

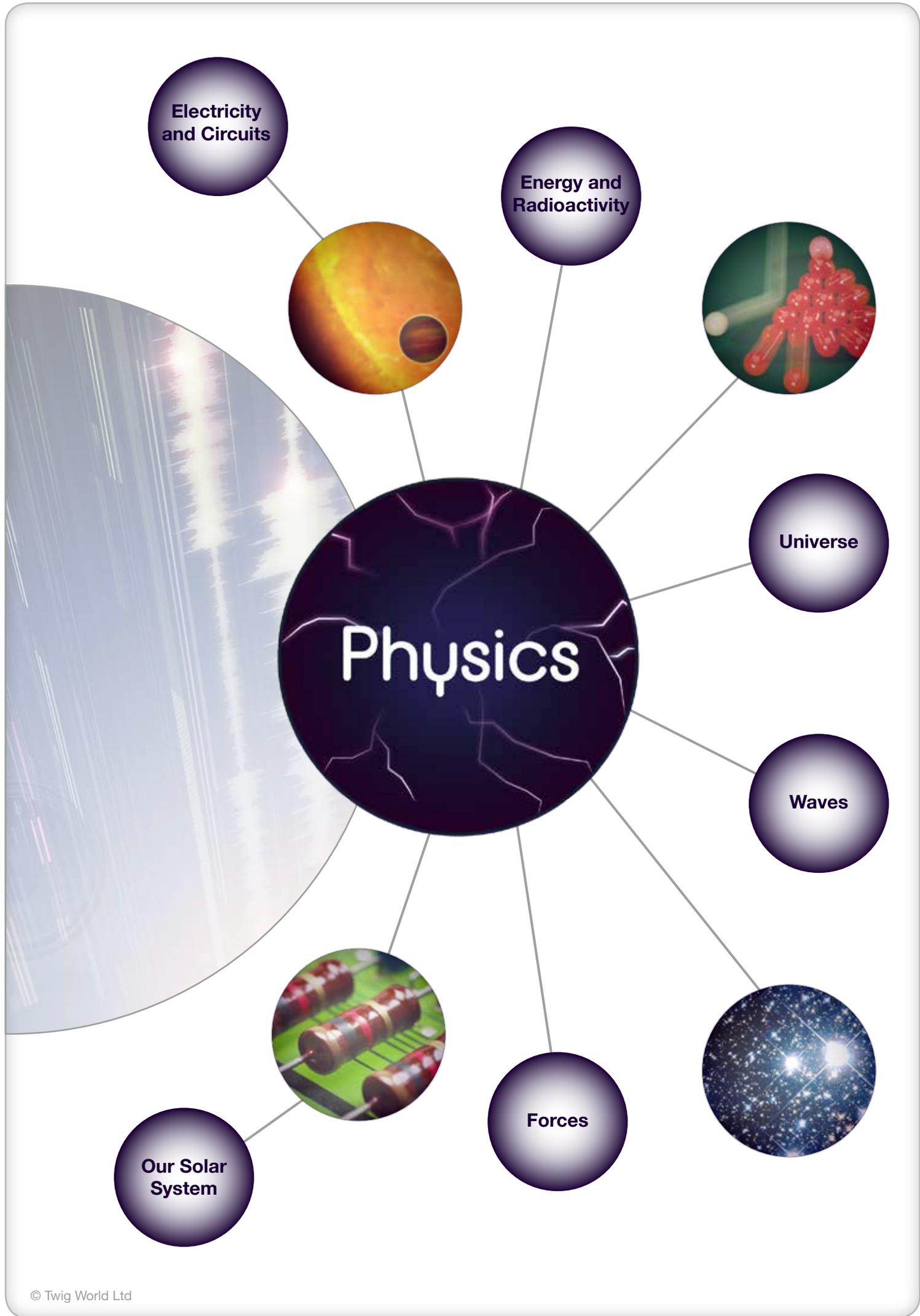


Film List

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Circuits

Circuits	Why are circuits vital for electrical currents?
Resistance	What is resistance, and why is it both useful and a hindrance?
Diodes and Transistors	Introducing the simple devices that have revolutionised technology.
Moore's Law	Was the rapid advancement in computing power predicted?
Hi-Fi Engineering	How do hi-fi speakers convert electrical signals into sound waves?
Rock Star Shock	Revealing the potentially deadly dangers of electricity through the story of a tragic accident.
Electric Eels	How does the eel harness the power of electricity?
FactPack: How to Draw a Circuit	Discover the universal symbols used in circuit design.

