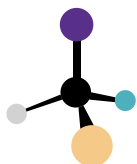
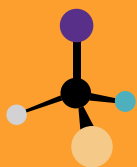
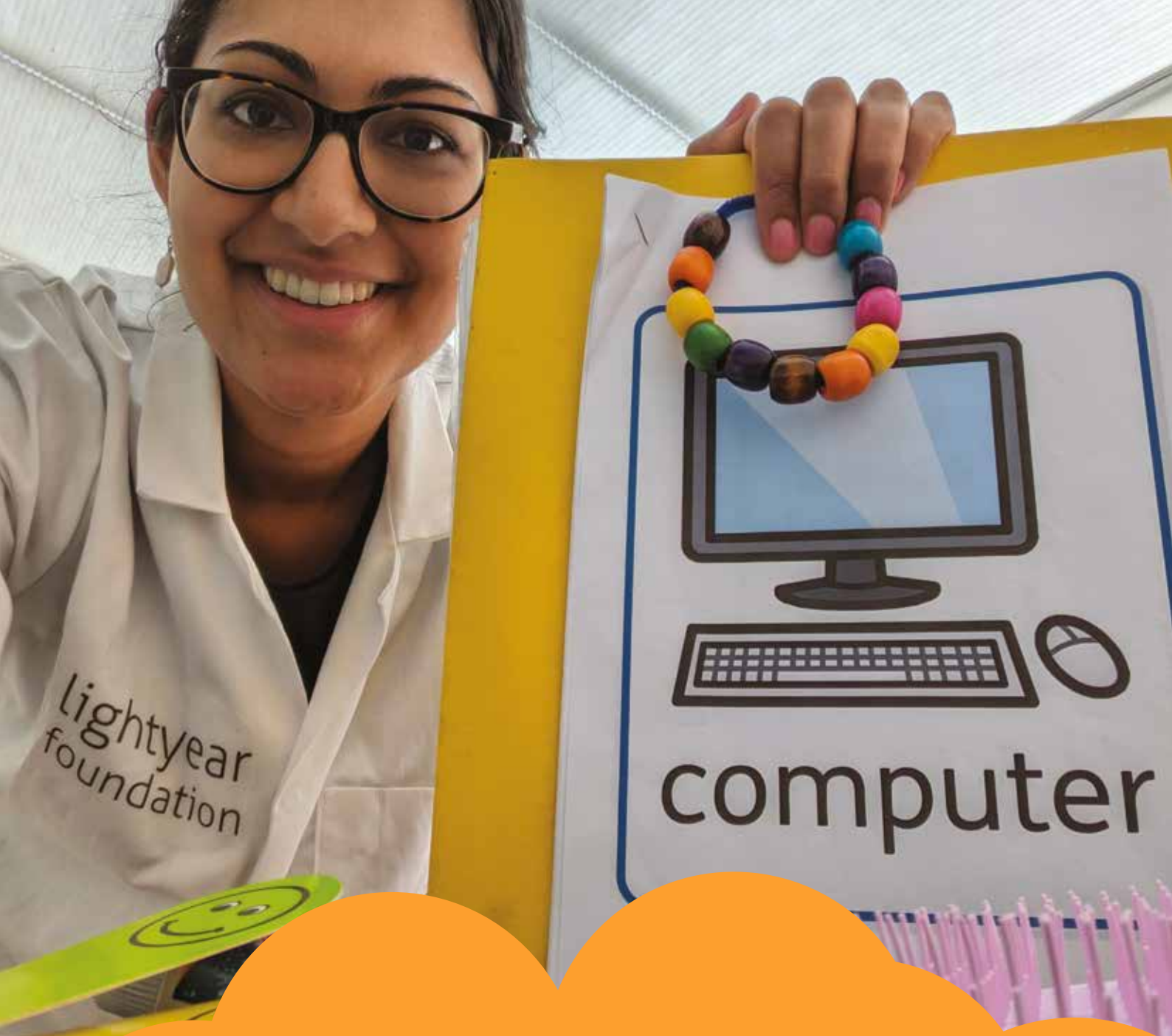


Impact Report 2023



lightyear
foundation



lightyear
foundation

Lightyear Foundation breaks down the barriers to disabled people participating in science, technology, engineering and maths (STEM), opening up the exciting world of science to all, regardless of ability or background.

2023 in numbers

85

in Work
Inspiration
Trips

683

in Immersive
Sensory Science

841

disabled young
people through our
programmes

73

in Lightyear
Labs

23

Lightyear
Role Models

30

SEND teachers
upskilled

5 staff working the
combined equivalent
of 1 full-time person

22

volunteers offering
212.5 hours of
support

32

people trained
in 'Making STEM
Accessible'

30

STEM professionals
hosting Work
Inspiration Trips

360

SEN in STEM
Network members

67

attendees at 2 events

4

consultancy
projects

What we do and why we do it

The need

Recent years have seen some headway in tackling STEM's inclusivity and diversity issues, but it's still a work in progress. The good news is that there's a growing realisation that a homogeneous workforce tends to come up with narrow-focused solutions. To overcome the big global challenges, our scientists and engineers of the future need to

come from all walks of life. The problem is twofold: young disabled people aren't being offered the opportunity to access the world of STEM and to see a role for themselves within it, and many STEM educators and employers do not offer inclusive and accessible routes to joining the sector. We tackle both issues head on.

