Topical Science Updates



June 2021

Climate Crisis Special

in collaboration with the

Great Science Share for Schools





The Climate Crisis has reached the point where doing nothing is no longer an option. We all have a responsibility to consider our own impact on the environment, and the power to put pressure on governments and businesses to reduce their impact.

Calculate your environmental impact

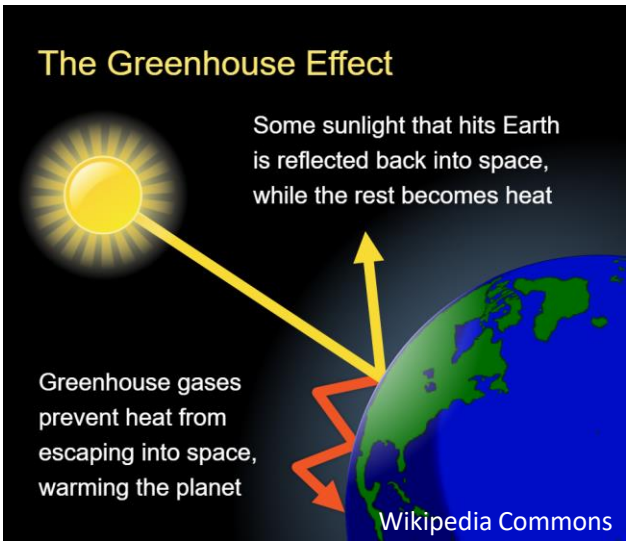
How you can help

What is Climate Charge?

You've heard the term Climate Change, but what does it really mean? And what is causing it?

Over it's 4.5 billion year history Earth has warmed and cooled dramatically in natural cycles but since the industrial revolution something unnatural has been affecting natures delicate balance – Humans!

The industrial revolution was powered by the discovery that burning fossil fuels released huge amounts of energy that could be used to power machines.



The downside of burning fossil fuels, which are still used today as a major fuel source, is that they release carbon dioxide, CO_2, which gets trapped in the atmosphere and contributes to the greenhouse effect. The increase in greenhouse gasses stops heat escaping from Earth and contributes to Global Warming.

What is Climate Change? | Climate Change | Fossil Fuels | Using fossil fuels | Natural Climate Cycles

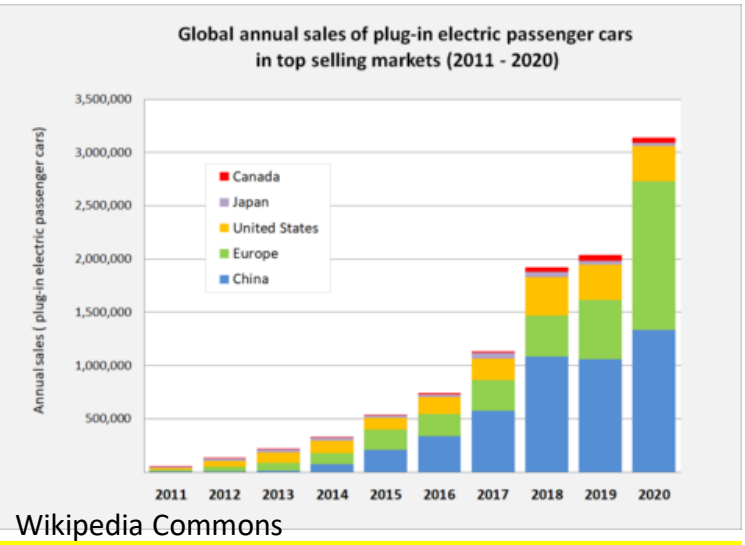
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Are Electric Cars the answer?



Wikipedia Commons

Electric, and hybrid, cars account for about 4.2% of global car sales, this has doubled since 2019. The realisation that petrol and diesel cars are unsustainably polluting has meant car manufacturers investing heavily in electric technology – great…or is it?

Electric cars require large batteries to give them a decent driving range and despite huge advances in battery technology they still require rare natural resources to make, and they degrade over time and have to be disposed of. This is a problem.

What could be the next energy source for our cars?

Evs Factcheck Mythbusting Evs Battery disposal

Solving the plastic problem?

Plastic was invented as a 'wonder' material, but there is one problem…it lasts forever – or so it seems. Plastic pollution has become a huge global problem and the world needs solutions fast.


Pixabay

Ocean Cleanup Cleanup Innovations

Lifecycle of a plastic bottle Plastic alternatives

Young People Leading the Climate Charge


Pixabay

With many governments round the world unable to agree on an appropriate level of action there are many people who think that no enough is currently been done.

