Data Skills Gateway Joined Up for Jobs Forum August 30th 2023

"We are now entering an era when the generation, collection, analysis and monetisation of huge volumes of data underpins the Digital Economy.

The value of data comes from use in real-time, or aggregation over long periods, to understand and predict behaviour.

Whilst data has become ubiquitous, the challenges for all organisations are effectively to use this data to shape, develop and deliver innovative processes (including new digital products and services) to consumers and citizens.

This is what we call **Data Driven Innovation** (DDI)." **Jon Oberlander**

THE UNIVERSITY of EDINBURGH

Data-Driven Innovation

Why Edinburgh?

THE UNIVERSITY of EDINBURGH

Data Skills Gateway

AI in Edinburgh turns 60

The roots of Artificial Intelligence in Edinburgh go back to 1963, to the Experimental Programming Unit led by Donald Michie, who had worked with Alan Turing at Bletchley Park.

Edinburgh has become the **fastest growing digital hub in the UK** during the past decade, outperforming all nations and regions in digital sector employment growth (8.2% p.a.) *(DCMS, 2021)*

THE UNIVERSITY of EDINBURGH

Data-Driven Innovation

Data Skills Gateway

Leading Digital cluster

2006

2016

2022

Data Skills Gateway

Data-Driven Innovation (DDI):
15-year, £661m investment and innovation initiative supported by a total of £270m capital funding from the UK and Scottish Governments.

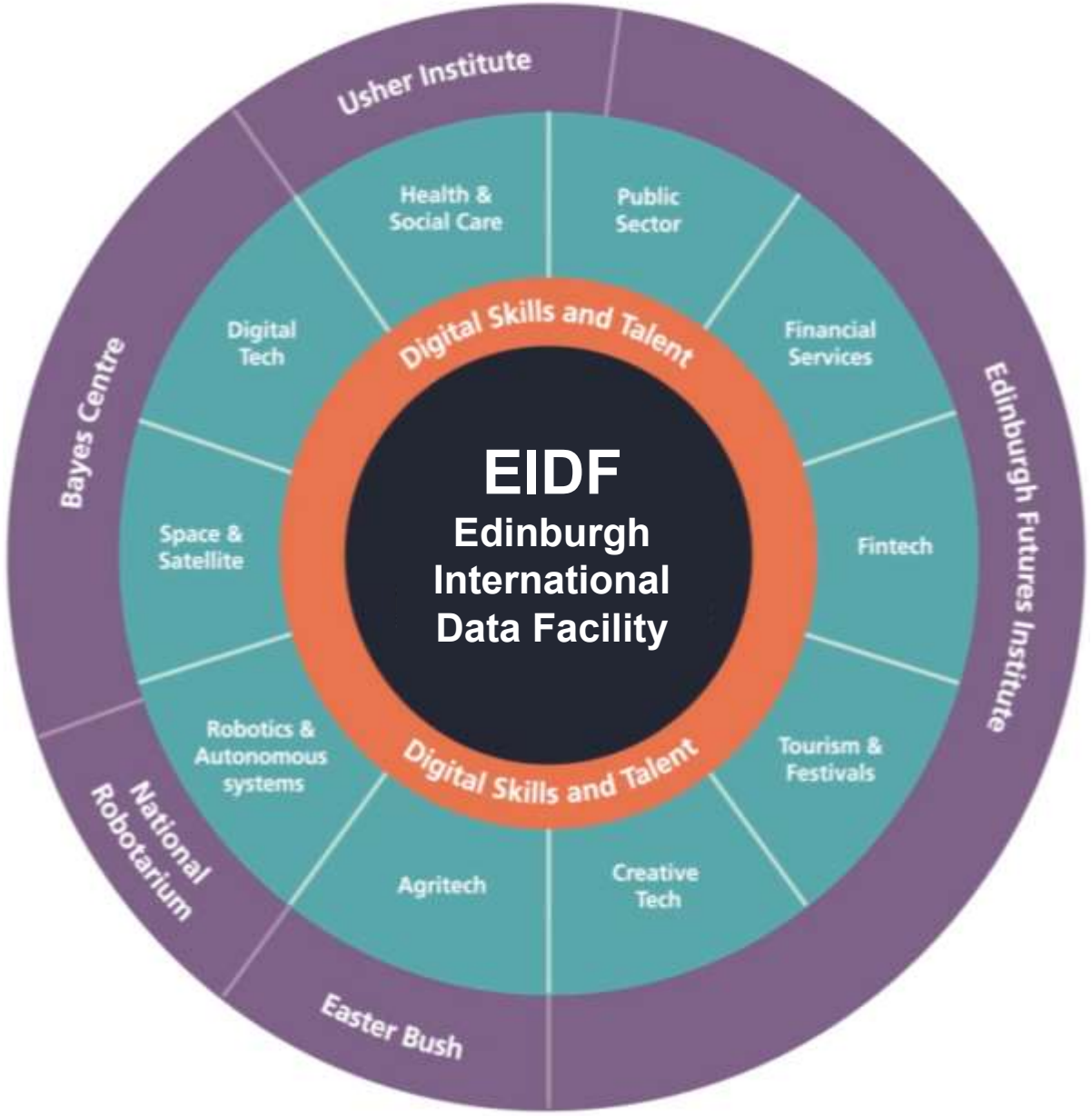
lets become the data capital of europe

CITY REGION DEAL
Edinburgh & South East Scotland

THE UNIVERSITY of EDINBURGH

Data-Driven Innovation

6 DDI Hubs – One Innovation Platform:
53,000 sqm of new space for researchers, students and partners to collaborate – challenge, create, change.



THE UNIVERSITY of EDINBURGH

Data-Driven Innovation

Bayes Centre: opened 09 / 2018

National Robotarium: opened 07 / 2022

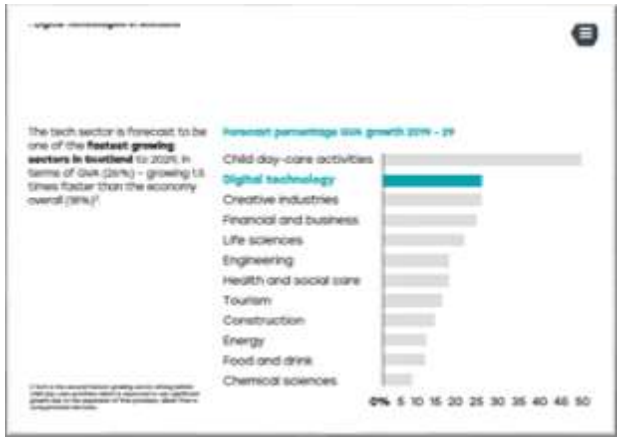
Edinburgh Future Institute : ready autumn 2023

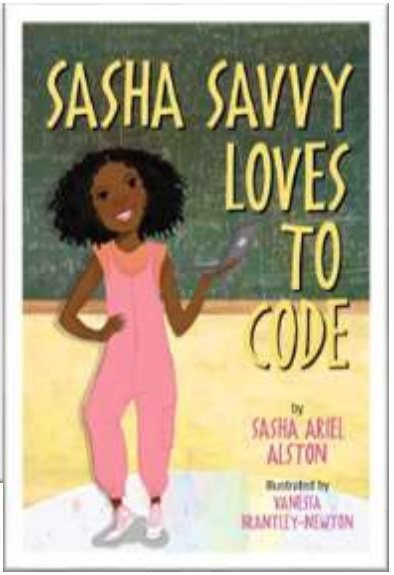
Easter Bush Innovation Centre: upgraded 2024

