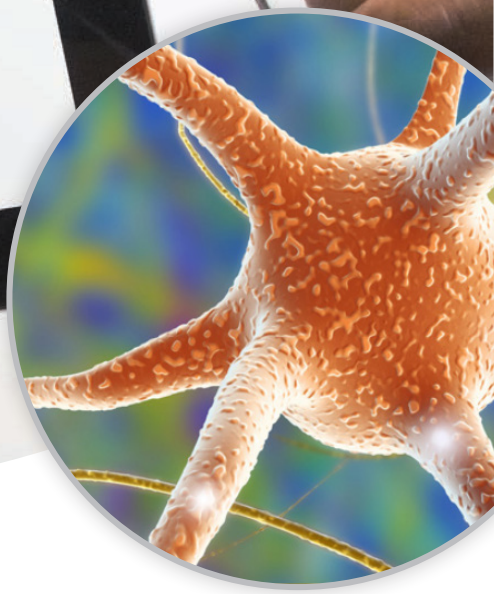
Trumptech 尊科

Twig



Film List for Form 3 Science Education (Unit 12~14)

Hong Kong's Science Curriculum-matched

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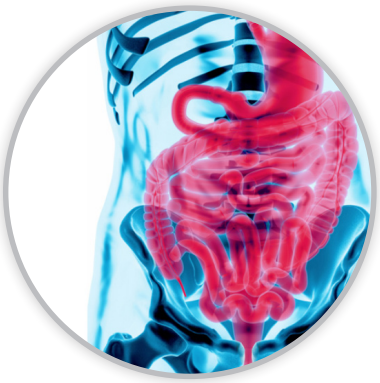

NOT FOR SALE

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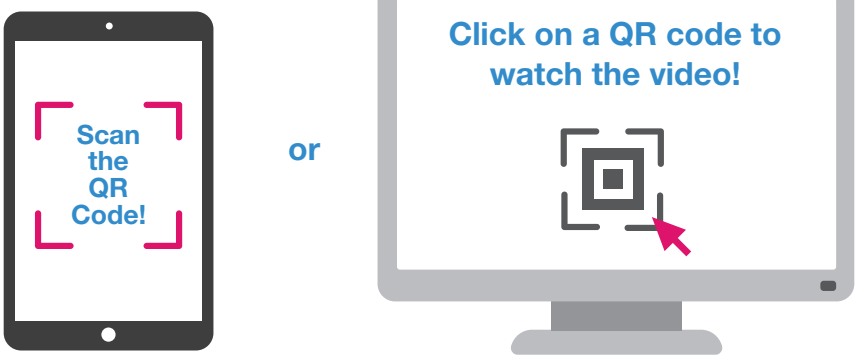
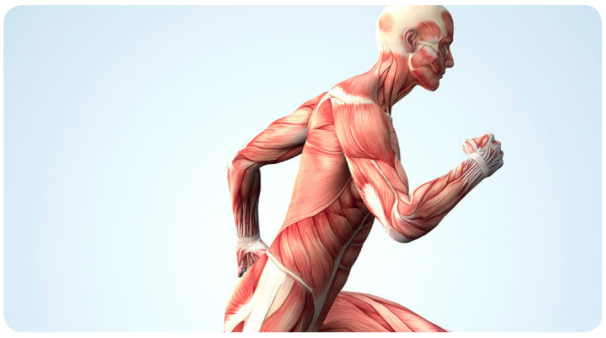
Film List for Form 3 Science Education (Unit 12~14)

Contents



Unit 12
Nutrition and Health

Keeping Our Bodies Healthy



WHAT IS FITNESS?
The three methods used to measure our levels of fitness.

WHY IS FAT SO HARD TO SHIFT?
Why it's easier to put on weight than lose it.

OBESITY
What is obesity and how can we tackle it?

Nutrition and Health

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

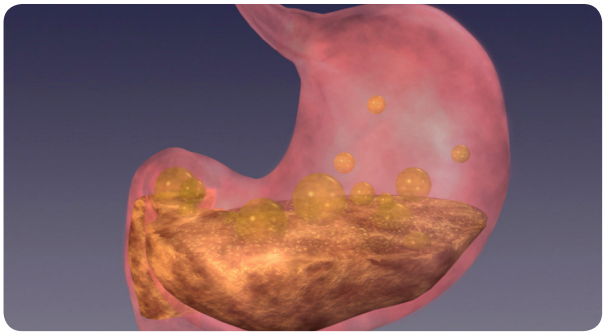
Almost every process in your body involves protein.

