TEENTECH

AWARDS

SUPPORTED BY

4   ATKINS *Member of the SNC-Lavalin Group*   Domino's   aws   HALEON   NetworkRail   PITTSBURGH REGIONAL HEALTH INITIATIVE

FRIDAY 30TH JUNE 2023
IET LONDON

WHAT THEY SAY...

This idea changed my outlook towards science, geography and even technology used for everyday living. Via this project, I learnt how the products we consume or use every day are being made and delivered globally. Ideas like global supply chain, transportation, green energy production are examples of topics I explored. Novel and innovative ideas like this will absolutely have impact on changing career pathways for the younger generations.

- Student

We have learnt that even when we think life is good there are always problems to help people that need it. Doing this project has made me see that we are very fortunate to have the technology to solve problems that we have today. I just can hope that our project will come true so people can have a place to talk, a place to go when they have gone through something traumatic and a space where you can visit places you never dreamed of because of a disability or constant treatment.

- Students

I'm very interested in biology as well as art, and this project inspired me look at more practical applications for my biology knowledge which I found very exciting. As well as this I really enjoyed the creative problem solving of trying to figure out the electronics and am now considering looking further into engineering as I hadn't previously realised how creative this subject can be.

- Students

Working through this project has opened our eyes to the many opportunities in the scientific and technological fields. It has also shown us that something that may seem very academic can also link to creativity. Art was very helpful in this process, for example: designing logos and the site. Coding was also beneficial. We used to think it was confusing with all its different rules and statements. Yet, once we put it into this context, it was fun. This project has encouraged us to learn more about medicine, diagnosis and coding. Overall, we have learnt a lot about teamwork and the fascinating branches of science and technology whilst doing this project.
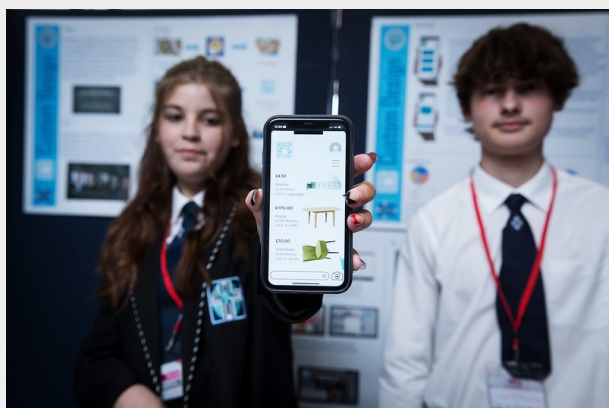
- Students

As a group, we gained insight into how the world of app development works. We found this interesting as none of us has this sort of experience before, and we also enjoyed exploring our idea and how we can make it beneficial to people. The most fun part of the process was the designing of the app prototype as we had generated so many ideas and even though we liked them all, it was interesting how the process of app development forced us to think in a critical and analytical way as we had to choose only one design.

- Student

Taking part in TeenTech has taught us a lot of valuable lessons and has inspired us to be more creative, to think outside of the box more often, and to rise to the challenge when necessary. We have developed important skills such as leadership, communication and problem solving. We are extremely appreciative of this opportunity as we have learnt so much, not only about the science behind our product but also about the components that are required to build a good product. This experience has been incredibly rewarding and has shown us how influential teamwork can be; involving ourselves in this competition has definitely increased our confidence and has allowed us to further progress and learn about the different aspects of STEM. .

- Student

It has been a great opportunity to get to know some of our students outside of the classroom, something that isn't as achievable in day-to-day teaching. Running the awards has developed my planning, teaching and learning skills, and I consciously try to include STEM-based careers in my science lessons and beyond. TeenTech has become a topic of conversation in and around school, not only with students but staff too, and it has been amazing to see students flourish not only with their innovation but also in their general confidence around their peers and staff. Students have really found something that makes them 'tick', and it's a joy to witness. Organisations like TeenTech remind you of why you became a teacher - to give fulfilling opportunities to all students, no matter what your circumstances. Proofreading the students' innovation logs and reading how the awards have impacted the students made all the extra working hours worthwhile. It has been a pleasure to have the opportunity to run the TeenTech awards and I hope to carry on the tradition for many years to come, building our 'student base' year on year, with my ultimate goal being that our school becomes a Gold Award TeenTech Centre of Innovation and Creativity. Lastly, I would like to thank TeenTech directly for all of the support and resources they have provided, making running the awards much smoother and manageable in a very fast-paced job.

- Teacher

WELCOME FROM MAGGIE PHILBIN

A very warm welcome to the TeenTech Awards which celebrate the talented young people who bring their creativity and innovative thinking to some of the biggest problems of our time.

