

# What's



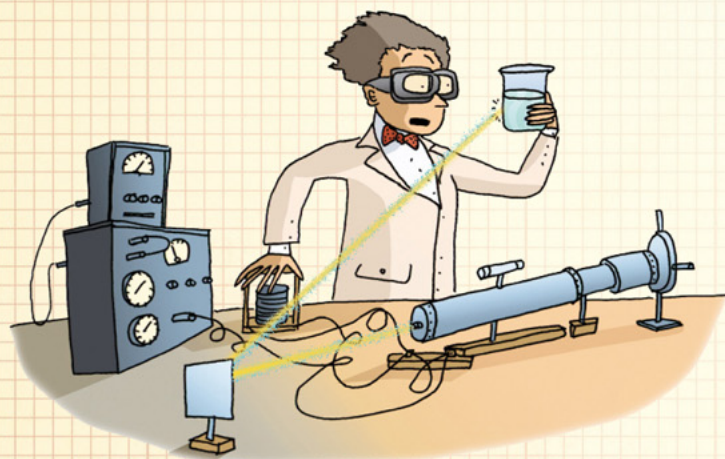
# Physics

## all about?

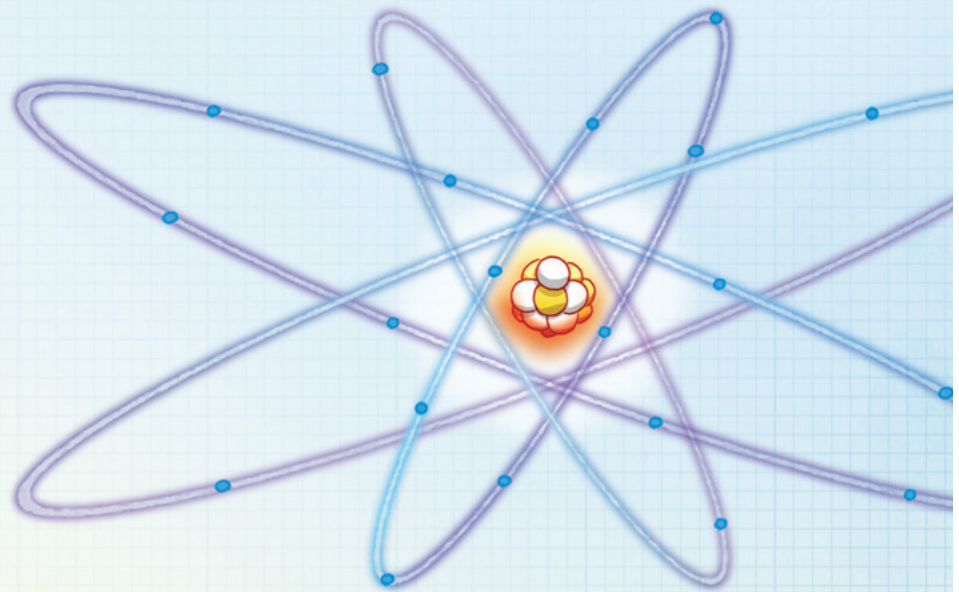


- Why is the sky blue?
- How did the Universe begin?
- Where does electricity come from?

Discover why things fall to the ground, how sound travels through walls, and how many wonderful inventions exist thanks to physics