INTRODUCTION TO DIGESTION

The journey of food through your digestive system.

FACTPACK: DIGESTION

The weird and wonderful world of digestive organs.



STOMACH

The digestive journey: how does your stomach break down your food?

SMALL INTESTINE

The digestive journey: what happens to food in the small intestine?

LARGE INTESTINE

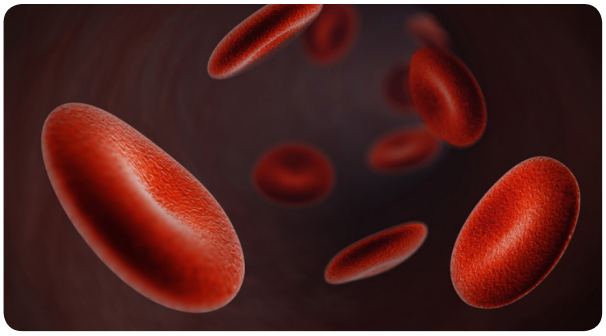
The digestive journey: what happens to food in the large intestine?

FACTPACK: TEETH

Some fun facts about a human's 32 teeth.

HEALTHY TEETH

What causes tooth damage and how can you avoid it?



BLOOD

What blood actually does and why we can't live without it.

HEALTHY BEAUTY

How diet can affect appearance.

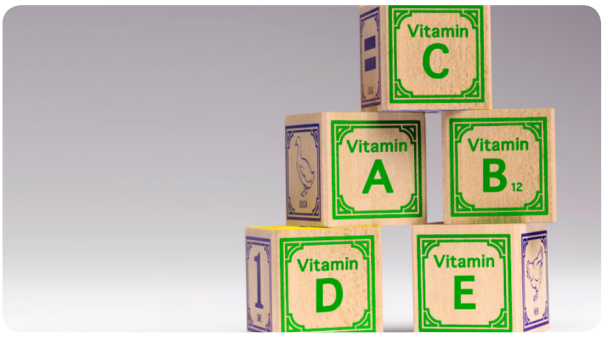
BALANCED DIET

The foods that should form part of a healthy diet.

LIFE CYCLE NUTRITION

What are the key nutrients required by our bodies for each stage in life?.

MALNUTRITION
Discover the biggest risk to health worldwide.

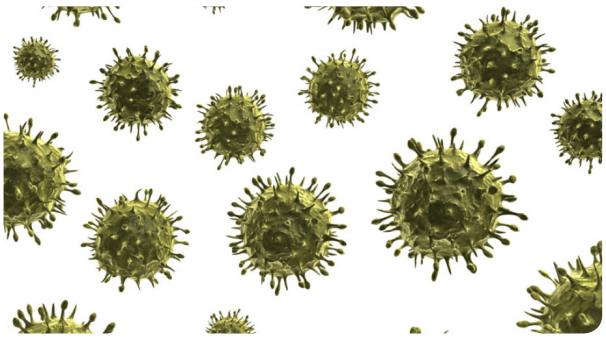


VITAMIN DEFICIENCIES
The investigation that revealed the shocking impacts of a vitamin deficient diet.

Health and Diseases

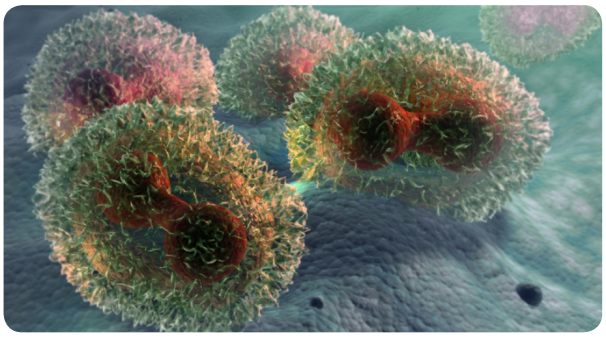
GERMS AND HYGIENE
Germs are all around us; what are the risks and how can we protect ourselves?

FACTPACK: BACTERIA
How can a single cell kill or cure?



FACTPACK: VIRUSES
Are viruses alive?

ERADICATION OF POLIO
Polio affected thousands of children until two men developed very different vaccines.



