

TEEN TECH®

AWARDS

SUPPORTED BY



FRIDAY 28TH JUNE 2024
IET LONDON

WHAT THEY SAY...

We learnt how to work as a team, how to negotiate, listen and incorporate each others ideas. We were creative and willing to take a risk. Without each other we would not of been able to develop this idea into something more. Working with each other has expanded our mindset and opened up a whole new creative side that we didn't know existed. Although we did have disagreements and our own opinions we worked through them and found a way to include everyone.

- Students

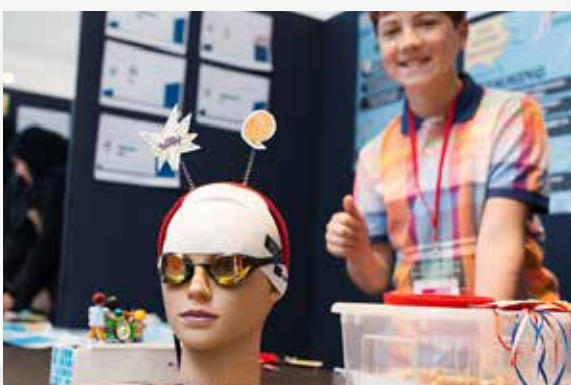


This has been really inspiring, conversing with other groups and seeing their innovative ideas blossom into tangible prototypes is really interesting to see. We've learnt that it can be hard to work in a team, and separate the jobs into equal parts, but for the most part it has been easy to work in a team since we can communicate with each other.

- Students

By participating in the TeenTech Awards, I have developed my potential to be a good employee in the future workforce because I have developed qualities that are desirable to employers. My research has developed my critical thinking skills as I have constantly dealt with changes, whether it be to my team or to the project itself. Even though I ended up doing the project alone, it has allowed me to illustrate teamwork through communication with my mentors who inspired and fueled my creativity. Most importantly my aim to help doctors in healthcare has been successfully developed and has inspired me to continue my research beyond the competition itself.

- Student



Throughout this project I have learned that it takes a lot more than thinking of an idea to make it work, there is a process you must go through to develop your product to the best of your ability, you must think of every case scenario that things could go wrong or right. I realised that although I like our idea, it may not appeal to everyone, but instead of looking at that negatively, I use this information to challenge myself to make it better.

- Student



Engaging in a project with a focus on mental health and educational support shifted my perspective on the role of technology in society. It underlines the potential of technological innovations to address social challenges, promoting a vision of technology as a force for good and possibly sparking my interest in pursuing a career in tech that emphasises social impact.

- Student

The external input we got from professionals and our survey was incredibly important in our decision making and allowed us to continue with confidence – it is clear why this is so important in industry and in large scale products. This project has allowed us to think creatively and analyse research to inform our decisions. It has also given us an insight into the long process behind every item that is manufactured and sold. It has been a great opportunity to work as a team – which has been one of our strengths throughout.

- Students



Despite all of our forethought and scrutiny, we inevitably met many failures and were forced to face many obstacles. However, through these hardships, we mastered skills of patience, problem-solving and the ability to learn from our mistakes instead of mourning over them. We also gleaned invaluable collaboration and communication skills from this project. It could have not been done alone, and our teamwork has also brought us closer as people.

- Students

Through conceptualising and developing my project, I have learnt numerous valuable lessons spanning technology, psychology, education, and design. Most critically, I have realised the importance of human-centred design: the most useful feedback I have received has come from "beta testers" of the app, who are children themselves. Instead of letting my excitement about science and coding guide the app's development, I have realised that I must keep my larger goal in mind. Science does not exist in a vacuum, because ultimately, technology aims to improve the lives of real people.

- Student



WELCOME FROM MAGGIE PHILBIN

The TeenTech Awards celebrate the talent and creativity of young people across the UK, giving them opportunity to share their own ideas for the future they wish to enjoy. The challenge is to take a fresh look at the world and work on a project to make life 'better, simpler, safer or more fun' using science, technology or engineering.

The programme is designed to provide support to all students and schools who participate. It's a chance to develop skills and work with inspiring mentors. An opportunity to understand more about emerging industries and more about yourself.

Over 14,000 young people participate in our TeenTech Festivals, Innovation Days, and Virtual Masterclasses which lead into the Award programme. This year, over a thousand students then worked on projects with 854 identifying as female, 635 as male, 14 as non-binary & 7 as 'other'. 73 students identifying as female and 51 as male have reached this final showcase.

If you are a visitor, I am sure you will share our excitement at the inspiring work produced by young people, many of whom told us they had no real previous interest in science and technology. As you will see, they have not only learnt about the breadth of opportunity in science, technology and engineering but also understood so much more about their own potential.

As you look at the projects, please congratulate the teachers and company partners who have provided so much time, support, and inspiration. We are deeply grateful to our sponsors who are supporting young people in this powerful way.

We very much hope you will continue to support TeenTech in the future, providing encouragement, inspiration and practical support for a generation with the potential to change the world.

