



# GETTING INNOVATIVE FOR A GREENER FUTURE

Create your own invention inside!



# Happy World IP Day 2020!

...Happy World What?! 🤖

Every 26 April, we celebrate World Intellectual Property Day! It's a day to applaud creations, inventions, designs and ideas, along with all the people who came up with them.

## What is intellectual property (IP)?

Intellectual property (IP) is any creation of the mind: inventions, books, artwork, designs, ideas!

IP rights make sure that the people who have these ideas are recognised for them, and no one else can pretend that they had the idea first.



## Our planet needs our help!

Creating a path to protecting our planet is a top priority today, so this year we're focussing on innovations for a greener future. This is our common challenge, and everyone can play their part in making our planet a better place to live. With that in mind, we have filled this book with simple ways you can get involved too!

There are so many people doing amazing things to protect our planet. These are ordinary people whose stories inspire us all to make a difference, and that's why we've included them here. Read on to hear stories of the young and brilliant inventors who are protecting planet earth.

Then finally, be prepared to add your own invention to this book...you are the future, and you are our planet's hope! Perhaps you will be among the next characters who make an extraordinary impact, helping to protect the earth and all the other wonderful forms of life.

On World Intellectual Property Day 2020, let us explore new ideas and ways of doing things as we work towards a green future together. Why? Because our tomorrow will be built on the choices we make today. This planet is our home... let's take better care of it together!

# What's our planet's problem?!

In one word, our planet's problem is *us*.

We are catching too many fish in the oceans, chopping down the world's forests, changing the climate and polluting the air and water. Why? Because we must feed the billions of people who live on earth.

## Climate change

Climate is the normal weather of an area over a long period of time.

Have you heard that our world is changing? That some places are getting unusually hot while others are getting unusually cold? Overall, the earth's climate is getting warmer and warmer. This is known as **global warming**.

The climate of our planet has changed before, but this time it's because of people. We are causing these changes, and they're happening on a bigger scale and faster than ever before.

Scientists all agree that the earth's rising temperature is down to human activity. When we burn coal, oil and gas (fossil fuels) to produce energy and electricity, **greenhouse gases (GHGs)** are released into the atmosphere. GHGs help to keep our planet warm, but when there are too many, they trap too much heat from sunlight. **Carbon dioxide**, in particular, is trapping more and more heat, and it is this that is making the world warm up.

The big problem with these changes in climate is that they can lead to natural disasters, like stronger storms, droughts and floods. Climate change is also melting the earth's polar ice and causing sea levels to rise. All this can damage the places that people, animals and plants call home.



# Natural resources

Natural resources are useful things that come from nature, such as water, rocks, forests and animals.

We have used natural resources for thousands of years to produce the things we need, like clothes or food, because the earth can replace them. It can take a long time, but more trees will grow, and more animals will be born. So, what's the problem?

Well, there's more than just one problem. Firstly, the ways in which we use the earth's resources are often bad for the environment, producing waste and gas emissions. And secondly, the planet simply cannot keep up with how fast we are using up its resources!

The [Organisation for Economic Co-operation & Development \(OECD\)](https://www.oecd.org/)<sup>1</sup> carried out a study into the use of the earth's resources. They found that every year, 62 billion tonnes of resources are removed. That's ten tonnes for every person alive today! Imagine the weight of around two elephants in wood, fossil and biomass fuels, minerals and metals used for every person, every year.

1: [www.edie.net/news/5/20-of-Earths-natural-resource-use-goes-to-waste/23607](https://www.edie.net/news/5/20-of-Earths-natural-resource-use-goes-to-waste/23607)

**Carbon Footprint**

How much carbon goes into the air because of the things you do.

The bigger your footprint, the more carbon dioxide you produce at home and school by using power, transport or not recycling.



# What are people doing to help?

Innovations are making a big difference in helping us safeguard our planet. New inventions, new ideas, and new ways of doing things are all helping us to reduce, reuse and recycle!



More people are choosing to cycle or take public transport, helping to reduce their carbon footprints.



Countries around the world are working together to slow down climate change.



New technologies are being developed, such as hybrid and electric cars that emit far fewer GHGs.



People are starting to use more clean energy, such as hydropower, or wind, solar and geothermal energy. Clean energy releases little to no GHGs and is renewable by nature, so it will not run out!



Shops no longer hand out free plastic carrier bags. Reusable shopping bags make a huge difference in reducing how much we consume!



Businesses are creating and using products that can be recycled or decompose easily, like paper straws and compostable forks.

