



Film List

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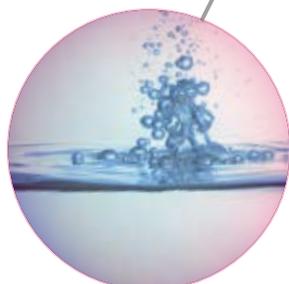
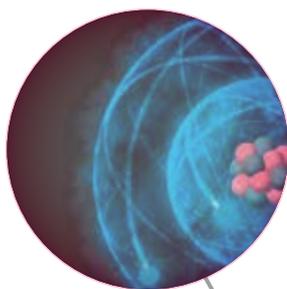
Chemistry

Atoms and
Bonding



Chemical
Industries

Periodic
Table



**Atoms**

What Is an Atom?	Everything is made of atoms – but what are atoms made of?
Atom Structure: Electron Shells	How does the atomic structure of elements affect their reactivity?
Flame Colours and Fireworks	How are different colours of fireworks created?
Flame Colours and Spectroscopy	How can looking through a prism help us identify elements?
Northern Lights	What causes the Northern Lights?
Heavy Water	Why did World War Two allies sabotage the Nazi's use of heavy water?
Discovery of the Atom	Who discovered the structure of the atom?
FactPack: Scale of the Atom	How small is an atom?
FactPack: Structure of the Atom	How has our understanding of atomic structure changed over time?

Chemical Bonds

Introduction to Chemical Bonding	An introduction to how elements combine.
Ionic Bonding	Discover how metals and non-metal elements form compounds.
Covalent Bonding	Discover how non-metal elements form compounds.
Metallic Bonding	Discover how metal elements form compounds.
Carbon: Introduction	What are the different forms of carbon and how are they created?
Carbon: Synthetic Diamonds	Is it possible to create diamonds in a laboratory?
Carbon: Buckminsterfullerene	Introducing a little known natural form of carbon.
Nanotechnology: What Is It?	An explanation of a revolutionary technology.
Nanotechnology: Is It Safe?	Is there a dark side to nanotechnology?
Carbon Monoxide Poisoning	What makes carbon monoxide the 'silent killer'?
FactPack: Elements, Compounds and Mixtures	What makes something a compound, an element or a mixture?



States of Matter	
Changing States of Matter	How does matter change into different states?
Solids, Liquids and Gases	Discover the three states in which all matter on Earth exists.
Solutions	Discover how the physical process of dissolving happens and why.
Salt: Salt and Ice	Discover why salt is used to treat icy roads.
Intermolecular Forces	Discover the hidden forces fundamental to the state of matter.
Salt: Separating Mixtures	How is salt collected from the oceans and Earth?
Non-Newtonian Liquids	Discover the extraordinary liquids which defy explanation.
How Do Snowflakes Form?	How do water molecules form these beautiful, delicate structures?
How to Make Fake Snow	An introduction to the technology that makes snow indoors.
Water Forces	Discover the special forces that allow some animals to walk on water.
Forensics: Tools of CSI	How forensic scientists can link a criminal to a crime scene using only broken glass, fibres and a footprint.
Forensics: DNA Profiling	An introduction to revolutionary technique that can prove innocence, or catch a killer.
Forensics: Bog Bodies	Discover how preserved bodies can help forensic scientists understand our ancient past.
Forensics: Chromatography	How can colours help us solve crimes?
FactPack: Forensics	How do detectives discover the identity of victims?

**Food Basics**

Food Basics: Carbohydrates	Why are carbohydrates such a good source of energy for our bodies?
Food Basics: Fats	Did you know that fats can be good as well as bad?
Food Basics: Proteins	Find out why almost most every process in your body involves protein.
Fermentation	Did you know bacteria, yeast and mould are vital in the production of common foods?
Omega-3: Healthy Fat?	Learn how one man's extreme diet led to an important discovery about omega-3 fatty acids.
What Is a Calorie?	What are calories, and why do we need them to survive?
How Do Carb-Free Diets Work?	Can we survive without carbohydrates?
Ripening Fruit	How do supermarkets ripen green bananas?
Salt: Food Preservative	Find out why an ancient discovery is still used in food preservation today.
Natural versus Artificial	Are all natural chemicals good for us, and all artificial chemicals bad?
Nitrates: Food Preservatives	Learn how one chemical can have two very different uses.
FactPack: Energy Drinks	Find out about the ingredients and effects of energy drinks.

