Year 7 Supporting Success

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Why is it important to learn Science?

Science is everywhere, from TikTok to headline news.

We want students to understand what is in front of them and how it can relate to their own life and experiences.

Our Planet Now

Dragonflies spread north in warming world - report

SN Science News for Students

Tiny swimming robots may help clean up a microplastics mess

Founded in 2003, Science News for Students is a free, award-winning online publication dedicated to providing age-appropriate science news to ...

Tuna bounce back, but sharks in 'desperate' decline

The Papers: 'Jabs blitz' for winter as over-50s 'get boosters'

SN Science News

NASA's Perseverance rover snagged its first Martian rock samples

Science News was founded in 1921 as an independent, nonprofit source of accurate information on the latest news of science, medicine and ...

The green jobs for a new generation

Science editor David Shukman on three jobs in growing green industries, and what it's like to do them

Virgin Galactic flights grounded in 'mishap' probe

Poll highlights climate anxiety among young people

Over half of respondents in a survey believe humanity is doomed and governments are failing to act.

Horbury Academy

People Belong Place Matters Purpose Lasts

Challenge Zone

BRITISH SCIENCE WEEK

You are going to replicate the TikTok safely and in a controlled manner.

What do Science lessons look like at Horbury?

Title: Metals and Oxygen

Last lesson:

What is the difference between a **chemical** and **physical** reaction?

A Gap in Our Learning

What 3 particles make up an atom?

Key language for this lesson

Metal
Oxygen
Metal oxide
Solid
Gas

Key Skills

Correct the equation below:

Hydrogen + oxygen = H_2O

The Bigger Picture:
In your year 7 chemistry lessons, you spent 2 lessons reacting metals with oxygen.

You wrote down your **observations.**

What are observations?

Think It

When **metals** react with **oxygen** in the air, they form **metal oxides**.

Discuss with your shoulder partner what **metal oxides** would be formed when the following **metals react with oxygen:**

Iron
Magnesium
Copper
Zinc

Say It

Class practical – 10 minutes

Teacher demo – calcium and oxygen.

Method:

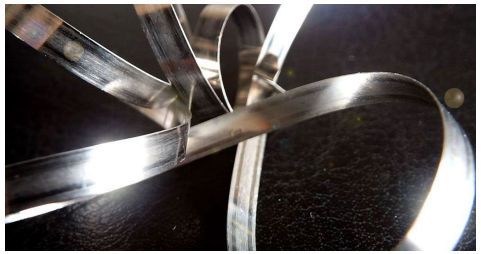
1. Collect the following equipment: Bunsen burner, heat mat, tongs.
2. Collect 4 pieces of the metal samples: iron, magnesium, zinc, copper.
3. Light your Bunsen burner and turn it onto a safety flame.
4. Place the metals in the tongs securely.
5. Turn your Bunsen burner onto a blue flame.
6. Burn the metals in oxygen.

Recording results:

Make sure you collect all of your observations in your results table.

Challenge: write word equations.

Metal + oxygen → metal oxide



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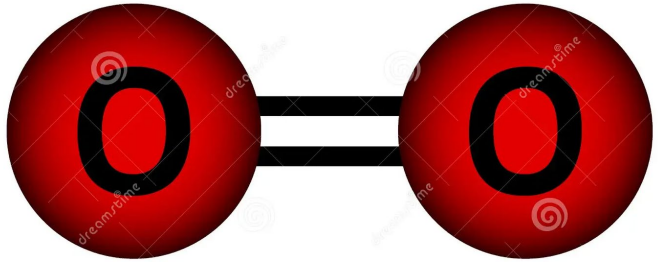


→

Magnesium + oxygen → magnesium oxide

Chemistry key skill:
When oxygen has bonded to another atom like in magnesium oxide, it is no longer called oxygen. **It is called oxide.**

Task: Write the word equations for the other 3 reactions.

Challenge: can you have a go at symbol equations?