A small group of inspirational young people have taken it upon themselves to put pressure on the worlds leaders to make the changes that are needed.

Greta Thurnberg has been campaigning for global action since she was 12 years old and she has inspired other young people round the world to do the same. She isn't the only high profile young campaigner though – find out about others **here.**

COP26

Greta Thunberg Speech

School Strikes

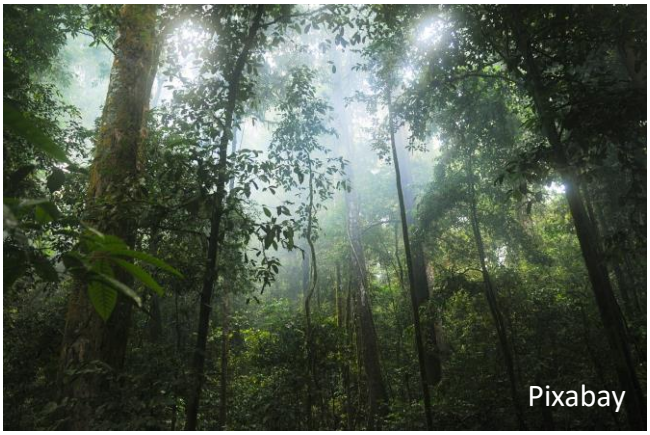
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Deforestation



The worlds rainforests are disappearing at a rate of about 4000 football pitches an hour! At that rate there will be no rainforest left in 100 years.

Earth's rainforests are vital for sustaining natures delicate balance, they take about 20% of man-made carbon dioxide out of the air and produce about 20% of our oxygen.

They also sustain about half the worlds plant and animal species, provide us with at least 25% of our medicines and a significant amount of food for the worlds population. Preserving them is essential for the sustainable future of Planet Earth.



In some parts of the world rainforest is now protected and in other places projects are ongoing to regenerate rainforests.

What are rainforests? Why are they important?

Deforestation Regenerating rainforests

Great Green Wall Project

Energising the future

One of the big challenges facing us as a Global community is generating enough clean electricity to power our increasingly technological lives.

Sources of clean energy are going to be essential to provide sustainable power supplies without causing further damage to the environment.

What will the future of energy production look like?



Clean energy Renewables

The future of clean power

When considering this challenge it is important to remember that over 10% of the worlds population live with little, or no, electricity at all.

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An annual campaign to inspire young people to share *their* scientific questions with new audiences.

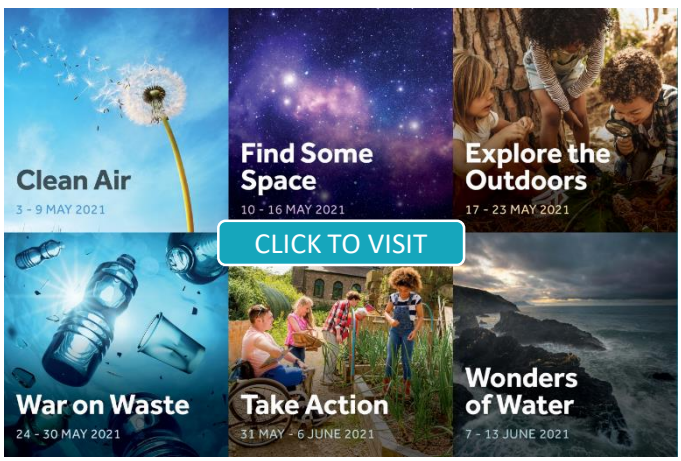
The Great Science Share for Schools is the award-winning campaign that **invites 5-14 year olds to share *their* own scientific questions and investigations**, to **raise the profile of science in schools and communities**, and **inspire young people into science and engineering**.

6 weeks of activities and lessons to stimulate children to ask, investigate and share what they're curious about. End it with a whole school science day, fair or virtual share, using Twitter to reach out to the GSSfS community.

Explore the 2021 Weekly Themes linked to the Climate Emergency

From 3rd May 2021, every Monday will see the release of themed curriculum resources for 5-14 year olds. Use lessons and activities in school or for home learning that will inspire pupils to ask and investigate scientific questions.

REGISTER to receive key information ahead of each weekly launch.



Your Planet, Your Questions

15 June 2021 9 - 10am

with Prof Brian Cox and a panel of Climate science experts

Register to submit your pupils' questions for the panel.

THE ROYAL SOCIETY

CLICK TO VISIT



Just launched!

Includes a **campaign roadmap**, **pupil sheets**, and a **poster** to promote your participation.



