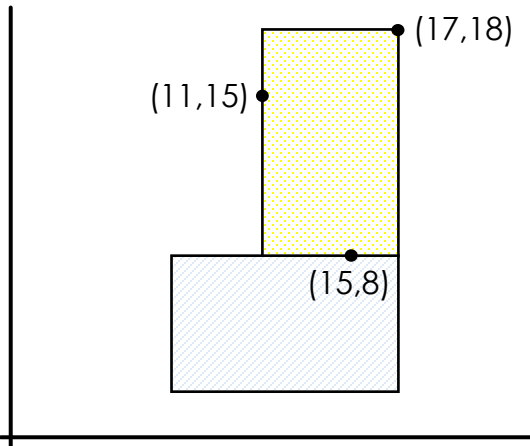
(18,15) (7,2)

Extend: Find the midpoint of each rectangle.

Derive Coordinates

Task E

The rectangles are identical sizes.



Plot the coordinates:

(11,18) (15,2)

(17,11) (9,8)

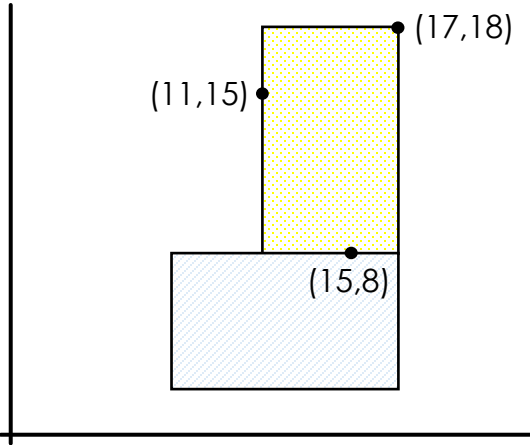
(18,15) (7,2)

Extend: Find the midpoint of each rectangle.

Derive Coordinates

Task E

The rectangles are identical sizes.



Plot the coordinates:

(11,18) (15,2)

(17,11) (9,8)

(18,15) (7,2)

Extend: Find the midpoint of each rectangle.

Task Family: Interpreting Graphs

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: analysing different graph types.



Task A: selecting graph types.



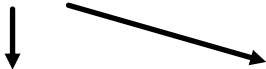
Build 2: worked examples of graphs.



Task B: questions, bar graph and pie charts.

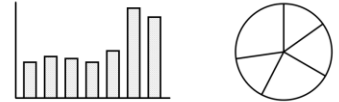


Build 3: interpret and compare line graphs.

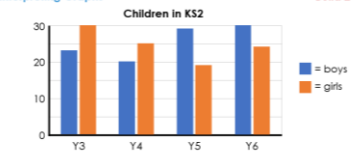


Task C Version 1 or Task C Version 2: questions, line graphs.

Interpreting Graphs **Build 1**
Which of the graphs could show the number of people who attended a Zoo in one week?



Interpreting Graphs **Build 2**



To answer, add 4 bars

What could the question be?

Interpreting Graphs **Build 3**



Answers:

Task A: Groups of won/drawn/lost shown by pie chart or bar graph. Pie chart would compare the sections clearly.

A line graph will show the ongoing change of the temperature in a greenhouse.

Lots of groups of information, so can be shown by a bar graph (hard to compare small groups with a pie chart)

A line graph will show the ongoing growth of the sunflower.

Task B: 29 children go to choir 57 children go to sports clubs

7 more girls than boys at chess club 40% boys at running club (10 out of 25 children)

Lost 14 matches (accept small approximation errors)

8 draws last season, 4 draws this season, 4 more draws (accept small approximation errors)

Task C Version 1 and Version 2: Top left: 11:10am Top right: 6 hours 40 minutes

Bottom left: 7.2°C Bottom right: The temperature is always above 10°C. Having a

narrower scale makes the changes in the temperature easier to see on the graph.

Speed graph: look for a speed above 20km/h for the middle hour. Speed is 0 for 15 minutes. The highest speed in the last 15 minutes, must be more than 20km/h.

Distance graph: start at 0, a slow rise in distance for 30 minutes then a steeper rise for the next hour. The line is horizontal for 15 minutes then is at its steepest for the last 15 minutes, finishing at the top-right corner.