Maggie Philbin
CEO TeenTech



The TeenTech Awards Team

Maggie Philbin	Kate Bevan	Natasha Ramsden
Dani Longhurst	Darren Thomson	Kathy Dare
Sally Dixon	Erem Kassim-Lakha	Martin Dare
Ali Maggs	Sandra Cooper	Harry Ortman
Tom Walbrin	Andy Quested	Ruth Seabrook
Elaine Manton	Veronica Thorne	
Andy Wilson	Kerensa Jennings	

JUDGING THE TEENTECH AWARDS

The categories of the TeenTech Awards are designed to encourage students to explore the most important industries of the future, understand key global issues, develop skills and learn more about their own potential to succeed.

Students work on projects from the Autumn, developing ideas and then following a suggested structure to help them progress their thinking. Projects are submitted electronically at the end of the Spring term for judging by our sponsors and industry experts.

We asked the judges to look for original ideas and projects that demonstrated thorough research and presentation with a clear understanding of the potential market. Students are asked to prove that they had sought-out and contacted industry experts and worked with them, in the spirit of global collaboration.

Judges awarded Contender, Bronze, Silver and Gold certificates plus individual feedback to each and every participant in the process. The leading projects in each category have been invited to showcase their work to judges and their videos will be shown today.

JUDGES AND PRESENTERS

- **Emma Morgan**
Communications Director, Sopra-Steria
- **Lee Edwards**
Chief Technology Officer, SSCL
- **Fiona Christie**
Director of Marketing & Communication, SSCL
- **Poppy Harrison**
Engineer, AtkinsRéalis
- **Martin Grant**
Senior Engineer and Team Leader, AtkinsRéalis
- **Sarah Finnegan**
Digital Strategy Consultant, AtkinsRéalis
- **Saeed Umar**
Chief Technology Officer, Lancashire Teaching Hospitals NHS Foundation Trust
- **Phil Kemp**
Solutions Architect, Amazon Web Services
- **Anson Lai**
Programme Manager, Amazon Web Services
- **Lettie Ndlovu**
Solutions Architect Apprentice, Amazon Web Services
- **Stephen Sutcliffe**
Director of Finance and Accounting, NHS Shared Business Services
- **Andrea Smith**
DI Director, NHS Shared Business Services
- **Rory Cellan-Jones**
Technology Journalist and Health Blogger
- **Stephen McGann**
Actor
- **Evelyn Steele**
Director of Global Regulatory Affairs, Haleon
- **Kiruba Vertharajan**
Senior Scientific Technical Lead, Haleon
- **Taylor Hartnett**
Capability and Energy Manager, Haleon
- **Adizah Tejani**
Technology Executive, HSBC
- **Tom Leggett**
Vehicle Technology Manager, Thatcham Research
- **Bobby Seagull**
Broadcaster, Entrepreneur and Teacher
- **Hayley Mokiwa**
Apprentice, IBM
- **Lauren Shea**
Graduate Project Manager, Babcock International Group
- **Sophie Barwick**
Material Science and Engineering
- **James Morris**
Pathway Director, MA Interactive Journalism, City University
- **Andy Sumpter**
Retail Consultant, ShopperTrak
- **Andrew Murphy-Pittock**
Head of Investigation Education, Healthcare Safety Investigation Branch
- **Nabihah Ghufoor**
Biomedical Engineer, ARUP
- **Anni Feng**
Associate Director, Hoare Lea
- **Professor Peter Few**
Associate Pro-Vice Chancellor, Academic Portfolio Development, Dean of the School of Education, University of Roehampton
- **Dr Denise Gorse**
Honorary Associate Professor, Dept of Computing, UCL
- **Avni Solanki**
Product Development and Innovation Manager, Wincanton
- **Karen Bowes**
Group Chief People Officer, Knight Frank
- **Becky Davis**
UK Consulting Director, Sopra Steria
- **Emily Cook**
Systems Engineering & Verification Officer, Rolls-Royce

TEENTECH

AWARDS

ABOUT TEENTECH

TeenTech was set up in 2008 to help young people understand the opportunities in the science, technology, digital and engineering industries, regardless of gender, ethnicity or social background. We support companies, councils, colleges and universities, providing them with strategies of engagement and ways to develop approaches which work well with young people.

Our programmes are carefully planned to engage teachers and parents as they are the main influencers in career decisions. We run a variety of sharply focused initiatives providing students with a coherent, engaging pathway into the industries of the future. They all meet Gatsby benchmarks. Our CEO, Maggie Philbin, has been named Digital Leader of The Year, Most Inspiring Woman in UKIT (Computer Weekly) and has been awarded an OBE and ten honorary degrees for her work with TeenTech.

