

# gridlocks – can you unlock the grid?

## Esters from alcohols and acids

Before you answer the puzzles below fill in the table of esters using:

ethylmethanoate      methylpropanoate      propylethanoate      butylbutanoate

Alcohol from which the ester is made	Carboxylic acid from which the ester is made			
	methanoic acid	ethanoic acid	propanoic acid	butanoic acid
methanol	methylethanoate	methylmethanoate		methylbutanoate
ethanol		ethylethanoate	ethylpropanoate	ethylbutanoate
propanol	propylmethanoate		propylpropanoate	propylbutanoate
butanol	butylmethanoate	butylethanoate	butylpropanoate	

### Gridlock 1

Each row, column and 2 x 2 box contains an ester made from each of the four alcohols. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

made from methanoic acid		made from ethanoic acid	
	methylmethanoate		butylethanoate
			methylethanoate
ethylethanoate			propylmethanoate
made from ethanoic acid		made from methanoic acid	

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## Gridlock 2

Each row column and 2 x 2 box contains an ester made from each of the four alcohols.

made from propanoic acid		made from butanoic acid	
ethylpropanoate			methylbutanoate
			butylpropanoate
propylbutanoate			
made from butanoic acid		made from propanoic acid	

## Gridlock 3

Each row column and 2 x 2 box contains an ester made from each of the four alcohols.

made from methanoic acid		made from ethanoic acid	
ethylmethanoate			
		butylethanoate	
		methylbutanoate	
	propylpropanoate		
made from propanoic acid		made from butanoic acid	