Interpreting Graphs

Task A

Context	Graph Type	Explain your choice:
Graph to show the football matches won, drawn and lost by York Rovers FC last season.	<i>Bar graph</i> <i>Pie chart</i> <i>Line graph</i>	
Graph to show the temperature in the greenhouse on Tuesday.	<i>Bar graph</i> <i>Pie chart</i> <i>Line graph</i>	
Graph to show pets owned by all the children in the class.	<i>Bar graph</i> <i>Pie chart</i> <i>Line graph</i>	
Graph to show the height of a sunflower since the seed was planted.	<i>Bar graph</i> <i>Pie chart</i> <i>Line graph</i>	

Interpreting Graphs

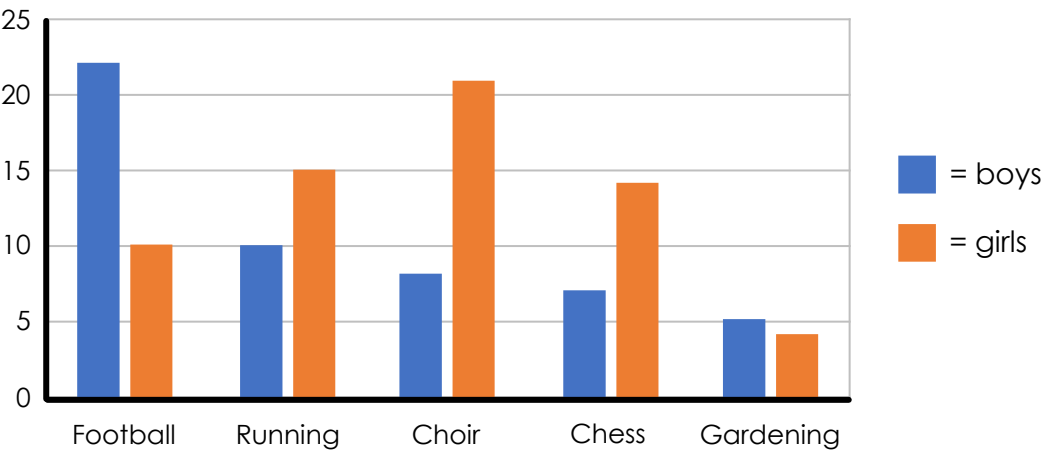
Task A

Context	Graph Type	Explain your choice:
Graph to show the football matches won, drawn and lost by York Rovers FC last season.	<i>Bar graph</i> <i>Pie chart</i> <i>Line graph</i>	
Graph to show the temperature in the greenhouse on Tuesday.	<i>Bar graph</i> <i>Pie chart</i> <i>Line graph</i>	
Graph to show pets owned by all the children in the class.	<i>Bar graph</i> <i>Pie chart</i> <i>Line graph</i>	
Graph to show the height of a sunflower since the seed was planted.	<i>Bar graph</i> <i>Pie chart</i> <i>Line graph</i>	

Interpreting Graphs

Task B

Children at After-School Clubs



How many children go to choir?	How many children go to sports clubs?
How many more girls than boys go to chess club?	What percentage of the children at running club are boys?

Extend: rank the questions by difficulty

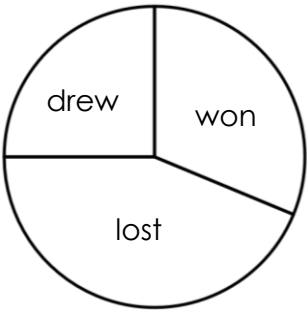
The pie charts show the proportion of matches that Warton Town Football Club won, lost and drew last season and this season.

Last season, Warton Town FC drew 8 matches.

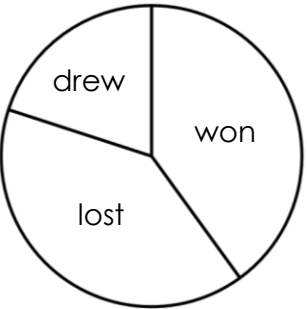
This season, Warton Town FC have played 20 matches.