Electricity

What Is Electricity?	We all use electricity every day but what exactly is it?
AC, DC and Transformers	Discover why power is lost from electricity lines, and how transformers tackle this problem.
Electrical Safety	How can you protect yourself against electric shocks?
Static Electricity	Discover the hidden dangers of static electricity.
War of the Currents	Find out how a battle to supply electricity across the USA led to the invention of the electric chair.
Electricity in Medicine	Witness how electricity is used to save lives.
Thermal Imaging	How can a heat-seeking camera and helicopter help keep your lights on?
FactPack: Global Electricity Supply	How do different countries around the world generate their electricity?

Magnets

What Are Magnets?	Explore the many uses of magnets.
What Are Electromagnets?	Discover how combining electricity with magnetism can create a useful tool.
How Do Generators Work?	Explore the simple principle that brought electricity into everyday use.
Maglev Trains	Discover the train that defies gravity.
MRI	See how a magnetic machine allows doctors to see inside us.
Earth's Wandering Poles	What would happen if the North and South Poles switched?



Energy

Forms of Energy	What forms does energy take?
Energy Transformation	Discover how energy is recycled into different forms.
Potential Energy	Discover the three ways in which energy can be stored.
Steam Power	How do steam engines use heat to produce motion?
The Energy of Formula 1	Introducing the energy-converting engine that powers Formula 1 cars around the track.
Perpetual Motion	Is there a machine that can power itself forever?
FactPack: Horsepower	Find out how one man used horses to measure energy use.

Heat

Heat Transport	Discover the three ways heat energy can travel.
Laws of Thermodynamics	Discover the fundamental principles of energy use.
Expansion and Contraction	Why does heat cause objects to change shape?
Red Hot: Emergency Stop	Find out how the everyday process of braking uses extraordinary energy conversion.
Hot Air Balloons	How is flight made possible with little more than hot air?
Cavitation	Witness the tremendous damage that can be caused by tiny air bubbles.
The Race for Absolute Zero: Liquefying Gas	Discover how scientists reached supercool temperatures in the race to liquefy gases.
The Race for Absolute Zero: Laser Cooling	Discover how lasers were used to create the coldest temperature ever recorded.
FactPack: Extreme Temperatures	What are the hottest and coldest temperatures on Earth?

Radioactivity

Radioactive Substances	What makes a material radioactive?
Radioactive Half-Life	Will a radioactive material always be radioactive?
Reducing Radiation Risk	How can we work safely with radioactive materials?
Nuclear Fusion: The Hot and Cold Science	Can nuclear fusion be achieved through two methods?
Nuclear Weapons	Witness the science behind the most destructive weapons ever created.
Nuclear Fission	How can energy be released from within atoms?
FactPack: Background Radiation	What radiation do we live with every day?



Applying Force

Forces of Nature	Discover the four fundamental forces of nature which hold our Universe together.
Friction	Learn about friction, and how it affects us. Too little and we fall – too much and we struggle to move.
Centripetal Force	Discover the forces that control turning and rotation.
Streamlined: Dolphins vs People	Discover how streamlining affects animals' ability to swim.
Aerodynamics in Cycling	Discover how cyclists can manipulate forces to help them to win a race.
Friction in Curling	Discover the ingenious ways curlers use friction in their sport.
Rollercoasters	How do forces combine to create a thrill-packed ride?
Lever, Wheels, Pulleys	How do these simple machines work?
Planes, Wedges, Screws	How do these simple machines work?
Machines: Building the Pyramids	What machines did the Ancient Egyptians use to build the Pyramids of Giza?
Fighter Pilots: G-Force	Learn why fighter pilots must undergo special training to cope with acceleration.
FactPack: Experience Friction	Play along and experience friction first hand.
FactPack: G-Force	How much G-force can a human stand?

Newton's Law

Newton's Laws of Motion	Discover the physical rules which dictate how objects move.
Speed, Velocity, Acceleration	What is the difference between speed, velocity and acceleration?
Momentum	Discover why some moving objects won't stop.
Terminal Velocity	What happens when you accelerate in freefall?
How Do Animals Fly?	Discover why some animals are able to fly.
How Do Planes Fly?	Discover how planes are engineered to stay in the air.
Body Crash	Discover how airbags and seatbelts can save your life.
FactPack: Acceleration	Which can accelerate faster: man-made objects or living organisms?

