Use What You Know — Year 3 Maths

Year 3 Maths · 50 challenge cards

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Five-card sample · screen

Five start-ready cards. Each challenge is followed by its answer.

- One card per page; the answer is on the next page.
- Choose by readiness using the Tutor Notes. The deck has selective curriculum coverage.

Fifty short maths challenges that ask children to use something they already know in a new situation. Selected learning for Year 3 in England. Start with the cards marked start-ready, then choose other cards by the teaching they need.

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UseWhatYouKnow-Y3-Maths-Sample-Screen.pdf

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Checking the check

Jo works out 46 + 38 and gets 84. To check, she works out 84 – 38 and gets 56. “They don’t match, so my adding was wrong,” she says.

Which calculation is wrong? What is its correct answer?

Answer

The mistake is in the check: 84 – 38 is 46, not 56. Her adding was right.

How to work it out

Test the first sum: 46 + 30 = 76, and 8 more makes 84, so the adding was right. Now do the check slowly: 84 – 30 = 54, and 54 – 8 = 46. The check should have come to 46, which matches the number Jo started with. The slip was in the subtraction.

What mattered

A check can go wrong too. When two answers do not match, either of them could hold the mistake.

Three votes to come

A class is voting for a pet. Three children have not voted yet. The pet with the most votes wins.

Pet	Votes so far
Fish	7
Hamster	9
Snail	4

Can Fish still win? Can Snail still win? Explain how you know.

Answer

Fish can still win: three more votes would give it 10, which beats 9. Snail cannot: even with three more votes it has only 7.

How to work it out

Give all three missing votes to one pet and see whether it gets past the leader. Fish would have 7 + 3 = 10, and 10 is more than Hamster's 9, so Fish can still win. Snail would have 4 + 3 = 7, and 7 is fewer than 9, so Snail cannot win whatever happens.

What mattered

To see whether something is still possible, test the best case: all the votes that are left.

One turn instead of three

A toy robot faces the door. It makes a quarter turn clockwise, then a half turn clockwise, then a quarter turn anticlockwise.

Which single turn does the same job as all three?

Answer

a half turn

How to work it out

The quarter turn clockwise and the quarter turn anticlockwise undo each other. Only the half turn is left, so the robot ends up facing directly away from the door. A half turn in either direction does the same job.

What mattered

Equal turns in opposite directions cancel out, so you only need to keep what is left.

Count the change

Lena buys a comic for 65p and a sticker for 28p. She pays with a £1 coin. The shopkeeper gives her a 5p coin and a 1p coin.

How much more change should Lena have been given?

Answer

1p

How to work it out

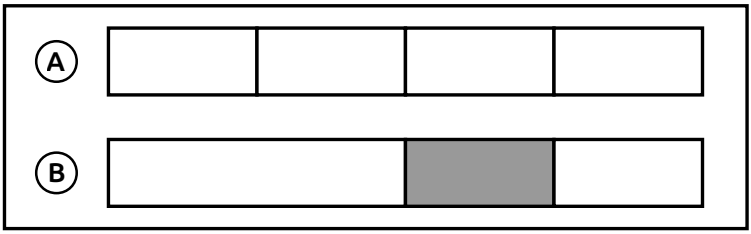
The two things cost 65p + 28p = 93p. Change from £1 is 100p − 93p = 7p. Lena was given 5p + 1p = 6p, so she is 1p short.

What mattered

You needed the cost of both things together before you could find the change, and then you had to compare it with the coins she was given.

One of three parts

Bar A is split into 4 equal parts. Bar B is the same length. Tom says, "One of bar B's three parts is shaded, so $\frac{1}{3}$ of bar B is shaded."



What fraction of bar B is really shaded? Explain Tom's mistake.

Answer

$^1/_4$. Bar B's three parts are not equal. The shaded part is the same size as one of bar A's quarters.

How to work it out

A fraction counts equal parts. Bar B has three parts, but they are not equal: one is as long as the other two together. Compare bar B with bar A above it. The shaded part of bar B lines up exactly with one of bar A's four equal parts, so it is $^1/_4$ of the bar. Four parts of that size would fill bar B.

What mattered

Fractions are about equal parts. Counting parts only works when every part is the same size.