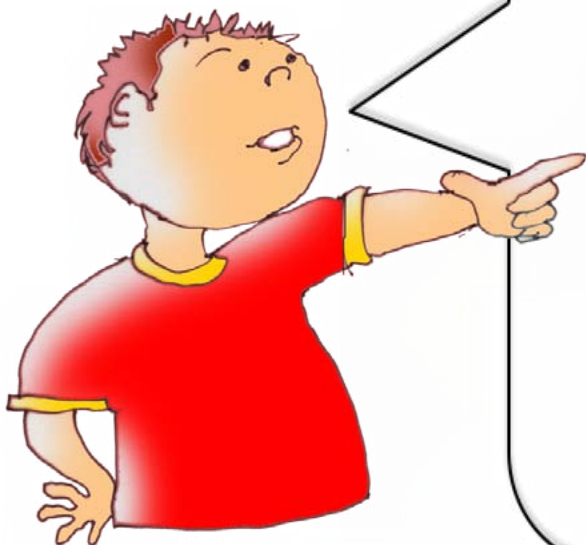


How can you measure exactly 4 litres of water using a 3L, a 5 L and an unmarked container?



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# Some solutions to the 4 litre problem

## Ellen's Strategy

Look for a difference of 4 litres.

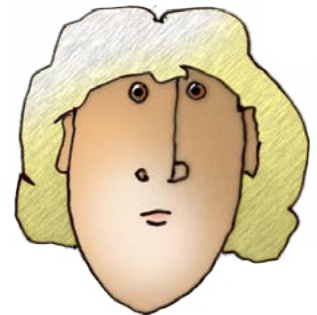
e.g.  $2 \times 3 \text{ L} = 6 \text{ L}$  and  $2 \times 5 \text{ L} = 10 \text{ L}$

The difference is 4 L. Therefore fill the 5 L container twice and empty this into the large third container. Now use this third container to fill the 3 L container once. Tip out this water then fill it a second time. There should now be exactly 4 L remaining in the third container.



## Sam's Strategy

Put the 3 L container into a large plastic bowl. Fill the 5 L container and pour this into the 3 L container until it is full. If you keep pouring the overflow must be exactly 2 L. Empty the 3 L into the 5 L and top it up with extra water from the tap. Repeat the whole process. You should now have 4 L in the overflow bowl and 3 L in the 3 L container.



## Minh's Strategy

Fill the 5 L container. Pour the water from this into the 3 L container then empty the 3 L. Pour the extra 2 L in the 5 L into a third container. Repeat so that you now have exactly 4 L in the third container.



## Shaynaz's Strategy

Fill the 5 L container. Pour the water from this into the 3 L container then empty the 3 L container. Now pour the remaining 2 L in the 5 L container into the 3 L container. Fill the 5 L container again. Pour from the 5 L to fill the 3 L container (you add an extra 1 L) and you will now have exactly 4 L left in the 5 L container.