Warton Town FC lost how many matches last season?
How many more matches did Warton Town FC draw last season than this season?
True or false: Warton Town FC won more matches last season.

Last Season



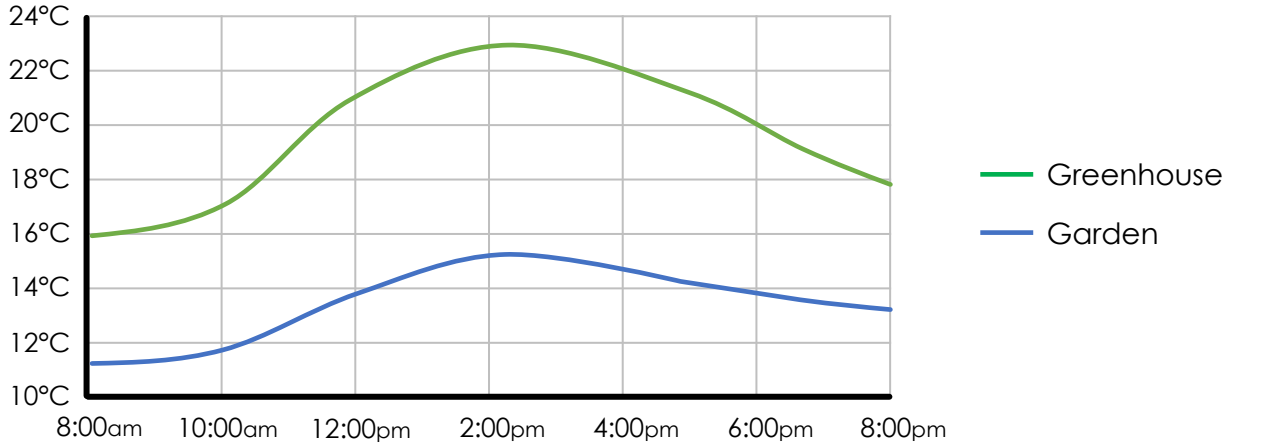
This Season



Interpreting Graphs

Task C Version 1

Garden and Greenhouse Temperatures



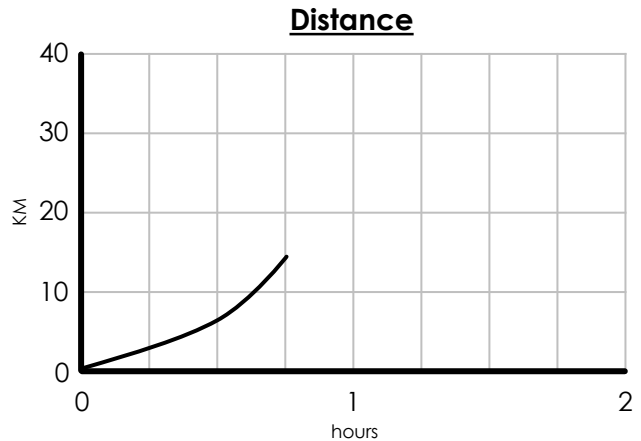
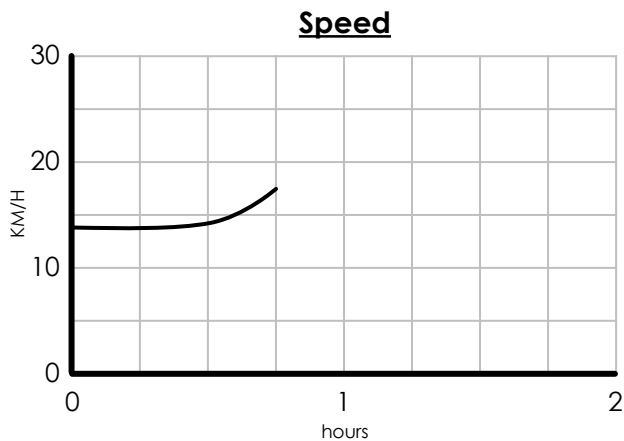
Which Answer? *Explain the mistakes*