24%

of the population in the UK is disabled

47%

of disabled people are unemployed

78%

of the autistic community are unemployed

Disabled people are

3x

as likely to have no qualifications

65%

of people with SEND want to be in employment - only 5-6% will achieve this

It only takes 4 encounters with employers to improve a disabled young person's employment prospects by

100%

95%

of adults with learning disabilities are unemployed

Sources include House of Commons Library, Equality and Human Right Commission, Office for National Statistics, and Inspiring the Future/Mencap.

Lack of STEM knowledge and qualifications among teaching staff in schools for disabled children

Limited access for disabled children to informal science experiences

Nervousness and lack of skills within the STEM sector including around adapting activities often meaning exciting STEM events and celebrations are not targeted at disabled children

Inflexible evaluation techniques for children with a range of communication needs, meaning feedback on their experiences is untranslatable and inaccurate

What are some of the barriers to disabled children accessing STEM?

Invisible disabled role models – unless disabled children and the people around them can see disability in STEM, they can never know it's possible

Discrimination, intentional or otherwise, from society around a disabled child's ability and potential

Many visitor attractions are inaccessible to a range of different needs (for example, not having BSL interpreted shows or warnings before loud noises) so disabled children are unable to enjoy the places that trigger a love of STEM in early childhood

Lack of appreciation in education and society about how STEM can teach disabled children valuable life skills and independence – and how disabled adults have a valuable and important part to play

The difference we make to disabled children

Many disabled children and young people either have no access to a STEM education or simply believe it's not something they could ever be part of, meaning the sector and society at large is missing out on the talents and contributions of a huge number of people. For children with more complex disabilities, STEM offers a unique way to inspire and impart key life skills such as choice-making or dealing with unexpected outcomes. So whether it leads to a career in the sector or improves a disabled person's self-confidence, independence and enjoyment of life, creating opportunities for disabled children to love and learn from these subjects has significant individual and social impact.

We fill a gap in service delivery and education that is offered by no other organisation.

The difference we make to the STEM sector

We know that research, engineering and technology jobs are growing at double the rate of other occupations. 1.8m more STEM-qualified people will be needed in the UK by 2025. Misperceptions of disabled scientists and engineers are categorically causing the STEM industry to miss out on hiring some of the most skilled workers who can make incredible contributions to progress in STEM and the global economy. The unique ways in which disabled people interpret and interact with the world, typically perceived as an obstacle to their inclusion, are arguably among humanity's best chances at solving some of our planet's biggest problems. We believe a disability makes a person uniquely qualified for STEM work. We will continue to advise and support STEM working environments to be inclusive places where individuals have an equal opportunity to participate and advance.



Our solution

We take a holistic approach, developing unique programmes that educate, inspire and include disabled children in STEM from the early years through to young adulthood, whilst working in partnership with educators and employers to identify and dismantle the barriers that young disabled people currently face in the STEM sector. We fill a gap in service delivery and education that is offered by no other organisation. We are proud of the range and impact of our programmes.

In 2023, we helped to improve disabled children's access to STEM through six programme areas:

1. Immersive Sensory Science
2. Lightyear Labs
3. Role Models
4. Work Inspiration Trips
5. SEN in STEM Network
6. Training, consultancy and partnership working

The impact

Our programmes show disabled children how viable and rewarding a future in STEM could be, alongside building essential personal skills like self-efficacy, self-reliance and autonomy. We believe part of the solution is to engage young disabled people from an early age with immersive, accessible, colourful, awe-inspiring classes and events, and to show them how to use their disability as a superpower, both within the STEM sector and beyond. This education

and work experience can be life changing and lead to a prosperous career path, offering a joyful alternative to the most common adult experiences for those with learning disabilities - time in a care home or recreational day centre, or in supported employment in retail or hospitality.

Through our work, we improve the quality of life, independence and future choices of thousands of disabled children. We increase representation and visibility by normalising disabled children taking part in these types of activities, and we play a vital role in championing a growing sense of belonging among the disabled community within the STEM sector. Each and every child we support is helping to show those who follow what's possible! Systemically, we help to reduce unemployment in the disabled community by creating a vibrant pipeline of STEM talent to UK industry and using our SEN in STEM Network to drive change at the heart of the sector.

The impact of our work ultimately means more disabled children inspired and delighted by STEM, more disabled people believing an education in a STEM subject is possible for them, and more disabled STEM professionals being welcomed and supported in the UK sector.

Each and every child we support is helping to show those who follow what's possible!

Supporting disabled children and young people to dream big and reach their potential is a vital cornerstone for building an inclusive, happy and functioning society.



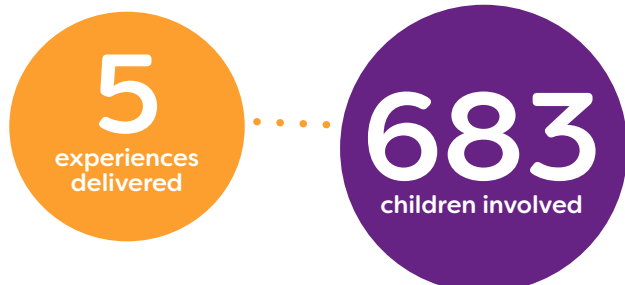


"It was EPIC!
It was like a magical
space story. My favourite
thing was when we
welcomed the
planets."

Immersive Sensory
Science student

Our Model

1 Immersive Sensory Science



We know there is a significant lack of opportunities for disabled children to have hands-on science experiences that are fully accessible and adapted for their needs, yet we also know how truly impactful and magical these events can be. With hands-on demonstrations and stunning visuals combined with knowledgeable, enthusiastic and professional presenters, our Immersive Sensory Science programme offers lively, accessible, interactive and fun STEM experiences for disabled

children. We visit SEN schools nationwide and stage shows for all ages and abilities, engaging young people with the wonder of STEM. From taking an imaginary trip to space in a pop-up planetarium to travelling through the clouds and feeling them brush past us as we fly through the sky, Immersive Sensory Science uses beautiful colours, sounds, textures and activities to create an unforgettable multi-sensory experience to support STEM learning.

