

Chris Anthony

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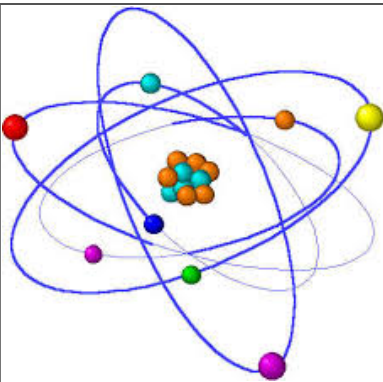
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Science Education



Click here to Go Back to: [Home Page](#) [General Science Page](#)

MY TEACHING PAGES: [Photosynthesis](#) [Microbial Physiology](#) [Methylotrophy](#) [My Powerpoint presentati](#)

[BBC Bite sized Science](#). An excellent site

[Previous BBC Science Key Stage 3](#) **NO LONGER AVAILABLE FROM BBC** **Some of the lists may be useful**

[My Microscope pages](#) have many useful sections for students of all ages

[Other useful sites for younger scientists](#)

Other useful sites

[KnockHardy publishing](#): Valuable revision notes with examples.

[Docbrown site](#): This part is devoted to A2 and AS levels. Looks good although there are irritating adverts etc.

[American Museum of Natural History](#) Website for kids on all aspects of science

[National Geographic for kids](#)

[Glasgow Science Centre](#)

[A long list of useful science websites](#)

VIDEOS can be speeded up by downloading an [accelerator](#)

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Previous Science Key Stage 3 (KS3) in the UK system. Years 7 - 9, age 11-14

Some of this may be useful but for new BBC bitesize [Click Here](#)

- **SORRY NO LONGER AVAILABLE FROM BBC** but the lists may be useful.

If you Click on in the Table below that says **more detail** this goes to my Tables which give lists of main topics BUT the links to details no longer function.

Organisms, behaviour and health

[Click here for more detail](#)

Life processes, cells, health, variation and classification, feeding relationships

Chemical and material behaviour

[Click here for more detail](#)

Solids, liquids and gases, periodic table, pH scale for acids, bases and alkalis

Energy, electricity and forces

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Energy, forces, electric currents and magnetism

The environment, the Earth and the universe

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Rock types, astronomy, and the environment

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Chemical and material behaviour

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Physical and chemical properties are discussed here. Find out about the atoms and particles that make up chemical matter, and the experiments that help you analyse elements.

This section includes The Particle Model, Atoms and Elements, Compounds and Mixtures, Acids Bases and Metals. The links to blue headings no longer available.

[Click here to download a summary of some of this material as a Word document](#) ([Chemistry for Matt](#))

The Particle Model

You can use the idea of particles to explain the properties of solids, liquids and gases. The strength of

bonds between particles is different in all three states. It explains why solids cannot flow, and why gases can be compressed.

[Solids](#) [Liquids](#) [Gases](#) [Flowing](#) [Arrangement and movement](#)

Behaviour of matter

Solids, liquids and gasses have physical properties. The way they behave is affected by heating and cooling. We will also look at pressure and diffusion in gases.

[Expansion and contraction](#) [Pressure in gases](#) [Diffusion](#)

Atoms and elements

Everything is made from atoms, and there are over 100 different types. These are called elements, and they can be divided into the metals and the non-metals. We'll look at their physical and chemical properties in this Revision Bite

[Atoms](#) [Chemical symbols](#) [The periodic table](#) [Metals](#) [Non-metals](#) [Metals v non-metals](#)

Compounds and mixtures

Compounds are chemicals made from atoms of different elements joined by chemical bonds. They can only be separated by a chemical reaction.

A mixture is made from molecules of elements and compounds that are simply mixed together, without chemical bonds. Mixtures can be separated using techniques such as filtration, chromatography, evaporation and distillation.

[Compounds](#) [Atoms and molecules](#) [Chemical formulae](#) [The reactivity series of metals](#)
[Metal and non-metal oxides](#) [Mixtures](#) [Separating mixtures](#)

Acids, bases and metals

Acids, bases, alkalis and metals are found in the laboratory and at home. They can be irritant or corrosive and must be handled carefully.

How acid or alkaline a chemical is can be measured on the pH scale, using indicators like litmus and universal indicator. Acids and bases react together to form salts and other products too.

[Acids in the laboratory](#) [Bases and alkalis](#) [Indicators and the pH scale](#)
[Reactions of acids with bases](#) [Naming salts](#) [Reactions of acids with metals](#)

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Energy, electricity and forces

Energy comes from renewable and non-renewable sources. Electrical energy is a measurable force that also creates magnetic fields.
This section includes Energy transfer and storage, Forces, Electric Current and Voltage, Magnets and electric current

Energy transfer and storage

Energy can be stored or transferred from place to place in different ways. Let's look at some examples

[Energy basics](#) [Energy transfer diagrams](#) [Heat and temperature](#) [Transfer of thermal energy](#)
[Non-renewable resources](#) [Renewable resources](#) [Saving energy](#)

Forces

Forces can change the shape of objects and change the way they are moving. Weight, pressure and turning moments are all the result of forces too.

