**CC8 Revision Mat**

Describe what happens to the acidity and pH of a solution as more hydrogen ions are added

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Describe what happens to the alkalinity and pH of a solution as more hydroxide ions are added

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……………………………………………………………………………………..

What can be said about the concentration of ions in a neutral solution?

……………………………………………………………………………………..

|  |  |
| --- | --- |
| Ion | Formula |
| Chloride |  |
| Oxide |  |
| Hydroxide |  |
| Nitrate |  |
| Sulfate |  |

|  |  |
| --- | --- |
| Common acid | Formula |
|  | HCl |
| Sulfuric acid |  |
| Nitric acid |  |

|  |  |
| --- | --- |
| Common alkali | Formula |
|  | NaOH |
| Potassium hydroxide |  |
| Calcium hydroxide |  |

Looking at acids: (Higher)

Calculate the concentration if 5g is dissolved in 50cm3

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What is a concentrated solution?

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……………………………………………………………………………………..



How many more times concentrated is a solution of pH 0 compared with a solution of pH 3? …………………………………………………………………………

Explain the difference between a strong and a weak acid.

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Explain how a concentrated solution of a weak acid could have the same pH and similar reactions to a dilute solution of a weak acid

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Acids, Alkalis and indicators

|  |  |
| --- | --- |
| Type of solution | pH |
| Acid |  |
| Alkali |  |
| Neutral |  |

What hazard symbols would you find on an acid/alkali?

1. …………………………………………………….
2. …………………………………………………….

Indicators:

|  |  |  |
| --- | --- | --- |
| Indicator | Colour in acidic solutions | Colour in alkaline solutions |
| Litmus |  |  |
| Methyl orange |  |  |
| Phenolphthalein |  |  |

Ions in acids and alkalis:

What is an ion?

……………………………………………………………………………………..

……………………………………………………………………………………..

What ion is in excess in acids? …………………………..

What ion is in excess in alkalis? …………………………

Alkalis and Neutralisation

Write a symbol equation to show the dissociation of ions for hydrochloric acid:

…………………………………………………………………………………

Write a symbol equation to show the dissociation of ions for sodium hydroxide

…………………………………………………………………………………

Write a symbol equation to show how water forms in a neutralisation reaction

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Alkalis and Balancing Equations

Write balanced symbol equations for the following reactions: Include state symbols.

Lithium hydroxide + Hydrochloric acid 🡪

…………………………………………………………………………………

Calcium hydroxide + nitric acid 🡪

…………………………………………………………………………………

Sodium hydroxide + Sulfuric acid 🡪

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Sodium hydroxide + Hydrochloric acid 🡪

…………………………………………………………………………………

Alkalis and Balancing Equations

Complete the general equation:

Metal hydroxide + Acid 🡪 \_\_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Complete word equations for the following reactions:

Lithium hydroxide + Hydrochloric acid 🡪

……………………………………………………………………………………..

Calcium hydroxide + nitric acid 🡪

……………………………………………………………………………………..

Sodium hydroxide + Sulfuric acid 🡪

……………………………………………………………………………………..

Sodium hydroxide + Hydrochloric acid 🡪

……………………………………………………………………………………..

Bases and Salts

Explain why excess base is used in making a soluble salt.

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Write a word equation when insoluble nickel oxide with hydrochloric acid

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Bases and Salts

Complete the general equation:

Metal oxide + Acid 🡪 \_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_

|  |  |
| --- | --- |
| Acid | Salt Formed |
| Hydrochloric acid |  |
| Nitric acid |  |
| Sulfuric acid |  |

Complete the word equations:

Magnesium oxide + Sulfuric acid 🡪

……………………………………………………………………………………..

Write a balanced symbol equation for the above reaction

……………………………………………………………………………………..