"The students were fully immersed in the experience and fascinated by the visual effects. I was very impressed by the knowledge of the presenter and his ability to communicate this to the students."

SEND teacher

"It's great to have an experience that all our learners can enjoy."

SEND teacher



"Slapped in the face with greatness!"

Student

2 Lightyear Labs

12
labs delivered

73
children
involved

30
SEND teachers
upskilled

34.5
volunteer hours

Our Lightyear Labs take small groups of children aged 11–16 years in special schools on a journey through science experimentation, once a week for a month, either online or in person. Our challenge-based learning methodology promotes experimentation and discovery while developing critical thinking, decision-making and problem-solving skills. We provide a magical box of kit so children and teachers have everything they need to start experimenting, led by one of our Lightyear Lab scientists and skilled volunteers! The lab aims to support our young researchers to work scientifically in practical science, to increase confidence in practical STEM applications, to learn how to make predictions, to develop resilience around incorrect predictions and to apply prior learning to answer real-world STEM problems through experiments.

NEW! Lightning Labs

Our new Lightning Labs are a shorter version of our full lab, offering a one-hour session to promote experimentation and discovery for up to ten children. We hope this will enable us to reach more children with this programme, and could lead on to a full lab for those children who show great interest and promise.

Outcomes

- 94% of children learned something new
- 90% of children found the topics fun
- 63% of children showed higher engagement than in their school science lessons

"I was just amazed that the sessions captured our students' attention for that long through online learning. The resources were very well combined with the pace and delivery of the session. Very hard to do!"

Kyle Richmond, Lead Science Teacher, Heaton School

"Thank you so much for the sessions. The students really enjoyed it and got a lot out of it. It helped to structure our STEM club too which is relatively new. They have inspired us to keep going with experiments towards the Crest Awards. Please thank our presenter for her enthusiasm and patience."

Jo McMullen, Philip Southcote School

"We felt the Lightyear Lab was brilliant, the students enjoyed the activities and grew with confidence week by week. The host was brilliant in engaging and listening to the students and adapted to their pace."

Lisa Waters, Senior Assistant Head, Helen Allison School



3 Role Models

23
Role Models

We augment learning by sharing real-life stories of disabled professionals doing awesome things within the STEM industry. Our role models encourage disabled children to look at the industry as a viable and welcoming career option while being honest about their experiences and the challenges they have faced (and continue to face). After all, you can't be what you can't see.

We support our role models to deliver Q&As, visits and interactions with our young people, community organisations and sector employers. This visibility and exposure is an incredibly powerful method for raising awareness and

improving inclusivity. Young people meeting STEM through our programmes can see themselves reflected in the sector workforce.

Lived disability experience is simply not replicable. By sharing their stories, our role models celebrate diversity and disability, and encourage disabled children to realise their potential. They also show how their actions and experiences have impacted the sector for the good, helping to blaze a trail for others who follow them.

According to new ONS data relating to disability in employment, disabled professionals working in the sciences are extremely rare, with disabled physical scientists (largely physicists) making up just 7.7% – even less than chemical scientists (8.4%) and biological scientists (9.7%).

In 2023, we partnered with the Institute of Physics' Planet Possibility consortium to profile the lives and careers of five disabled physicists, increasing their visibility so that they can be role models for the next generation of disabled and neurodiverse physicists.

Our Role Models:



Dr Jessica Boland

Senior Lecturer in Functional Materials and Devices, University of Manchester



Dr Hamied Haroon

Research Associate in Magnetic Resonance Imaging, University of Manchester



Sara Fletcher

Programme Evaluation Manager, Science and Technology Facilities Council



Dr David Cornwell

Senior Lecturer in Geophysics, University of Aberdeen



Dr Patrick Dunne

Lecturer in Physics and Data Science, Imperial College London

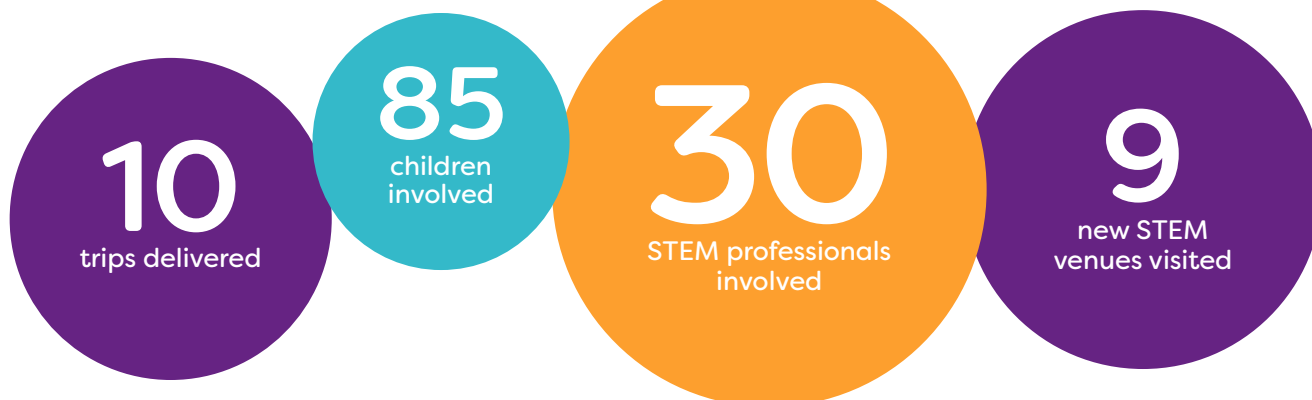


You can read their profiles and watch their video interviews on our website www.lightyearfoundation.org/role-models

"I liked everything from the start to the end. We saw a crystal and a laser and a marshmallow. We saw a piece of the moon and Mars and we got some glasses. Thank you all!"