Pressure	
Gas Laws	What happens when gases expand?
Buoyancy	Why do objects float or sink?
The Bends	Discover the potentially lethal dangers of changing pressure.
Pressure and Surface Area	Discover the relationship between pressure and surface area.
FactPack: Pressure and Altitude	Discover the effects of extreme changes in pressure with altitude.

“ You get engrossed in the films... I didn't really like science before but when we started using Twig, I could understand much better ”





Solar System

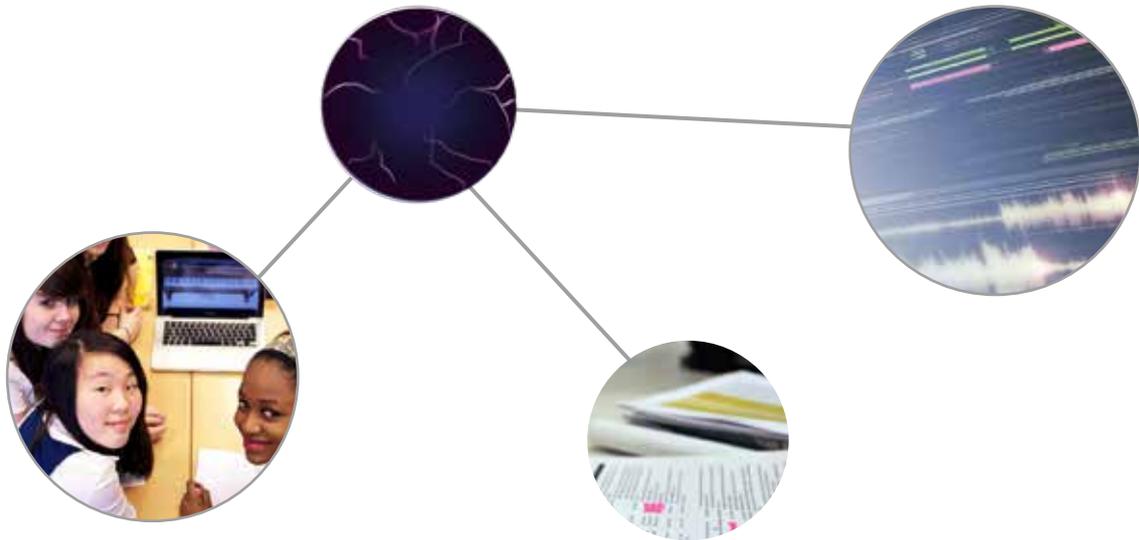
The Birth of Our Solar System	What created our Solar System?
Earth's Twin	Why did colliding with its twin prepare our planet for life?
The Goldilocks Zone	Not too hot and not too cold – why Earth is just right to support life.
How Did Saturn Get Its Rings?	Explore the mystery that plagues the brightest brains in astrophysics.
Venus 1: Atmosphere	Would probes sent to Venus discover an Earth-like planet?
Venus 2: Surface	What did the first probe find on Venus' surface?
What Are Asteroids?	An introduction to asteroids.
Mercury	An introduction to the smallest planet in our Solar System.
Venus	An introduction to the hottest planet in our Solar System.
Earth	An introduction to the planet we call home.
Mars	An introduction to our closest neighbouring planet.
Jupiter	An introduction to the biggest planet in our Solar System.
Saturn	An introduction to the Gas Giant, Saturn.
Uranus	An introduction to the seventh planet from the Sun.
Neptune	An introduction to the eighth planet from the Sun.
What is an Orbit?	All planets orbit the Sun, thanks to gravity.
FactPack: Moons	Find out about the moons of other planets.

Sun and Stars

The Sun	Journey into the Sun and discover why all life on Earth depends upon it.
Day and Night	What makes it day or night?
What Are Stars?	Find out how stars are born, how they live and how they die.
Why Is the Sky Blue?	From blue horizons to red sunsets, what creates the colour of the sky?
What Are Eclipses?	What causes solar and lunar eclipses?
Northern Lights and Solar Flares	Witness the Sun's role in creating the beautiful Northern Lights.
Shadow Chasers	Meet the party-people who gather to see and study eclipses.
Constellations	Learn how we give meaning to the patterns of stars in our sky.
Death of the Sun	Explore the future life and death of the Sun.

