

# gridlocks – can you unlock the grid?

## Atomic structure (16–18)

Before you answer the Gridlocks below, fill in the table of isotopes:

isotope	number of protons	neutrons	electrons
$^{19}_9\text{F}$			
$^{35}_{17}\text{Cl}$			2,8,7
$^2_1\text{H}$			
$^7_3\text{Li}$			

### Gridlock 1

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

isotope		number of protons	
$^{35}_{17}\text{Cl}$			
		3	
		2,7	
	1		
neutrons		electrons	

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## Gridlock 2

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

isotope		number of protons	
	$^{19}_9\text{F}$		3
			9
17			1
number of protons		neutrons	

## Gridlock 3

This Gridlock is based on 4 different elements; you will have to work out what they are.

element		number of protons	
O			6
			2,8,1
11			
number of protons		electrons	

**Atomic structure (16–18) – answers**

isotope	number of protons	neutrons	electrons
$^{19}_9\text{F}$	9	10	2,7
$^{35}_{17}\text{Cl}$	17	18	2,8,7
$^2_1\text{H}$	1	1	1
$^7_3\text{Li}$	3	4	2,1

**Gridlock 1 – answers**

isotope		number of protons	
$^{35}_{17}\text{Cl}$	$^7_3\text{Li}$	1	9
$^2_1\text{H}$	$^{19}_9\text{F}$	3	17
4	18	2,7	1
10	1	2,8,7	2,1
neutrons		electrons	

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## Gridlock 2 – answers

isotope		number of protons	
${}^2_1\text{H}$	${}^{19}_9\text{F}$	17	3
${}^7_3\text{Li}$	${}^{35}_{17}\text{Cl}$	1	9
9	1	4	18
17	3	10	1
number of protons		neutrons	

## Gridlock 3 – answers

element		number of protons	
O	Na	2	6
He	C	11	8
6	2	2,6	2,8,1
11	8	2,4	2
number of protons		electrons	