As some of you will know, for many years I worked on a programme called 'Tomorrow's World' which featured early prototypes and concepts. Many of the projects being showcased today would have found a place on that show. I know our industry judges have been deeply impressed by the bold thinking and quality of the work.

As a charity our mission is to be fully inclusive in our programmes, encouraging diversity and demonstrating that careers in contemporary industry are for everyone. Students come from across the UK and Europe. If you are a student, you should feel incredibly proud to be here today.

Over the past year, over 15,000 young people joined TeenTech Festivals, Innovation Hacks and Virtual Masterclasses and did preliminary work on ideas. 1510 students then worked on projects with 854 identifying as female, 635 as male, 14 as non-binary and 7 as 'other'. 75 students identifying as female and 51 as male have reached this final showcase.

Your project is one of only 61 selected to showcase at the IET today.

The TeenTech Awards are designed to be of real benefit to every student and school, whether or not they are selected for the final showcase, and we provide ongoing opportunities for everyone.

We are very proud of our alumni, two of whom are presenting the ceremony today. Students can become TeenTech ambassadors, presenting at national and international conferences. They have been awarded scholarships, international visits, have three times been 'Young Engineer of the Year' and are now pursuing STEM and digital apprenticeships and university courses which they might not otherwise have chosen.

If you are a teacher, parent, or carer, thank you for being such a powerful supporter and providing so much encouragement. We know most students work on projects in their own time and this involves a significant commitment on your part.

We are deeply grateful to our industry sponsors and supporters who are exceptional, providing year-round insight, support, and inspiration and making TeenTech such an inspiring and kind community.

We hope that you all are inspired by the wonderful work shared today and that 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.

The TeenTech Awards Team

Maggie Philbin	Kate Bevan
Dani Longhurst	Bill Walker
Sally Dixon	Andy Moore
Natasha Ramsden	John Constable
Ali Maggs	Claire Scull
Kathy Dare	Erim Kassim-Lakha
Tom Walbrin	Sandra Cooper
Elaine Manton	Della Burnside
Belinda Shelton	Chris Lynch
Joss Pegden	Darren Thomson
Andy Wilson	Kerensa Jennings
Nicola Ellis	

Kieron in 1988 as a YTS student at IBM.

Kieron (middle back, wearing the red tie) in the autumn of 1988 when he first started his IBM apprenticeship.

THANK YOU KIERON JOHNSON

This is a very personal thank you to the family and friends of Kieron Johnson. Very sadly, Kieron died, aged just 51 in May last year. We are deeply honoured and very touched to have received donations in his memory which have been used to support our TeenTech Awards and TeenTech Festivals program this year.

He was clearly very much loved by his wife Joanne, son Alexander, parents, family, friends and work colleagues and his death came as a big shock.

Kieron had a special interest in encouraging young talent in tech and his family asked for donations to be made to TeenTech and Shelter. Kieron's wife Joanne said, "When he passed away, and we were looking for a charity to benefit from donations at his funeral, TeenTech seemed to be the obvious choice."

Joanne explained how "Kieron was a teenager in the 1980s and grew up watching programs like Tomorrow's World. He developed a keen interest in IT. Despite coming from a working-class background with limited means, his parents saw the wisdom of investing in a BBC Micro Computer, at a time when state schools like his perhaps had one or two computers to share across the whole school, so that Kieron could pursue this interest in IT.

"In 1988 he was lucky enough to secure a Youth Training Scheme place at IBM Hursley and his career in technology went from there. He rose through the ranks, and in later years he was an Executive Director in the IT department of J.P. Morgan, the international bank. Part of this role was bringing on junior talent, and he was very passionate about their IT apprenticeship scheme and the opportunities that presented to young people from diverse backgrounds."

Kieron's father Keith said, "If I could offer some advice to students today, is to do what you want to do and not what others want you to do. That was the advice I gave Kieron when he had the choice of 2 placements, one at IBM and the other at the Admiralty Surface Weapons Establishment (he was also interested in electronics). He said: 'Dad, what should I do?' I said, 'Son what do you want to do?' He chose IBM Hursley and the rest as they say is history."

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 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 focussed initiatives providing students with a coherent, engaging pathway into the industries of the future. They all meet Gatsby benchmarks.

Our CEO, Maggie Philbin, was named Digital Leader of the Year 2016, Most Influential Woman in UK IT 2016 (Computer Weekly) and awarded an OBE in 2017 for her TeenTech work.

