

gridlocks – can you unlock the grid?

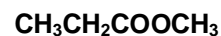
Naming esters

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

ethylmethanoate



propylethanoate



name	structural formula
methylethanoate	$\text{CH}_3\text{COOCH}_3$
	$\text{HCOOCH}_2\text{CH}_3$
methylpropanoate	
propylmethanoate	
ethylpropanoate	$\text{CH}_3\text{CH}_2\text{COOCH}_2\text{CH}_3$
	$\text{CH}_3\text{COO}(\text{CH}_2)_2\text{CH}_3$

Gridlock 1

Each row, column and 2 x 2 box contains the first four esters above. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

name		structural formula	
ethylmethanoate			$\text{CH}_3\text{COOCH}_3$
			propylmethanoate
$\text{CH}_3\text{CH}_2\text{COOCH}_3$			
structural formula		name	

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Gridlock 2

Each row, column and 2 x 2 box contains the bottom four esters in the table.

name		structural formula	
propylethanoate			$\text{CH}_3\text{CH}_2\text{COOCH}_2\text{CH}_3$
	$\text{CH}_3\text{CH}_2\text{COOCH}_3$		propylmethanoate
structural formula		name	

Gridlock 3

Each row, column and 2 x 2 box contains four **new** esters.

name		structural formula	
ethylethanoate			
		$\text{CH}_3(\text{CH}_2)_2\text{COOCH}_2\text{CH}_3$	
		methylmethanoate	
	$\text{CH}_3\text{CH}_2\text{COO}(\text{CH}_2)_2\text{CH}_3$		
structural formula		name	

Naming esters – answers

name	structural formula
methylethanoate	$\text{CH}_3\text{COOCH}_3$
ethylmethanoate	$\text{HCOOCH}_2\text{CH}_3$
methylpropanoate	$\text{CH}_3\text{CH}_2\text{COOCH}_3$
propylmethanoate	$\text{HCOO}(\text{CH}_2)_2\text{CH}_3$
ethylpropanoate	$\text{CH}_3\text{CH}_2\text{COOCH}_2\text{CH}_3$
propylethanoate	$\text{CH}_3\text{COO}(\text{CH}_2)_2\text{CH}_3$

Gridlock 1 – answers

name		structural formula	
ethylmethanoate	methylpropanoate	$\text{HCOO}(\text{CH}_2)_2\text{CH}_3$	$\text{CH}_3\text{COOCH}_3$
propylmethanoate	methylethanoate	$\text{HCOOCH}_2\text{CH}_3$	$\text{CH}_3\text{CH}_2\text{COOCH}_3$
$\text{CH}_3\text{COOCH}_3$	$\text{HCOOCH}_2\text{CH}_3$	methylpropanoate	propylmethanoate
$\text{CH}_3\text{CH}_2\text{COOCH}_3$	$\text{HCOO}(\text{CH}_2)_2\text{CH}_3$	methylethanoate	ethylmethanoate
structural formula			name

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Gridlock 2 – answers

name		structural formula	
propylethanoate	propylmethanoate	$\text{CH}_3\text{CH}_2\text{COOCH}_3$	$\text{CH}_3\text{CH}_2\text{COOCH}_2\text{CH}_3$
methylpropanoate	ethylpropanoate	$\text{HCOO}(\text{CH}_2)_2\text{CH}_3$	$\text{CH}_3\text{COO}(\text{CH}_2)_2\text{CH}_3$
$\text{CH}_3\text{CH}_2\text{COOCH}_2\text{CH}_3$	$\text{CH}_3\text{CH}_2\text{COOCH}_3$	propylethanoate	propylmethanoate
$\text{HCOO}(\text{CH}_2)_2\text{CH}_3$	$\text{CH}_3\text{COO}(\text{CH}_2)_2\text{CH}_3$	ethylpropanoate	methylpropanoate
structural formula		name	

Gridlock 3 – answers

name		structural formula	
ethylethanoate	ethylbutanoate	$\text{CH}_3\text{CH}_2\text{COO}(\text{CH}_2)_2\text{CH}_3$	HCOOCH_3
propylpropanoate	methylmethanoate	$\text{CH}_3(\text{CH}_2)_2\text{COOCH}_2\text{CH}_3$	$\text{CH}_3\text{COOCH}_2\text{CH}_3$
$\text{CH}_3(\text{CH}_2)_2\text{COOCH}_2\text{CH}_3$	$\text{CH}_3\text{COOCH}_2\text{CH}_3$	methylmethanoate	propylpropanoate
HCOOCH_3	$\text{CH}_3\text{CH}_2\text{COO}(\text{CH}_2)_2\text{CH}_3$	ethylethanoate	ethylbutanoate
structural formula		name	