Week 7: Acids and Metals

Lesson 1: Revision Lesson

Complete Starter (in back of class jotter)

Revision Starter

1) Copy and complete the following sentence:
   When an acid is diluted, its pH _____ and its acidity _____.
2) Copy and complete the following word equations:
   a) Lithium + _____ → Lithium Hydroxide + Hydrogen
   b) Sodium hydroxide + _____ → Sodium sulfate + Water
   c) _____ + Hydrochloric Acid → Zinc chloride + Hydrogen
3) Iron burns in air to make iron oxide – write this as a word equation

Learning Outcomes

By the end of this lesson you should be able to:

- Explain the pH scale and identify acids and alkalis
- Describe dilution and neutralisation
- Write word equations of reactions between acids, metals, water and oxygen

Success Criteria

You will have been successful in this lesson if you:

1. Read through the Acids and Metals notes and Learning Outcomes in your booklet
2. Watch the video links provided
3. Complete questions provided

If you have any questions about the content of this lesson, you should ask your **class teacher either through your class MS team or via email**.

We have now reached the end of the Acids and Metals topic so you should now make sure you access all of the resources already made for you to help further your own independent revision.

What to do

Complete tasks 1-5 – This involves **watching selected videos**, using **selected websites** to support your revision, reading and revising using your **Pupil Notes** and **answering questions** in your class jotter.

Task 1: Watch video resources available

Videos below:

Dilution and the pH scale	https://youtu.be/2tWBf9Zm9xI
Neutralisation and the pH scale	https://youtu.be/GG7Smvf9oqA
Everyday Neutralisations	https://youtu.be/YpAsX7qW8p0
Naming Salts	https://youtu.be/n45716MIygA
Acid Rain	https://youtu.be/VKu1i6dF4mg
Homework 21 solutions	https://youtu.be/z_zjzvQF1zI
Homework 22 solutions	https://youtu.be/jj4Bj6XnkgI
Homework 23 solutions	https://youtu.be/LHDDrH13lno
Homework 25 solutions	https://youtu.be/hTKAmDBHqwA
Homework 26 solutions	https://youtu.be/HPqTtmV5Kvk

Metals and Water

Metals and Acid

Metals and Oxygen

Metal Reactions word equations

Task 2: Use the following websites to develop your understanding

Utilise the following websites:

BBC Bitesize – Acids and Bases

- Read through pages 1-7 of the revision guide and try the test
- The test will automatically give you feedback on your learning

Evans2chemweb

- Username: snhs
- Password: giffnock
- Choose any teacher icon
    - Choose Revision tab at top of page
        - Intermediate 1
            - Unit 1 – Acids and Alkalis
                - You can then work through the notes and the four activities on this page
                - These activities will be marked automatically and also allow you to use simulated experiments
            - Unit 2 – Metals
                - You can work through the notes and activity on "Reactions of metals"

StudyRocket

- Read through the notes on this webpage on Reactivity Series, Metal Reactions with Water, Acid and Oxygen and Testing for Hydrogen

Note: You do not need to understand the section on Displacement

Task 3: Using your Pupil Notes to evaluate your progress

- Read through the "Learning Outcomes" section of Acids and Metals unit (pages 35 and 36 in your Pupil Notes)
- Use these to self-evaluate your progress so far by considering your understanding of each concept in the unit.
- Consider traffic light system for each LO
    - Red – find the concept difficult to understand,
    - Amber – find the concept okay but have some difficulties
    - Green – fully understand the concept
- Write R (Red), A (Amber), G (Green) beside each LO
- You should then focus your revision on the areas you rated as Red or Amber using:
    - The Pupil Notes that focus on that topic
    - The Self Check Questions that have been made available to use
    - The Homework feedback you have received from your teacher on those topics

Task 4: Questions to try

Try the following questions to further your revision. Answers to these will be posted on Tuesday. This should give you detailed explanation on how to progress in your revision.

1) Three colourless solutions are sat in flasks in a lab with the labels “distilled water”, “sulfuric acid” and “ammonia solution”. Explain how you would test the pH of the three substances and decide from these results which label to place on each flask.

2) What are the three ways to test for pH in the lab?

3) Potassium and nitric acid react together, write the word equation for this reaction.

4) Sulfuric acid and sodium carbonate react together, write the word equation for this reaction.

5) Hydrochloric acid and calcium hydroxide react together, write the word equation for this reaction.

6) Water is slowly added to lithium hydroxide. Explain what happens to the pH of lithium hydroxide and how you could show the pH had changed.

7) What gas is produced when a metal reacts with water?

8) A metal reacts with water and the pH is tested after the reaction, how would you describe the pH of the resultant solution?

9) Three experiments were carried out of Metals A, B and C reacting with oxygen. Metal A showed no sign of reaction, Metal B burst into flames with a bright light visible, Metal C appeared to glow a dull red colour. Describe the difference in reactivity of these three metals with oxygen.

10) What acid is formed when sulfur dioxide dissolves in rain water?

Task 5: Correct today's revision starter

Starter answers

1) When an acid is diluted, its pH **increases** and its acidity **decreases**.
2)
   a) Lithium + **Water** → Lithium Hydroxide + Hydrogen
   b) Sodium hydroxide + **Sulfuric Acid** → Sodium sulfate + Water
   c) **Zinc** + Hydrochloric Acid → Zinc chloride + Hydrogen
3) Iron + oxygen → Iron oxide