

gridlocks – can you unlock the grid?

Acids and alkalis

Before you answer the gridlocks below fill in the table about acids and alkalis using:

14 green orange hydrochloric acid red

Type of substance	Typical pH	Colour in universal indicator	Example
strong acid	1		
weak acid	4		ethanoic acid
weak alkali	10	light blue	ammonia solution
strong alkali		purple	sodium hydroxide
neutral	7		water

Gridlock 1

Each row, column and 2 x 2 box can only contain one piece of information about each of the first four types of substance. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

type of substance		typical pH	
weak acid			
		14	
		strong acid	
	10		
typical pH		type of substance	

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Gridlock 2

Each row, column and 2 x 2 box can only contain one piece of information about each of the first four types of substance.

type of substance		typical pH	
	strong acid		14
			1
orange			ammonia solution
colour in universal indicator		example	

Gridlock 3

In gridlock 3, water has replaced one of the other substances.

type of substance		typical pH	
weak acid			1
			sodium hydroxide
green			
colour in universal indicator		example	

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Acids and alkalis – answers

Before you answer the gridlocks below fill in the table about acids and alkalis using:

14 green orange hydrochloric acid red

Type of substance	Typical pH	Colour in universal indicator	Example
strong acid	1	red	hydrochloric acid
weak acid	4	orange	ethanoic acid
weak alkali	10	light blue	ammonia solution
strong alkali	14	purple	sodium hydroxide
neutral	7	green	water

Gridlock 1 – answers

Each row, column and 2 x 2 box can only contain one piece of information about each of the first four types of substance. Use your problem solving skills and the answers in the table above to fill in the blank boxes.

type of substance		typical pH	
weak acid	strong alkali	10	1
weak alkali	strong acid	14	4
14	4	strong acid	weak alkali
1	10	weak acid	strong alkali
typical pH		type of substance	

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Gridlock 2 – answers

Each row, column and 2 x 2 box can only contain one piece of information about each of the first four types of substance.

type of substance		typical pH	
weak alkali	strong acid	4	14
strong alkali	weak acid	10	1
red	light blue	sodium hydroxide	ethanoic acid
orange	purple	hydrochloric acid	ammonia solution
colour in universal indicator		example	

Gridlock 3 – answers

In gridlock 3, water has replaced one of the other substances.

type of substance		typical pH	
weak acid	neutral	14	1
strong alkali	strong acid	4	7
red	orange	water	sodium hydroxide
green	purple	hydrochloric acid	ethanoic acid
colour in universal indicator		example	