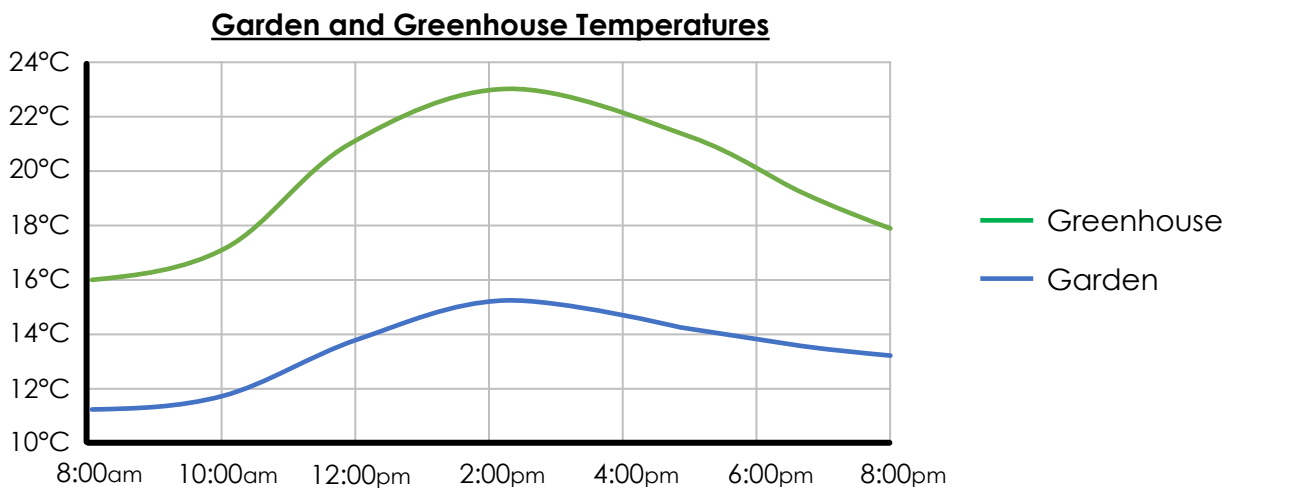
<p>At what time is the temperature in the garden 13°C?</p> <div>10:40am</div> <div>11:10am</div>	<p>For how long is the temperature above 20°C in the greenhouse?</p> <div>11:20am</div> <div>6 hours 40 mins</div>
<p>How much hotter is it in the greenhouse than the garden at 4:00pm?</p> <div>7.2°C</div> <div>22°C</div>	<p>Why does the graph start from 10°C rather than 0°C?</p>

Kelsey went for a 40km bike ride. It took her 2 hours.

For the first 30 minutes, Kelsey cycled slowly. She cycled more quickly for the next hour. Then, Kelsey stopped for 15 minutes. She cycled quickly for the last 15 minutes.

Finish the line graphs to show the possible speed and distance covered by Kelsey on her bike ride.