Think It

Challenge zone:

Task 1: Complete word equations for the reactions of the following metals with oxygen:

1. Lithium
2. Sodium
3. Potassium
4. Calcium
5. Gold
6. Silver
7. Tin
8. Lead

Task 2: Add state symbols to each of your word equations.

Challenge: what compound is formed when hydrogen reacts with oxygen and carbon reacts with oxygen? Write these as word equations?

Think It

1. How do you know a gas has been produced in a reaction?	Bubbling / Fizzing / Effervescence
2. What gas is produced when an acid reacts with a metal?	Hydrogen
3. What gas is produced when an acid reaction with a metal carbonate?	Carbon dioxide
4. What is produced when oxygen reacts with a metal?	Metal oxide
5. What is the formula for hydrochloric acid?	HCl
6. What is the formula for sulfuric acid?	H_2SO_4
7. What is the formula for nitric acid?	HNO_3
8. Why is copper oxide powder added to hydrochloric in excess when making copper chloride crystals?	To ensure that all of the hydrochloric acid has reacted.
9. Place these 3 metals in order of reactivity: Copper Zinc Potassium Magnesium	Potassium Magnesium Zinc Copper
10. Complete the word equation: Copper sulphate +magnesium → .....+.....	Copper sulphate +magnesium → magnesium sulphate + copper

Revision Lessons

Atoms, elements, compounds and mixtures

Definitions:

Atom

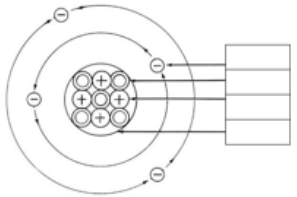
Element

Compound

Mixture

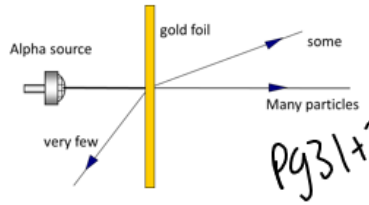
Structure of the atom, subatomic particles and isotopes

Pg 16



Particle	Relative charge	Relative mass
Proton		
Neutron		
Electron		

Development of the model of the atom



Pg31+32

Evidence	Explanation
Most travelled straight through	
Some were deflected a bit	
Very few were deflected back	

Thompson
Rutherford
Bohr
Chadwick

Electron configuration

Draw and state the electron configuration of:

Pg33

Lithium

Magnesium

Neon

Names:
Group 1:
Group 7:
Group 0:

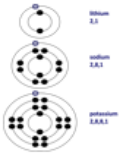
Metals are found...

Properties of metals are:

How did Mendeleev arrange the elements?

Why did Mendeleev's periodic table work?

Group 1: name _____



In order to react...

As you go down the group the atoms get...

The force between the positive nucleus and the electron gets...

The shielding...

It is easier / harder to...

The reactivity...

Group 7 : name _____

Pg 41

In order to react...

As you go down the group the atoms get...

The force between the positive nucleus and the electron gets...

The shielding...

It is easier / harder to...

The reactivity...

Group 0 : name _____

Why are they unreactive?

Why does the melting and boiling point increase?

0
He
Ne
Ar
Kr
Xe
Rn
Og

On Monday 30th June you will have an end of year test. The topics that this will be on the test are:

- Cell biology
- Particle model of matter
- Atomic structure and the periodic table
- Organisation
- Bioenergetics
- Energy
- Energy changes

Before all end of unit tests, class teachers will **post in Teams with revision links** for you to use at home to prepare.

The link below will help you with your revision. The link is for the main BBC bitesize page for science and you can select the revision pages using the headings above.

https://www.bbc.co.uk/bitesize/examspecs/z8r997h

These are links to YouTube video clips. you will need to select the correct ones to use following the revision you have done on BBC bitesize.

https://www.youtube.com/playlist?list=PLidqqIGKox7X5UFT-expKIuR-i-BN3Q1g
https://www.youtube.com/playlist?list=PLidqqIGKox7WeOKVGHxcd69kKqtwrKl8W
https://www.youtube.com/playlist?list=PLidqqIGKox7UVC-8WC9djoeBzwxPeXph7
You can also use Educake for your revision.

