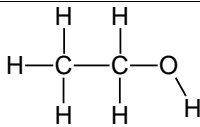


# gridlocks – can you unlock the grid?

## Alcohols

Before you answer the puzzles below fill in the table of alcohols:

Name	Number of carbons	Formula	Displayed formula
methanol	1	CH <sub>3</sub> OH	
ethanol	2	C <sub>2</sub> H <sub>5</sub> OH	
propanol	3	C <sub>3</sub> H <sub>7</sub> OH	
butanol	4	C <sub>4</sub> H <sub>9</sub> OH	

### Gridlock 1

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

number of carbons		name	
2			methanol
	propanol		4
name		number of carbons	

# gridlocks – can you unlock the grid?

## Gridlock 2

Each row, column and 2 x 2 box contains information about the four alcohols.

name		formula	
ethanol			
		C <sub>4</sub> H <sub>9</sub> OH	
		$  \begin{array}{c}  \text{H} \\    \\  \text{H}-\text{C}-\text{O}-\text{H} \\    \\  \text{H}  \end{array}  $	
	C <sub>3</sub> H <sub>7</sub> OH		
formula		displayed formula	

## Gridlock 3

Each row, column and 2 x 2 box contains information about the four alcohols.

name		displayed formula	
	methanol		$  \begin{array}{ccccccc}  & \text{H} & \text{H} & \text{H} & \text{H} & & \\  &   &   &   &   & & \\  \text{H} & -\text{C} & -\text{C} & -\text{C} & -\text{C} & -\text{O} & -\text{H} \\  &   &   &   &   & & \\  & \text{H} & \text{H} & \text{H} & \text{H} & &   \end{array}  $
			$  \begin{array}{c}  \text{H} \\    \\  \text{H}-\text{C}-\text{O}-\text{H} \\    \\  \text{H}  \end{array}  $
$  \begin{array}{c}  \text{H} \\    \\  \text{H}-\text{C}-\text{O}-\text{H} \\    \\  \text{H}  \end{array}  $			
$  \begin{array}{ccc}  \text{H} & \text{H} & \\    &   & \\  \text{H}-\text{C} & -\text{C} & -\text{O}-\text{H} \\    &   & \\  \text{H} & \text{H} &   \end{array}  $			propanol
displayed formula		name	

## Alcohols – answers

Name	Number of carbons	Formula	Displayed formula
methanol	1	CH <sub>3</sub> OH	<pre>       H         H — C — O — H               H           </pre>
ethanol	2	C <sub>2</sub> H <sub>5</sub> OH	<pre>       H   H             H — C — C — O — H                   H   H           </pre>
propanol	3	C <sub>3</sub> H <sub>7</sub> OH	<pre>       H   H   H                 H — C — C — C — O — H                       H   H   H           </pre>
butanol	4	C <sub>4</sub> H <sub>9</sub> OH	<pre>       H   H   H   H                     H — C — C — C — C — O — H                           H   H   H   H           </pre>

## Gridlock 1 – answers

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

number of carbons		name	
2	4	propanol	methanol
3	1	butanol	ethanol
methanol	propanol	2	4
butanol	ethanol	1	3
name		number of carbons	

# gridlocks – can you unlock the grid?

## Gridlock 2 – answers

Each row, column and 2 x 2 box contains information about the four alcohols.

name		formula	
ethanol	butanol	$C_3H_7OH$	$CH_3OH$
propanol	methanol	$C_4H_9OH$	$C_2H_5OH$
$C_4H_9OH$	$C_2H_5OH$	$\begin{array}{c} H \\   \\ H-C-O \\   \quad   \\ H \quad H \end{array}$	$\begin{array}{cccc} H & H & H & \\   &   &   & \\ H-C & -C & -C & -O \\   &   &   &   \\ H & H & H & H \end{array}$
$CH_3OH$	$C_3H_7OH$	$\begin{array}{ccc} H & H & \\   &   & \\ H-C & -C & -O \\   &   &   \\ H & H & H \end{array}$	$\begin{array}{cccc} H & H & H & H \\   &   &   &   \\ H-C & -C & -C & -C \\   &   &   &   \\ H & H & H & H \end{array}$
formula		displayed formula	

## Gridlock 3 – answers

Each row, column and 2 x 2 box contains information about the four alcohols.

name		displayed formula	
propanol	methanol	$\begin{array}{ccc} H & H & \\   &   & \\ H-C & -C & -O \\   &   &   \\ H & H & H \end{array}$	$\begin{array}{cccc} H & H & H & H \\   &   &   &   \\ H-C & -C & -C & -C \\   &   &   &   \\ H & H & H & H \end{array}$
butanol	ethanol	$\begin{array}{ccc} H & H & H \\   &   &   \\ H-C & -C & -C \\   &   &   \\ H & H & H \end{array}$	$\begin{array}{c} H \\   \\ H-C-O \\   \quad   \\ H \quad H \end{array}$
$\begin{array}{c} H \\   \\ H-C-O \\   \quad   \\ H \quad H \end{array}$	$\begin{array}{ccc} H & H & H \\   &   &   \\ H-C & -C & -C \\   &   &   \\ H & H & H \end{array}$	butanol	ethanol
$\begin{array}{ccc} H & H & \\   &   & \\ H-C & -C & -O \\   &   &   \\ H & H & H \end{array}$	$\begin{array}{cccc} H & H & H & H \\   &   &   &   \\ H-C & -C & -C & -C \\   &   &   &   \\ H & H & H & H \end{array}$	methanol	propanol
displayed formula		name	