

### Esters from alcohols and acids

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

ethylmethanoate methylpropanoate propylethanoate butylbutanoate

Alcohol from	Carboxylic acid from which the ester is made				
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		

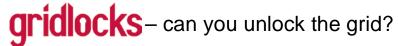
#### **Gridlock 1**

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 m	ethanoic acid







# **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.

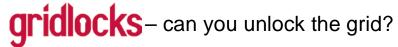
made from methanoic acid		made from ethanoic acid	
ethylmethanoate			
		butylethanoate	
		methylbutanoate	
	propylpropanoate		

made from propanoic acid

made from butanoic acid







# Esters from alcohols and acids - answers

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

ethylmethanoate methylpropanoate propylethanoate butylbutanoate

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

#### Gridlock 1 - answers

made from methanoic acid		made from ethanoic acid	
propylmethanoate	methylmethanoate	ethylethanoate	butylethanoate
butylmethanoate	ethylmethanoate	propylethanoate	methylethanoate
methylethanoate	propylethanoate	butylmethanoate	ethylmethanoate
ethylethanoate	butylethanoate	methylmethanoate	propylmethanoate
made from ethanoic acid		made from methanoic acid	





# gridlocks - can you unlock the grid?

# Gridlock 2 – answers

made from propanoic acid		made from butanoic acid	
ethylpropanoate	propylpropanoate	butylbutanoate	methylbutanoate
butylpropanoate	methylpropanoate	ethylbutanoate	propylbutanoate
methylbutanoate	ethylbutanoate	propylpropanoate	butylpropanoate
propylbutanoate	butylbutanoate	methylpropanoate	ethylpropanoate
made from butanoic acid		made from propanoic acid	

### Gridlock 3 - answers

made from methanoic acid		made from ethanoic acid	
ethylmethanoate	butylmethanoate	propylethanoate	methylethanoate
propylmethanoate	methylmethanoate	butylethanoate	ethylethanoate
butylpropanoate	ethylpropanoate	methylbutanoate	propylbutanoate
methylpropanoate	propylpropanoate	ethylbutanoate	butylbutanoate
made from propanoic acid		made from b	outanoic acid



