digital Xtra fund

We awarded...

£150,000

for digital skills activities in Scotland...

across **24** local authorities

| Local Authority	Engagement
Aberdeenshire	425
Clackmannanshire	5
Comhairle nan Eilean Siar	70
Dundee	41
East Ayrshire	85
Edinburgh	2,082
East Lothian	157
East Renfrewshire	30
Falkirk	663
Fife	239
Glasgow	344
Highland	586
Inverclyde	169
Midlothian	243
Moray	774
North Ayrshire	90
North Lanarkshire	638
Orkney	146
Perth & Kinross	81
Renfrewshire	250
Scottish Borders	111
Shetland Islands	74
South Lanarkshire	558
West Lothian	342

Engagement per Local Authority

We supported **35** initiatives and reached...

8,203

children and young people including...

4,171 girls and young women
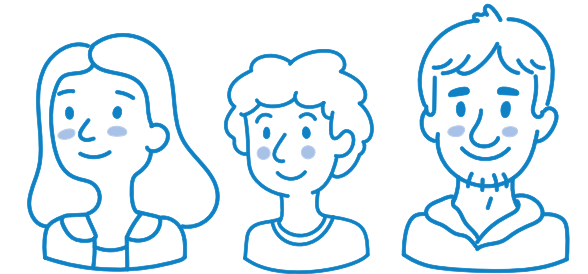
Age range of participants

90 Early Learning & Childcare

5,771 Primary School age

2,337 Secondary School age

Equipment purchased by this year's grant recipients included...

LEGO Education SPIKE Prime and Essential sets; BBC micro:bits and accessories; Sphero BOLTs, indis, and Minis; Marty the Robot; VEX GO; Otto DIY; DJI mini drones; Dash and Dots; Ino-Bots; Makey Makey; Botley 2.0; Bee-Bots and Blue-Bots; Coding Critters; Code & Go Robot Mouse; KittenBot Meowbits; Cubetto; Artie Max; Sustainable Energy Production Teaching Sets, as well as tablets, laptops, and 3D printers.
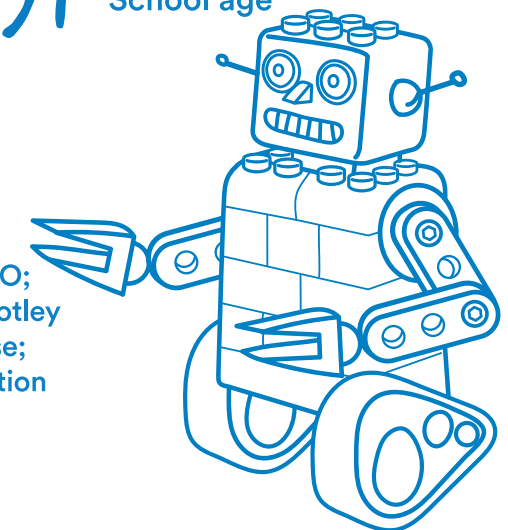
Ethics in Tech

In 2022, Digital Xtra Fund began developing three new activities to engage and enlighten young people about ethics in technology in anticipation of the Scottish Government's 'Building Trust in the Digital Era' report. The results were wide ranging and impressive:

Tech We Trust by Digital Skills Education

Tech We Trust is an interactive lesson demonstrating how personal data is used in algorithms and how programmers can (often accidentally) include their own bias. The activity challenged young people aged 10+ to create a fair and unbiased algorithm to determine who received a free ticket to a local attraction. Participants were asked to weigh eight variables before inputting these into an algorithm using Python. This highlighted specific outcomes which could be considered unfair or biased based on circumstances outwith the algorithm's scope. It also featured three talks about data and algorithms as well as several professional development sessions and resources for educators.

The activity saw 325 primary and 500 secondary school pupils (including 36% female participants) take part in a live online lesson.

I have used this lesson twice now with students and it has been incredible. Such a great way of talking about bias in algorithms! We used it to intro the idea of algorithmic bias before talking about it in terms of AI. Then we compared and contrasted the algorithm from Tech we Trust with an AI algorithm. - Educator

DIGITAL SKILLS EDUCATION
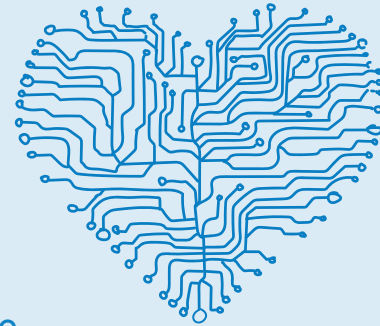
Maddie is Online: Series 4 by Robert Gordan University

The fourth series of Maddie is Online focussed on ethics of online safety and security. Phase One saw S1 and S2 pupils submit short stories aligned to the project's key themes. Five of these were then selected by a panel to be animated by the stories' authors (including 60% female participants). The winning story, 'Lucy the Influencer', was announced at an online event attended by 502 people.