This links takes you to lesson PowerPoints and resources to use for your revision:

Y11 Horbury Revision Lessons 2024

You will need the folder titled 'paper 1'. Use the headings above to select the correct resources to use.

If you have any questions, please let me know.

Mrs Field

Q1.

Stefan is on holiday in the mountains. It is snowing.

(a) (i) Choose words from the box to complete the sentence below.

solid	liquid	gas

A snowflake falls on Stefan's nose and melts.
When the snowflake melts, it changes

from a ..... to a .....

1 mark

(ii) Snow that falls on the ground melts slowly.
Snow that falls on Stefan's nose melts **very quickly**.
Give a reason for this.

.....

1 mark

(iii) In his hotel, Stefan sees some changes.
Are the changes below reversible?
Write **yes** or **no**.

ice melting .....

wood burning .....

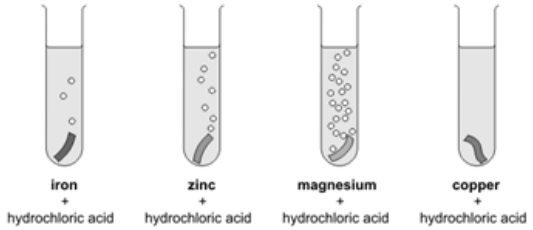
toasting bread .....

1 mark
maximum 3 marks

Q2.

(a) Ruth put a piece of a different metal in each of four test tubes.

She poured 10 cm^3 of hydrochloric acid onto each metal.



Look at the diagrams above.

(i) How do these show if a metal reacts with the acid?

.....

1 mark

(ii) **On the lines below**, put the **four** metals in the order of how strongly they

react with the acid.

most reactive .....

.....

.....

least reactive .....

1 mark

(b) Choose the name of a metal from the box below to answer each question.

copper	iron	magnesium	zinc

(i) Which metal from the box is used for electrical wires?

.....

1 mark

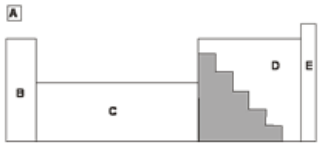
(ii) Which metal from the box goes rusty?

.....

1 mark maximum 4 marks

Q3.

(a) The diagram below shows part of the periodic table of elements.



The shaded area contains **only** metal elements.

Two other areas also contain **only** metal elements.

Which areas contain only metal elements? Tick the **two** correct boxes.

A ☐ B ☐ C ☐ D ☐ E ☐

1 mark

(b) Copper is a metal.

At room temperature copper is a strong solid.
Give **two** other properties of copper that show it is a metal.

1. .....1 mark

2. .....1 mark

(c) When copper metal is heated it reacts with a gas in air.

What is the chemical name of the **product** formed when copper reacts with a gas in air?