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 BUILD YOUR FUTURE

TeenTech Build 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

- Helps students refocus their thinking about school subject choices and to consider career paths they never knew existed
- Gives students confidence about their abilities they may not have found in the classroom
- Builds new relationships between schools and companies
- Our students are encouraged to become TeenTech ambassadors, sharing their experiences with other students, companies and at global conferences

- Changes student, teacher and parent perceptions about STEM and the people who work in it
- Enhances teachers' knowledge about industry and provides plenty of ideas to enrich lessons
- Makes companies aware of the talent in the classroom-some of our partners engage students in real-life projects
- Data from our initiatives informs and improves all our programmes and is widely shared at conferences, in reports and in the press

OUR PARTNERS

We are completely funded by sponsorships and donations

We rely on a wide network of partners to deliver our events

We work with over 40 UK Universities and 350 companies – from global to start up.

OUR PARTNERS

ATKINS, MEMBER OF THE SNC LAVALIN GROUP

As an industry, it's our responsibility to inspire young people to think about the role they can play in shaping the world's greener, better tomorrow – in the dramatically changing environment that we have experienced over the past few years. We must tell an exciting story about doing great things and making a difference; we must share knowledge, experience, and passion; bringing Science, Technology, Engineering and Maths to life.

Working with Teentech, and sponsoring the Design and Construction award especially, has given us an incredible platform to reach out across the UK and inspire the next generation of engineers, designers and project managers. The Teentech Awards fosters the imagination of young people to start their own journeys in this exciting field; bringing people and vital new ideas into the industry. A sustainable, greener future is only achievable with incredible work like this to inspire the next generation.

AWS (AMAZON WEB SERVICES)

At AWS, we believe that technology should be built in a way that's inclusive, diverse, and equitable. We are acutely aware that diversity in technology is unbalanced and that life long perceptions are set at an early age. We are committed to building the next generation of technical leaders regardless of their background by providing our communities with broader access to STEM education and encouraging equitable access to careers in technology. We have a responsibility to make that happen. Working with TeenTech will allow us to dispel some of the misconceptions that young people may have in the technology sector and to help create the next generation of creative thinkers and future builders. We are very excited to inspire the next generation to upskill their talent and ignite their interest in the technology sector through the TeenTech Awards.

CHANNEL 4

TeenTech is vital to demonstrating to young people that Technology is a world of intrigue and opportunity with the ability to engage at any age. Channel 4 are committed as a Public Service Broadcaster to encourage and nurture young talent into coming forward with ideas and demonstrating true engagement by providing the time to assess and feedback to those young people who take the time to input their concepts. It has been a privilege to see the generation of unique views on options for new ideas and remodelling of some existing ideas. It is important that we support TeenTech as great facility to inspire and teach the up and coming generation of new technology innovators.

DOMINO'S

Domino's is honoured and excited by our partnership with TeenTech to inform young people of the 'tech behind the pizza'. Over 90% of our orders are placed using one of our digital platforms and we use a variety of tech across the order pipeline; from selecting a menu item to delivering a piping hot pizza to our customers. Working with TeenTech allows us to help upcoming talent to also understand the possibilities of Domino's as a future employer and encourage them to participate in STEM subjects whilst in education. This will broaden the mindsets of young people by encouraging and supporting their passion for technology and also help Domino's to continue to "deliver a better future through food people love".

HALEON

Haleon, a company whose brands are built on science, innovation and human understanding, hugely supports the value and effort that industry offers in enthusing, engaging and energising the younger generation. The fast moving pace that technology is progressing needs the younger generation to get behind and drive forwards new innovations and applications of these technology advances.

As a sponsor of TeenTech, Haleon participated in the recent judging of the incredible projects that were submitted to the health category. So many credible and well thought through ideas and proposals in this area, really digging deep into Consumer feedback and insights understanding their needs alongside creative, innovative ideas on applying new technologies in the health sector. With so many great ideas, it was a very hard job for the Haleon judges to agree on their finalists.

NETWORK RAIL

We are encouraging more people into STEM and that's why we're getting involved in initiatives that bring the sector to life and help stimulate young people's creativity and inquisitiveness. We are delighted to support TeenTech, and to be part of the growing number of key industry partners. The programme enables young people to meet our role models to find out more about career opportunities, learn about our exciting and innovative projects making it an industry and career choice they aspire to work in, giving Network Rail the opportunity to engage with the next generation of inventors and engineers.

PITTSBURGH REGIONAL HEALTH INITIATIVE

TeenTech's ability to meaningfully engage the next generation was one of the main reasons we wanted to get involved and bring a new challenge – patient safety – to the table. We believe that the future is bright when young people are involved in solution building; they have unique perspectives and wild imaginations that we must harness!

PA CONSULTING

We believe in the power of ingenuity to build a positive human future. We combine innovative thinking and breakthrough technologies, delivering end-to-end innovation. We have been delighted to 3D print the TeenTech Awards since 2014.

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.