Usher Institute: ready autumn 2023

EIDF Computer room: opened 02 / 2022

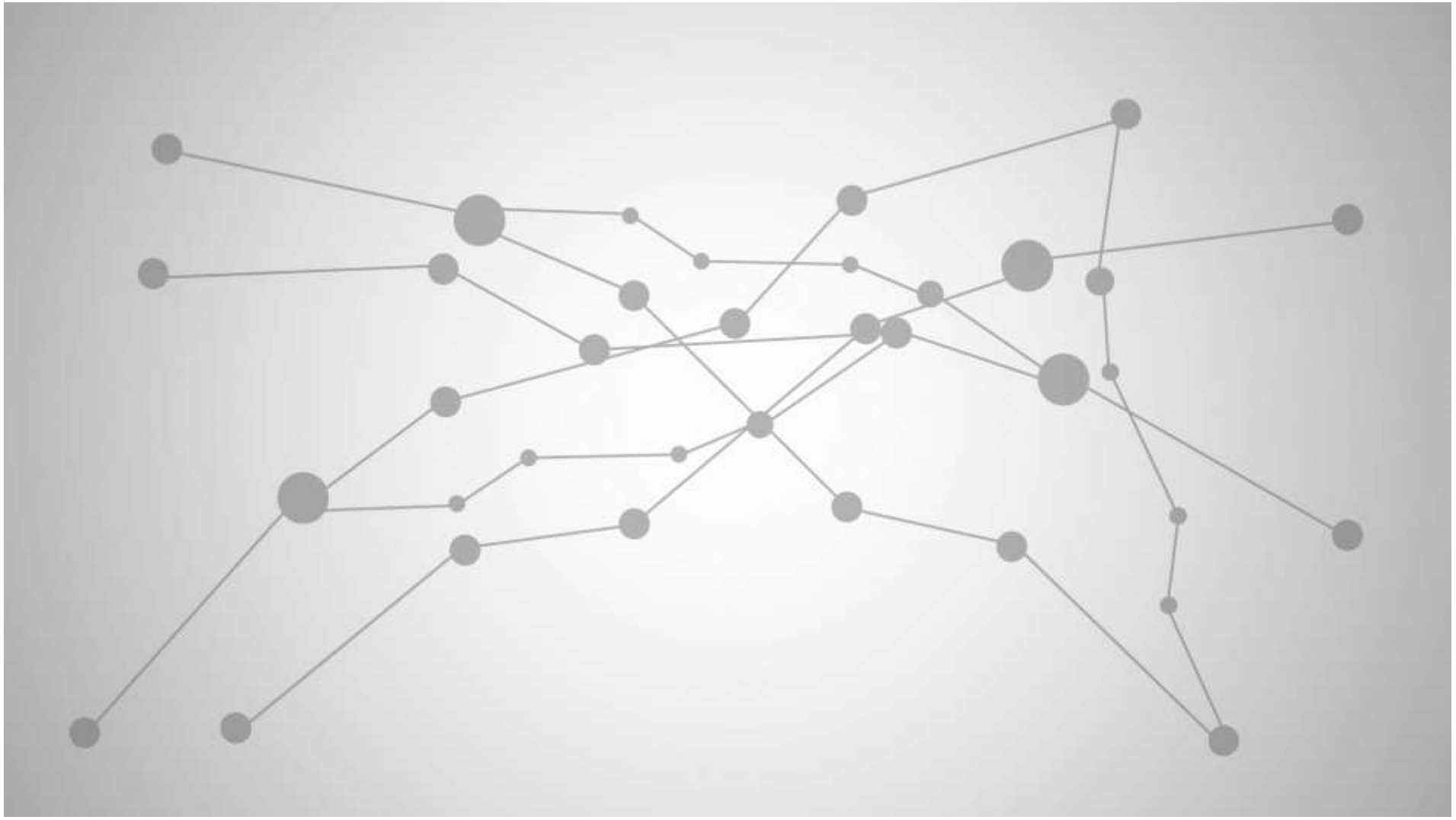
Programme developed in response to demand for Data Skills nationally and locally