# Want to know what YOU can do?

Creative and caring people like you are just what we need to build a greener future and improve our world. The great news is, it's super easy to start using less energy or reduce waste, keeping your carbon footprint down. Here are some things you can do right away!

## Reduce waste by:

- recycling paper, plastic, glass and aluminium.
- selling or donating old clothing and other items you no longer use.
- taking your own, reusable bag to the shops.
- using a refillable water bottle.

## Use less electricity by:

- turning off TVs and other electronics when you're not using them.
- switching off lights when you leave a room.
- air drying your hair and clothes.

## Use less water by:

- showering for a shorter amount of time.
- turning the tap off while you're brushing your teeth.



Who knows?  
Changing your own energy habits may also motivate your friends, family and teachers to do the same.

# What's all this got to do with Intellectual Property?



Remember we said that intellectual property (IP) is any creation of the mind? Inventions, books, artwork, designs, ideas!

Well, IP rights exist to make sure that those who create or invent get paid for their work. No one can spend all their time thinking of ideas if they can't earn a living from them! Those who hold the IP rights can charge money if someone wants to use their IP, and nobody else can copy or use it without first asking for their permission. This encourages people to be innovative and creative, and ultimately benefits the lives of everyone on our planet.

Across the world, young people are showing their determination to save the planet! It is their new, climate-friendly ideas and thinking that are urgently needed to tackle the climate crisis and achieve a green future. By reaching out to young people, IP Offices can support them by protecting their innovative ideas, enabling them to turn their dreams into reality.

## Different types of IP are protected by different rights

### Patents:

inventions, such as electric cars

### Trademarks:

brands, such as WWF

### Copyright and related rights:

designs, and creative works such as films, TV programmes, songs and plays about the environment.

# Celebrating Young Innovators

Around the world, pioneering young inventors and creators are working to shape a future that is green and from which we will all benefit.

Read on to discover how they spare no effort in their quest to protect our planet...



## Bioplastics vs petroleum based plastics

**Petroleum-Based Plastics:** These make up most plastic products. Not bio-degradable and probably take several hundred to a thousand years to break down.

**Bioplastics:** Made from living organisms. Biodegradable, taking 3-6 months to fully break down.



## Elif Bilgin

Elif grew up in the city of Istanbul where, as a teenager, she started to take more and more notice of the world around her. She became very concerned about climate change and pollution and began to research what could be done in order to live in a cleaner environment. **Bioplastics** were what caught her eye – a cheaper and eco-friendlier plastic made out of organic materials. She had a brilliant idea — why not use bananas as a potential material?

Finding a method to do this wasn't easy though! Elif spent a full two years experimenting – and failing – until finally, her incredible patience and determination paid off. She had invented a way to make her own version of bioplastic from banana peels.

Elif won \$50,000 at the Google Science Fair in 2013, the “Scientific American Magazine’s Science in Action Award” and the “Voters’ Choice Award”, all thanks to her dedication to creating a better and cleaner world for us all.

*‘I don’t think that it is your age that determines the potential you have — it is the unlimited imagination you have that gives you the unlimited potential to create.’<sup>2</sup>*

Elif Bilgin

2: [www.dailysabah.com/feature/2014/08/21/elif-bilgin-turkeys-environmental-wonder-kid](http://www.dailysabah.com/feature/2014/08/21/elif-bilgin-turkeys-environmental-wonder-kid)

## Hannah Herbst

Florida-based Hannah was inspired to invent at the age of 14 by her then-nine-year-old pen pal. Living in Ethiopia, her pen pal did not have access to lights, and Hannah was determined to come up with a solution.

Hannah invented a small turbine prototype that converts energy from the movement of the ocean’s currents into electricity. Known as BEACON (Bringing Electricity Access to Countries through Ocean Energy), the electricity that is made by the device can be stored in batteries or used to purify water.

The invention won the Discovery Education 3M Young Scientist Challenge in 2015, and in the same year Hannah was named America’s Top Young Scientist. Over the next few years, she will be developing her design so that people all around the world can generate clean energy.

*‘I see a lot of problems in the world, and I think that engineering provides a platform to fix them. I really want to help people; that’s my goal.’<sup>3</sup>*

Hannah Herbst

3: [kwhs.wharton.upenn.edu/2018/01/social-innovator-hannah-herbst-uses-water-power-tackle-energy-poverty](http://kwhs.wharton.upenn.edu/2018/01/social-innovator-hannah-herbst-uses-water-power-tackle-energy-poverty)



## Boyan Slat

In the summer of 2011, at the age of 16, Boyan was diving in Greece and was shocked to see more plastic bags than fish!