Work Inspiration Trip student

4 Work Inspiration Trips



From Facebook HQ in London to Ultraleap's haptic technology lab in Bristol, we love inspiring young STEM-ists by taking groups of post-16 disabled students to show them STEM in action! There are so few opportunities for disabled young people to see a place for themselves in a STEM workplace; our trips are designed to introduce students to the full range of roles and settings available, inspiring them to consider a career in this fulfilling sector. As a result of these trips, over 80% of students say they'd consider STEM choices at college or applying for work experience in the industry.

- 65% of young people with SEND want to be in full time paid employment – 5-6% will achieve this.
- It only takes four encounters with employers to improve a disabled young person's employment prospects by 100%.

A taste of what we got up in 2023:

St Christopher's School trip to Xplore!

The Xplore! Science Discovery Centre is the home of science in North Wales, full to the brim with science, exploration, and fun! Students had a range of needs and disabilities including autism, mobility issues and significant learning needs. The setting provided a range of immersive activities where students could experience forces in real time and there were lots of discussions about the use of forces in real life. Some students could identify elements of forces within areas of work, e.g., friction as a driver, and push and pull within fitness. Students were able to experience a driving simulation and discuss the importance of friction, weight and mass, and speed.

	Before	After
Students understand how physics plays a part in our lives	57%	90%
Students feel inspired to consider a physics-related job (e.g., to choose physics options at college or apply for work experience)	29%	90%
Students are aware of roles within physics for people with SEND	14%	90%

Freemantles School trip to Sensus Futuris, University of Surrey

Sensus Futuris is a specialist lab at the University of Surrey exploring innovative artificial intelligence solutions, including their impact on how we study and understand physics. Students had complex social communication needs, usually including a diagnosis of autism. We explored the world of Machine Learning and Artificial Intelligence and learned about some of the best solutions in the world, like Apparent Age Estimation Systems, Facial Recognition Systems, Facial Landmarks Detection Systems and state of the art Cross-Model Person Re-Identification Systems! Professor Josef Kittler and his team of PhD students explained how Sensus Futuris and other companies within the university lead research and teaching on the latest developments in this area of technology, and its ongoing implications for how we approach, understand and study physics. We all had a chance to take part in four experiments:

- **Celebrity Look-alike:** A computer took our photo and then compared us with over 22,000 celebrity images on its database, showing us our closest match!

- **Age Estimation:** We had to play against the artificial intelligence machine to guess the age of people in photos!
- **Face Matching:** This was a tricky one. The computer showed us two photos of faces and we had to guess whether they were the same person or not. It sounds easy but the photos were taken from different angles in different lighting with different hair, make-up and jewellery. People who are good at this are right over 70% of the time and are called 'super recognisers'. Several of our students stunned Professor Kittler and his team with their ability to beat the machine on this experiment!
- **Witness Statement Photo Matching:** We became detectives, typing in descriptions of people and their clothes for the computer to match it against a database of CCTV images. This is how the police try to find people they're looking for!

	Before	After
Students understand how physics plays a part in our lives	40%	80%
Students are interested in knowing more about physics	55%	90%
Students feel inspired to consider a physics-related job (e.g., to choose physics options at college or apply for work experience)	12%	65%
Students are aware of roles within physics for people with SEND	10%	78%

"This was the best day of my life, I want to come back every day."

Student

"The tour was well planned, the kids really enjoyed seeing how the vertical farms looked in practice and it was generally a really positive experience for them."

SEND teacher

"Hosting children from Pond Meadow School was an amazing experience. They were infectious about our work in Artificial Intelligence and keenly participated in the demos of different AI systems. The abilities of some of the pupils in matching face images and estimating age were exceptional. One of them scored 100% in a standard face matching test! We could see a role for them in our research, and in other companies that employ people with such talents. This was the most rewarding outreach activity for us for quite some time."

Professor Josef Kittler, Sensus Futuris, University of Surrey

"We thought the trip was wonderful. Lots of the kids were really inspired by the trip and the class teacher was planning some follow-on work."

SEND teacher



"I didn't know I was so good at this! I'm much better than I thought!"
Student

"I would think about studying science and a job in science after today!"
Student

5 The SEN in STEM Network



We founded the SEN in STEM Network in 2018 in response to huge demand and appetite for a central forum to discuss accessible outreach within the sector, hosting regular in-person and virtual roundtable events and workshops at venues from the Home Office to London Zoo! The network brings the sector together to break down barriers to inclusion by sharing best practice and leading the way with practical solutions. Our members span leading science institutions, membership organisations, science centres, charities, government bodies and private sector companies who collectively represent the UK's STEM community, including the Royal Society, the Royal Astronomical Society, the Science Museum, the Association for Science & Discovery Centres, the West of England Centre for Inclusive Living, the Ministry of Defence and Airbus. Membership is entirely free of charge.