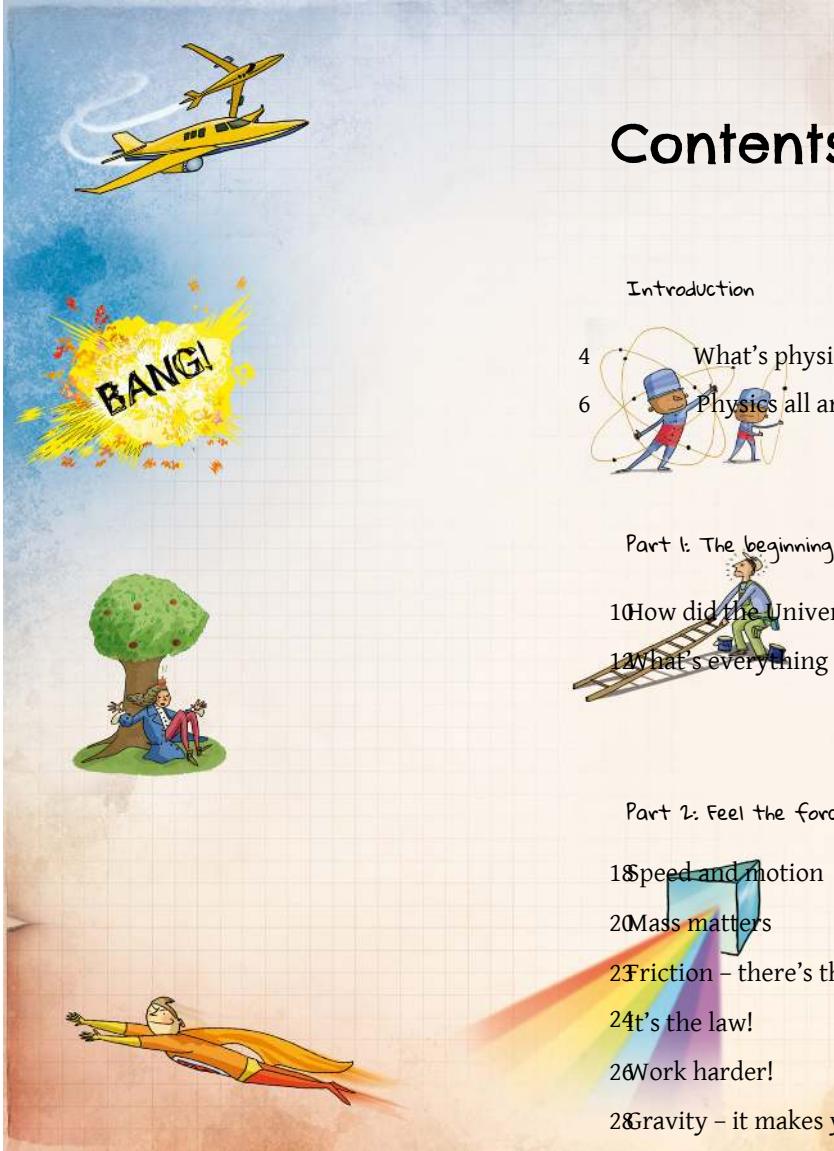


# What's Physics all about?



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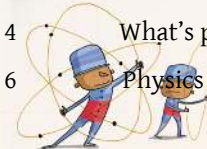


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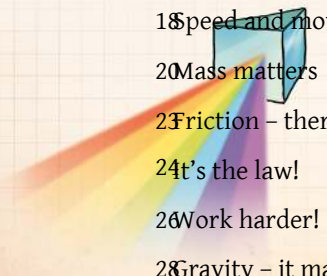
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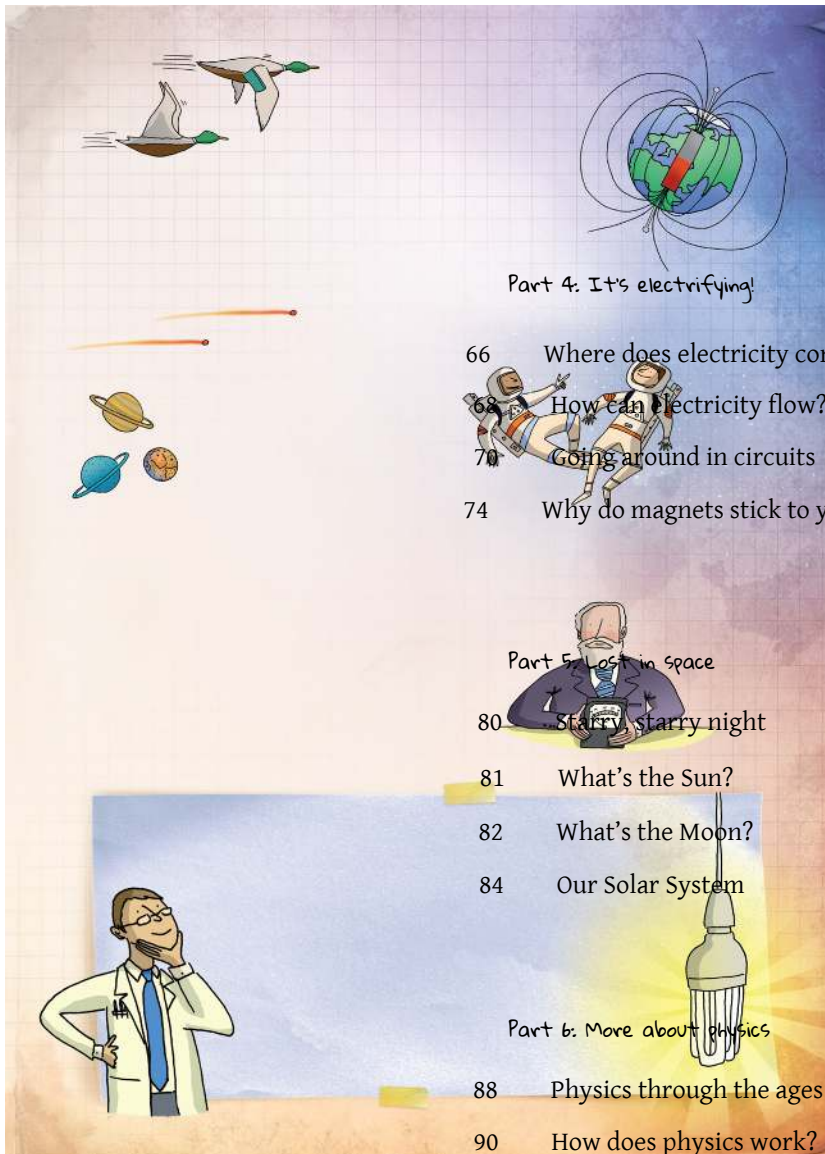
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## Internet links