OUR PROGRAMMES

TEENTECH

AWARDS

Are you an innovator? Do you have an idea which could make life easier, simpler, safer or more fun? We want you to use your imagination to think creatively. This is a chance to ask "What if?" or even build a prototype of your idea. The TeenTech Awards are for students aged 11-16 (Years 7 to 11) and 17-19 (Years 12 to 13) working in teams of up to three to look at problems large and small to see if they can find a better way of doing things. This programme is supported by leading global science, technology and engineering companies.

TEENTECH

FESTIVALS

TeenTech Festival days vary in size from innovation and technical workshops to large scale events bringing together students from 30-50 schools across a region with over 140 scientists, technologists and engineers from a wide range of companies for a day of challenges and experiments. We have measured the impact of events since 2008 and know there is a real shift in student perceptions, particularly amongst girls.

TEENTECH

Innovation

TeenTech Innovation Hacks bring the exciting world of science and technology prototyping to school, company and NHS sites. Hosted by well-known science and technology reporters, our interactive sessions are fun, engaging and provide real context to learning, helping young people understand more about careers and the way exciting emerging technology is shaping all aspects of our lives. For more information about our TeenTech NHS programme, please see the back cover.

TEENTECH

CITY OF TOMORROW

Our national programme for students aged 8 to 13 surfacing the "invisible" jobs powering the modern digital city. Our planet requires a radical shift in how we live together. How can we use energy more efficiently? How can we improve infrastructure? How can we live healthier and happier lives? These challenges will require solutions from the next generation of scientists, thinkers and leaders. Welcome to the 'Smarter, Kinder, Safer' TeenTech City of Tomorrow.

TEENTECH

create your future

TeenTech Create Your Future helps students aged 11-19 understand exciting career opportunities in the connected cities of the future through fun, interactive and engaging live sessions, and challenges set by industry experts to develop your students' skills. The programme provides your students with access to industry experts in the classroom from Arup and other local and global organisations.

TEENTECH

•LIVE

Our TeenTech Live virtual programme of sessions have gone from strength to strength. They are hosted by well-known science and technology reporters, and are interactive fun and engaging. Recent sessions have included Animation Masterclasses (featuring guests from Aardman Animations and Industrial Light and Magic), Augmented Reality Masterclasses, Natural Disasters, Sustainability, Accessibility, Space and more! They are free to join and can be watched by entire classes or year groups.

TEENTECH IN NUMBERS

DIRECT REACH

The number of students involved in TeenTech events every year. Mixed ability students with 37% identifying as Male, 54% Female, 5% Non-Binary and 4% Other:

>15,000

INDIRECT REACH

We estimate that through our whole school approach via teaching materials, Young TeenTech Ambassadors, assemblies and webpages this rises to:

>75,000

TEENTECH LIVE EVENTS AND FESTIVALS

Live, interactive, virtual and in-person events this academic year:

>80



OUR OUTCOMES

- 98.5% Schools who participate in TeenTech programmes say they will 'definitely' do so again.
- 97% teachers say our programmes are useful to extremely useful in developing creativity, teamwork, confidence, and an understanding of the breadth of STEM careers
- 97% say our programmes are useful to extremely useful in developing an understanding that gender, ethnicity and social class need not be a barrier to success.
- 87% teachers say TeenTech improves student confidence about their abilities.
- 90% teachers say TeenTech improves their own knowledge about industry.
- 85 % teachers say we help students refocus their thinking about school subject choices and to consider career paths they never knew existed.
- Our students become TeenTech ambassadors, sharing their experiences with other students, companies and at global conferences
- Data from our initiatives informs and improves all our programmes and is widely shared at conferences, in reports and in the press

SUPPORTING TEENTECH

TeenTech is completely funded by sponsorships and donations. If you would like to make a donation to TeenTech, please get in touch, or scan this QR code to [donate via JustGiving](#).



TEENTECH

AWARDS



SUPPORTED BY



OUR PARTNERS

ATKINSRÉALIS

If technology is to be a way of life, then all careers will be STEM careers.

It's crucial that Employers sit at the heart of the skills system, partnering with educators to widen the gaze of young people as they look towards the world of work. AtkinsRéalis believe this is not a nice to have, it's a must have if we are to create a progressive and transformative journey for learners across the spectrum. Our answer to the skills crisis is the provision of STEM school and college governors who are anchored onto leadership teams enabling attainment in STEM subjects and amplifying concepts such as coding, data analysis, cybersecurity, artificial intelligence, and machine learning, by plugging in an operational programme of STEM ambassadorship over their 4 year term, to put STEM sustainably on the school agenda. Working with key delivery partners like TeenTech is fundamental to making this a reality. AtkinsRéalis are committed to making access to digital education accessible to communities that reflect the diversity of society so that everybody has a chance to succeed.

AWS

We are committed to inspiring the future generations of technologists, and encouraging equitable access to careers in technology. Working with TeenTech we hope to dispel some of the misconceptions young people have and ignite their interest in STEM subjects. We are very excited to help the next generation of creative thinkers and future builders find their path by participating in the TeenTech Awards.