Events in 2023

At the end of May, we ran our first face-to-face SEN in STEM Network event since before the pandemic. 'SEN in STEM: Meet the Funders' was hosted by the Royal Observatory Greenwich and sponsored by Immersive Experiences (who are one of our Immersive Sensory Science delivery partners). We heard about the latest opportunities for funding STEM outreach activities for disabled people from four speakers:

- [Dominique Sleet, Royal Academy Of Engineering](#)
- [Tom Mansell & Anna Hoddinott, John Lyon's Charity](#)
- [Rebecca Levy, Spectris Foundation](#)
- [Christina Fuentes Tibbitt, British Science Association](#)

In November, we hosted an online roundtable event exploring how to make STEM workplaces more accessible and inclusive for disabled staff, and why having a diverse workforce is so important. Dr Claire Malone spoke about creating an inclusive environment for under-represented groups in STEM, drawing from her personal experience as a disabled physicist in academia. She discussed the types of barriers that disabled people can face and examined what organisations can do to break them down successfully and sustainably. Em Diserens, Lightyear Foundation's STEM Partnerships Manager, followed with a roundtable session covering practical guidance and best practice on including disabled professionals in STEM workplaces, cultivating environments where everyone feels able to participate and achieve their potential.



Our members span leading science institutions, membership organisations, science centres, charities, government bodies and private sector companies who collectively represent the UK's STEM community.

6 Training and Consultancy

32
people trained
in inclusive
practice

4
joint projects/
partnerships

We help STEM organisations improve access to their materials, venues, processes and activities for disabled children. For example, this year we advised Royal Observatory Greenwich in the accessible redesign of their planetarium shows and activities.

We also run training sessions for teachers (special school and mainstream), museum presenters, STEM activity club leaders and other child-facing STEM professionals on inclusive techniques,

including our popular 'Making STEM Accessible' online course. This is a practical course for anyone working in STEM and interacting with disabled children or those with special educational needs. Attendees will leave with new techniques, tips and renewed confidence in delivery, evaluation and communication methods plus what they can do to embed these practices into their future work. Course learning objectives include:

- Understand what society can lose when we do not include disabled learners
- Understand Lightyear Foundation's multi-themed approach to inclusive learning
- Learn the importance of knowing the audience you are working with
- Learn methods employed to keep participants safe during online and in-person sessions
- Understand how to plan and deliver an inclusive activity, both in-person and online
- Learn the importance of celebrating achievements

This year, we have supported:





Xplore!

Canolfan Darganfod Gwyddoniaeth
Science Discovery Centre

www.xplorescience.co.uk
#xplorescience

**Dewch i ysgogi
breuddwyd heddiw
Inspire a dream
today**



Meet Lightyear Role Model: Dr Hamied Haroon

Job Title: Research Associate in Magnetic Resonance Imaging, University of Manchester

Disability: Charcot Marie Tooth Disease

"I have been disabled all my life, with physical impairments due to a genetic condition known as Charcot Marie Tooth syndrome, which sounds funny, but it has nothing to do with my teeth! It's actually made the nerves in my arms and legs slowly die off since I was little so now I have floppy hands and wear metal callipers on my legs to help me stand up. I used to be able to walk more in my callipers when I was younger but now I use a powered wheelchair to get around, which is great fun! I also have Crohn's disease which can make my tummy hurt and make me feel tired."

Why did you want to work in STEM?

"My favourite TV programmes as a kid were Star Trek and Tomorrow's World! You might not have heard of them, but they opened our imaginations, exploring where science and technology could take us in the future! Many of those exciting ideas are part of our everyday lives today! Cool, right? But there's so much more to discover and invent!"

What's your favourite thing about your job?

"I am a physicist and I work in a field known as Medical Imaging. I get to work with stunning MRI images of the brain and the body – including the beating heart – to understand how we are structured and function, and how these change as we get older or with different conditions. I love working together with teams of doctors, scientists and engineers to look at the research questions we need to answer to help patients the most. I like teaching and training future scientists and doctors! I also love presenting my research work at international conferences – it's a scary thing to do but it's allowed me to travel to some amazing places around the world and feel part of the huge global scientific community!"

What are your top tips for a young disabled person interested in STEM as a career?

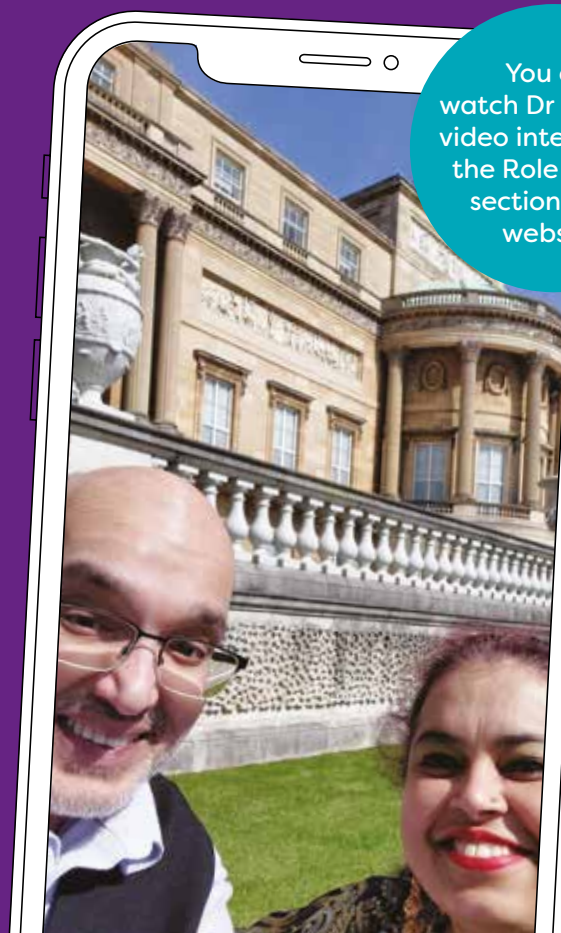
"Go for it! Don't let anyone tell you no! Find out

what options are available and what interests you most. Talk to people who work in the field you're interested in, including people who share your disability if there are any, or else you be the first! Your passion, hard work and determination will drive you!"