SMALLPOX: THE FIRST VACCINE

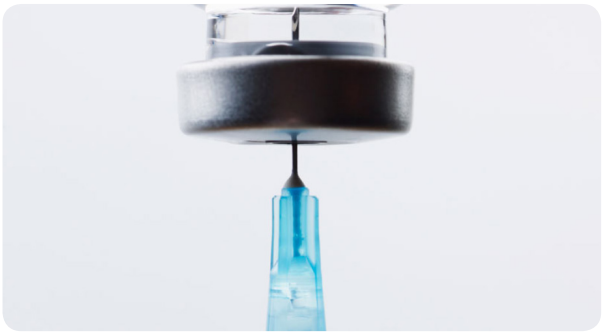
The eradication of one of the world's most lethal diseases.

IMMUNE DEFENCE: PART 1

What is your immune system and how does it work?

IMMUNE DEFENCE: PART 2

What are antibodies?



INSULIN AND DIABETES

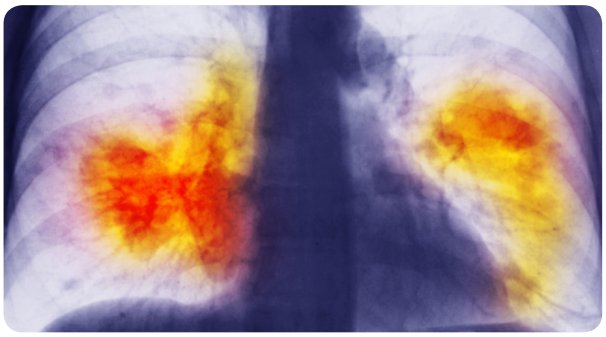
How diabetes affects the body's insulin supply.

HEALTHY HEART

Why fatty foods harm your heart.

SMOKING: THE DAMAGE

Witness the effects of smoking on the lungs.

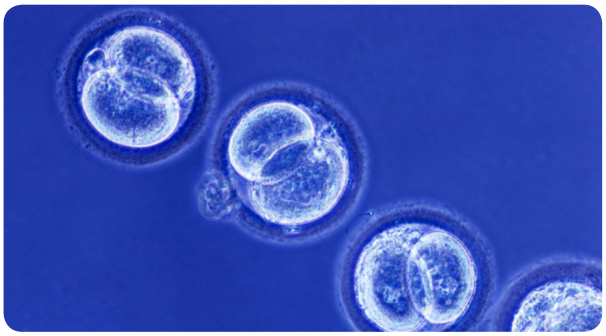


WHAT IS CANCER?

Find out why cancers cause more deaths worldwide than any other disease.

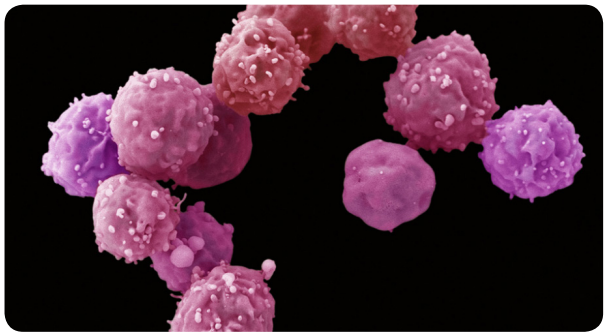
CLONING

Discover the process of making identical genetic copies.



STEM CELLS

What are stem cells and what makes them unique?



THERAPEUTIC STEM CELLS

The science and controversy of stem cell therapy.

THE FIRST HUMAN CLONE

When will we see the first human clone, and should we make one at all?

SAVIOUR SIBLINGS

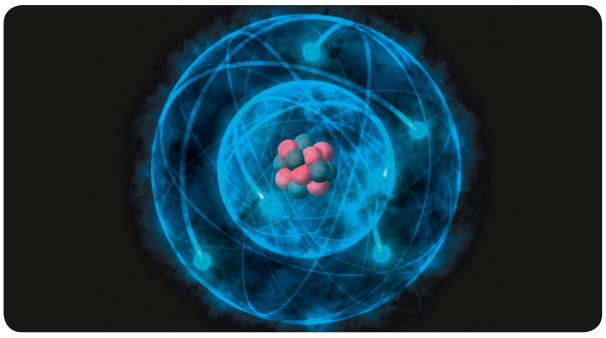
Should we create a new life in order to save an existing one?

GENETIC MODIFICATION

Should scientists manipulate the genetic information of cells?