HALEON

Haleon is a proud sponsor of Teentech as we continue to learn so much from the younger generations in their application of technology and bringing new innovative thinking as shown by another year of hugely impressive entries in the Health Category. By collaborating with TeenTech we hope to inspire the younger generation and help them recognise the endless future opportunities and possibilities in science, technology, and engineering. Year after year we are constantly impressed with the level of detail and high-quality entries that we get to judge as part of the Health Category – it makes our job as judges very difficult but very enjoyable too!



NHS SHARED BUSINESS SERVICES

Employing over 1,300 people, we believe that being a values-led organisation is key to making ours a great place to work.

Living those values every day, and putting our people first, has led to us being Certified as a Great Place to Work® 2023 and earned us rankings in the UK's Best Workplaces™ for Super Large Organisations, for Women and in Tech.

We also know, supporting people into the health sector offers incredible opportunity and therefore, we are delighted to support Teen Tech as an award sponsor as part of our wider Social Value Programme 'Healthy NHS SBS'. This partnership will enable young people across the country to meet our teams, engage in technology and business skills as well as finding out more about the opportunities available at NHS Shared Business Services and the sector we work in.

SOPRA STERIA

Young people not only represent the future but are in a great position to lead the way to change and build a better society. It's critical that we take an avid interest in the next generation workforce – supporting, encouraging, and helping young people to understand how they can drive positive change with technology.

SSCL

As a sponsor and partner of Teen Tech, SSCL is keen to support and encourage young people into the STEM industry. SSCL's Values are at the heart of everything we do and this is our opportunity to help people within our local communities into their first job, support a career change, and share the fantastic opportunities we have at SSCL.

TEENTECH

AWARDS

Welcome by Maggie Philbin, CEO TeenTech Charity

Presentation of Awards

Compères: We are delighted to welcome TeenTech Award alumni, Beth and Safa, to host the ceremony.

ENERGY & ENVIRONMENT – SUPPORTED BY AMAZON WEB SERVICES

BUILDING A 100% HYDROPONICS DEVICE by Aryaman

Due to climate change, we lose approx 12 million hectares of fertile land per year. Almost 20% of all CO2 emissions comes from the current food supply chain. The demand for food will increase by 50% in 2050. This project aims to design a solution that allows families and households to grow their own produce at home.

PEDALPAL by Daniel, Jay and Jonathan

An under-desk bike that allows the user to burn calories and stay active even during a office job that requires many hours at the desk without moving.

THE PERPETUAL MODULAR GENERATOR by Akhil

A perpetual motion machine, using maglev technology, that could be connected to a generator to produce limitless energy.

TREETECH by Sophia, Stephanie and Victoria

A protective cover, with sensors, that will fit around a section of the trunk which has motion sensors to detect unwanted movements near a tree, sending a signal to police or monitoring stations. Sensors will detect tree health. Our idea will tackle deforestation, and help to combat tree disease. We were also upset when the National Trust tree in the Sycamore gap was cut down and wanted to protect trees from being damaged.

WEARABLE TECHNOLOGY

AUTOSPECS by Rohan

Great specs for people, like my friend, who have autism spectrum disorder, making them very sensitive to light and certain colours. He wears sunglasses all year round to help him and he panics if he loses his glasses. These glasses will mute and alter colours, they will work using Bluetooth and photocells, changing reds and yellows to soft hues of blues and greens. There will be small speakers on the arms of the specs which will help many people who are encountering a brutal world on the spectrum.

CONSTRUCTION HAT LIGHT SENSOR PANEL by Leo

A construction hat with a solar powered light on it for working in the dark. Most construction hats with a light are made of horrible plastic that hurts your head or even break because it is so weak. My idea adds a spongy layer on

the inside that will add comfort and long-lasting sustainability.

DISABILITY HEARING AID by Amirah and Jesse

This product is designed for those with hearing impairments. This is a modern and futuristic hearing aid with increased functionality. It is designed to increase inclusivity with those with this disability.

SAFESHELL by Alex, Lucas and Oscar

An Oobleck vest is an innovative solution designed to protect individuals from senseless knife violence. Resembling a puffer coat, the vest utilizes Oobleck, a non-Newtonian fluid that remains liquid without applied pressure. This fluid is not only functional but also seamlessly integrates into the fashion industry, offering a discreet alternative to traditional stab-proof vests.

SPIRAL by Molly, Olivia and Zara

A ring that helps people who suffer with anxiety to recognise, track and focus support when it is needed the most. Spiral understands fidgeting and tracks the location and time that potential anxiety or panic attacks have occurred. Spiral links to an app which then helps the wearer seek support by alerting their support group - anxiety doesn't discriminate.

FUTURE OF TRANSPORT

ELECTRO GEN by Khushwant and Parth

Our eco-friendly project helps electric vehicles to make its own sustainable electricity, by using wind turbines and regenerative braking.