The Moon

The Moon	What makes a moon?
The Moon and Its Effect on Life	Could the Moon affect reproductive cycles on Earth?
The Moon and Spring Tides	The effect of the Moon on daily and extreme tides.
Dark Side of the Moon	Journey to the mysterious unseen far side of the Moon.
Life Without the Moon?	Why the Moon is vital for life on Earth.
Man on the Moon: Part 1	The extraordinary story of the Apollo 11 lunar landing, and how 'one giant leap' nearly never happened.
Man on the Moon: Part 2	After 'one giant leap', how did man return home from the Moon?
Fly Me to the Moon	Find out how to launch into outer space.
Moon Measuring	How do we measure the distance from the Earth to the Moon?





Big Bang

Big Bang Theory	How was our Universe created?
Big Bang Evidence	What is the evidence for the Big Bang theory?
Large Hadron Collider	Discover the machine which could recreate the Big Bang.
Nobel Prize by Chance	How a scientific 'mistake' led to one of the 20th century's greatest astronomical discoveries.
Cold War to Gamma Rays	Discover how Cold War suspicion lead the USA to discover radiation from deep space.
FactPack: Redshift	How wavelengths help measure distance in space.
FactPack: Big Bang Scientists	A brief history of the Universe through the eyes of the men who discovered it.

Outer Space

Scale of the Universe	Discover the size our Universe from Earth to the Solar System and beyond.
Black Holes	What are black holes and how are they formed?
Milky Way's Black Hole	Is there a supermassive black hole at the centre of our Galaxy?
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?
How Are Mirrors Made?	The amazing techniques used to make some of the world's largest mirrors for telescopes.
The Search for Dark Matter	Why scientists are venturing underground in the hunt for particles that bind our Universe together.
What Is a Light Year?	Why do we measure distance in terms of time?
Kittinger: First Man in Space?	The story of one man's quest to reach space in his hot air balloon.

Satellites

Shoemaker-Levy	The story of Shoemaker-Levy 9 – one of the most important comets in modern astronomy.
The Satellite Story	What is a satellite?
What Is GPS?	Find out how Global Positioning System (GPS) satellites tell us where we are on Earth.
What Are Comets?	An introduction to the comets orbiting our Sun.



Life in the Universe

Mars: Dead Planet	Discover the size our Universe from Earth to the Solar System and beyond.
Mars: The Search for Water	Is there water on Mars?
Planet Hunters	Meet the Planet Hunters.
Mars: Under the Ice	Discover why studies of Antarctica suggest there could be life on the red planet.
Next Stop Mars	As the Sun dies and gets hotter, will we need to move and bring life to the red planet?
Place Like Home: Life On a Moon	Could this moon hold the key to life on Earth?
Colonising the Moon?	Could we colonise the Moon, and who would get there first?
SETI: Are We Alone?	Has the SETI project detected extraterrestrial life?
Place Like Home: Cassini	Introducing the mission to reach Saturn's moon.
Planet Kevin	The story of Kevin, a student who managed to discover his own planet.
Life in Space	Can life survive in the vacuum of space?
Place Like Home: Inside a Probe	Learn how scientists overcame the difficulties of landing a probe on Saturn's moon.



EM 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?
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?
Submarine Communication	How and why are radio waves used in underwater communication?
FactPack: Animal Vision	How do animals view the world differently?

Sound

What Is Sound?	How and why do we hear different noises?
Speed of Sound	What factors determine how fast sounds travel?
Resonance	How does sound change as it passes through different mediums?
Doppler Shift	Discover how sound changes when objects move.
Beyond Human Hearing	Discover the sounds we can't hear and why they can be useful.
Shockwaves	Witness the destructive effects of supersonic speed.
Musical Instruments	What distinguishes music from noise?
Echolocation: Dolphins	How do dolphins use sound to navigate?
FactPack: Decibel Range	How loud is too loud?

Visible Light

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?
Manipulating Light	What happens when light hits an object, or moves through different mediums?
How Do Lasers Work?	How can light be powerful enough to cut through metal?
Fibre Optics	How can light be harnessed to transport information?
Time Travel	We can move freely through space, but is it possible that we could do the same through time?
FactPack: Colour Mixing	Revealing the different ways colour can be made.