CLICK TO VISIT

MANCHESTER 1824 The University of Manchester · BASF We create chemistry · SIEMENS Ingenuity for life · MANCHESTER CITY COUNCIL · The Ogden Trust making physics matter · why & how? PRIMARY SCIENCE TEACHING TRUST · THE ROYAL SOCIETY · COMINO FOUNDATION

Working collaboratively with the **Association of Science Education, Primary Science Quality Mark, Scottish Schools Education Network** and with the support of **The Curiosity Box and CREST (British Science Association)**

Together for a Fair Climate Future

Sustainability first

https://www.sustainabilityfirst.org.uk/

Children and young people will inherit a changing world due to the climate and ecological emergency.

Sustainability First is a sustainability charity in the UK and they have developed a pilot series of pre-recorded workshops and activities on water, waste and climate action, targeted at Key Stage 2 and Second Level pupils and available from May 2021.

These activities aim to inspire and support pupils to develop knowledge, creativity and skills to take climate action, whilst caring for the environment and each other.



All the activities combine lessons and tasks on art, science, geography, literacy, social justice, and citizenship. They're perfect for teachers to use in class or online teaching, or for pupils to work through at home with a parent or guardian. They're all linked to the National Curriculums for England and Wales and the Curriculum for Excellence in Scotland.

The workshops are delivered in partnership with the Great Science Share for Schools and supported by National Grid.

Let's Get Wise About Waste

Sustainability *first*

https://www.sustainabilityfirst.org.uk/



The UK produces 31 million tonnes of waste every year. That's the weight of 3.5 million double decker buses – a queue of which would go around the planet earth 2.5 times.

In this first workshop, Sustainability First explores waste – what it is, its impact on people and the planet, why we waste, and how we can reduce waste.

Pupils are encouraged to think about the waste they produce and put some of these actions into practice through a series of creative activities:

- using waste carboard to make marionette shadow figures, guided by artist Tere Chad
- reading and responding to letters from older people describing how their relationship with waste have changed over their lifetimes
- writing a story about their favourite item of clothing, with help from storyteller Lauren Bianchi.

Access all the waste workshop materials online here.

Our Changing World

Sustainability *first*

https://www.sustainabilityfirst.org.uk/



Young people around the world are concerned with the changing planet and want to make sure they can grow up into a healthy world where they can thrive and be happy.

In this second workshop, Sustainability First explores the climate crisis and its consequences - the connections we have with the planet, and why and how we should care for nature and each other.

Pupils will be supported to explore these ideas further through a series of activities:

- celebrating our connection to nature through drawing and painting, guided by Artist Christabel Forbes
- chair based yoga and breathing practices with Annelise Piers, reminding pupils that to take care of the earth we need to take care of ourselves
- writing statements for climate action, with the help of some youth climate activists sharing their own experiences.

Access all the climate action workshop materials online here .

The Wonders of Water

Sustainability *first*

https://www.sustainabilityfirst.org.uk/



Water, in all its forms, helps all life on earth in so many ways. Unfortunately, water systems are suffering due to things that people do that are bad for the planet.

In this third workshop, Sustainability First explores the necessity of healthy and sustainable water systems and why water is essential for life on planet earth – through the water cycle, how water reaches our home, and the impacts of human activity on waterways and oceans.

Pupils will be invited to use their imagination to go beyond the water surface through a series of activities including:

- making postcards using art and music guided by Artist Anthony Garrett
- writing stories or poems from the perspective of a sea animals suffering from water pollution.

Access all the water workshop materials online here.

Pupils' Assembly

Sustainability *first*

https://www.sustainabilityfirst.org.uk/

The workshop series will culminate on 15 June 2021 with a live pupils' assembly. This will be an opportunity for pupils to share and celebrate their art and writing and to put their questions, comments and suggestions to a panel of experts in waste, water and climate action – so they can take these opinions forward in their decision making.

If you are interested in getting involved in the Pupil's Assembly sign up here.

The assembly will be taking place live, but all the other workshop resources will be available to access and return to at any time on Sustainability First's website.

Find out more here.



For any inquiries on this programme, please email: sonya.peres@sustainabilityfirst.org.uk

THE GREAT 2021 BUG HUNT



"It's so addictive I can guarantee once you've been on a bug hunt you will never ever be bored again."

Nick Baker

An exciting competition for primary school children that takes you outside to explore the bug world!

What will you find?

Identify a local habitat, explore and discover the bugs that live there, draw them and record your findings – it's that simple!

Entries to reach us by:

June 10th 2021

www.schoolscience.co.uk/bughunt

schoolscience.co.uk

The Association for Science Education

Promoting Excellence in Science Teaching and Learning

Royal Entomological Society

Find out more about The Great 2021 Bug Hunt here.