From Atoms to Materials

Atoms and Elements

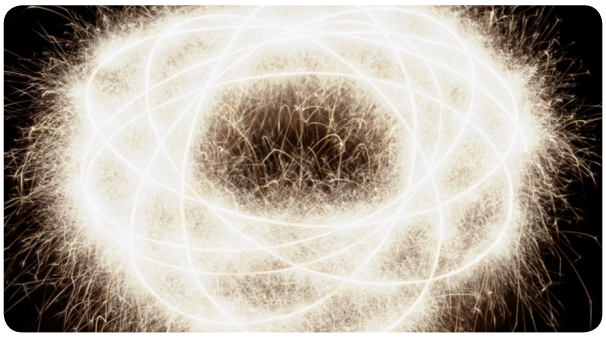


WHAT IS AN ATOM?

Everything is made of atoms - but what are atoms made of?

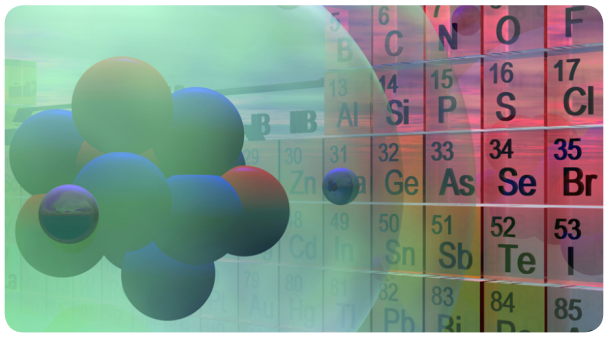
DISCOVERY OF THE ATOM

Who discovered the structure of the atom?



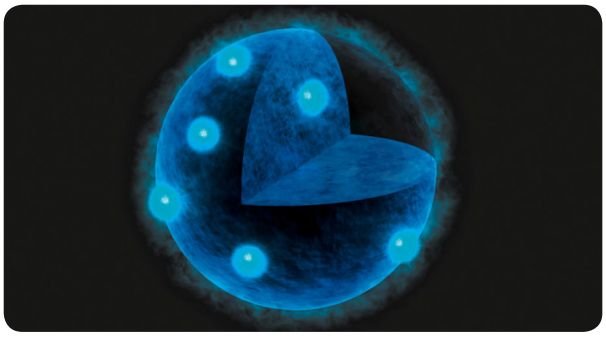
ATOM STRUCTURE: ELECTRON SHELLS

How does the atomic structure of elements affect their reactivity?



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?

FACTPACK: HOW TO MAKE A HUMAN

What elements are needed to make a human?

THE ELEMENTS: OXYGEN

An introduction to oxygen and its uses.

THE ELEMENTS: COPPER

An introduction to copper and its uses.

THE ELEMENTS: MERCURY

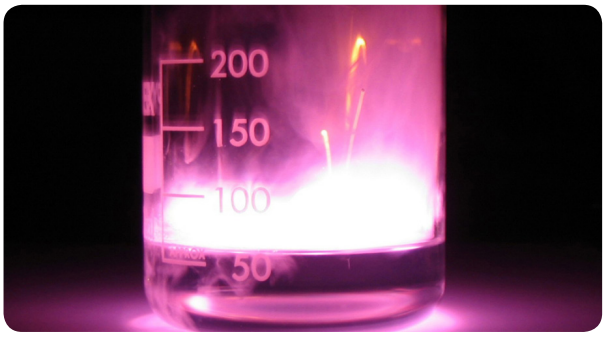
An introduction to mercury and its unique properties.

THE ELEMENTS: PHOSPHORUS

An introduction to phosphorus and its uses.

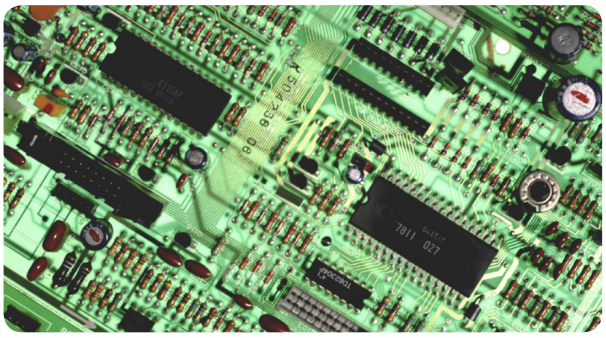
THE ELEMENTS: HYDROGEN

An introduction to hydrogen and its uses.