.....1 mark

Assessments are completed **following a short unit of work.**

We have assessments to suit the needs of **different learners.**

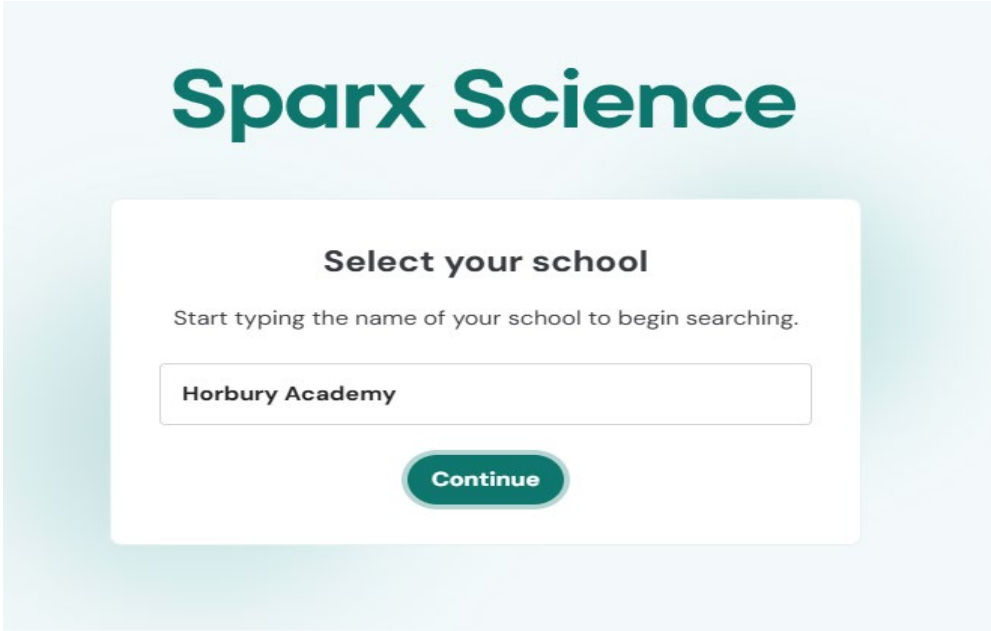
The following lesson, students **review the test** and complete tasks based on areas of strength and weakness.

Science Homework

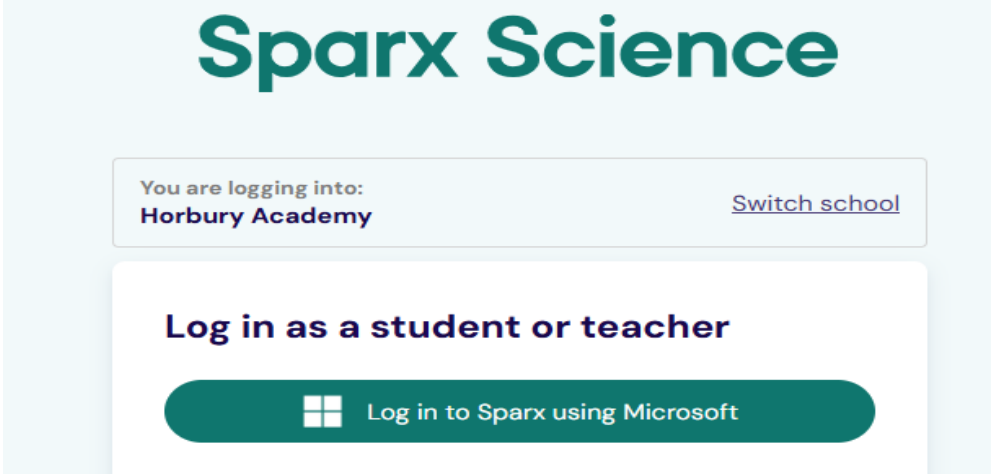
sparx science
AI Mode
All
Images
Videos
Forums
Shopping
News
More
Tools
Sparx Science
https://sparxscience.com
Sparx Science - Home
Sparx Learning provides maths, reading and science solutions to over half of UK schools, supporting students aged 11–16 across several large international ...

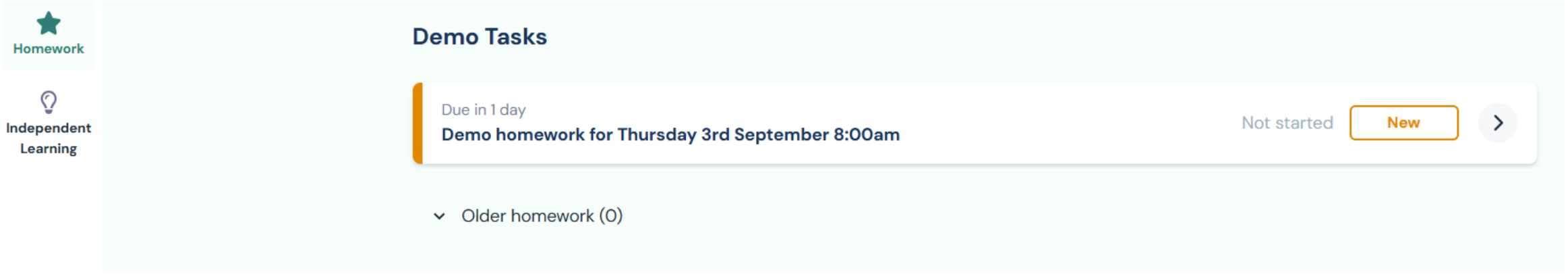
Log in

On the homepage click log in in the top right, then find our school, Horbury Academy.