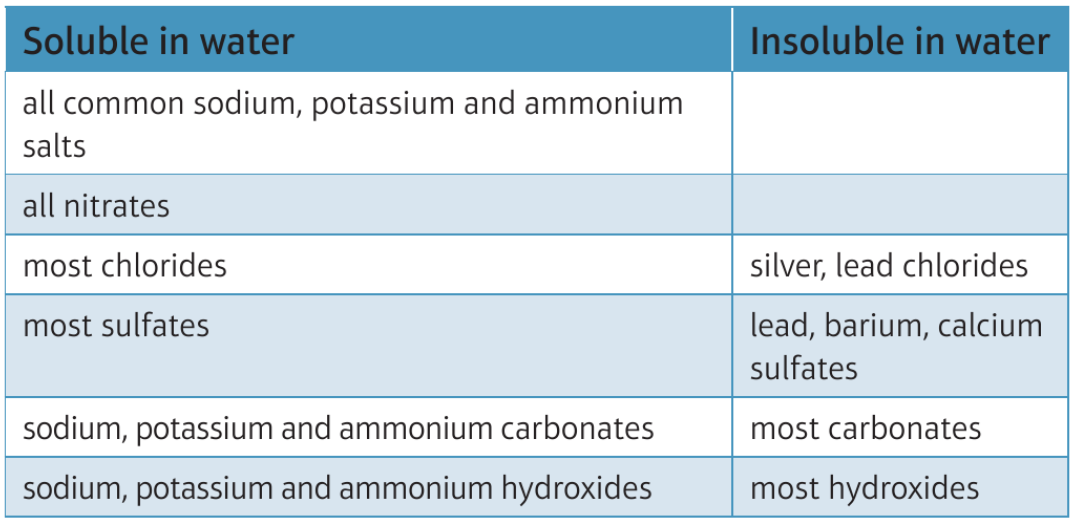
During a neutralisation reaction what two ions combine to form water?

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Describe how to prepare a **soluble** salt from copper oxide and sulphuric acid

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Solubility



What is a precipitate?

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Reactions of acids with metals and carbonates

Write a word equation when copper carbonate reacts with sulphuric acid

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Write a balanced symbol equation when copper carbonate reacts with nitric acid

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Write the **ionic equation** for the reaction between magnesium carbonate and hydrochloric acid (these equations do not include the spectator ions)

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Reactions of acids with metals and carbonates

What would you **see** in a reaction when you add metals or metal carbonates with acids?

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Describe the gas test for hydrogen

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Describe the gas test for carbon dioxide

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Write a word equation when zinc reacts with hydrochloric acid

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Write a balanced symbol equation when calcium reacts with sulphuric acid

………………………………………………………………………………

Write a half equation to show what happens to magnesium atoms

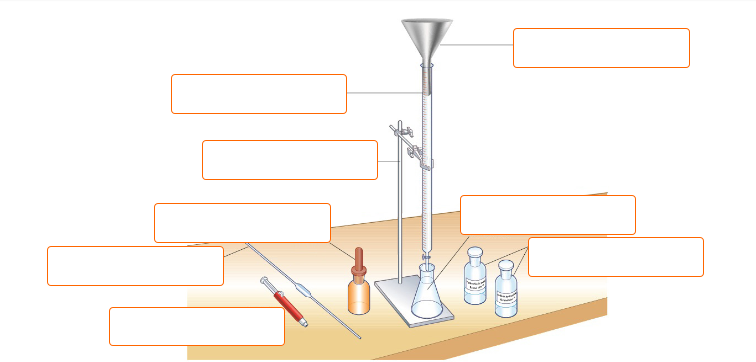
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What are ions called if they do not change during a reaction?

………………………………………………………………………………

Alkalis and Neutralisation

Titrations: Label the equipment in the diagram



Explain why it is better to use a pipette rather than a measuring cylinder.

……………………………………………………………………………………..

How would you determine the end point of a titration?

……………………………………………………………………………………..

Explain why universal indicator is not a good choice of indicator to use in a titration reaction

……………………………………………………………………………………..……………………………………………………………………………………..

Reactions of acids with metals and carbonates

Complete general equations:

Metal + Acid 🡪 \_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_

Metal carbonate + Acid 🡪 \_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Solubility:

Write a word equation for the reaction between lead nitrate and sodium chloride.

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What is the insoluble salt formed from the above reaction …………………………………………………………

Lead forms Pb2+ ions.

Write the ionic equation for the formation of lead chloride

……………………………………………………………………………………..

What two solutions could you use to make silver chloride?

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What two solutions could you used to make magnesium hydroxide

……………………………………………………………………………………..

Describe how to prepare an insoluble salt of barium sulfate from barium nitrate and sodium sulfate

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