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

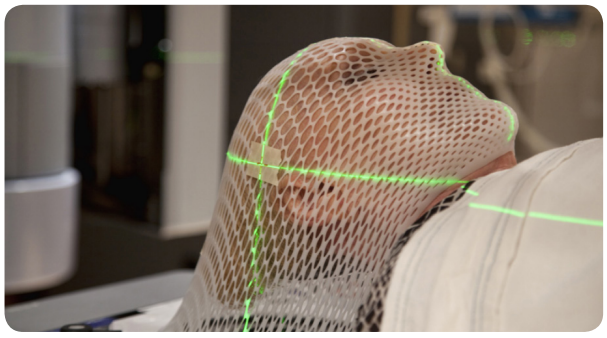
An introduction to lead and its role throughout human history.

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.

THE ELEMENTS: ALUMINIUM

Learn about the most abundant metal in the Earth's crust.

THE ELEMENTS: CHORINE

Find out why chlorine is used in swimming pools.

THE ELEMENTS: HELIUM

Find out why helium balloons float.

THE ELEMENTS: IODINE

Learn about iodine and its uses in medicine.

THE ELEMENTS: MAGNESIUM

Find out why magnesium is important for living things.

THE ELEMENTS: NEON

Learn about the noble gas, neon, and its uses.

THE ELEMENTS: NITROGEN

Find out why nitrogen is essential for life.

THE ELEMENTS: SILVER

Learn about silver and why it is so valuable.

THE ELEMENTS: SODIUM

Find out why sodium is highly reactive and highly useful!

THE ELEMENTS: SULFUR

Find out what's responsible for the smell of rotten eggs - compounds of sulfur!

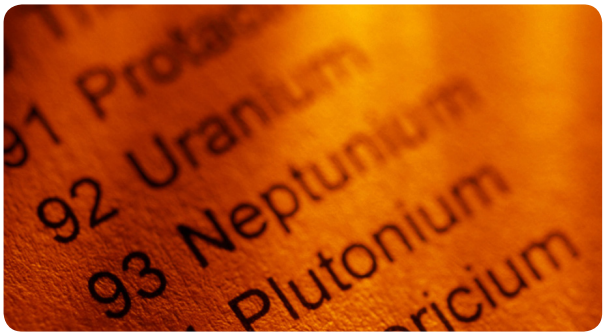
THE ELEMENTS: CARBON

Learn about carbon - the basis for all life on Earth.

THE ELEMENTS: GOLD

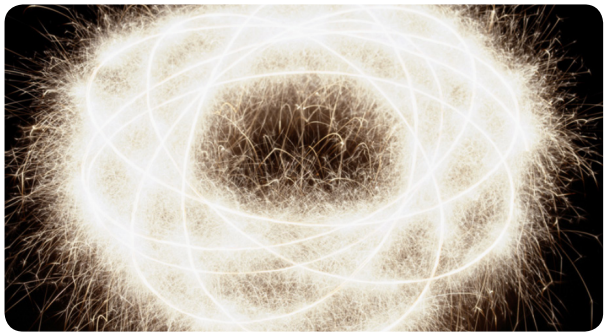
Find out why gold is a valuable metal element.

Periodic Table



INTRODUCTION TO THE PERIODIC TABLE

The ordering of the elements according to their properties.



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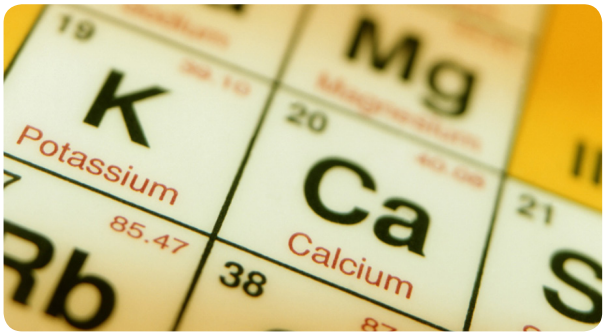


ATOMIC STRUCTURE

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

The unusual experiments which led to the discovery of phosphorus.

THE CURSE OF PHLOGISTON

The theory that hindered chemistry for centuries.

PHLOGISTON AND OXYGEN

How the discovery of phlogiston and oxygen changed chemical theory forever.

THE LEGACY OF JOHN NEWLANDS

The scientist who found music in the elements.

ALKALI METALS

Alkali metals have distinct properties. What are they?

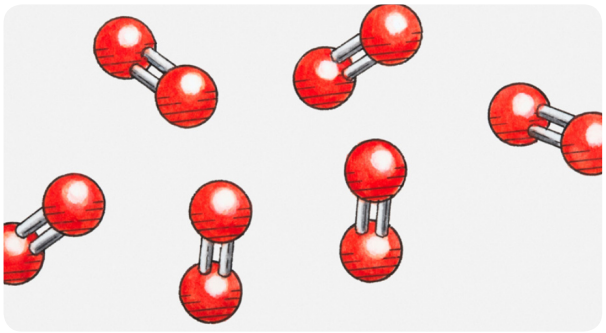
THE HALOGENS

The unique properties and uses of the halogen elements.