Guest Judges and Presenters

Alongside our sponsor judges we are indebted to the following:

Diya Sadi
Student

Ali Khan
Student

Dr Suzie Imber
Planetary Scientist and Science Communicator, University of Leicester

Rory Cellan-Jones
Technology Journalist and Health Blogger

Kate Bevan
Infosys

Katie Knapman
Presenter and Educational Consultant

Pete Lomas
Co-inventor Raspberry Pi, Norcott Technologies

Clare Wharmby
Carbon Innovation Manager, Edinburgh Climate Change Institute

James Morris
Pathway Director, MA Interactive Journalism, City University

Miles Berry
Roehampton University

Ruth Seabrook
Principal Lecturer, School of Education

Andy Sumpter
Retail Consultant, Shoppertrak

Nick Jefford-Horn
Channel 4

Kay Sawbridge
South Central Institute of Technology

Imran Quereshi
Associate Professor in Patient Safety – UCL and Innovation Consultant at AWS

Andrew Murphy-Pittock
Head of Investigation Education, Healthcare Safety Investigation Branch

Phil Craig
Senior Technical Account Manager, JAE Europe Ltd

Stuart Denny
Head of Strategic Product Sales, JAE Europe Ltd

Charlotte Petrides
Director of Engineering, Viasat

Robert Jones
Airswift

Rob Lambert
Partner, PA Consulting

Thayer Prime
Founder and CEO, Team Prime

Wendy Carstairs
Sr Partner Tech Manager, Microsoft

Dave Baker
Partner Technology Strategist, Microsoft

Matthew Wallwork
Technical Product Owner, BT

Sian John
Senior Director Microsoft Security Business Development

Faye Harland
Senior Journalist, BBC Radio Berkshire

Mike Gwatkin
Senior IT Business Partner, Rolls-Royce

San Ting Gilmartin
Director of Capital Planning and Developments at University Hospital Birmingham NHS Foundation Trust

Russ McKay and Spot
IBM

Welcome by Maggie Philbin, CEO TeenTech Charity

Presentation of Awards

Compères: We are delighted to welcome TeenTech Award alumni, Diya (Derby Moor Spencer Academy) and Ali (Leicester Grammar School), to host the ceremony.

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.

ENERGY AND ENVIRONMENT - SUPPORTED BY AWS

BIOVERGE BY HORATIO
A mobile phone application that gamifies biodiversity research and introduces people to building biodiversity research skills and contributes to real-world research.

CO2 ENRICHING GREENHOUSE BY ALISHBA, ISABELLE AND NIAMH
An eco-friendly alternative for growing common crops on an industrial scale. The agricultural industry emits a tenth of the CO2 emissions in the UK so we designed a carbon dioxide enriching greenhouse that takes in fresh air and captures the CO2 from it. It then filters the CO2 into the greenhouse and the remaining CO2 free air is released back into the atmosphere, making greenhouses more efficient.

SOLEFUL ENERGY BY DIYA, LILY AND ZARA
Imperishable Jiggle – This is a fidget device that uses the energy from the user fidgeting to power a set of LED lights. This means that people can use their own energy to create energy! It is environmentally friendly and raises awareness of energy use.

WEARABLE TECHNOLOGY

BLOOMING AWESOME BY JOSHUA
Seed-planting shoes – an attachment for shoes that would push a seed into the soil underfoot everytime your heel hits the ground. The seeds would be in a round container at the ankle.

CHILLOUT BY ISAAC, LEO AND SAMUEL
A piece of clothing/blanket that can cool down its user while generating electricity. It would do this by taking thermal energy from the body and transferring it into chemical energy in the form of a battery. This battery can then power sensors which can show the users vitals i.e. blood pressure, heart rate, skin temperature etc.

HEADSPACE BY REBECCA
Noise-cancelling headphones with a built-in massage pad in the band that aims to help prevent panic attacks and depressive episodes, the noise cancelling helps to create someone's own space and shut off the world around and escape and go to someplace calm. This product could be used by anyone but specifically for people dealing with mental health issues.

PROSTHETIC DEVELOPMENT INITIATIVE BY ALISHA, AMIRA AND AYESHAH
A new revolutionary prosthetic that will eliminate all common struggles faced by prosthetic users that most people are not aware of; we hope to help prosthetic users to not feel restricted or 'disabled' in any manner, and to not feel limited by their need of a prosthetic.

SMART SWIMMING BY IAN
Smart Swimming Technology, via sensors at the end of the swim lane + vibro bracelet, will make swimming safer for all swimmers. The device protects all swimmers from injury due to wall impact and prevents crashes. It helps swimming become more accessible for swimmers with disabilities, swimmers doing the backstroke, novice swimmers, and elderly swimmers.