What advantages has your disability given you in the field?

"Being a disabled person, I know how important STEM is. It's only through advances in science, engineering and technology that my genetic condition is understood, that I have callipers and a powered wheelchair, and that we have computers and the internet which allow me to work. Also, being a Disabled person makes me able to understand the point of view of the patients we do research with. After all, who knows what a bad day means better than a disabled person!"

You can watch Dr Haroon's video interview on the Role Models section of our website!



Left: Dr Haroon with his wife Humaira at the King's Garden Party in May at Buckingham Palace
Top left of page: Dr Haroon on a sunny day in Manchester

Measuring Success

We are passionate about creating evaluation frameworks that effectively capture the views of disabled children. We use a variety of communication methods alongside tactile, sensory and creative techniques, such as Widgit symbols, sound buttons and Makaton, to capture all voices, including feedback from those around the children, such as teachers, parents, learning support assistants and our own volunteers and programme leaders.

Our framework is a modified version of booklet five of UNICEF's framework for monitoring and evaluating children's projects and we also use the Leuven Scale for assessment (particularly for virtual work). We ensure feedback capture techniques are adjusted to individual needs. Group data collection mechanics are employed alongside individual interviews, observations and collecting stories of change. We also work with families where possible to encourage honest 360 feedback. We work closely with our community to ensure our projects respond to their needs through regular consultation with disabled children, families and schools, plus health, education and social care professionals. As an organisation, we ensure a significant proportion of our Board have lived experience of disability plus access to a dedicated Agents of Change 'council' made up of 40 young disabled leaders who inform and provide feedback on the design, delivery and content of our programmes. We are developing this work, sharing with and upskilling other organisations in inclusive techniques that put disabled children at the centre through our 'Making STEM Accessible' CPD-accredited training and our triage service. Our SEN in STEM Network roundtable on this topic was attended by 44 charities, groups and science visitor attractions.

Short-term impact metrics:

- Disabled children report an increased interest, understanding and enjoyment of STEM
- Special school teachers report greater confidence in teaching STEM
- Disabled children see a role and route for them in STEM education and work
- Organisations we support report improved accessibility and inclusivity practices in their workplaces

Long-term impact metrics:

- A broader and more inspiring STEM education offered in special schools as standard
- Greater representation of the disabled community in STEM higher education and workforces
- A more welcoming, inclusive and diverse STEM sector

Examples of creative evaluation:

Miles up the Mountain: A visual of a mountain is displayed in an interactive format. Students are helped to reflect on the sessions and how far they've come. They each choose where they feel they started and where they ended on the mountain showing their journey. This creates a lovely drawing with each student in a different colour.

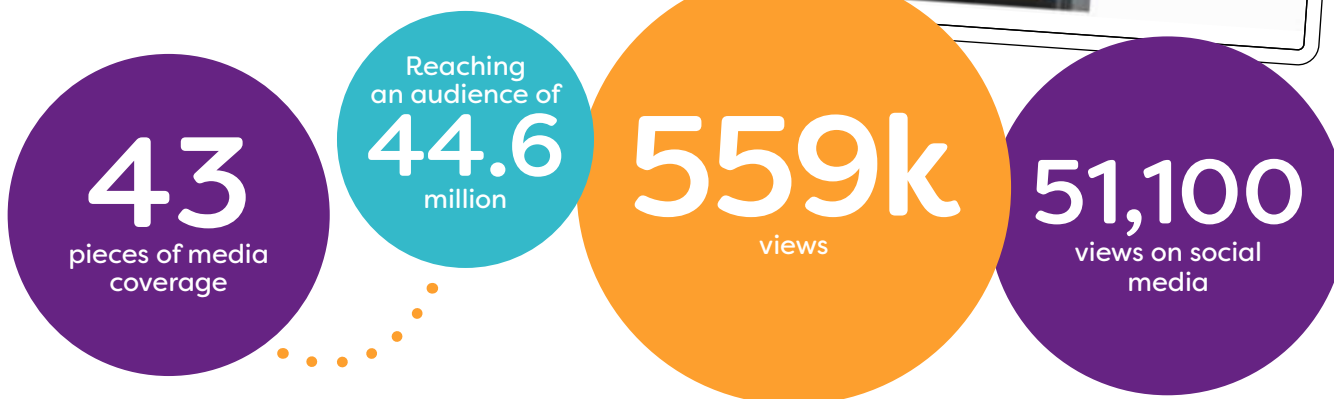
Science Sand: The session leader has a large jar of coloured sand. The students can choose a colour and also how many scoops they want put in, based on how confident they feel in physics. This is particularly nice as it's both an individual response but the jar shows collectively what the group has achieved.

Designing Lab Coats: We give participants a lab coat to wear for their lab sessions. For the last session of the course they can come to class with their coats decorated, either with what they learnt or their favourite bits of physics-inspired drawings.



Events and Media

We welcome every opportunity to talk about representation and accessibility in STEM. Here are some of our most impactful speaking engagements and media features in 2023.