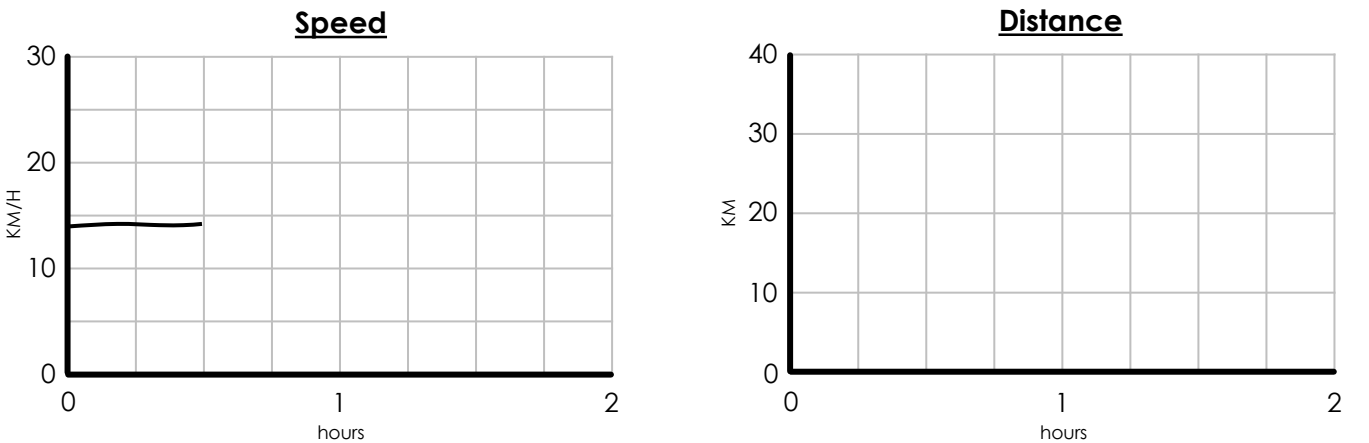


At what time is the temperature in the garden 13°C?	For how long is the temperature above 20°C in the greenhouse?
How much hotter is it in the greenhouse than the garden at 4:00pm?	Why does the graph start from 10°C rather than 0°C?

Kelsey went for a 40km bike ride. It took her 2 hours.

For the first 30 minutes, Kelsey cycled slowly. She cycled more quickly for the next hour. Then, Kelsey stopped for 15 minutes. She cycled quickly for the last 15 minutes.

Complete the line graphs to show the possible speed and distance covered by Kelsey on her bike ride.



Task Family: The Mean

Teacher Guide

[Click here to download the Deconstructing Word Questions – Build-Up file.](#)

This document provides the **Build** tasks for each task family.

Task Family Suggested Route:

Build 1: analyse contexts for using the mean.



Task A: analyse contexts for using the mean.



Build 2: explain mistakes, answers modelled.



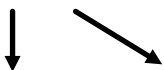
Task B: explain mistakes, answer questions.



Task C: varied fluency questions.



Build 3: slow reveal tasks.



Task D and/or **Task E:** multi-step word questions, Task E is more challenging.

The Mean Build 1

For each example, **can the mean be calculated?**
Why would the mean be calculated?

The mean number of days in a week.

The mean number of baskets scored by a netball player per match.

The mean price of a mango in the supermarket.

The mean happiness you feel each morning.

The mean height of an adult giraffe.

The Mean Build 2

Which Answer?

Here are the shoe sizes for five children:

3, 4, 3, 7, 3

The mean shoe size is size 3

The mean shoe size is size 4

The Mean Build 2

The rugby team Layton Warriors played 3 matches.

Their mean number of points per match was 20

Match 1: 21 points

Match 2: 26 points

Match 3: points

Answers:

Task A: For baby weight and electricity bills, a mean can be calculated and there is a purpose to knowing the mean. Note the distinction from a division calculation where each value is the same (e.g. the cost of each egg). The mean friendliness of a dog can be estimated but not measured!

Task B: Blue: should divide by 4 as there are 4 numbers.

Red: The 3 numbers given have a sum of 20, not an average of 20.

Green: The total cost of all the tickets has not been calculated. There are three adult tickets, not one, and four tickets have been bought.

Task C: (a) 9 (b) 9 (c) Example: 13, 14, 15 (d) 2 (e) 20p (f) 17p

Task D: (a) 32 runs (b) 108 runs (c) 15 points

Task E: 4 answers: 8, 11, 14, 15 8, 12, 13, 15 9, 10, 13, 16 9, 11, 12, 16

Extend: 24 years old

The Mean

Task A

Tick the examples where **the mean can be calculated and is useful**.

- (a) What is the mean weight of a new-born baby?
- (b) A pack of 6 eggs costs £1.20. What is the mean cost of each egg?
- (c) How friendly is the average dog? Give the answer as a mean.
- (d) What is the mean amount of electricity used by each house per month?

For one example, explain how calculating the mean could be useful:

The Mean

Task A

Tick the examples where **the mean can be calculated and is useful**.

- (a) What is the mean weight of a new-born baby?
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For one example, explain how calculating the mean could be useful:

The Mean

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- (a) What is the mean weight of a new-born baby?
- (b) A pack of 6 eggs costs £1.20. What is the mean cost of each egg?
- (c) How friendly is the average dog? Give the answer as a mean.
- (d) What is the mean amount of electricity used by each house per month?

For one example, explain how calculating the mean could be useful:

The Mean

Task B

Explain the mistakes. Give the correct answer.