You can find out all sorts of things about physics on the internet. You can find experiments to do at home, design your own theme park using the laws of physics,

## INTRODUCTION

# What's physics all about?

Physics is about how things work, and why things happen the way they do. Physicists ask all sorts of questions about life, the Universe and everything, from why a teaspoon gets hot when it's in a cup of coffee, to what happens to your body when you dive to the bottom of the sea.

They also ask some really big questions...

# What is the Universe made

Deep down, every single thing in the Universe is made from the same tiny bits of stuff called atoms.

But is an atom the smallest thing there is? And where did all this stuff come from in the first place? Physicists don't have *all* the answers, but they have lots of ideas.



# How does Universe w

Physicists can't explain how the whole Universe works – at least, not yet. But they can explain how all the things in it work the way they do.

If you've ever wondered why there are different seasons in a year, or why things fall to the ground,

### Careers in physics

People who study physics don't all end up becoming scientists. Here are some of the many jobs physics prepares you for:



#### Architects

need to understand the laws of physics to design buildings that won't fall down.



#### Computer game programmers

use the laws of physics to design more realistic games.



#### Pilots

need to know how planes fly – which is all to do with physics.



## What is energy?

Energy is what makes things happen. It makes atoms move, light shine and electricity flow. If there was no energy, the Universe would be a really quiet, cold and boring place to live.

Physicists study all kinds of energy. And they try to find new energy sources so that our power supplies will never run out.



Lightning that flash

## What's out in space?

Physics is about everything in our world and beyond – so physicists want to know what it's like in space.

Do things in space work in the same way that things work on Earth? Does time change if you travel through space? Physicists who try to answer questions like this are called astrophysicists. Astronomers, who study the night sky, are physicists too.



When you look at the seeing all the way into

## A journey into the unknown...

The really exciting thing about physics is that there is so much still to discover. Physicists argue about things such as whether using a mobile phone can give you cancer, and if there is life on other planets. Perhaps no one

**Just a matter of time?**

One day, an over-enthu physicist in a lab somewhere migt create a comj



INTRODUCTION

# Physics all around

People have been studying physics – without calling it that – for thousands of years, and using their discoveries to make life easier along the way. The first people who invented the wheel, or built canoes, were using the rules of physics. Without physics there would be no...



## ...parachutes

In 1617, Croatian inventor Faust Vrancic made an early kind of parachute by strapping a curved canopy to his back. It slowed his fall when he jumped off a tall tower in Venice.



## ...telephones

The telephone was invented by Alexander Graham Bell in 1876. He spent years investigating how sounds are created and how they move.



## ...light bulbs

In 1878, Englishman Sir Joseph Swan and Thomas Edison from the USA invented the light bulb almost simultaneously. Instead of fighting, the pair went into business together.



## ...motorbikes

In 1885, German engineer Gottlieb Daimler attached an engine to a wooden bicycle to make the first (rather wobbly) motorbike.

## ...planes



## INTRODUCTION



### ...computers

One of the first computers, the ENIAC, was designed by two American scientists, John Mauchly and J. Presper Eckert. It took them three years to build it. When they finished, in 1946, it took up the space of about five classrooms. The first home computer wasn't invented until 1975 – until then, computers were too big to have at home.

### ...televisions

The first television was built in 1925 by Scottish inventor John Logie Baird. He made it in his attic out of household objects. By 1929, the British Broadcasting Corporation was using his television system to broadcast tv shows.

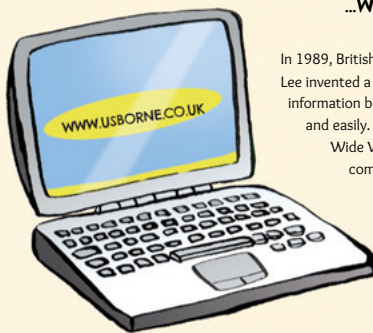


### ...microwave ovens

In 1945, American scientist Percy Spencer was walking past a machine called a magnetron when the chocolate bar in his pocket suddenly melted. He worked out that a kind of energy called microwave energy, emitted by the magnetron, was responsible. He used the magnetron to invent the microwave oven.

### ...World Wide Web.

In 1989, British scientist Tim Berners-Lee invented a way of sharing information between computers quickly and easily. It's called the World Wide Web, and today it links computers all over the world.



### ...MP3 players

The MP3 data storage file was developed by a team of German and US engineers. An MP3 is a type of computer file that contains a digital version of a song or a video.

The first MP3s were released on the



Who knows what could be next?