FUTURE OF TRANSPORT

123 ELECTROCHAIR BY BELLA, MAIA AND TESS
A wheelchair designed to charge on the go through solar power, thermo-electricity and friction, all generated through the wheelchair and its user via solar power, thermo-electricity and dynamos. The wheelchair is also designed for comfort and making people with disabilities feel more confident and independent.

HELLOBRAKELIGHTS BY MAX, NOAH AND WILLIAM
Brake lights which change depending how firmly you press them so the person behind you can make better decisions how to drive. This is aimed at saving lives.

RAZ INC BY EVA, JOSIE AND SCARLETT
Steering wheel designed for people with no hands alongside an AI named RaZ which controls face recognition, voice recognition and the RaZ Inc app that can be installed on a phone.

HEALTH - SUPPORTED BY HALEON

AVA BY HELAINA
A product, to help dementia patients. AVA stands for Audio, Vision, and Aromatherapy. It is a cube, that is split into four sections; The Control Section to control LED lights, the Auditory Section that plays songs or noise that calms the patient down, the Visual Section has a mini projector that projects photos of people close to the patient and the Aromatherapy Section which comes with bottles of essential oils with a scent that is calming for the patient.

CARDIAC OUTPUT ANALYSIS CHIP BY CIARAN, JASON AND MAX
A chip that will make doctors/nurses jobs easier and allow patients to be more comfortable whilst in hospital. It is simple and easy. Our product could allow a reduction in waiting times as it will free up more room for beds. The chip will simply slot into the inside of a hospital gown which will monitor your heartrate and vitals.

ENVISION BY HAADII, ISAAC AND MARCUS
An eye networking system that involves a pair of glasses connected with a camera, that emits high frequency radio signals to a motherboard attached to the retina. Electrodes on the motherboard transform these signals into electrical impulses to give way to the cells inside the retina that directly is connected to the optical nerve. The signals are then transferred with the optic nerve to the visual function of the brain where they are perceived as picture.

RULAX BY ANISHA, ELIZA AND NEYLA
The ruler that helps you relax! Our product is an anxiety ruler that trains young people to independently deal with their anxiety in a way that will be beneficial for their future and their mental well-being. Our ruler uses 2 techniques to deal with anxiety, a breathing technique and a tapping technique.

STRESS RELIEVING HAND BALM BY CARYS, MILLIE AND MOLLY
A balm to relieve anxiety in students during exam periods. It will be scented and subtly coloured to not only help with stress relief, but it is scientifically proven that associating scents with certain information can jog your memory before a test if you use the same scent.

SAFETY AND SECURITY - SUPPORTED BY CHANNEL 4

LIBERANDUM BY CLAUDIA, ELISA AND ELYSSA
A thin patch that can be applied on a partially hidden body area for a long-period of time, with a personal QR code which can be easily scanned by a phone. When scanned it will re-direct you to a page containing important patient medical details in case of emergencies. Paramedics and doctors can further find out detailed patient information with a second log-in. This means people with hidden conditions or allergies can feel safer as they can be treated correctly via information from the Liberandum patch.

MUTE BY ABBIE, ANDREW, BROOKE AND DIANA
A medical user translation earbud that automatically translates one language to another in a medical setting. The mic will detect the language and will translate that language into the required language for the user, whilst including tone of voice etc.

SAFETY ALTOGETHER BY ELIKA, JEYHAN AND NADIA
An easy to use health and safety watch, aimed at elderly and vulnerable people to keep them safe, happy and healthy.

STAIRLOCK BY AMBER
Difficult gate clips can be challenging for carers and people with arthritis. My product is a stair gate that opens with a finger print scanner this aims to help people with kids, pets or arthritis.

SUPERSOCIAL BY DEXTER, JOSHUA AND SAM
An app designed to revolutionise social media use.

SKILLS FOR TOMORROW'S WORLD: 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.

DIGITAL AND DATA SKILLS - SUPPORTED BY DOMINO'S

ATTENDI BY ALEXANDER, EUAN AND VAIRAVEL
Registration is essential in schools but the current system is inefficient and outdated. We have innovated a technology to register people automatically using facial recognition.

AUTOMATION IN ANIMAL CARE BY ISABELLE
A product that can help reduce the pressure on animal owners, while still giving the specified animal a good quality of life. The design uses safe but resistant materials that will allow it to last, to help combat the rising costs of living and to ensure that the product will fulfil its intended purpose.

HELIOS MARTIAN ROVER BY ANTHONY, RANVIR AND YASH
A Martian rover was designed to analyse the subsurface structures on Mars, particularly the tunnel systems and cavities. This will help aid settlement in the future on Mars, which is answering questions from one of the fastest-growing industries (i.e. space tech).