<p>What is the mean of 7, 5, 9 and 3?</p> <div> $7 + 5 + 9 + 3 = 24$ $24 \div 3 = 8$ </div>	<p>The mistake is...</p> <p>Answer:</p>
<p>Give 3 numbers with a mean of 20.</p> <div> 8, 5 and 7 </div>	<p>The mistake is...</p> <p>Answer:</p>
<p>Adult cinema tickets: £9 each Child cinema tickets: £5 each 3 adults and 1 child go to the cinema. What is the mean cost of each ticket?</p> <div> $£9 + £5 = £14$ $£14 \div 2 = £7$ </div>	<p>The mistake is...</p> <p>Answer:</p>

The Mean

Task B

Explain the mistakes. Give the correct answer.

<p>What is the mean of 7, 5, 9 and 3?</p> <div> $7 + 5 + 9 + 3 = 24$ $24 \div 3 = 8$ </div>	<p>The mistake is...</p> <p>Answer:</p>
<p>Give 3 numbers with a mean of 20.</p> <div> 8, 5 and 7 </div>	<p>The mistake is...</p> <p>Answer:</p>
<p>Adult cinema tickets: £9 each Child cinema tickets: £5 each 3 adults and 1 child go to the cinema. What is the mean cost of each ticket?</p> <div> $£9 + £5 = £14$ $£14 \div 2 = £7$ </div>	<p>The mistake is...</p> <p>Answer:</p>

The Mean

Task C

- (a) Calculate the mean of 12, 7 and 8
- (b) Calculate the mean of 7, 12, 8 and 9
- (c) The mean of three numbers is 14. The numbers could be
- (d) The mean of these numbers is 6:
- (e) Bananas cost 15p each. Apples cost 25p each.
What is the mean cost per piece of fruit?
- (f) Bananas cost 15p each. Apples cost 25p each.
Tim buys 4 bananas and an apple.
What is the mean cost per piece of fruit?

The Mean

Task C

- (a) Calculate the mean of 12, 7 and 8
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The Mean

Task C

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What is the mean cost per piece of fruit?
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Tim buys 4 bananas and an apple.
What is the mean cost per piece of fruit?

The Mean

Task D

- (a) Zack played 5 cricket matches, scoring a mean of 30 runs per match. These were his scores in his first four matches: 38, 5, 24, 12

How many runs did Zack score in his fifth match?

- (b) Helen played 4 cricket matches, scoring a mean of 32 runs per match. These were her scores in her first three matches: 7, 12, 1

How many runs did Helen score in her fourth match?

- (c) Amy played 3 basketball matches, scoring a mean of 14 points per match. Amy scored 6 more points in her first match than her second match. She scored 18 points in her third match.

How many points did Amy score in her first match?

The Mean

Task D

- (a) Zack played 5 cricket matches, scoring a mean of 30 runs per match. These were his scores in his first four matches: 38, 5, 24, 51

How many runs did Zack score in his fifth match?

- (b) Helen played 4 cricket matches, scoring a mean of 32 runs per match. These were her scores in her first three matches: 7, 12, 1

How many runs did Helen score in her fourth match?

- (c) Amy played 3 basketball matches, scoring a mean of 14 points per match. Amy scored 6 more points in her first match than her second match. She scored 18 points in her third match.

How many points did Amy score in her first match?

The Mean

Task E

The mean age of four brothers is 12 years old.

The difference in age between the youngest and the oldest brother is 7 years.

All the brothers are different ages.

Give the possible ages of the brothers.

Level 1: Find a possible answer

Level 2: Find different possible answers

Level 3: Find all the possible answers

Extend: The mean age of the four people in a room was 14. Then, Fred walked into the room. Now the mean age of the people in the room is 16.

How old is Fred?

The Mean

Task E

The mean age of four brothers is 12 years old.

The difference in age between the youngest and the oldest brother is 7 years.

All the brothers are different ages.

Give the possible ages of the brothers.

Level 1: Find a possible answer

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Extend: The mean age of the four people in a room was 14. Then, Fred walked into the room. Now the mean age of the people in the room is 16.

How old is Fred?

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