Promotional film

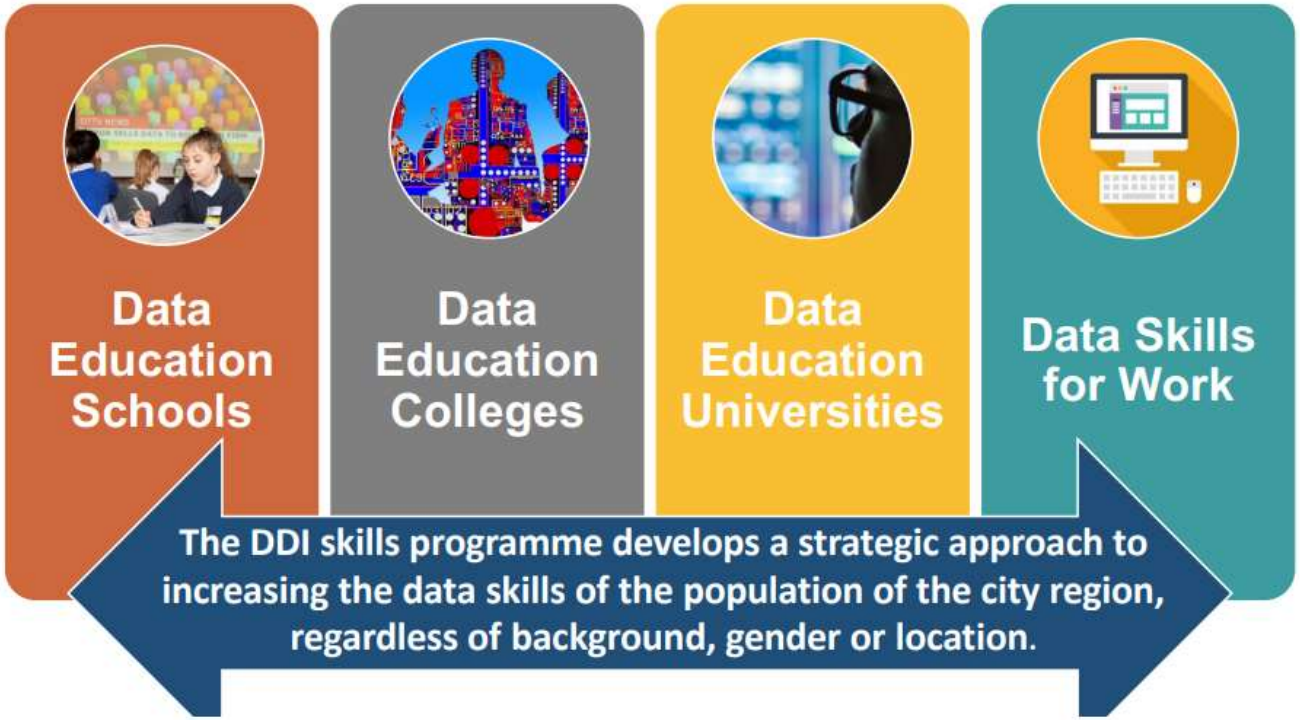
DDI Skills Gateway



Partnership model…

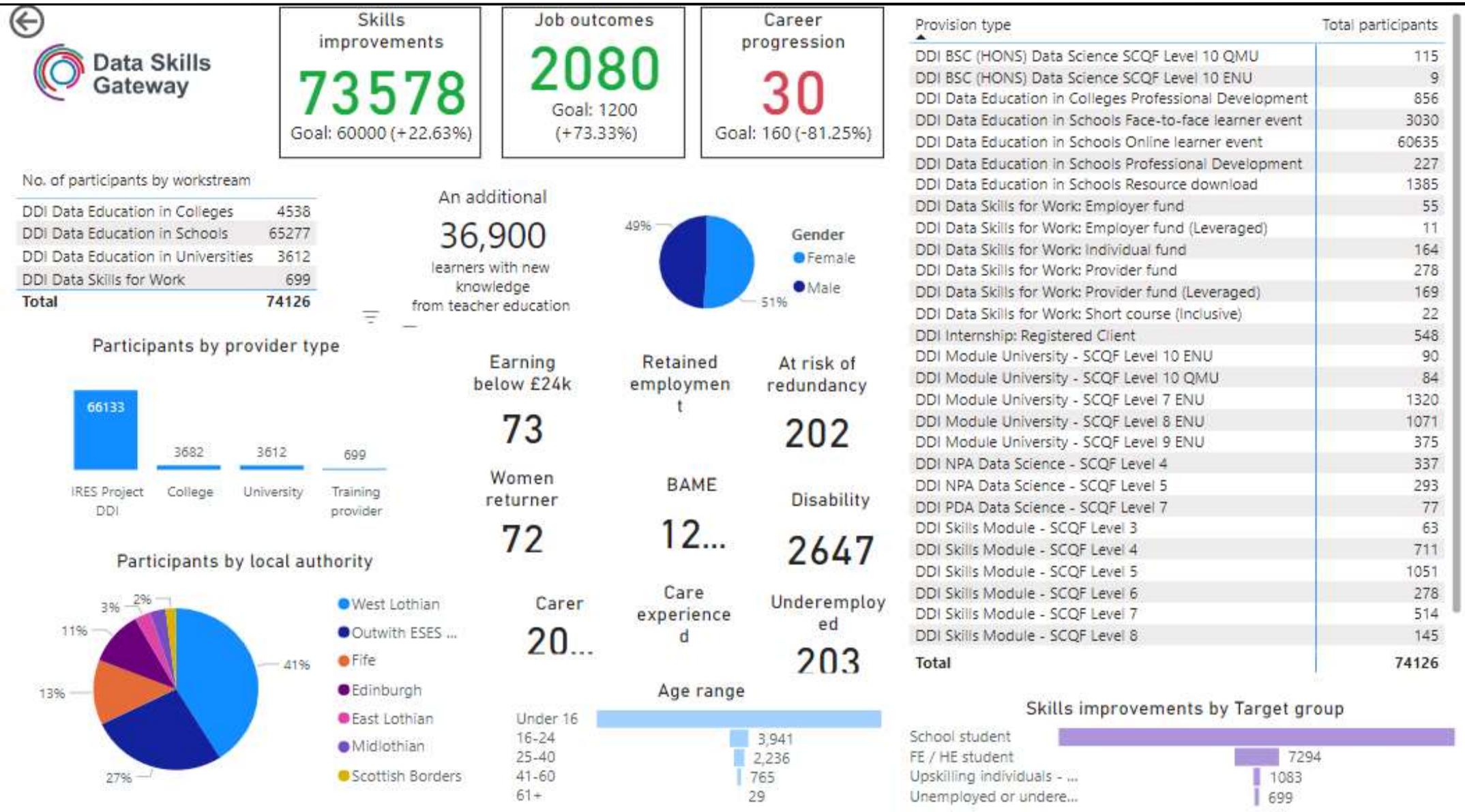
DDI Skills Gateway

… across skills pipeline

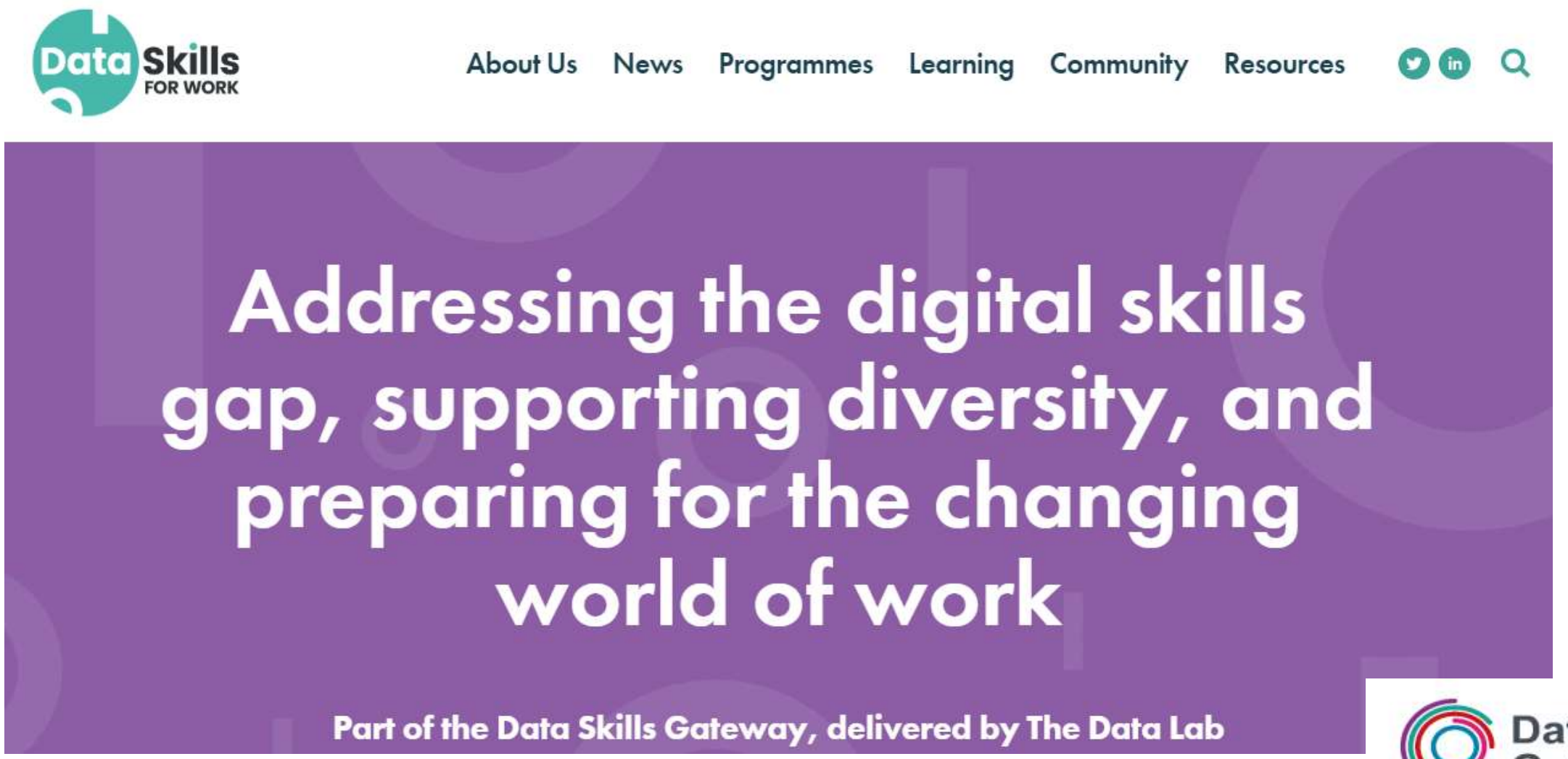


Data Skills Gateway

Demonstrating our reach



Data Skills for Work



Data Skills Gateway

Data Skills for Work

Data Skills Gateway

Data Skills for Work

677

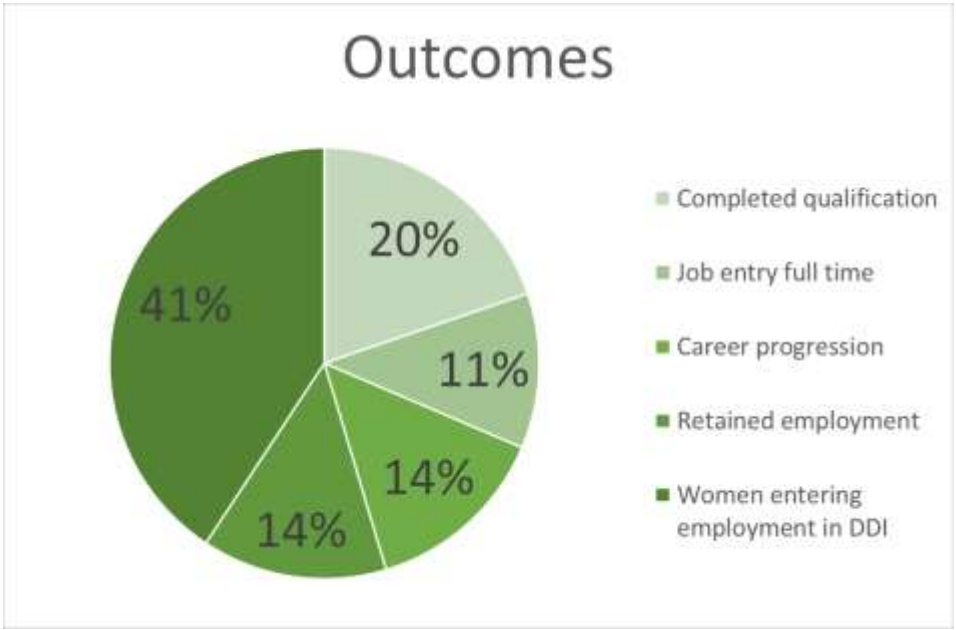
Learners supported to upskill through our Data Skills Credits scheme

497	180
Direct funding	Leveraged

427
WOMEN

148
BAME

Data Skills Credits



Sample size = 86

"Data Skills for Work have helped us tremendously by increasing the number of women taking part in our courses and allowing us to deliver courses open learning in a way that is affordable and