THE NOBLE GASES

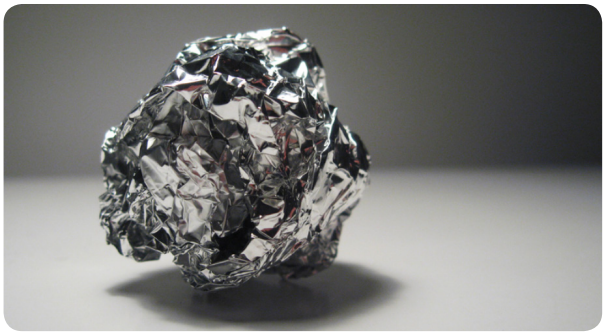
The properties and uses of the noble gases.

Mixtures and Compounds



FACTPACK: ELEMENTS, COMPOUNDS & MIXTURES
What makes something a compound, an element or a mixture?

Metals



EXTRACTION OF ALUMINIUM
Discover the immense power and heat needed to extract aluminium from its ore.

THE ELEMENTS: ALUMINIUM
Learn about the most abundant metal in the Earth's crust.

THE ELEMENTS: COPPER
An introduction to copper and its uses.

THE ELEMENTS: IRON
An introduction to iron and its uses.

THE ELEMENTS: SILVER

Learn about silver and why it is so valuable.

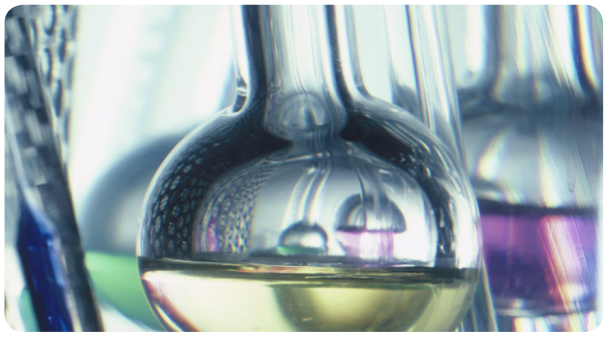
THE ELEMENTS: GOLD

Find out why gold is a valuable met element.

Materials of the Modern World

ALLOYS

How do we use alloys in everyday life?



FRACTIONAL DISTILLATION

How is crude oil converted into valuable products?

PLASTICS AND POLYMERS

How are different plastics, from shopping bags to dustbins, made?

INVENTION OF NYLON

An introduction to the discovery and uses of nylon.

RECYCLING PLASTICS

The different methods for recycling plastics.

Light, Colours and Beyond

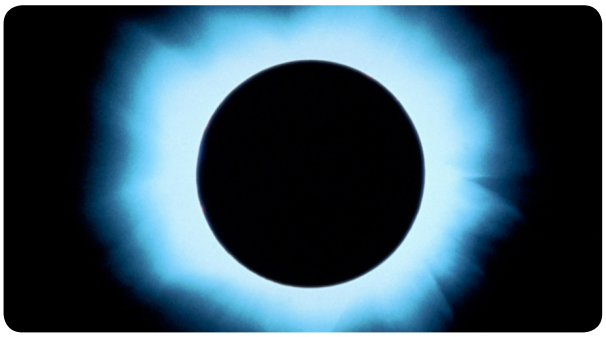
Light Rays from an Object

WHAT IS LIGHT?

Discover how light allows us to see the world and provides vital energy needed for life on Earth.

COLOUR

Red, green, yellow, blue - what makes colours different from each other?



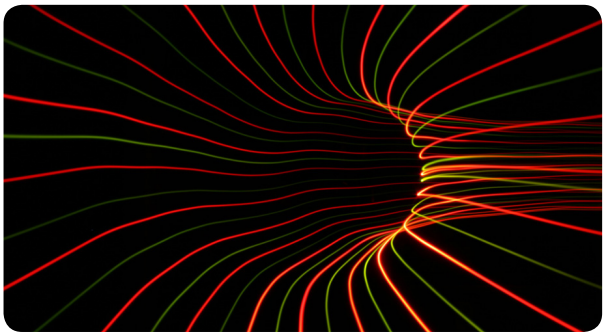
WHAT ARE ECLIPSES?

What causes solar and lunar eclipses?