MAPAPP+ by Jessica, Yixuan and Zikun

A multi-functional map which aims to expand on existing apps such as Google Maps and Citymapper, making them safer to use, as well as more educational.

TUBULAR ENERGY by Edward, Nathaniel and Samson

A way of converting the kinetic energy of moving Underground trains to electrical energy, to power a wide range of infrastructure in a clean and renewable way. This energy could be used for a huge variety of things, like powering the escalators or station lights, to name a few.

HEALTH – SUPPORTED BY HALEON

MAELA by Aarush, Kandara and Lottie

A wearable patch that measures hormone levels to help diagnose female reproductive health conditions quicker.

MATCH IT UP by Olivia, Evie and Lily

A special Hearing Pod to be used by deaf people to enable them to have conversations with people who can't use sign language. The hearing person wears the pod, and the deaf person has a receiver which types out what the other person is saying, so they can communicate. The pod can interpret the deaf person's reply.

MEDI-TRACE by Grace and Izabelle

An EpiPen box which has an integrated tracker and a pill box on the side with information on the back. The box alerts you when your child/friend/parent has opened their box by using a pressure pad and alert system. The alert will be triggered when the pressure pad is released sending a safe and secure message will then be sent to parents/carers and other emergency contacts to indicate the pen has been used and then gives the EpiPen users' location.

REVOLUTIONISING CONTRACEPTION by Dylan and Karam

Traditional methods of contraception focus on women and mainly involve hormonal regulation, this drug acts on biological mechanisms that are associated with men's sperm formation. Not only does this breakthrough bring new possibilities for male contraception, but it also represents an advancement in terms of fairness and equal choices when it comes to using contraceptives.

THE USE OF PLANT SMOKE EXTRACTS AS AN ALTERNATIVE TO COMMERCIALLY AVAILABLE DISINFECTANTS by Mark

This project looks at the dangers with commercially available disinfectants, and how plant smoke extracts would be a healthy and effective natural alternative. It explains how plant smoke extracts are better than other types of extractions of plant metabolites, and includes an overview of an experiment conducted to prove the efficiency of smoke extracts as a disinfectant

SAFETY & SECURITY

BIKELOCK by Bella and Emmy

A bike locking post that will provide security for the public. We will create a locking post suitable for any bike. The wooden post with a varnished coating will be sturdy and reliable. It will be attractive, long-lasting and will be solar powered.

DB SECURE by Jenifer and Joanne

A specialized security system for deaf, blind and able people.

DRIVESAFE by Isabelle and Jessica

This High Vis Jacket will have microcomputers and Bluetooth technology in it. Buttons located on the handlebars will turn the indicator on and indicate to whichever side is pressed. This will cause less accidents as the cyclist will not have to remove their hands from the handlebars making it safer to use.

SPIKECOASTER by Jennifer

A smart coaster designed to detect if a drink has been spiked to alert the drinker. Its outer LED ring will warn the user when there is a high risk that their drink has been tampered with by illuminating in red.

STYLISH SAFETY by Fahmida, Leonie and Sara

A safety pendant targeted for young girls with many different features and a stylish design

CREATIVE AND DIGITAL SKILLS

CORUSCANT by Gisele

Coruscant is an art therapy app tailored for underprivileged children, addressing their mental health struggles by offering an accessible emotional outlet while nurturing vital skills such as creativity and empathy. Through the app, children can animate stories and craft their own artistic narratives, providing an escape from their realities while fostering confidence.

EAZI-TROLLEY by Joshua and Navjot

Eazi-Trolley is an idea for a new shopping trolley using existing smart technology but harnessing AI to track food purchases. The trolley is based on a large container which recognises the types of objects placed inside and totals the cost. It can also be programmed to give information on the dietary requirements of the shopper.

FX by Anshu and Saathvik

A revolutionary innovation, providing smart glasses for people suffering from Fragile X Syndrome, a genetic condition that causes learning disabilities. Our glasses would use object detection, text to speech and many other AR technologies.

SUPERSONIC by Ethan

A versatile media server that could fully manage a user's media. This includes sound, video, 3D models (fbx, obj, gltf) and photos (images).

ZIGGY by Amelie, Amy and Megan

A robot that can help you out at home, initially watering plants for when you are away, using AI to detect when plants need watering.

SKILLS FOR TOMORROW'S WORLD

Teamwork

Understanding how to build and work well as a team is a crucial skill. This award recognises the students who demonstrated the ability to work well together.

Thinking Big and Bold

Being able to think differently and having the courage to consider new ways of doing things is a highly valuable skill. It often means taking a risk and having the courage to fail and then try again. This award recognises students who have looked at the world and considered fresh solutions.

Tenacity

Having the inner strength to keep going, even when you hit problems is a real skill for life. Students celebrated in this category have found ways to overcome obstacles.

Communication

This award celebrates students who have been able to clearly communicate their ideas, whether in written, oral or visual ways. This is such a vital skill – it doesn't matter how strong your idea is, if you can't find a way of letting others know.