BIG event 2023

Lightyear STEM Lead, Dr Claire Malone, presented at this event in Birmingham in July covering techniques and best practice used in making science engaging to an audience with learning or physical disabilities. She talked the audience through a Lightyear Lab experiment, identifying specific strategies that need to be employed when designing and delivering for this audience, sharing evidence that students find experiments with a tactile element more engaging (including something to feel, smell or taste). She also led a discussion on how these techniques can be applied to other outreach activities.



Physics World magazine

We are very proud to have featured in Physics World both online and in print in September, profiling our physics role models and discussing the lack of disabled representation in this field.



BBC Access All podcast

Lightyear Foundation role model Dr Hamied Haroon was interviewed on the BBC's weekly podcast about mental health, wellbeing and disabled people in September.



Coast FM, the Source FM & Siren FM radio

Our Deputy CEO Elle Wilks was interviewed alongside Lightyear Foundation role models about the importance of increasing diversity and inclusion in science.





Trustee Peter Roberts presenting at City, University of London

City, University of London

We are delighted that The Centre for Compressor Technology chose Lightyear Foundation to be its charity partner as its International Conference on Compressors and their Systems in London at City, University of London. Trustee Peter Roberts

presented our work and chatted to delegates in the exhibition hall. Thank you to Lukas Duer, winner of the Best Student Paper at the event, who kindly donated his £300 prize fund to Lightyear after hearing Peter speak!

Awards

We are proud to have been shortlisted and highly commended in the 2023 Charity Awards, the 2023 Charity Times Awards, and the 2023 Third Sector Charity Awards, recognising our relentless commitment to widening participation in STEM.



Our People

In 2023, we had five staff working the combined equivalent of one full-time person across strategy, operations, fundraising, communications, events and programme delivery.



We also hosted a summer placement funded by the Institute of Physics' Planet Possibility project for a student from the University of Southampton, Alfie Preston. Alfie scripted, filmed and edited a series of accessible physics experiments and was fantastic both on and off camera – we are very grateful for his support.

We are passionate about having a diverse Trustee Board that represents the community we serve. Our Trustees come from a range of backgrounds covering education, STEM, SEN and employability as well as having lived experience of disability.

Over 50% of our Trustees are disabled, which ensures we are led by the community we exist to serve.

Lightyear Trustees and staff undergo DBS checks, are trained in disability awareness, follow the Charity Governance Code and complete regular NSPCC child protection training.

Some ways we have made our Trustee meetings more accessible include:

Integrating the chat function to better accommodate a range of communication needs

Recording Board Meetings to enable trustees to watch again

Live captioning for Board Meetings

Giving a short physical description of ourselves in the introduction for attendees with visual impairments

Assigning Board Buddies to ensure new Trustees feel supported

Saying our name before we speak to ensure it's clear to everyone who's talking

Volunteers

As a small team, volunteers enable us to magnify our impact, bringing with them a host of skills and expertise. We are so fortunate to have volunteers supporting our projects from Zoom Commanders in our virtual Lightyear Labs and those who speak at events or support Work Inspiration Trips, to our fantastic volunteers who support our work 'behind the scenes' in data, IT and fundraising.

Our 2023 volunteer survey showed us that volunteering with Lightyear has a positive impact on what people think disabled children are capable of, as well as on their mental health and confidence.

- 75% of volunteers said that they have gained a sense of satisfaction from volunteering
- 100% of volunteers felt like valued members of Lightyear Foundation and wish to continue volunteering in the future



Trustee spotlight: Dr Camila Devis-Rozental

Dr Camila Devis-Rozental is an award-winning academic and author. She is a Principal Academic at Bournemouth University where she researches areas around positive psychology and

humanising practice with a focus on enhancing the student and staff experience. Camila has been included in the 2022 and 2023 Shaw Trust Disability Power 100 list which recognises the 100 most influential disabled people in the UK for her work on humanising education. In 2023, she was also nominated for the National Diversity Awards in the Positive Role Model for Disability category. Camila is passionate about social justice and championing educational opportunities for marginalised groups.

"This is my first year as a trustee in The Lightyear Foundation and I have been blown away by the commitment and passion that everyone shares in inspiring and enabling disabled children to take part in STEM activities. I've loved engaging with everyone and knowing we are doing something that will have a positive impact in the world. I'm so looking forward to continuing supporting Lightyear to go from strength to strength in the coming years."



Volunteer spotlight: Quintin Hunte (CRM and data support)

Quintin Hunte is a Senior Business Analyst and Project Manager for a global technology services company and also has a background in customer

experience management for a number of automotive brands, in the UK and overseas. He has helped us this year to set up our new CRM database, suggesting how we can best manage and protect our data, and providing hands-on support to the team.

"I've greatly enjoyed volunteering at Lightyear Foundation, supporting the team in deploying and enhancing their Salesforce CRM platform, which stores much of the charity's data and helps them track their many activities in a single system. Being a father of an autistic child, an IT professional working in the automotive sector, and a former and current resident of cities known for their focus on academic and technological innovation in STEM areas such as London, Cambridge and Dubai, Lightyear Foundation's mission resonates strongly with me."

I wholeheartedly agree with the charity's view that many of the existential challenges that humanity faces will demand a range of STEM-based solutions and that diversifying the STEM talent-pool to include greater numbers of disabled and neurodivergent innovators, with their often unique talents and perspectives, will do much to enrich the quality and success of those solutions. As such, I'm delighted to contribute, albeit in a modest capacity, to the admirable work of this small yet highly productive team. They are fun to work with, quick learners and patient teachers (a useful attribute when I'm the student).