flexible to learners from underrepresented groups. It's allowed us to help people develop their career and multiple examples of people getting really good jobs."

Sam Blyth - Head of School, School of Computing & Technology, Edinburgh College

Data Skills for Work

Data Skills Credits – Provider Fund Calls 2023

Funding for providers offering data skills courses to learners in ESESCRD and now expanded to Tay Cities Region

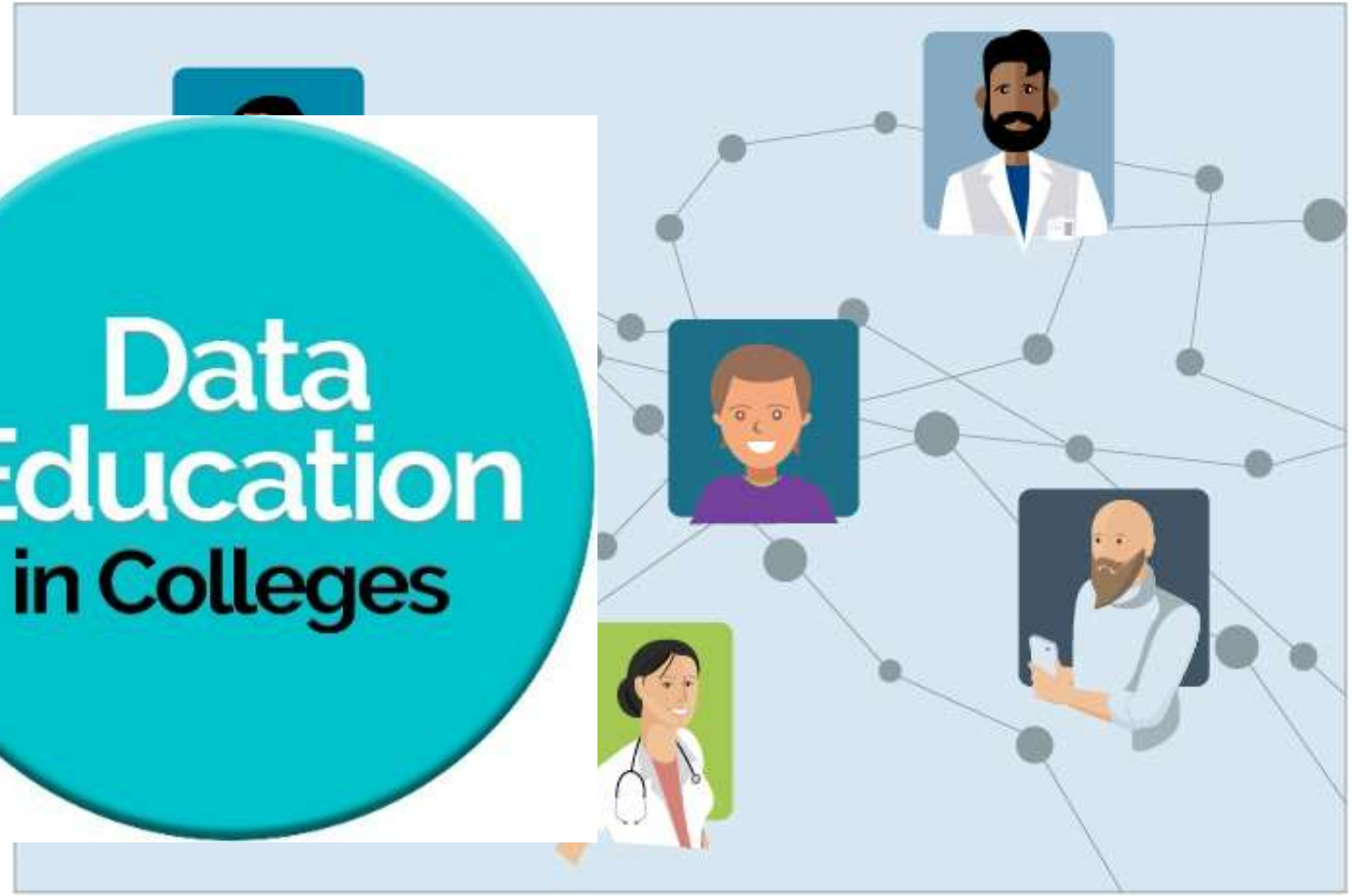
- Launched Provider Funding calls for Edinburgh City and Tay Cities Region to support a target of **224** learners in 23/24.
- Applications totalled £284k and £110k to award.
- Offers have been made to fund **20 courses** (11 in ESES and 9 in Tay Cities)

Let Data Drive You

Future proof you CV with data science skills.