Working Well with Industry

TeenTech actively encourages and supports students to seek feedback and advice from industry experts. Looking beyond your own experience will always make a project stronger and is also a way to build a very useful network for the future. All the teams celebrated in this category have made a serious effort to do this and embrace suggestions and ideas.

BEST INNOVATION (YEARS 7-11) - SUPPORTED BY SOPRA STERIA

BREATH TECHS BREATH EASY by Benedict, Daniel and Lewis

Breath Tech was created; this innovation is called Breathe Easy, and it is a world class inhaler. The Breathe Easy is a renewable, smarter, and overall better alternative to the regular, plastic inhaler.

MORPHO by Silvia and Zhixuan

A sustainable wallpaper that can morph into any image the consumer desires, uploaded through an app on their device. It provides a more convenient, flexible and adept way for individuals to decorate their home.

SMARTPILL by Harry

An innovative tool that has many possible uses to help and protect people from potentially harmful medical drugs and will allow people to access potentially harmful medicine safely.

BEST INNOVATION (YEARS 12-13) - SUPPORTED BY SOPRA STERIA

CRASH ALERTER by James and Lukas

Was developed to reduce the danger of rural and late night driving when crashes can happen without notice by sending out radio signals.

HENNA PROJECT by Zara

A henna projection lamp that connects to your phone via Bluetooth and the henna design then projects onto the hand to help young teenage girls with henna.

LANGLEY MALTINGS REGENERATION by Daniel, Jasmine and Zoe

A regeneration of a brown-site building that was used to process hops for use in beer production. Sympathetically restored with a modern aesthetic based on the organic inspiration of the barley hops and the fluidity of water.

POST EMERGENCY EARTHQUAKE SHELTER by Mia

A shelter designed for someone to live in in the weeks and months after an earthquake, while homes are being rebuilt. It's innovation compared to existing shelters is that, using modular design, it also functions as outdoor seating for use in park settings, meaning it can be stored within the community, to speed up the response and encourage people to get outside.

SPINAL SENSE by Christopher and Yanic

A preventative back posture detection device that is used to detect the back posture of user, informing them of when their posture is poor. This stops spinal health from deteriorating. The data collected from the device can then be used by Chiropractors and other medical professionals to make better informed clinical advice.

FOOD & RETAIL

BATTER UP by Anna and Finn

An innovative app that involves you, your lifestyle and food to stop boredom and food waste. You can enter the quantity of ingredients you have, and it will generate a recipe for you. It will also have a diet tracker for people wanting to have a healthier relationship with food, as well as a recipe page.

ELECTRIC SHOPPING TROLLEY by Charlie and Killian

A powered shopping trolley that will support frail shoppers as they move around the shop. It will be powered an electric rechargeable battery, and would have jet ski style steering column to enable lighter steering and has limited speed so that it is controllable by the user.

ETHICAL FASHION FOR CHARITY by Alice

A considerate and modern look at the ethical design of clothing that strives to leave no negative social or ethical impact in its wake, setting this garment apart from others as most clothing bought by my target demographic comes from fast fashion industries (which employ child labour and unfair workers' rights). It will also be inclusive to consider the needs of people who may have sensory issues, people of different sizes, insecurities, modesty, allergies, and people of different genders who may want the jacket to reflect their style and gender presentation.

FOOD SCANNER by Janice

Food waste is a big issue in Scotland – over 1million tons every year with over 60% coming from households. To stop so much waste, I have designed an app that tells the consumer when their food is going out of date, using a QR code. With this app, consumers will be able to view and be alerted to their foods use by dates, helping to minimise food waste in households simply and effectively.

SEARCH A SHOP by Alfie, Kellie and Sophia

A device used to both locate items in a supermarket but also to check stocks and provide alternatives that are more financially friendly alongside many other features. Our innovation tackles problems such as inflation, healthy eating and the cost-of-living crisis faced by many across the UK.

BEST RESEARCH

CO2 AND TEMPERATURE IN THE CANTEEN by Clementine and Ruby

We measured the carbon dioxide levels and temperature in the school canteen to see if there was an issue with the levels which may affect the health of the students.

CUBIE by Bethan and Hannah

A homework cube that is used to track your homework, so you don't have to write it down as it tells you when you have homework set and when you have prep do the next day it will read them or it to you.

FLAVORSHIFT by Kiran and Kainat

A nose device which people can attach to their nose, enabling the person to change the taste of the food they're eating through scent.

IVCALC by Arnav

A financial calculator and tool that helps people reach financial independence by providing cost breakdowns and portfolio growth simulations that make choosing an investment platform simple, regardless of their financial knowledge.

LUMOX by Anik

A product to secure and store your electronic valuables. Lumox merges the functionality of secure storage with the use to a student of a studying tool of their choice, from a whiteboard to a drawing guide.

SUSTAINABLE FASHION APP by Amelia and Josie

A "What 2 Wear" app that makes the user look closely at their lifestyles and what they consume while addressing the harm fast fashion is having on our environment.

