

Functional groups

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

ester	ketone	R-O-R	R-OH	nitrile	acid anhydride
Functional group	Name	Functional group	Name	Functional group	Name
R-CN		R-NH ₂	amine		
	carboxylate ion				
			amide		
	aldehyde		carboxylic acid		
		R-X	haloalkane		
	alcohol		ether		

Gridlock 1

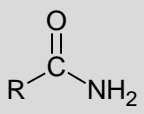
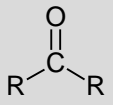
Each row, column and 2 x 2 box contains the functional groups ester, carboxylate ion, acid anhydride and aldehyde. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

functional group		name	
			aldehyde
		ester	
	acid anhydride		
name			functional group

gridlocks – can you unlock the grid?

Gridlock 2

Each row, column and 2 x 2 box contains an amide, amine, ketone and nitrile.

functional group		name	
			
		nitrile	
			
	amine		
name		functional group	

Gridlock 3

Each row, column and 2 x 2 box contains an alcohol, carboxylic acid, haloalkane and ether.

functional group		name	
	R-OH		ether
			alcohol
carboxylic acid			R-X
name		functional group	

Functional groups – answers

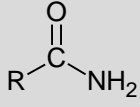
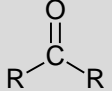
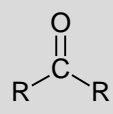
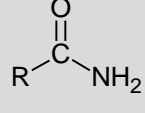
Functional group	Name	Functional group	Name
R-CN	nitrile	R-NH ₂	amine
	carboxylate ion		ester
	acid anhydride		amide
	aldehyde		carboxylic acid
	ketone	R-X	haloalkane
R-OH	alcohol	R-O-R	ether

Gridlock 1 – answers

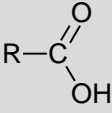
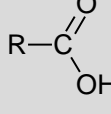
functional group		name	
		acid anhydride	aldehyde
		ester	carboxylate ion
carboxylate ion	acid anhydride		
aldehyde	ester		
name		functional group	

gridlocks – can you unlock the grid?

Gridlock 2 – answers

functional group		name	
	R-CN	amine	ketone
R-NH ₂		nitrile	amide
nitrile	amide		R-NH ₂
ketone	amine		R-CN
name		functional group	

Gridlock 3 – answers

functional group		name	
R-X	R-OH	carboxylic acid	ether
R-O-R		haloalkane	alcohol
alcohol	haloalkane	R-O-R	
carboxylic acid	ether	R-OH	R-X
name		functional group	