Learn more

Data Education in Colleges



Borders College

Edinburgh College

Fife College

west lothian college

City Region Deal
Edinburgh & South East Scotland

Data Skills
Level 3
(National 3)

Data Skills
Level 4
(National 4)

Data Skills
Level 5
(National 5)

SQA Data Science Curriculum Portfolio

NPA Data Science

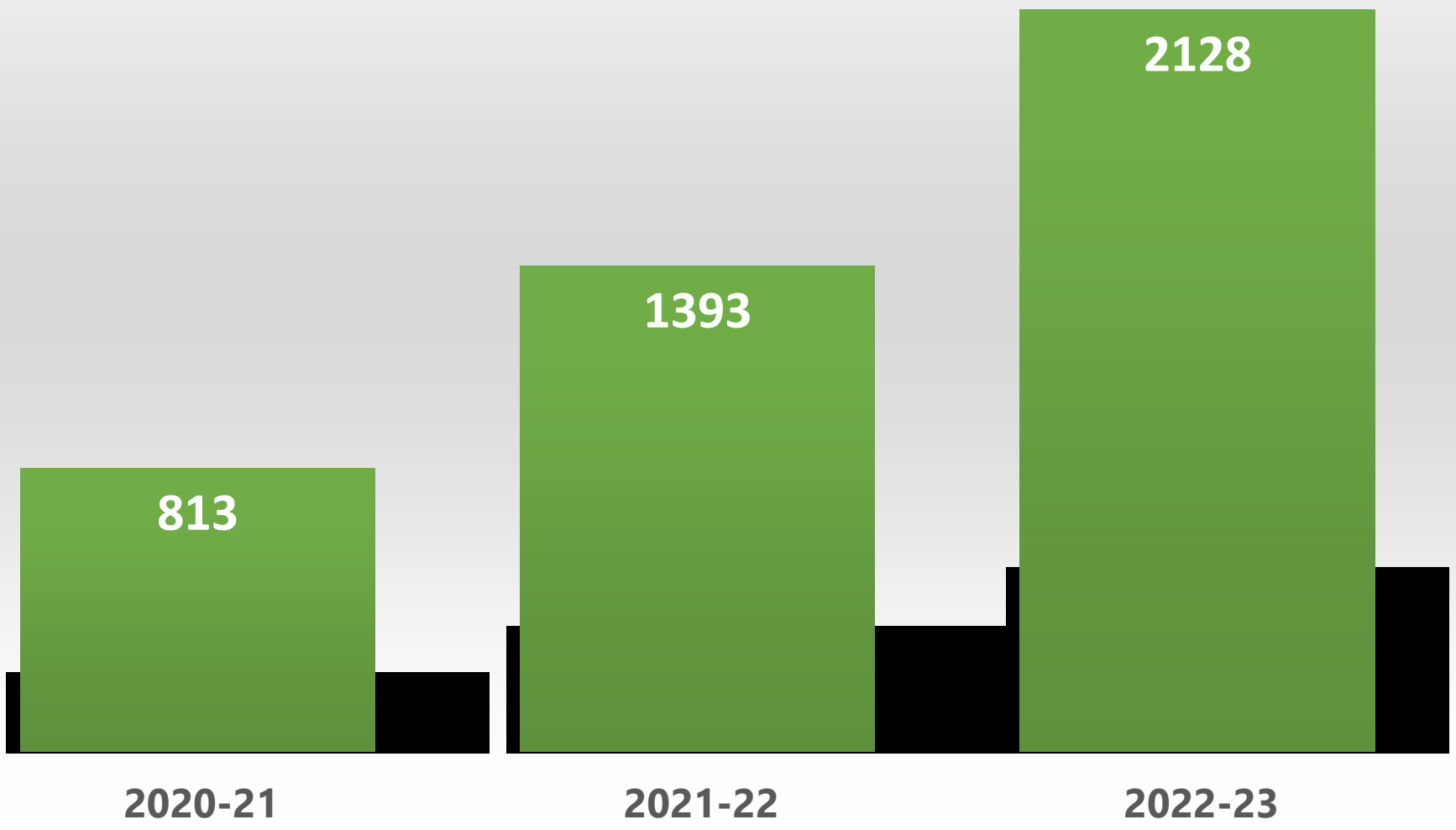
SCQF Levels 4, 5, 6

PDA Data Science

SCQF Levels 7 and 8

Borders College · Fife College · west lothian college · Edinburgh College · Data Skills Gateway