*'Everyone said to me: 'Oh there's nothing you can do about plastic once it gets into the oceans,' and I wondered whether that was true.'*<sup>4</sup>

Boyan had always enjoyed solving puzzles and was determined to crack this one too. It didn't take him long to come up with the idea of using the ocean's currents to gather the plastic together in one place.

At school, a science project gave Boyan the opportunity to develop his idea further. He imagined an arrangement of floating barriers, fixed to the seabed. Thanks to the ocean current, the barriers could catch the floating rubbish, making it much easier to remove for recycling. Because the waves would pass underneath the barriers, fish could safely swim beneath. There would be no gas emissions, and the collected ocean plastic could be recycled to make new products or oil.

He later founded The Ocean Cleanup, a non-profit organization, to develop his proposed technologies and save our seas.

*'To me it is not very motivating to solve one percent of a problem. Big problems require big solutions'*<sup>5</sup>

Boyan Slat

4: [theworldincubator.com/blog/page-11.html](http://theworldincubator.com/blog/page-11.html)

5: [www.digitaltrends.com/cool-tech/ocean-cleanup-project-boyan-slat-interview](http://www.digitaltrends.com/cool-tech/ocean-cleanup-project-boyan-slat-interview)



## Leroy Mwasuru

During the building of a new dorm at Leroy's school in Western Kenya, tractors disturbed hole-in-the-ground toilets and human waste began leaking into a stream nearby.

*'There was uproar from the local community,' Leroy recalls. 'It was the only source of fresh water, and nobody wants faeces in their water.'*<sup>6</sup>

But this wasn't the only problem faced by Leroy's community. His school was also using firewood in the kitchen, which meant that forests around the school were being cut down, and the cooks' lungs and eyes were suffering damage from the smoke.

So, Leroy and a group of friends vowed to solve these problems. They began a high school project looking for ways to provide alternative renewable energy to local communities and institutions in Kenya. Around their homework, exams and daily chores, they found time to form a plan – why not use human waste to power the gas stoves? Initial reluctance from the community soon turned to support, as Leroy's first prototype powered the school's kitchen and solved the problem of the leaking poop!

At the age of 16, Leroy founded Greenpact, a clean energy start-up working to provide access to clean energy and proper sanitation for more than 6 million Kenyan households.

*'In slums in Kenya where waste is mishandled causing waterborne diseases like Dysentery and Cholera, Greenpact will [help change] the status quo'*<sup>7</sup>

Leroy Mwasuru

6: [www.nbc-2.com/story/28207399/cooking-with-gas-teenager-brings-poop-power-to-kenyan-school](http://www.nbc-2.com/story/28207399/cooking-with-gas-teenager-brings-poop-power-to-kenyan-school)

7: [www.huffingtonpost.co.uk/entry/kenya-entrepreneurs-biogas-poo-power\\_uk\\_57851c77e4b0c7053213a8e2](http://www.huffingtonpost.co.uk/entry/kenya-entrepreneurs-biogas-poo-power_uk_57851c77e4b0c7053213a8e2)

# Could YOU be the next young inventor?

Why not? The world's young innovators have clearly demonstrated that there is no need to wait until you are older to make a difference!



## Brainstorm!

One of the best ways to collect ideas for developing an invention is to brainstorm!

- Make a list of everyday inventions that make life easier or better than it was in the past, e.g. remote controls, wireless headphones, portable chargers.
- Think about the environmental problems discussed in this book, what specific problems would you like to solve?
- Brainstorm a list of possible inventions. Write them down and explain what they do.

## Develop!

Select one of the inventions from your brainstorm and develop it! Use the **worksheet** on the next page!

- Draw a picture of your invention and name it.
- Describe your invention. What is it made of and what does it do?
- What problem do you hope to solve with it?
- Who would use your invention?
- How would it make their life better or more convenient?

## Present!

Practice a short presentation in front of your family, making sure you explain:

- What you've invented.
- Who it's for and why it will be used.
- What skills you've learned from this activity.

# My new invention

Name:

My invention is called:

What does my invention do?

What problem does my invention solve?

Who would use my invention?

What does my invention look like?

# Building a greener future

Our world is amazing: from the people who populate it, to the animals we share it with, from the cities we build to the oceans and forests of the planet itself! And you are part of it all.

Together we can find new, more effective ways to shape a low-carbon future. There really is no limit to your imagination. Trust your education, be confident, and believe you can do it! You have the power to change the world for the better and everyone at Potter Clarkson wishes you the best of luck!

**Happy World IP Day 2020!**