SUSTAIN KETTLE by Elise, Madeleine and Sylvie

An environmentally friendly kettle.

PATIENT SAFETY – SUPPORTED BY NHS SHARED BUSINESS SERVICES

EASYVEIN by Eleanor

A vein finder crossed with a heating glove that is designed to help ease people's fears of needles - hence the name Easyvein.

NURTURE BUDDY by Angel and Chiamaka

Hospitalised children's toy, that is connected to an app enabling parents to record messages to their children, give age-appropriate information about their illness and also entertainment and education via games on the app.

PROACTIVE BODY SCANNING by Akram and Arjun

By continuously monitoring patients' symptoms using advanced sensor technology, we can predict the progression of their conditions. What makes this innovative is the ability to provide early warnings and personalised care, ultimately improving patient outcomes and reducing health care costs. This approach allows for proactive intervention, enhancing the quality of healthcare and the patient experience

SPRAYSAFE by Isobel and Rosie

An efficient spray that detects and highlights traces of allergens on any surface, ensuring that people with allergies are safe. One would buy a 500ml bottle of a liquid, that when sprayed onto a countertop, will turn traces of allergens purple. This can then be wiped down, cleaned, and repeated until you are sure you are safe.

THE IRON WATCH by Islay and Mercedes

A watch that solves low iron/low blood pressure etc. The need for insulin can be extreme so with my watch it will automatically shoot it into your system. You won't feel a thing

DESIGN & CONSTRUCTION – SUPPORTED BY ATKINSRÉALIS

AUTOBARROW by George

Designed to help old people get less tired when doing gardening and could also help builders when transporting products (such as cement) owing to the weight of the building materials. The auto barrow could also help people who do a lot of gardening, so they can save time when moving their wheelbarrow as it would be able to drive itself.

SKYTETHER by Fida, Muhammad and Rehan

Imagine a long rope connecting a spacecraft or satellite to something else, like another spacecraft, or a space station. But instead of just dangling there, a sky tether can do some amazing things. For example, it can help propel spacecraft without needing traditional rocket fuel. By spinning around, it can fling payloads into higher orbits or even launch them on missions to other planets. It is like a cosmic slingshot!

TEENAGE PLAYGROUND by Inigo, Isabelle and Luisa

Our idea aims to get more teens outside by creating spaces that cater to the needs of teenagers. Most playgrounds are aimed at a younger demographic, equipping their playgrounds with structures built with an age range of toddlers to 10-year-olds. This play equipment is often too small or not challenging enough for teenagers, even those in the early teens, like 11- and 12-year-olds. Our solution is a teenage playground.

EDUCATION

CONVERSALTION by Annalisa, Evelyn and Martha

An app that provides the user with tips and prompts for social situations, aiming to help people with social anxiety as they navigate stressful social situations, as social anxiety is a very common issue which affects many of our peers and often goes unchecked or undiagnosed.

PROJECT BUDDY by Isla and Sophia

An app which allows people from different schools to work together and collaborate safely.

This takes students out of the online world and helps them to make friends, reduce frustration and loneliness as well as develop new ideas and perhaps business partners or study partners for the future.

TEACHING FIRST AID by Avan, Kavish and Parv

Our Project focuses on using technology to enable teaching First Aid in schools. First Aid has the potential to save thousands of lives a year, yet only 5% of adults know it.

By teaching it at an early age, we can implement such a key life skill into future generations. Technology has changed many areas of our life; entertainment and leisure, so why not learning?

BEST USE OF AI - SUPPORTED BY SSCL

AI CONTROLLED NUCLEAR POWER PLANT by Freya

An underground nuclear powerplant that uses AI robots instead of human workers to reduce casualties and will help places that have power insecurity.

AVALON-ESG by Mitya and Nikhil

A science-backed ESG (Environmental, Social and Governance) investing EdTech app.

Through a gamified learning experience, including digestible videos, emission tracking leaderboards and personalised, AI generated questions, we ensure an engaging and comprehensive learning experience for young investors. As a social enterprise, we aim to forge the next generation of sustainable investors and create a tangible impact on the environment.

FRENZY by Isobella, Marylene and Shanice

Frenzy is a robotic bear, covered in plush fur. It is designed to sense when you are anxious or need comforting. It can say comforting words or give you a hug. It can be programmed with the voice of a loved one and with advice for a range of problems. It is your best friend who is there for you when the human you need isn't.

GARDENING AI by Darius and Jamie

Some people want to use the space in their gardens for growing food or cutting flowers but don't know where to start. Our idea is that you can attach A.I within a website to help users for gardening, such as giving tips and answers to their questions.

SKINSCAN by Dhanista

Our idea allows users to scan their skin, providing an accurate analysis of their specific skin conditions, whether it's acne, hyperpigmentation or other issues. Instead of relying on influencers opinions or generalized product recommendations, Skin Scan uses this data to generate tailored suggestions. This approach eliminates the misinformation associated with social media trends.