Data Education in Colleges - Learner Engagement 2020 - 2023



Data Education in Colleges

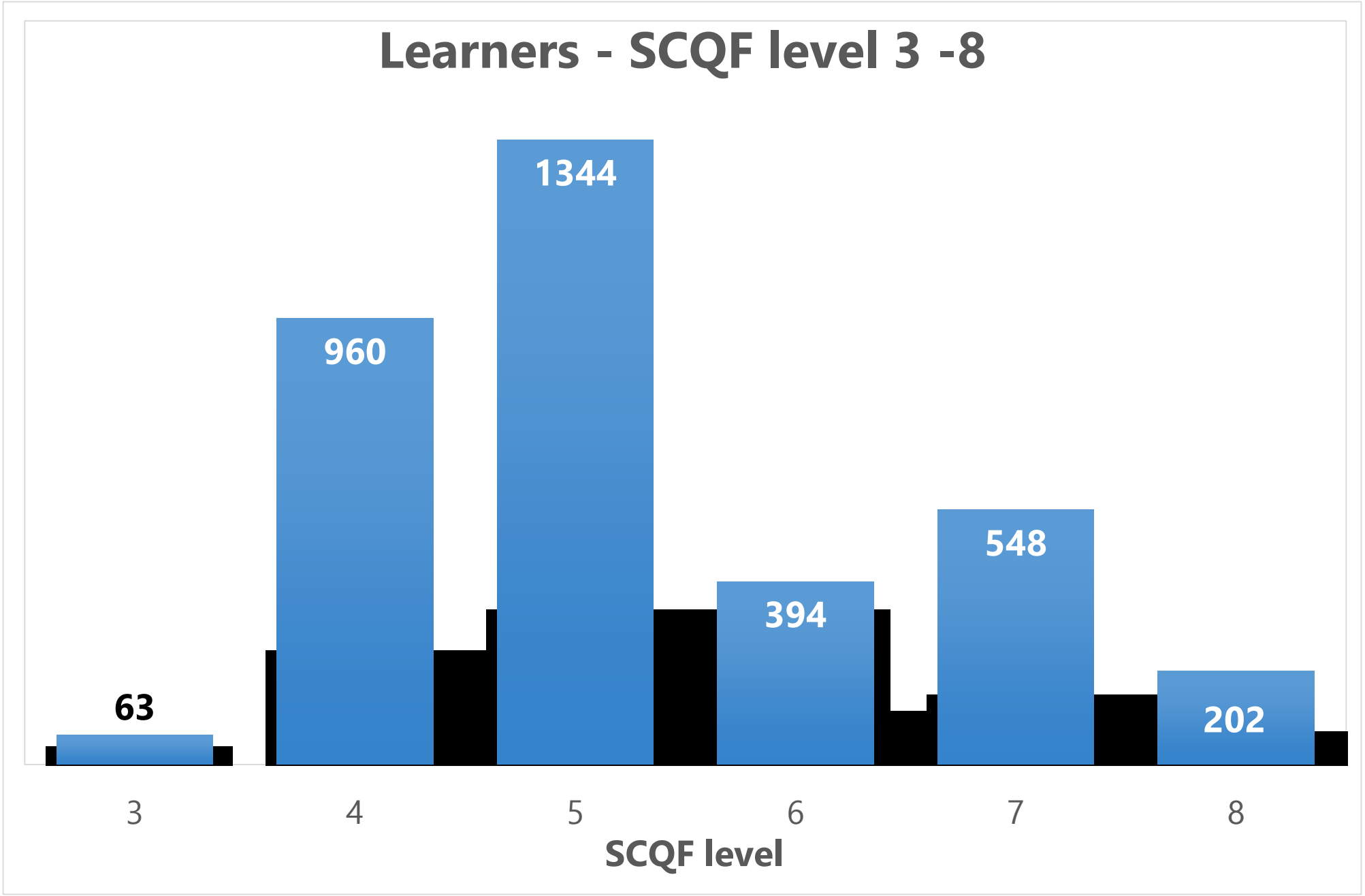
Borders College

Edinburgh College

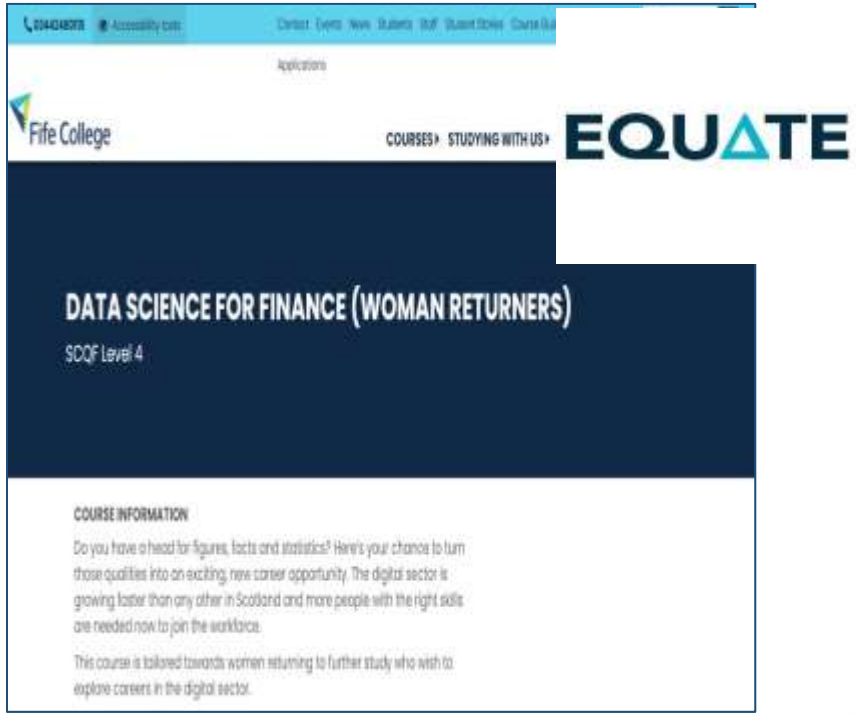
Fife College

west lothian college

Data Skills Gateway



Working in partnership with Third Sector



BORDERS COLLEGE
Fife College
west lothian college
Edinburgh College
CITY REGION DEAL Edinburgh & South East Scotland
CITY REGION DEAL Skills

College Community Courses

Edinburgh College working with Access to Industry, East Lothian Works and Midlothian Council to co-deliver a data skills progression route mainly through the National Progression Award (NPA) in Data Science at SCQF level 3-6.

This portfolio of data courses has helped learners to gain confidence in using digital technologies in different educational, social, or vocational environments.

On completion of the programme learners will have recognised digital and data literacies and other essential skills that contribute positively to learning in life and work, as well as their and others' rights and responsibilities as data citizens.

Learners are also progressing to PDA in Data Science (SCQF level 7) at Edinburgh College.

Professional Learning Programme

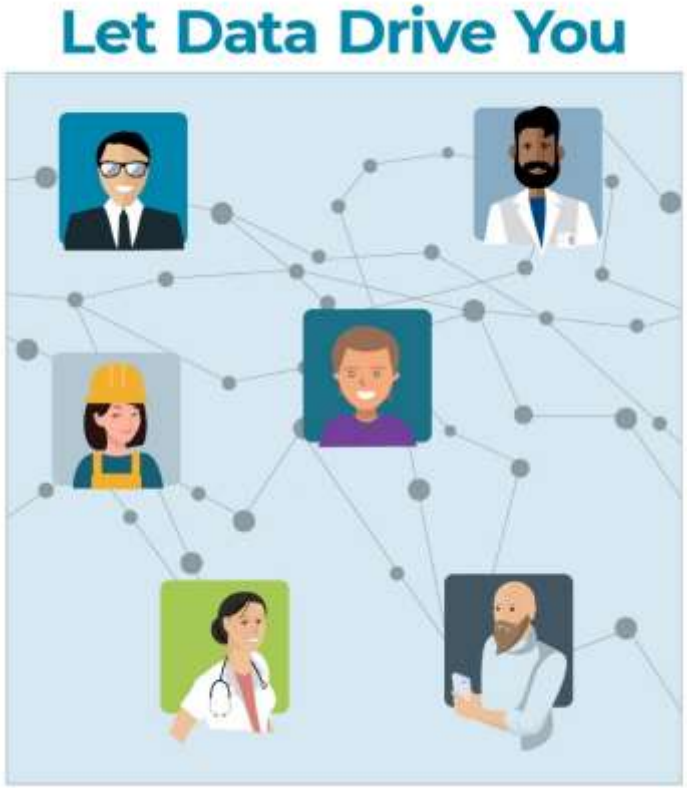
Data Education in Colleges Professional Learning Programme moves into its third year.

The DDI funded Professional Learning Programme was introduced in December 2020 to provide an opportunity for all staff, both support and teaching, from across the four colleges to engage in CPD around developing data literacy skills.

Since then, we've run:
•over **34 workshops** which have been attended by 629 staff members from across the four colleges;
•a range of **certificated courses**
•a variety of **curriculum groups** to provide lecturers with the opportunity to share their experiences of delivering Data Science programmes of study.