[What are forces?](#) [Weight, mass and gravity](#) [Pressure](#) [Balanced forces](#) [Unbalanced forces](#)
[Frictional forces](#) [Moments](#)

Electric current and voltage

Electric circuits can be series or parallel. You need to know the symbols we use to draw circuit diagrams. An ammeter measures electric current, in amps, by measuring how much charge is flowing in the circuit. A voltmeter measures, in volts, the difference in electrical energy between two points of a circuit.

[Electric charge](#) [Circuit symbols](#) [Series circuits and parallel circuits](#) [Measuring current and voltage](#)
[Current in series circuits](#)

Magnets and electric current

Electric current can cause a magnetic field, which is how electromagnets work. Electric current can also heat things, and cause chemical reactions, like in electrolysis.

[Bar magnets](#) [Magnetic fields](#) [Electromagnets](#) [Using electromagnets](#) [Heating effect](#) [Electrolysis](#)

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Organisms, behaviour and health

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Life processes, cells, health, variation and classification, feeding relationships

Humans, animals and plants have similar life processes. But, the cell functions, reproductive patterns, food chains and behaviour are very different for each species.

Life Processes

There are seven processes that are common to living things. These seven processes are movement, respiration, sensitivity, growth, reproduction, excretion and nutrition.

[MRS GREN](#) [Respiration](#) [The respiratory system and ventilation](#) [Gas exchange](#)
[Movement](#) [Joints](#) [Antagonistic muscles](#)

Cells to Systems

Animals and plants are made of cells. Cells form the basic "building blocks" for living things. Some cells have specialised functions.

Tissues are made from cells of a similar type. Organs are made from tissues, and systems are made from several organs working together.

[Cells](#) [Animal cells and plant cells](#) [Cells and their functions](#) [Cells, tissues and organ systems](#)

Reproduction

This Revision Bite is about the human reproductive system. It describes the changes that take place during adolescence as the reproductive system develops. It also describes pregnancy and the way that the foetus develops in the womb.

[The male reproductive system](#) [The female reproductive system](#) [The menstrual cycle](#)
[Fertilisation and foetal development](#) [Puberty](#)

Diet, Drugs and Health

A balanced diet contains the different nutrients in the correct amounts to keep us healthy. Certain foods are not necessarily 'bad' for us, but eating too much of them could be. We will look at what food types are needed, how they are digested.

Drugs are substances that affect our bodies. They can be medicines or recreational drugs, legal or illegal. We will look at these in detail.

[Nutrients](#) [Some effects of a poor diet](#) [Digestive system](#) [Digestion and enzymes](#)
[Absorption and egestion](#) [Smoking and health](#) [Drugs and health](#)

Disease

This Revision Bite is about disease - the microbes that cause it and what our bodies do to fight and prevent it.

[Microbes](#) [Microbes - useful or not?](#) [Spreading microbes](#) [Defence against microbes](#)
[Antibiotics and immunisation](#)

Variation and Classification

The millions of types of living things can be organised into categories, where we group together organisms with similar features. This is called the classification system.

Variation between individuals in a species can be continuous or discontinuous, inherited or environmental.

[Species](#) [Continuous and discontinuous](#) [Inherited and environmental causes of variation](#)
[Variety within a species](#) [Genetic engineering](#) [Why do we classify organisms?](#) [The five kingdoms](#)

Food Chains

In this Revision Bite we'll look at the feeding relationships between living things. These can be shown in food chains and food webs.

All food chains start with green plants. Green plants use sunlight to produce the source of their energy. This energy is then passed along the food chain as one organism eats another.

[Plants and photosynthesis](#) [Getting carbon dioxide, light and water](#)
[Respiration in plants](#) [Food chains](#) [Pyramids of numbers](#) [Food webs](#)
[Changes to food webs](#) [Toxic materials in the food chain](#)

Behaviour

There are several types of behaviour in humans and other animals that can be described and investigated by scientific research.

[Instinct](#) [Imprinting](#) [Conditioning](#) [Imitation](#) [Human behaviour](#) [Investigating behaviour](#)

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The Environment, the Earth and the Universe

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Learn about the rock forms and habitats on Earth. And find out more about our planet and where it fits into the solar system.

The Rock cycle

This Revision Bite looks at the three types of rock: sedimentary, igneous and metamorphic. It looks at how they are formed, the weathering of rocks and the way one form of rock turns into another, in the rock cycle.

[What are rocks?](#) [Sedimentary rocks](#) [Igneous rocks](#) [Metamorphic rocks](#)
[Weathering](#) [Erosion and transport](#) [The rock cycle](#)

Astronomy and Space Science

The solar system contains planets, their satellites, asteroids and comets. The planets orbit the Sun and take different amounts of time to do this.

We have night and day on Earth because the Earth spins on its axis. The tilt of the Earth's axis causes the seasons to change as we orbit the Sun in one Earth year.

[The solar system](#) [Gravitational forces](#) [Days and nights](#) [Years and seasons](#)
[The Moon](#) [Artificial satellites and space probes](#)

Changes in the Environment

This Revision Bite is about the relationships between organisms and the environments they live in.

[A changing environment](#) [Extinction](#) [Humans and the environment](#) [Pollution](#) [Climate change](#)

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CONTACT ME: [Email](#)

THANKS for help to [Hugh Anthony](#) and [Carl Gore](#)

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