Phase Two of the project saw 25 primary and 115 secondary school pupils take part in six online workshops and two careers' talks related to the project's key themes.

Finally, Phase Three included the publication of an online toolkit with resources and activities about ethics and online safety and security.

This opportunity has helped me both with my computing and story writing skills. I've also learned more about how to avoid getting scammed online and I hope our animated stories can help other pupils learn more about avoiding this happening to them too. – Student at St Andrew's and St Bride's High School

RGU ROBERT GORDON UNIVERSITY ABERDEEN

Digital Ethics Badge by iDEA

Inspiring Digital Enterprise Award (iDEA) developed a new gold-level Digital Ethics Badge. This bite-sized, interactive online module helps learners understand what is digital ethics, why it is important, and the ethical impacts digital innovation can have on the world.

Users learned how to identify and embed ethical principles while creating digital products, tools, and services as well as the role of a digital ethicist. Users then applied this knowledge during a final scenario-based challenge where they acted as a digital ethics consultant for a health-tech start-up helping identify and mitigate potential ethical risks.

During its first year of delivery, over 15,000 learners around the world are expected to engage with the badge.

I loved the Digital Ethics Guide and how it simplified all the important factors and how to dissect potential issues and how to treat them. I also liked the hands-on case as I could actually put my knowledge to practical use and strengthen it further. This made the overall experience more fun and interesting. - Online Learner

iDEA

At Corstorphine Primary School in Edinburgh, class teacher Neil Stannett recognised the need to boost interest among pupils in coding and STEM in a creative way. He launched the Technicoders Coding Club with 10 boys and 10 girls from P6 and P7 and purchased a set of Sphero BOLT coding robots with support from Digital Xtra Fund.

During the club's first year, the Technicoders met each week to develop their skills using the BOLTs and block coding. They also explored using micro:bits and RGB lights to understand the colour spectrum and connecting devices to communicate with each other.

Neil said: *"I was excited at the prospect of being able to support our new pupil group to learn about coding, and experiment creatively with robotics. Thanks to the grant, we were able to purchase a set of 15 Sphero BOLTs in a travel charging case, along with a variety of accessories to go with our school sets of micro:bits. The BOLTs were ideal for our pupil group to learn with as they can be coded using different programming languages. They are also just great fun."*

The club was also lucky to have a number of pupils who were keen to support the school with its digital journey by passing on what they had learned to the younger years, also 'lighting the fuse' of interest among them. As such, the school decided to also set up a P5 Code Club. The Technicoders were also invited into individual classes to support with digital learning at various points throughout the year.

Neil commented: *"One of the standout moments for me has to be when, during our initial sessions with the P5s, a small group started creating a story using the text-speech function on the iPads. The Technicoders then supported the P5's to code their BOLTs to interact with the story using lights, sounds, and movements. This instigated the next few weeks of learning, as all the groups began creating stories and using their robots to move through the story as the main character. I was so impressed at the creativity and innovation on show."*

"I liked hearing about the jobs in space the most because I hadn't really thought about those sorts of jobs before and now I think it is something I would like to do."

Bhavesh, age 12

"I like the Technicoders because we got to explore different aspects of tech and learn new things. When I'm older, I will want to work in tech especially since there is likely to be more advanced tech in the future and we will be more surrounded by it."

Zoe, age 12

Case Study 2
Hillside School: Hillside Coding Club

Hillside School in Portlethen, Aberdeenshire, established a Coding Club for 25 Primary 6 and 7 pupils with 68% of participants identifying as female. The project's aim was to increase learning about computer science and coding by inspiring participants to create games and programme robots.

Highlights throughout the year included using MakeCode Arcade to create games connected to the UN Sustainable Development Goals and play with their KittenBot Meowbits, learning how robots are used before building their own, and the opportunity to get hands-on with Marty the Robot.