I'm grateful for the opportunities that volunteering has afforded me to learn about the charity's objectives, activities and structure. It's also given me practical experience of a different version of the Salesforce CRM system than the one I usually work with, which has helped me acquire an additional Salesforce certification recently. I look forward to continuing my fulfilling role as a Lightyear Foundation volunteer, helping to expand the reach and deepen the impact of the team's exceptional and much needed work."

Looking Ahead

Following a phenomenal and transformational three-year grant from the Spectris Foundation, we end 2023 with plans in place to significantly expand our reach and impact in the coming years. In 2024 and beyond, we will be introducing the following activities.

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Lightyear Foundation Mission Control

We centre children's feedback in the design and development of our programmes and are experts in creating evaluation frameworks that effectively capture the views of disabled children using tactile, sensory and creative techniques such as Science Sand and Miles up the Mountain. We use Widgeit Symbols and Makaton to enable participants to feedback their views as independently as possible and we continue to develop this work, sharing with and upskilling other organisations in inclusive techniques that not just successfully include disabled children but put them at the heart. In 2024, we will be introducing our own youth advisory council – named Lightyear Mission Control! This group of 10 peer-elected disabled children will meet quarterly to inform the design, delivery and content of our programmes, and to share their experiences and ideas around accessing opportunities in STEM.

Astronomy Lightyear Lab



Our funding agreement with the Royal Astronomical Society will enable us to develop an astronomy-themed Lightyear Lab and create a digital leave-behind document on 'Accessible Astronomy' for schools to continue to discuss and explore astronomy with their students. We will be piloting this new lab and materials in one special school in the UK in 2024 and then using these learnings to create a scalable and replicable astronomy-themed Lightyear Lab for national roll-out.

Chemistry programmes



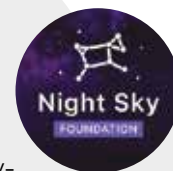
In partnership with the Royal Society of Chemistry, we will be developing and piloting a chemistry-themed programme to add to our school offering, which will be designed to achieve these goals:

- To encourage an interest in chemistry among disabled young people in special secondary schools across the UK
- To increase disabled children's confidence in doing practical chemistry
- To improve knowledge of the careers available in chemistry
- To raise aspirations of disabled students in this subject
- To increase understanding of how chemistry relates to the world around us
- To tackle the disparity in the demographics of people studying and working in chemistry

This will include a new chemistry Lightning Lab, two Immersive Sensory Science experiences, and five Work Inspiration Trips to chemistry-related workplaces.

Technology-themed activities

Following our successful collaboration with Night Sky Foundation in 2023, we are rolling out an expanded technology-themed programme, adding new components to maximise reach and impact. In 2024, this will include two full Lightyear Labs, a Lightning Lab (a single session version of our deep learning series), two Immersive Sensory Science experiences and the recruitment, profiling and promotion of five disabled role models working in the field of technology.



Makaton STEM signs

There is huge demand for Makaton vocabulary to add specific STEM-related terminology. Currently, for example, the sign for 'planet' is a ball and then 'p'. Creating Makaton signs to include STEM vocabulary would help to reinforce the importance of these subjects within SEN education, and open up the language of STEM to a wider audience. We will be working with Makaton to design and introduce these new signs. We had hoped to deliver this project in 2023, but it is firmly on our radar to bring to fruition next year.

Formula 1 Engineering Lab

We're teaming up with F1 in Schools to design and deliver an accessible and inclusive Formula 1 Engineering Lab in special schools, introducing the world of race car engineering to a new generation of potential drivers and engineers. Each lab is a series of four 1-hour sessions, delivered in special schools to small groups of disabled children aged 11-16 to work scientifically in practical engineering, getting hands-on with equipment and teaming up with real race car engineers. After designing their cars to factor in aerodynamics and testing them under pressure in a wind tunnel, it's race day! Our cars will power down the racetrack at speeds of up to 75 kph! This exciting new workshop will show them (and the world) how the different ways they see and interact with their environment can be a superpower in F1 engineering.

Lightyear Foundation Inclusion Awards

After much planning this year, we hope to host our inaugural Lightyear Foundation Inclusion Awards as our way to recognise and celebrate the relentless commitment, energy and achievements of people and places working hard to improve accessibility and inclusivity in STEM. New Scientist magazine has confirmed its intention to collaborate on these awards. Fully online, these awards will be accessible to all with signing and captioning.

This exciting new workshop will show them (and the world) how the different ways they see and interact with their environment can be a superpower in F1 engineering.



Our vision of the future

Through developing our programmes to be scalable and replicable, and through fortifying pathways with our SEN in STEM Network members and other educators and employers, we firmly position ourselves as a catalyst for creating systemic change. We are committed to tackling the root causes preventing the disabled community from accessing STEM. We want to be part of the solution so that ultimately our services are no longer needed. Our vision is of a future where inclusivity and accessibility are embedded within STEM education and workplaces, where disabled people are welcomed and celebrated in these pioneering fields, offering their unique contributions to tackling the world's greatest challenges and advancing human knowledge.

Supporters

We are especially grateful for the support from our trusts/grantmakers, corporate friends and community donors this year, including:

Amazon Smile
ApotheCom
Big Yellow Storage
Brits-at-CERN
Cawood Scientific
Crowdfunder (Race to Space campaign)
Euler Labs Ltd
Facebook Giving
Future First
Immersive Experiences
LocalGiving
LocalGiving Magic Little Grants (Postcode Lottery)
Masonic Charitable Foundation
Night Sky Foundation
Oxford University
PayPal Giving
Royal Astronomical Society
Royal Society of Chemistry (Chemists' Community Fund)
Springer Nature
The Charles Ruddock Trust Ltd
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The Joseph and Annie Cattle Trust
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