Reflection

HOW ARE MIRRORS MADE?

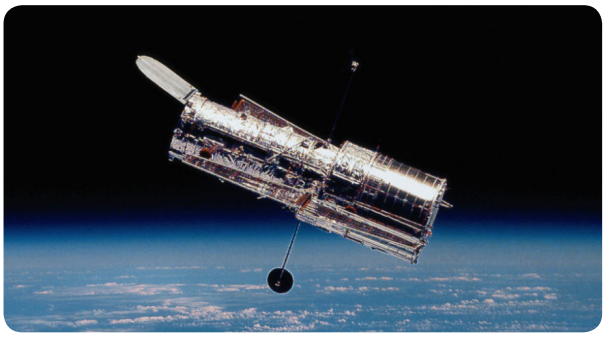
The amazing techniques used to make some of the world's largest mirrors for telescopes.



MANIPULATING LIGHT

What happens when light hits an object, or moves through different mediums?

TELESCOPES
How do telescopes work and how have they developed through history?

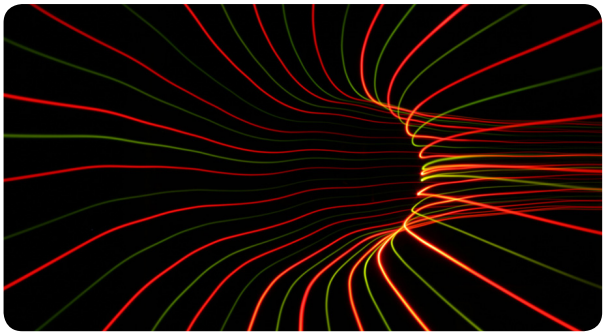


HUBBLE SPACE TELESCOPE
Why did the eight year project to build the Hubble Telescope nearly fail?

MOON MEASURING
How do we measure the distance from the Earth to the Moon?

FIBRE OPTICS
How can light be harnessed to transport information?

Refraction



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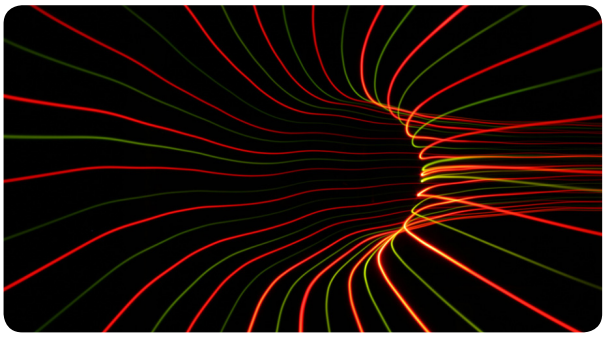
Total Internal Reflection



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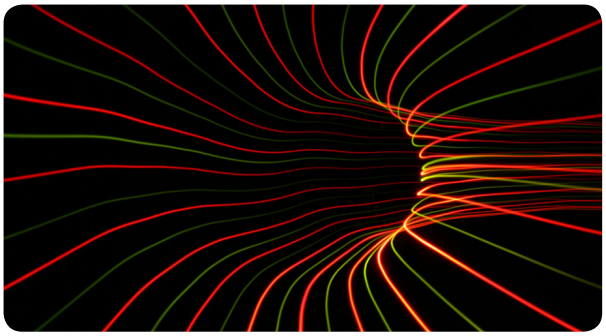
Images Formed by Convex Lenses



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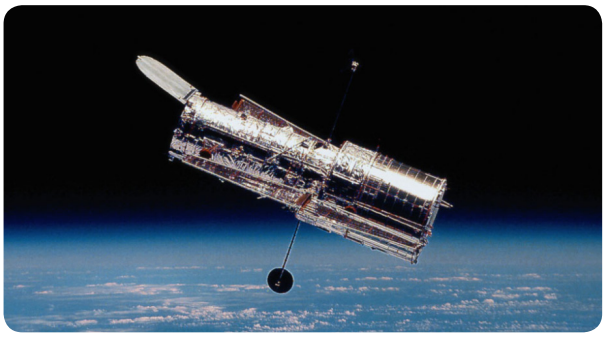
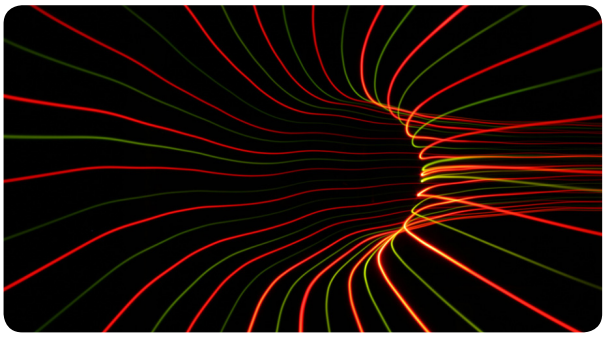


HUBBLE SPACE TELESCOPE
Why did the eight year project to build the Hubble Telescope nearly fail?