Club members also had opportunities to go on several epic field trips to Aberdeen Science Centre, North East Scotland College, and the University of Aberdeen. At Aberdeen Science Centre, participants took part in a hands-on and informative LEGO Education SPIKE robotics workshop. They then learned about the importance of the planning process in tech while visiting the College. Many also had their first introduction to Python using Minecraft Education. At the University of Aberdeen, participants were shown the lecture halls and library before receiving a behind the scenes tour of the science and engineering department where they got hands-on with even more robots. Club members also participated in an engaging workshop about the variety of coding-related opportunities beyond school. Hillside School teacher and Club Leader, Fiona Lindsay, said: *"Hillside Coding Club had the most truly awesome experience at Aberdeen University. The day was full of inspiring, mind-blowing and memorable moments. It exceeded my expectations in so far as it more than motivated, engaged, and sparked curiosity in the Club members."*

Fiona added: *"Support from Digital Xtra Fund has made the workshops, outings, and experiences possible providing insight into future careers opportunities. We feel privileged and so lucky to have had this funding to be able to give the pupils this experience."*

"This was a huge challenge and I did think we would never be able to do this, but we did! We were very proud of the game that we created by ourselves, it was so hard but we did it!"
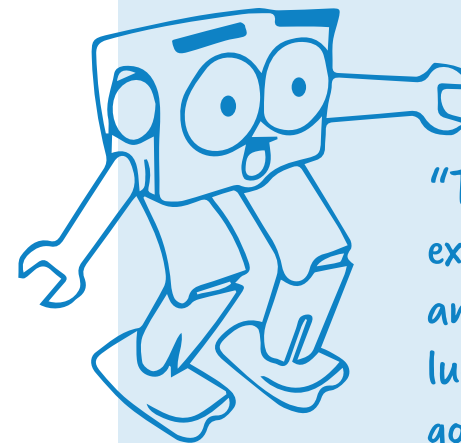
"I can't wait to get to create my own projects with Scratch next year and come up with my own ideas for this. I now feel more confident in doing this"

"The Aberdeen University visit was a great experience. All the people that we met were very kind and taught us lots of different things. I feel very lucky to have been able to visit. I really would love to go there as a student!"

HILLSIDE school

Feedback from Round VII (2022/23) Grant Recipients

Digital Xtra Fund's success is measured not just in pounds awarded or numbers engaged, but also through the feedback we receive from grant recipients about how the grant awards has helped them create unique and meaningful experiences for young people. Below is a selection of some of this year's wonderful feedback:

The outcomes and experiences would only have been achieved through the grant. It has built confidence with both pupils and staff, allowing for participation with more complex resources that would never be purchased without this. We are proud of our Digital Leaders who took control and responsibility over the project. They displayed a dedication, helping each other and establishing new skills.

Teacher and Digital Champion, Rochsolloch Primary School

In the initial survey, only a few children were creating with technology while the rest were consuming it. Now, 60% of the children are regularly creating with technology in their spare time in school and at home. They are also exploring coding websites such as scratch and code monkey. The sessions have increased their confidence in using technology to support their learning and we have been able to introduce several different codable devices to learn with across the curriculum.

Digital Lead, Pitlessie Primary School

All pupils said they were more interested in robotics and coding as a result of attending the clubs. Some pupils are considering careers in robotics / engineering areas. One of the girls is keen to pursue a career within Engineering and has been one of our best coders. She has understood the programming language with ease and has developed very strong problem solving skills when we have been working on the challenge tasks.

Principal Teacher, Blairgowrie High School

'Creating Code Clubs' has been extremely successful. Learner and family engagement with the project, particularly those in targeted groups, was consistently high. The project helped us to engage children and families who previously had not engaged with extracurricular activities of any sort. Without the support of Digital Xtra Fund, it would have taken us years to afford and acquire the resources needed to provide quality extra-curricular learning in this area.
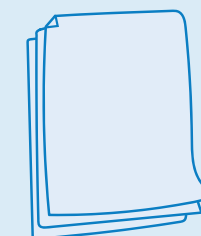
Acting Principal Teacher, St Brendan's Primary School

Industry Engagement

Working with so many outstanding educators and keen industry partners, Digital Xtra Fund is perfectly placed to enable meaningful industry engagements with grant recipients. Building on the success of the previous year, the Fund facilitated 12 in-person and online opportunities for young people and industry experts to connect in a variety of informal and creative settings.

44 industry volunteers contributed approximately…

77 hours engaging and inspiring…

879 children and young people with tech!

In addition, volunteers from industry, government, and the education and skills sectors provided their time and expertise assessing applications to help Digital Xtra Fund select the next cohort of 26 supported initiatives for 2023/24.

In total, 58 volunteers contributed approximately 398 hours evaluating 143 grant applications

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