Click log in with Microsoft, this will be the same log in as for teams / computers in school with email.





Homework will be shown on the screen when you log in.

There is also a tab for independent learning

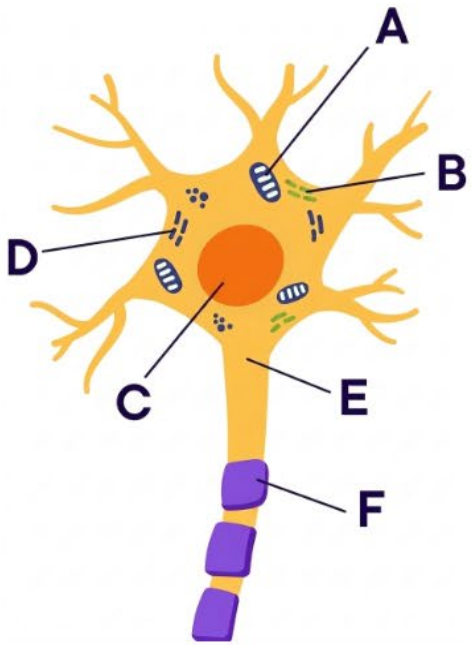
All task must be completed to 100% for the homework to count as completed.

Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | Q9 | Q10 | Results

This diagram shows a specialised cell called a nerve cell.

Which label shows the nucleus?

A | B | C | D | E | F



Zoom

I don't know | Report Problem | Submit

Y7 Science Trip

In October there is a Science trip lead by Mr Pennington and Mr Stringer.

60 pupils will take a coach to Magna Science Adventure Centre.

There will be a few communications:

1st – Form of interest due by 25th September

2nd – Selection/reserve letter 28th September

3rd – Payment due 11th October (£17)

4th – Phone calls

The trip date is Wednesday 22nd October 2026.
Pupils will leave the academy at 9.00 and return by 14.55

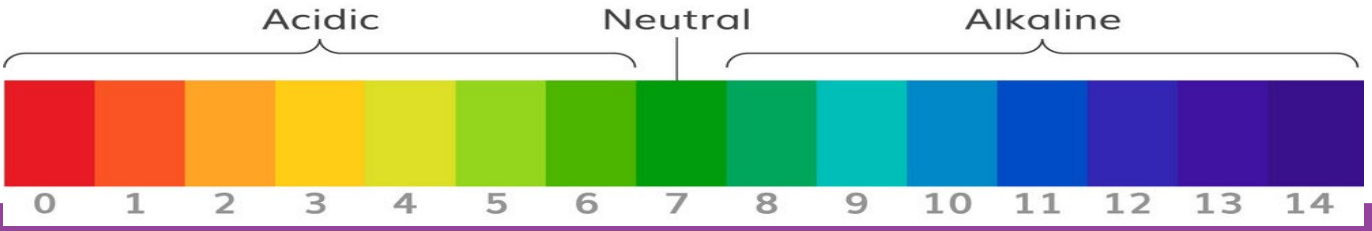
Any Questions?

You are going to be using the following equipment to produce a pH rainbow:

- Test tubes and a test tube rack
- Citric acid
- Sodium carbonate
- Water
- Universal indicator
- Pipettes

In order to safely carry out this practical it is essential that you complete a risk assessment.

Stretch: Do you believe it is ever possible to fully remove the risk from a practical. Explain your answer.

In group of 4 use the acids, alkalis, water, universal indicator, test tubes, pipettes and test tube racks to create the pH scale colours.
We call this the pH Rainbow…

Learning challenge: to produce a pH rainbow using knowledge of acids and alkalis.