VERIFIAI – FAKE NEWS DETECTION by Ahmed, Ashmit and Yash

We finetuned an open-source LLM to detect fake news, taking a utilitarianist approach to its implementation.

TEENTECH

AWARDS

TEACHER OF THE YEAR

TeenTech appreciate that behind every student project entered for the TeenTech Awards lies the dedication, time and organisational skills of a teacher, technician, librarian or assistant who has taken on the considerable extra work and planning that

participation involves. There will be an individual award for a teacher who we believe has shown exceptional imagination and dedication to help their students.

This year's finalists are:

Amanda Bonney - Bishop Luffa School

Adrian Eynon - Dudley Sixth Form College

Zoe Hennchen - Engineering UTC North Lincolnshire

Kirsty Midwood - Oldham Sixth Form College

Jeremy Evans - Warminster School

YOUNG INNOVATOR OF THE YEAR – THE PEOPLE'S CHOICE

Every finalist has been asked to vote for a team other than their own.

THANK YOUS

Along with our sponsors we would like to thank the following, who have volunteered their time and talent to make the TeenTech Awards a very special day:

Andy Quested for leading the A/V team
Prototype Projects for 3D printing our Awards
University of Roehampton for filming the day
Kerensa Jennings and Veronica Thorne for stage managing the ceremony
Oldham Sixth Form College, Loreto Grammar School and Channing School for providing student volunteers on the day.
Rose McVeigh and the team from Sprinkl

Over 300 companies and 40 Universities are now working with TeenTech but we would like to especially thank the following who have provided exceptional support for student projects:

Accenture
ARUP
AIRSWIFT
AWS
BT
AtkinsRéalis
Chaos Created Media
Department for Science, Innovation and Technology
Dropbox
Haleon
Harry McVeigh
Hoare Lea
IBM
Institute of Cancer Research
Kainos
Lancashire Police Cyber Crime
MIRA Institute of Technology
Nespresso
NHS
Ontario Teachers' Pension Plan (Europe) Limited
Oracle
Professional Wierdos
The Lancashire Teaching Hospital
Softwire
Sprinkl
Thatcham Research
Viasat
The Worshipful Company of Fuellers
Which? Magazine
Wincanton

Universities supporting student projects for the TeenTech Awards

Advanced Manufacturing & Engineering, University of Coventry
Birmingham City University
Bristol Robotics Lab, University of Bristol
Harper Adams University
The University of Bath
The University of Cardiff
The University of Central Lancashire
The University of Exeter
The University of Manchester
The University of Nottingham – Faculty of Engineering
The University of Oxford
The University of Leicester
The University of London, Queen Mary's College
The University of Portsmouth
The University of York St John
The University of Roehampton
The University of Teeside
The University of Wales
The University of Warwick
York St John University
Stanford University
Strathclyde University

And of course, thank you, for making the TeenTech Awards so very memorable.
We look forward to seeing you again in 2025.

TEENTECH

AWARDS



28TH JUNE 2024
IET LONDON

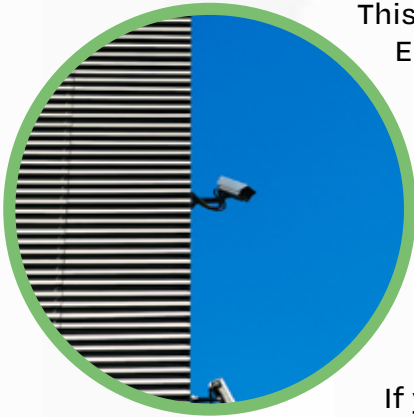


TEEN TETHICS

There is growing recognition that engineering should be ethically principled and socially/environmentally responsible, but the views of young people are rarely collected and included in this debate.

For the past year, over 500 TeenTech students have worked with engineers and explored the ethics of decision-making and trade-offs that occur during engineering and tech innovation.

We know that students who take part in the TeenTech Awards have always demonstrated ethical principles in their ideas. We want to give young people the opportunity to develop a formal code of ethical practice which will be embedded in the Awards programme and also shared with engineers worldwide.



This exciting TeenTethics project is funded by The Royal Academy of Engineering. We're working with ethics advisor Edwin Colyer from Scientia Scripta who is helping students to think deeply about what they value most and prioritise in new tech products and services, including how they are made, and the impact they have on people and the planet.

The Charter for Ethical Innovation is entirely the work of young people and they have decided it should be a living thing – so young people can add their suggestions and keep it completely relevant in the face of such rapid technology change and development.

If you are a young person under 25 and would like to add your own comments or ideas, scan this QR code and make sure your voice is heard.

If you work in any area of engineering and would like to host an event or participate in a TeenTethics Day, please contact maggie.philbin@teentech.com.

Read the Charter and share your views!



[TEENTECH.COM/TEENTETHICS](https://teentech.com/teentethics)



Royal Academy
of Engineering