Oil Products

Fractional Distillation	How is crude oil converted into valuable products?
Plastics and Polymers	How are different plastics, from shopping bags to dustbins, made?
Esters and Perfumes	Discover the science behind pleasant smells.
Recycling Plastics	An introduction to the different methods for recycling plastics.
Vegetable Oils as Fuel	How can the oil we cook with also be used as fuel to run a car engine?
Leaded and Unleaded Petrol	Why was lead banned from petrol?
Invention of Nylon	An introduction to the discovery and uses of nylon.
FactPack: Hydrocarbons	The difference between alkanes and alkenes.

**Discovering Elements**

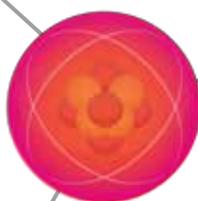
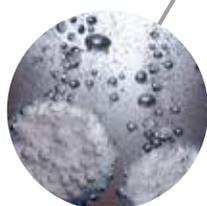
Introduction to the Periodic Table	An introduction to the method of ordering of the elements according to their properties.
Atomic Structure	Explore the Periodic Table and discover what it tells us about each element.
Mendeleev's Prophecy	Find out why the element gallium had been predicted even before it was discovered.
Discovery of Phosphorus	Witness the unusual experiments which led to the discovery of phosphorus.
The Curse of Phlogiston	Discover the theory which hindered Chemistry for centuries.
Phlogiston and Oxygen	How the discovery of phlogiston and oxygen changed chemical theory forever.
The Legacy of John Newlands	Introducing the scientist who found music in the elements.
We Are All Made of Stars	Discover how all the elements on Earth were created.
FactPack: How to Make a Human	What elements are needed to make a human?

Metals

Transition Metals	What are the unique properties of metals in the transition group?
Alkali Metals	Alkali metals have distinct properties – what are they?
Reactivity Series	How has man discovered and used reactive metals through history?
Metals in Medicine	Discover the metals used to heal the human body.
Alloys	How do we use alloys in everyday life?
The Elements: Copper	An introduction to copper and its uses.
The Elements: Mercury	An introduction to mercury and its unique properties.
The Elements: Potassium	An introduction to potassium and its unique properties.
The Elements: Silicon	An introduction to silicon and its uses.
The Elements: Iron	An introduction to iron and its uses.
The Elements: Lead	An introduction to lead and its role throughout human history.
The Elements: Uranium	An introduction to uranium and its uses.
The Elements: Plutonium	An introduction to plutonium and its unique properties.
The Elements: Radium	An introduction to radium and its uses.

Non-metals

The Halogens	What are the unique properties and uses of the halogen elements?
The Noble Gases	Discover the properties and uses of the noble gases.
The Elements: Oxygen	An introduction to oxygen and its uses.
The Elements: Phosphorus	The unusual experiments which led to the discovery of phosphorus.
The Elements: Hydrogen	An introduction to hydrogen and its uses.
Hard and Soft Water	Discover the hidden minerals in water that affect its usefulness.
FactPack: Atmospheric Gases	What gases make up Earth's atmosphere?



**Acids and Bases**

Acids and Alkalis: Part 1	What are acids and alkalis? Explore the extremes of the pH scale.
Acids and Alkalis: Part 2	Discover the importance and uses of neutralisation reactions.
Crystals in Caves	What role does rain water play in creating crystals in caves?
First Synthetic Pigment	How were synthetic paints first created?
Why Do Leaves Change Colour?	What are the chemical reactions that produce vibrant leaf colours throughout the seasons?
FactPack: pH Scale	Can you guess the acidity or alkalinity of five solutions?

Energy Changes

Energy Change of Reactions	What are exothermic and endothermic reactions, and how do they differ?
Rates of Reaction: Basics	How is the speed of a chemical reaction measured and changed?
Collision Theory	How do particle collisions affect the rate of chemical reactions?
Electrolysis	What is electrolysis, and how does it work?
Redox Reactions	Discover how metals are extracted from their natural ores.
Oxidation Reactions	Find out how oxidation can be useful as well as harmful.
Nobel and Dynamite	Did you know the man who famously founded the Nobel Peace Prize also invented dynamite?
Oxygen and Combustion	What is combustion and why is it essential to life on Earth?
Extraction of Aluminium	Discover the immense power and heat needed to extract aluminium from its ore.
How Do Fireworks Work?	Discover the various chemical reactions at play in the creation of spectacular fireworks.
The Hindenburg Disaster	What caused the famous airship to explode?