Borders College | Fife College | west lothian college | Edinburgh College | Data Skills Gateway

New courses



Women in Data and Digital Innovation skills

- PDA in Data Science (Level 7)

Data Science for Veterans

- NPA in Data Science (Level 6)

School College Partnership Programme

- NPA in Data Science as part of School College Partnership programme (Level 5 and 6)

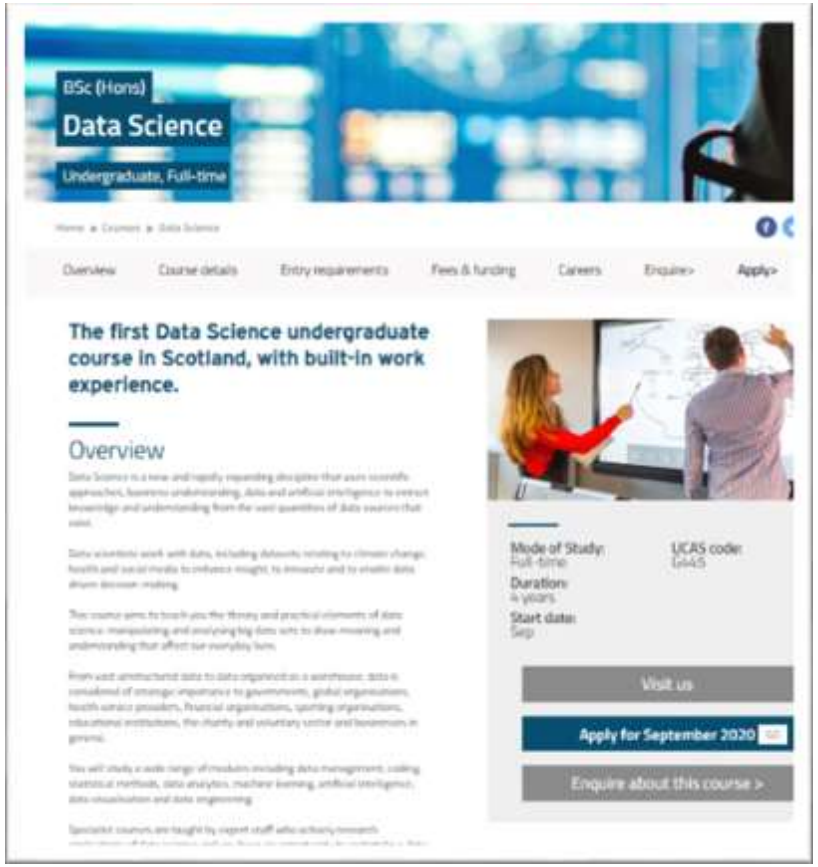
Health and Social Care

- PDA in Technology Enabled Care (Level 7)

Bridging course to BSc

Borders College · Fife College · west lothian college · Edinburgh College · Data Skills Gateway

Data Education in Universities



Two degree courses (for data professionals):

- BSc (Hons) Data Science (first intake 2020)
- BSc (Hons) Computer Science and Artificial Intelligence (first intake planned 2023)

Existing provision:

BSc (Hons) Data Science Graduate Apprenticeship

MSc Data Science

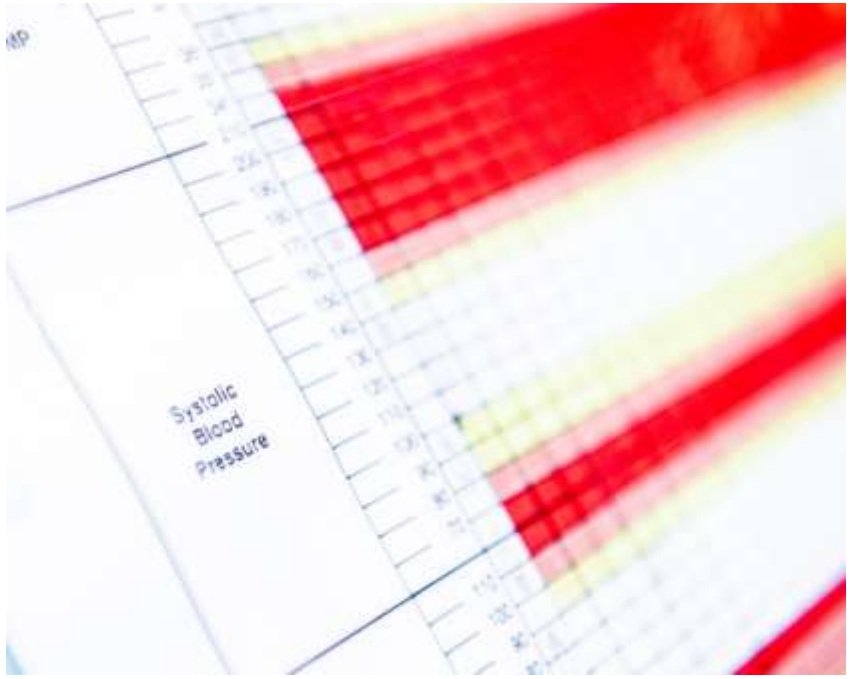
MSc Data Engineering

Data Education in Universities

Data Skills Gateway

Queen Margaret University EDINBURGH

Edinburgh Napier UNIVERSITY



- Embedding data skills in degree study – over **3500** students have studied new data modules at Edinburgh Napier & Queen Margaret Universities, on programmes including:
  - BA Nursing
  - BA Business Management

Data Education in Universities

- Student paid placements in data science roles, **117** roles, live adverts for summer 2023
- Research into gendered experiences of work placements underway

