

gridlocks – can you unlock the grid?

Compounds ending in 'ate'

If a compound has 3 elements in it with oxygen as one of them the names often end in 'ate' (if hydrogen is with the oxygen it can be a hydroxide rather than an 'ate'). Before you answer the puzzles below fill in the table of compounds using:

| silver nitrate | copper sulfate | zinc carbonate | sodium chlorate |
|---------------------|---------------------------------|----------------|-----------------|
| Name | Elements in the compound | | |
| calcium carbonate | calcium, carbon and oxygen | | |
| | copper, sulfur and oxygen | | |
| | silver, nitrogen and oxygen | | |
| sodium phosphate | sodium, phosphorus and oxygen | | |
| potassium manganate | potassium, manganese and oxygen | | |
| | sodium, chlorine and oxygen | | |
| potassium chromate | potassium, chromium and oxygen | | |
| | zinc, carbon and oxygen | | |

Gridlock 1

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

| compound | | made up of the elements | |
|-------------------------|------------------|-------------------------|-------------------------------|
| calcium carbonate | | | sodium, phosphorus and oxygen |
| | sodium phosphate | | |
| | | | calcium carbonate |
| | | copper sulfate | |
| made up of the elements | | compound | |

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Gridlock 2

Each row, column and 2 x 2 box contains information about each of the last four compounds in the table.

| compound | | made up of the elements | |
|-------------------------|--------------------------------|-------------------------|--|
| sodium chlorate | | | |
| | | zinc, carbon and oxygen | |
| | | potassium manganate | |
| | potassium, chromium and oxygen | | |
| made up of the elements | | compound | |

Gridlock 3

You will need to identify which four compounds are in this puzzle.

| compound | | made up of the elements | |
|---------------------------|----------------|-------------------------|---------------------------------|
| | zinc carbonate | | potassium, manganese and oxygen |
| | | | zinc, carbon and oxygen |
| | | | |
| copper, sulfur and oxygen | | | silver nitrate |
| made up of the elements | | compound | |

Compounds ending in 'ate' – answers

If a compound has 3 elements in it with oxygen as one of them the names often end in 'ate' (if hydrogen is with the oxygen it can be a hydroxide rather than an 'ate'). Before you answer the puzzles below fill in the table of compounds using:

| silver nitrate | copper sulfate | zinc carbonate | sodium chlorate |
|---------------------|----------------|---------------------------------|-----------------|
| Name | | Elements in the compound | |
| calcium carbonate | | calcium, carbon and oxygen | |
| copper sulfate | | copper, sulfur and oxygen | |
| silver nitrate | | silver, nitrogen and oxygen | |
| sodium phosphate | | sodium, phosphorus and oxygen | |
| potassium manganate | | potassium, manganese and oxygen | |
| sodium chlorate | | sodium, chlorine and oxygen | |
| potassium chromate | | potassium, chromium and oxygen | |
| zinc carbonate | | zinc, carbon and oxygen | |

Puzzle 1 – answers

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

| compound | | made up of the elements | |
|-------------------------------|-----------------------------|-----------------------------|-------------------------------|
| calcium carbonate | copper sulfate | silver, nitrogen and oxygen | sodium, phosphorus and oxygen |
| silver nitrate | sodium phosphate | calcium, carbon and oxygen | copper, sulfur and oxygen |
| copper, sulfur and oxygen | silver, nitrogen and oxygen | sodium phosphate | calcium carbonate |
| sodium, phosphorus and oxygen | calcium, carbon and oxygen | copper sulfate | silver nitrate |
| made up of the elements | | compound | |

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Puzzle 2 – answers

Each row, column and 2 x 2 box contains information about each of the last four compounds in the table.

| compound | | made up of the elements | |
|---------------------------------|--------------------------------|--------------------------------|---------------------------------|
| sodium chlorate | zinc carbonate | potassium, chromium and oxygen | potassium, manganese and oxygen |
| potassium chromate | potassium manganate | zinc, carbon and oxygen | sodium chlorine and oxygen |
| zinc, carbon and oxygen | sodium, chlorine and oxygen | potassium manganate | potassium chromate |
| potassium, manganese and oxygen | potassium, chromium and oxygen | sodium chlorate | zinc carbonate |
| made up of the elements | | compound | |

Puzzle 3 – answers

You will need to identify which four compounds are in this puzzle.

| compound | | made up of the elements | |
|---------------------------|---------------------------------|-----------------------------|---------------------------------|
| silver nitrate | zinc carbonate | copper, sulfur and oxygen | potassium, manganese and oxygen |
| potassium manganate | copper sulfate | silver, nitrogen and oxygen | zinc, carbon and oxygen |
| zinc, carbon and oxygen | silver, nitrogen and oxygen | potassium manganate | copper sulfate |
| copper, sulfur and oxygen | potassium, manganese and oxygen | zinc carbonate | silver nitrate |
| made up of the elements | | compound | |