

Analysing reasoning and solutions

Comparing different solution strategies

<p>Paint prices</p> <p>1 litre of paint costs £15. What does 0.6 litres cost?</p>	<p>Chris: It is just over a half, so it would be about £8.</p> <p>Sam: I would divide 15 by 0.6. You want a smaller answer.</p> <p>Rani: I would say one fifth of a litre is £3, so 0.6 litres will be three times as much, so £9.</p> <p>Tim: I would multiply 15 by 0.6.</p>
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Correcting mistakes in reasoning

- In January, fares went up by 20%.
- In August, they went down by 20%.
- Sue claims that:
'The fares are now back to what they were before the January increase.'
- Do you agree?

Here is a discussion between four students. They are discussing a common percentages misconception.

Harriet: That's wrong, because they went up by 20%, say you had £100, that's 5, no 10.
Andy: Yes, £10 so it's 90 quid, no 20% so that's £80. 20% of 100 is 80 – no, 20.
Harriet: Five twenties are in 100.
Dan: Say the fare was 100 and it went up by 20%, that's 120.
Sara: Then it went back down, so that's the same.
Harriet: No, because 20% of 120 is more than 20% of 100. It will go down by more so it will be less. Are you with me?
Andy: Would it go down by more?
Harriet: Yes, because 20% of 120 is more than 20% of 100.
Andy: What is 20% of 120?
Dan: 96.
Harriet: It will go down by more so it will be less than 100.
Dan: It will go to 96.