LILIANA PARK BY JESSICA, RAMINA AND SOPHIA
Lilliana Park is a concept aimed at improving inclusivity in community parks for those that have a physical or intellectual disability.

MEDI-DRONE BY JASMINE, LILIANI AND SESINIE
A drone that can carry medical equipment such as first aid supplies in a container over a long distance using remote guidance. Its main purpose would be used to assist emergency response or humanitarian aid services to locate and medically assists victims of natural disasters, its ability to access any areas through flight makes it extremely helpful for immediate relief.

BEST INNOVATION (YEARS 7-11) - SUPPORTED BY NETWORK RAIL

BONESTRUCTION BY SELINA AND ZAHRA
A cheap and easy to use kit for emergency splint construction in remote locations, low-income countries or those impacted by natural disasters.

MANO BY CARA AND ZOE
A project to help deaf or hard of hearing people on video calls. It is a digital image App of someone doing real-time sign language to help people understand and communicate via video calls. It could replace subtitles which are often wrong or difficult to read.

VR BIOSENSORY ROOM BY CHARLIE
A Virtual Reality (VR) Sensory Room to reduce anxiety in paediatric patients. It uses biosensors to detect a range of changes to body systems such as heart rate, breathing rate, skin temperature and moisture levels, facial expressions, eye movements etc. This will result in a bespoke experience for each child using the VR sensory room based upon what is calming to them.

BEST INNOVATION (YEARS 12-13)

NOISE LEVEL REDUCTION SYSTEM BY AVYUKT, OM AND YASH
The construction industry is known for its high ambient noise levels, which can pose a significant risk to the hearing health of workers on site. To address this issue, an active noise-cancelling speaker has been developed, which specifically targets and cancels out the noise generated by power tools such as cutting stations.

RE-GENERATION TOWN BY JOEL
A study into the variety of empty buildings in a local town and the number of people struggling to obtain jobs and housing and combined them into a concept to regenerate towns giving people employment and housing. This model could be applied Nationally solving lots of social issues.

REDEFINING REHABILITATION BY HANNAH
My aim is to create a product that aids people who have suffered a stroke and are in their rehabilitation stage. My product will focus on rehabilitating and helping people build up their strength and balance in their lower body. The main purpose of my product will be to re-build muscle memory and allow people to regain confidence when moving around and balancing.

ARC TEMPORARY ACCOMMODATION BY ABIGAIL, CALLUM AND RAMAK
We are creating homes for the disadvantaged that are not cheap boxes that are bare and inhospitable. We are trying to create homes of a higher of stature and comfortability for anyone and everyone to reduce the disregard for human life that is placed upon young adults and the homeless.

SKILLS FOR TOMORROW'S WORLD: 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

FOOD AND RETAIL

PLASTIC TO PALM OIL BY HARKIRAT, MIKOLAJ AMD WUT
Our project tackles the problem that palm oil presents to our plant and the sustainability of it. We discovered the chemical similarities between the plastic we throw out every day, ending up in our landfills and oceans. This then led us to the similarities in the chemical properties of polyethylene and palmitic acid. This is when the idea of making palm oil from plastic was born.

SHOP WITH M.E BY ELEANOR AND MAYA
An interactive app that creates an accurate body proportionate avatar of the User that allows clothing items to be selected and virtually tried on by the User's 'Avatar' and seen in 3D rotation.
It also allows for individual gender type, skin tone, hair , height, weight and eye colour to use 'Colour Analysis' to make clothing recommendations to suit the user.

STYLISH SHOPPER BY ISABELLE
A scanner targeting fashion shops to enable people to shop smarter. The scanner can be taken to the changing rooms so that the customer can scan into the computer at the changing rooms and this will tell the employee how many items the customer has. My product aims to help people with colour-blindness, Parkinson's disease and Hirayama's Disease, a "my details" screen function helps with people with colour blindness.

ULTIMATE WORK FROM HOME CLOTHING BY HARRIET
With people increasingly working from home, this innovative clothing solution will help improve comfort and organisation for those working in their home environment.

CREATIVE AND DIGITAL MEDIA

ACTUALLY BY ALEX AND HUGH
An app that compiles council information about your local area to help people to understand what is going through their minds and what changes may come to your area. It is being created to remove the information drought that is the current state of council correspondence and promote local communities to come together more as they are finally aware of what is going on around them.

CULTURAL MASTER BY ETHAN
A piece of digital music that incorporates sounds and feelings of the cultural front of music. It will include a more varied style of music, and even though it would be entirely digital - I believe that it could resonate with many people and tune into their beliefs.