Images Formed by Concave Lenses



MANIPULATING LIGHT
What happens when light hits an object, or moves through different mediums?

Electromagnetic Spectrum

THE ELECTROMAGNETIC SPECTRUM
Electromagnetic radiation is all around us, but what is it?

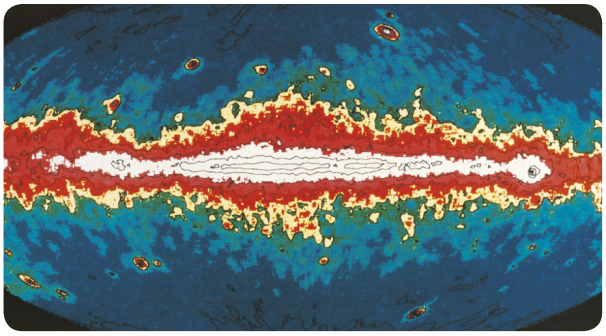
WHAT MAKES UP THE ELECTROMAGNETIC SPECTRUM?
What are the different types of radiation that make up the electromagnetic spectrum?

NOBEL PRIZE BY CHANCE

How a scientific 'mistake' led to one of the 20th century's greatest astronomical discoveries.

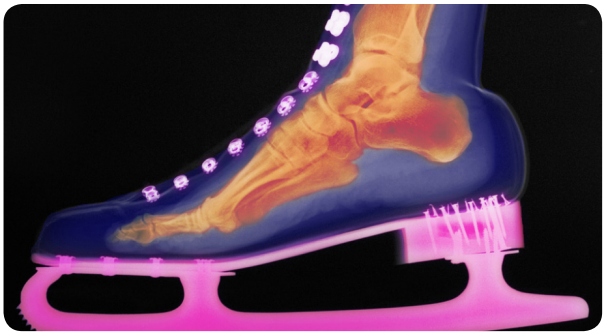
FACTPACK: BIG BANG SCIENTISTS

A brief history of the Universe through the eyes of the men who discovered it.



COLD WAR TO GAMMA RAYS

How Cold War suspicion led the USA to discover radiation from deep space.



WAVES IN MEDICINE

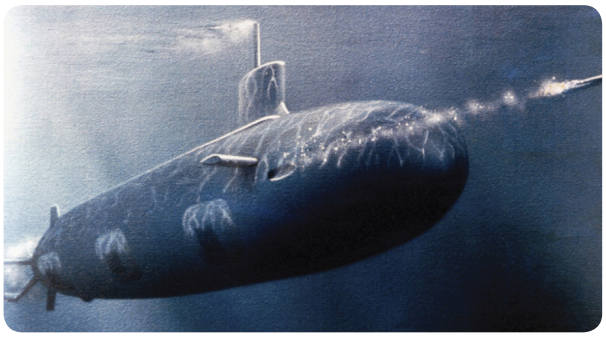
Why the highest energy radiation in the electromagnetic spectrum can be very useful.

INFRARED: SNAKE HUNT

Discover the extraordinary adaptation which allows snakes to hunt in near darkness.

HOW DO MOBILE PHONES WORK?

Why are microwaves perfect for communication using small mobile phones?



RADIO WAVES: SUBMARINE COMMUNICATION

How and why are radio waves used in underwater communication?

FACTPACK: BACKGROUND RADIATION

What radiation do we live with every day?

FACTPACK: ANIMAL VISION

How do animals view the world differently?

LIFE ON MARS: THE SEARCH FOR WATER

Is there water on Mars?

TELESCOPES

How do telescopes work and how have they developed through history?

NUCLEAR FISSION

How can energy be released from within atoms?

WHAT IS GPS?

How Global Positioning System (GPS) satellites tell us where we are on Earth.

WHAT IS LIGHT?

Discover how light allows us to see the world and provides vital energy needed for life on Earth.

COLOUR

Red, green, yellow, blue - what makes colours different from each other?

FACTPACK: COLOUR-MIXING

Revealing the different ways colour can be made.

NORTHERN LIGHTS

What causes the Northern Lights?