FOLDOMAP BY SEBASTIAN
Foldomap will eliminate the need for multiple different maps in different areas by storing the information for vast areas on one device. It will utilise highly innovative new technologies.

TYMPANIC BY AARUSH, KANDARA AND LOTTIE
A pair of headphones that give technological aid for people with learning disabilities. Children with learning disability aid tend to be able to harness their skills better and receive higher grades. These headphones will help to combat the academic achievement gap between individuals with and without learning disabilities.

ZERMATT BY FAITH, IMOGEN AND SYLVIE
An app that would help to manage the amount of homework that students would receive and enable them to balance their lives between work, hobbies, and relaxation. It is the app that actually cares!

BEST RESEARCH

BARKING FOR BUZZ BY KATIA
Barking for Buzz is an insect-based dog food aimed at all dog owners. The project included research into what a sustainable dog food might contain and the science behind the feasibility of an insect-based product, market research and use of technology to create a marketing strategy.

CHAT GPT BY AUDREY
A literature review on ChatGPT, investigating on its inaccurate outputs and future innovation directions. This project aims to study on current research done related to ChatGPT and identify research gaps for future innovations and exploration related to large language models and machine learning.

MEDI-CENTRE BY OLIVER
A medication centre that sends alerts to a user's phone and opens medication boxes containing their meds. This has been made for home use but is being developed for more commercial production.

MICROBIOLIGICAL TREATMENT BY JERRY AND ZITING
A research project attempting to mitigate the problem of microplastics ending up in the ocean and entering the food chain. Synthetic polymers are known to be non-biodegradable. In addition, microplastics are minuscule, which makes them hard to collect and eradicate. Chemical agents and marine species can be utilised to achieve this.

TECH IN REHABILITATION OF STROKE VICTIMS BY ABIGAIL
A research project about how technology can be used in the rehabilitation of stroke victims by looking at various sources in order to explore current and emerging applications of technology and how they can be applied in conjunction and independently of other conventional rehabilitation methods.

GLOBAL CHALLENGE: PATIENT SAFETY – SUPPORTED BY PITTSBURGH REGIONAL HEALTH INITIATIVE

BUSYBEA BY DIVYA
A hospital bed allocation system using simulation and machine learning to classify patient data and recommends actions to provide high quality of service.

DEMENSURE BY LOIS AND RUBY
An innovative implant to monitor and care for dementia patients in the community.

DEMENTIA AID BY KATIE
A dementia kit to be used with people to aid memory recall and help their daily lives. It was designed for Katie's Grandad who sadly passed away during the development of her project.

DISPATCH BY ABHI, SAHIL AND RITVIK
An app which provides volunteers to take people in category 3/4 of the healthcare system to the hospital. The aim of the project is to reduce wait times for people in category 3/4 and to reduce the stress and load on current ambulances.

MEDMEMO BY AHMED, HARIS AND WILSON
Our innovation is an algorithm in which a diagnosis is entered, along with prescriptions and medical info by a doctor or nurse. In return, the algorithm uses a large data set to provide key information in the form of a neat and easy to read pamphlet, so that patients do not find themselves forgetting, mistaking or overwhelmed by information after the appointment.

MYSKIN BY NEYA, RAVEENA AND SHREYA
An App designed to address the problem of doctors and nurses trying to diagnose skin disorders on non-white skin tones, as only 4% - 18% of images in medical textbooks feature examples of skin disorders on darker skin tones. There will also be a self-diagnosis facility and an opportunity to have pictures of your own condition's signs and symptoms added to the data base, once successfully diagnosed to constantly update it.

OBLITERATING OVERDOSE BY YATHMI AND VANESSA
The research and development of a project aimed at reducing overdoses and the severity of their effects.

STEP INTO A SMILE BY TANVIR
Step into a Smile is designed to revolutionize the healthcare system by including schemes to improve well-being of patients and staff in hospital, such as training staff members using holo-lens, providing calming atmospheres and a 3 step assess and response approach, using 3 types of technology: The Data Bot to enable the efficient sharing of patients' notes between professionals. Mental Health X-ray (amygdala scan) to monitor the non-verbal patient's emotional state. Remote control to enable patients some control over their room/cubicle environment.

THE PHARMABOT BY ELLIE, KELLIE AND SOPHIA
A pharmaceutical robot that checks and packages pills to prevent medication errors in the UK.

SKILLS FOR TOMORROW'S WORLD: 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.

DESIGN AND CONSTRUCTION - SUPPORTED BY ATKINS

AUTOMATION IN ANIMAL CARE BY ISABELLE
A product that can help reduce the pressure on animal owners, while still giving the specified animal a good quality of life. The design uses safe but resistant materials that will allow it to last, to help combat the rising costs of living and to ensure that the product will fulfil its intended purpose.

EMERGENCY MULTI-TOOL BY SHRISH
A multi-sport tool designed for emergency services and lifeguards to use during watersport activities that is easy and practical to use.

ECOVIA BY ARIAM, KIRI AND MARTHA
A gym which is partly powered by the equipment itself using renewable, kinetic energy and is aimed at 11–18-year-olds.

EDUCATION

FOR THE BREAST BY HOLLIE
We designed bust models for women and girls to feel and check for lumps or rashes. We believe that inclusivity is highly important as women of colour and plus size women have often gone without representation or utilisation in the field of medicine. Our models have a range of skin colours as well as a range of breast sizes.

FRIEND OR FOE BY DILLANY, LORRIN AND ROWAN
A google web extension, with the aim to solve the issue of fake news and misinformation. This web extension scores every article using our algorithm for news reliability.

PLANTS IN SCHOOLS BY JULIE AND MOUBONI
Introducing low maintenance but effective plants into classrooms to hopefully improve the mental status of students at school. We have also designed a pot to contain the plant which avoids spillage by self-righting when knocked over using a weight at the bottom of a sphere.

POCKET PROTRACTOR BY ROSIE
My product is a geometry set in one, inspired by a pen knife, all the bits come out and it is easy to use and fits in your pencil care. It targets secondary school children who have a lot in their pencil cases and who forget their geometry in lessons as it is easy to lose. Every mathematician would need one as it is easier than all the different parts of a geometry set.

SKILLS FOR TOMORROW'S WORLD: 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.

TEACHER OF THE YEAR - PRIZE KINDLY DONATED BY MICROSOFT

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.

Carol Ezis - Derby Moor Spencer Academy
Zoe Hennchen - Engineering North Lincolnshire UTC
Natalie Stewart - Hadley Learning Community
Joshua Rooke - Moorside High School
Hannah Tinman - Sedgefield Community College

YOUNG INNOVATOR OF THE YEAR - THE PEOPLE'S CHOICE

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

THANK YOU

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

- Russ McKay and IBM for the time and creativity provided in training our latest TeenTech presenter!
- Ali Maggs, Tom Walbrin and Harry Ortmans for their design work across our TeenTech Awards materials.
- Dudley Sixth and Bristol Grammar School for providing student volunteers on the day.

Over 300 companies and 40 universities, colleges and Institutes of Technology are now working with TeenTech. We would like to give special thanks to the following organisations who have provided exceptional support for our students. Their teams provide valuable year-round support, donating their many hours of volunteer time to TeenTech and providing a vibrant network for our students and schools.

Companies

Accenture
AirSWIFT
Alder Hey Childrens Hospital
Atkins Global
AWS (Amazon Web Services)
Black Marble
BT
Broadcom
Chaos Created Media
Channel4
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Department of Health and Social Care
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Royal Academy of Engineering
Royal National Orthopaedic Hospital
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Universities

Advanced Manufacturing & Engineering, University of Coventry
Birmingham City University
Bristol Robotics Lab, University of Bristol
Fareham College
Harper Adams University
MIRA Technology Institute
South Central Institute of Technology
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 Strathclyde
The University of Teeside
The University of Wales
The University of Warwick
York St John University
Stanford University

And of course, thank you, for making the TeenTech Awards so very memorable. We look forward to seeing you again in 2024.

TEENTECH

Supporting
NHS 75

TEENTECH NHS

TeenTech is delighted to celebrate the 75th anniversary of the NHS by launching a three year programme of events to inspire young people to design their own ideas for the future of healthcare and increase their awareness of the wide range of digital, engineering and science careers in the NHS.

EVENTS
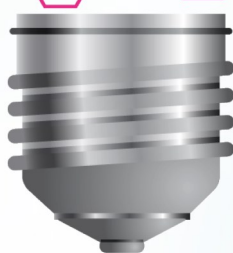
At our TeenTech Festivals, the NHS and health tech companies will run interactive demonstrations of the latest innovations in health. TeenTech Festivals and Innovation Days are are running in all NHS regions, culminating in national showcase days where young people will share their ideas with the NHS.

INNOVATION CHALLENGE

Maybe you have an idea for a specific innovation in technology which could be used at home, in an ambulance, in A&E, on the hospital ward, in the operating theatre or in recovery? How could you make NHS services work well for everyone? How could better use of data, AI, and Machine Learning have a similar impact on healthcare?

INNOVATION HACKS

Our Innovation Hacks are running on NHS, company and academic sites, where NHS experts explain their problems and challenges to help you focus on solutions. We'll also hear from tech experts on how they've applied their technology in other industries to give you ideas on how they could be adopted in the health-care sector.

TEENTECH.COM/NHS