Data Education in Schools

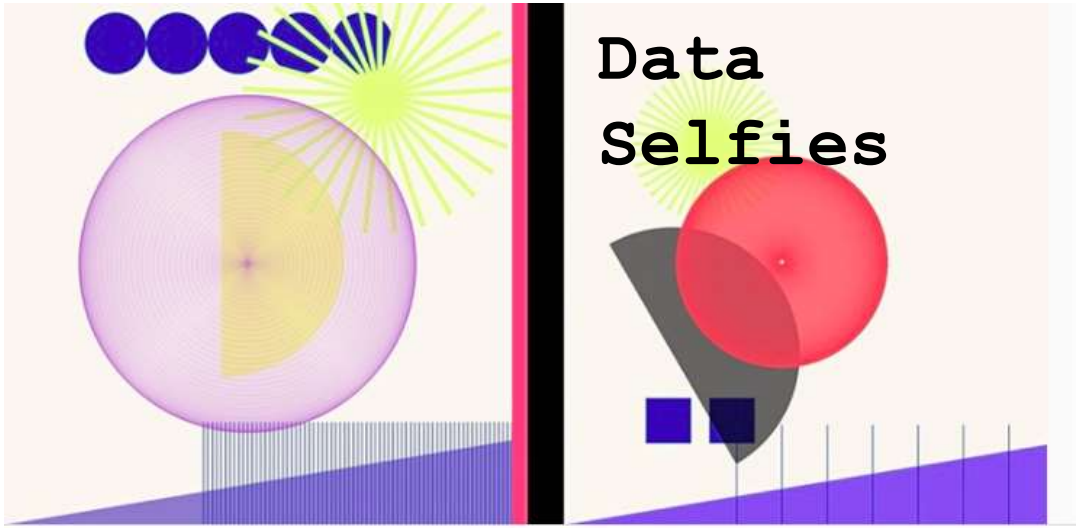
www.dataschools.education

Learning with Data

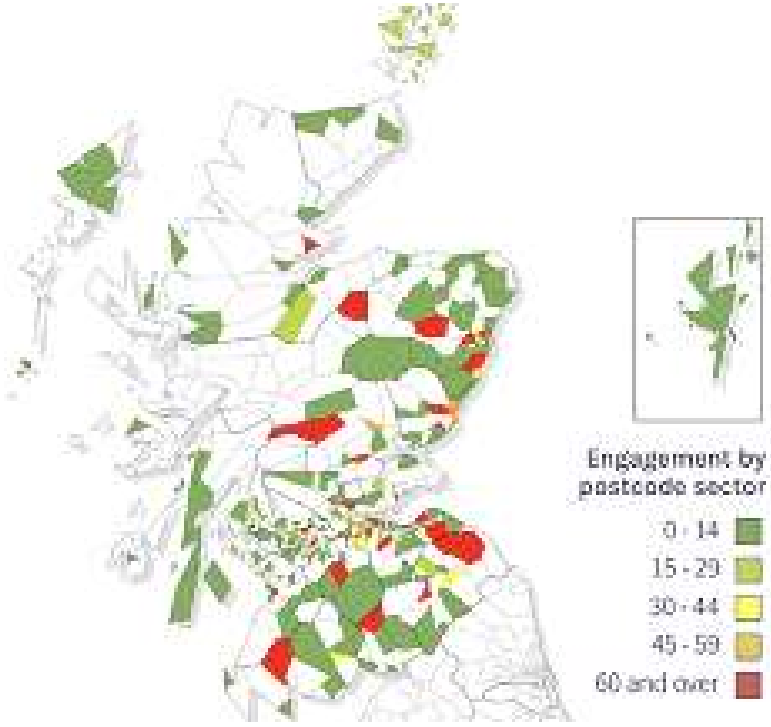
Empowering school learners to succeed in a data driven future

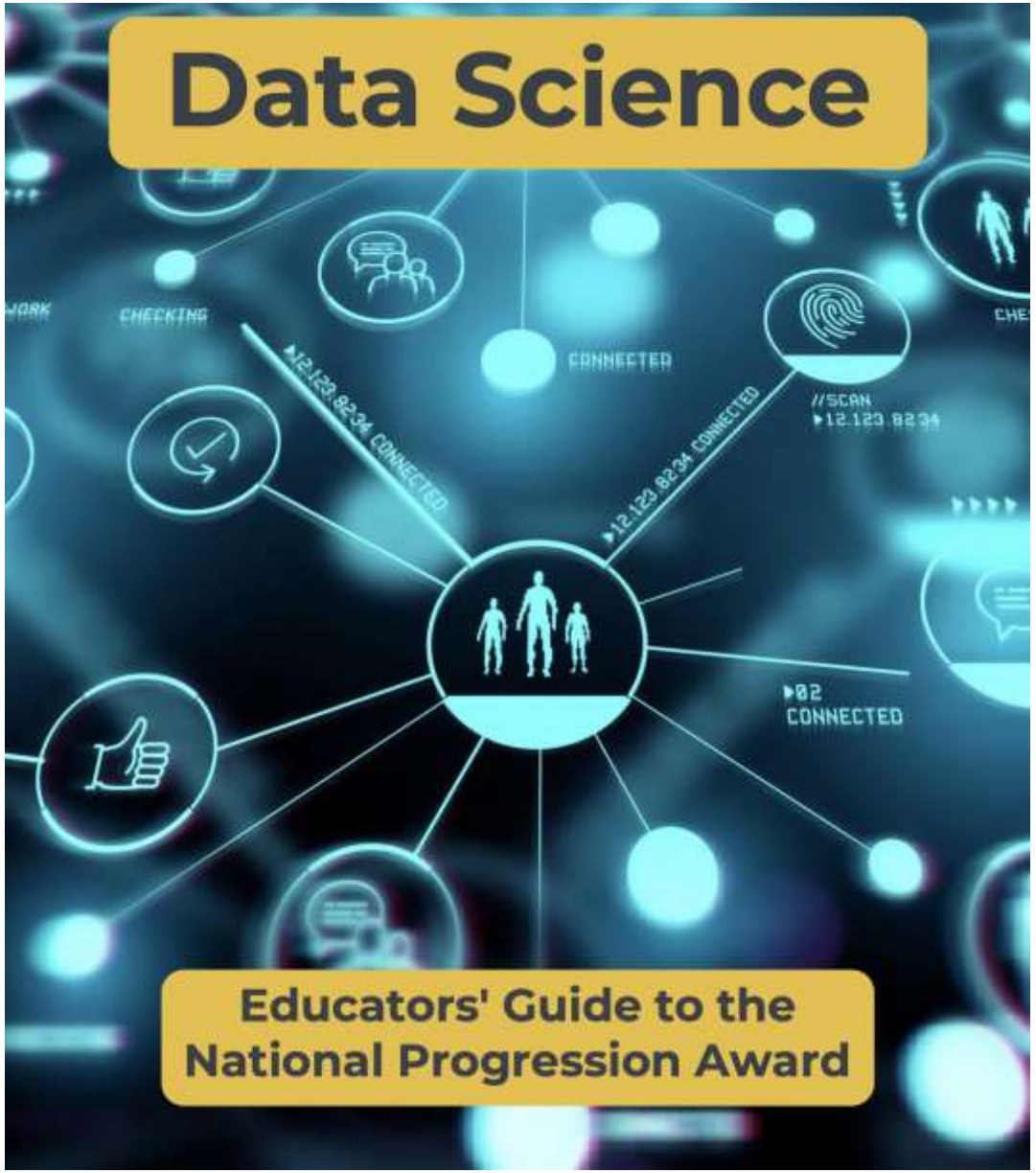
Data Science – Live Lessons

Pioneering Data Literacy in Schools



Reach – 24,000 participants in over 27 countries breakdown by postcode, red being the most frequently engaging postcodes





National Progression Award in Data Science

The NPAs in Data Science at SCQF levels 4, 5 and 6 provide foundation knowledge and skills in data science to increase awareness of the discipline among learners and provide practical skills in data analysis

What is an NPA?

A National Progression Award is designed to provide learners with the knowledge and skills needed to progress to further learning or employment. NPAs focus on specific areas such as cyber security, computer programming and data science. NPAs are small, highly-focussed, nationally recognised qualifications that deliver real-world skills.

What is the size of the qualification?

At Level 4 (National 4) the qualification will take 80 hours to deliver. At Level 5 (National 5) and Level 6 (Higher) the qualification will take 120 hours to deliver.

What is included in the qualification?

- Data skills
- Data analysis
- Computer programming
- Statistics
- Data citizenship
- Data ethics

What will learners get from the NPA?

There is a shortage of trained data scientists. Data skills are also important at university and in everyday life. Learners will find out what data science is used for, the principles behind it, and gain practical skills in analysing large datasets. They will be able to apply these skills in their personal lives, at university and in employment.

Why is data science important?

You might have heard about "the data economy" or "data driven innovation". Data skills are to the 21st Century what reading and writing were to the Twentieth. The coronavirus pandemic has shown us how important data skills are for communities. Data science is used in numerous fields from health care to astronomy. Just about every under-graduate course at university involves data analysis. Almost every job requires data skills, as such the UK needs more data scientists!

Who is the NPA for?

Everyone! Every learner will benefit from acquiring data skills, and every teacher can deliver the qualification. Data science is particularly important in the computing and physical sciences but it's also important in other subject areas such as Mathematics, Modern Studies and Geography.

Support Material

A range of support materials are available for teachers and learners. There's a Learner's Guide, which covers the contents of most of the qualification, and an Educator's Guide to help teachers prepare for and deliver the qualification. There's also a range of assessments for most of the units within the qualification.

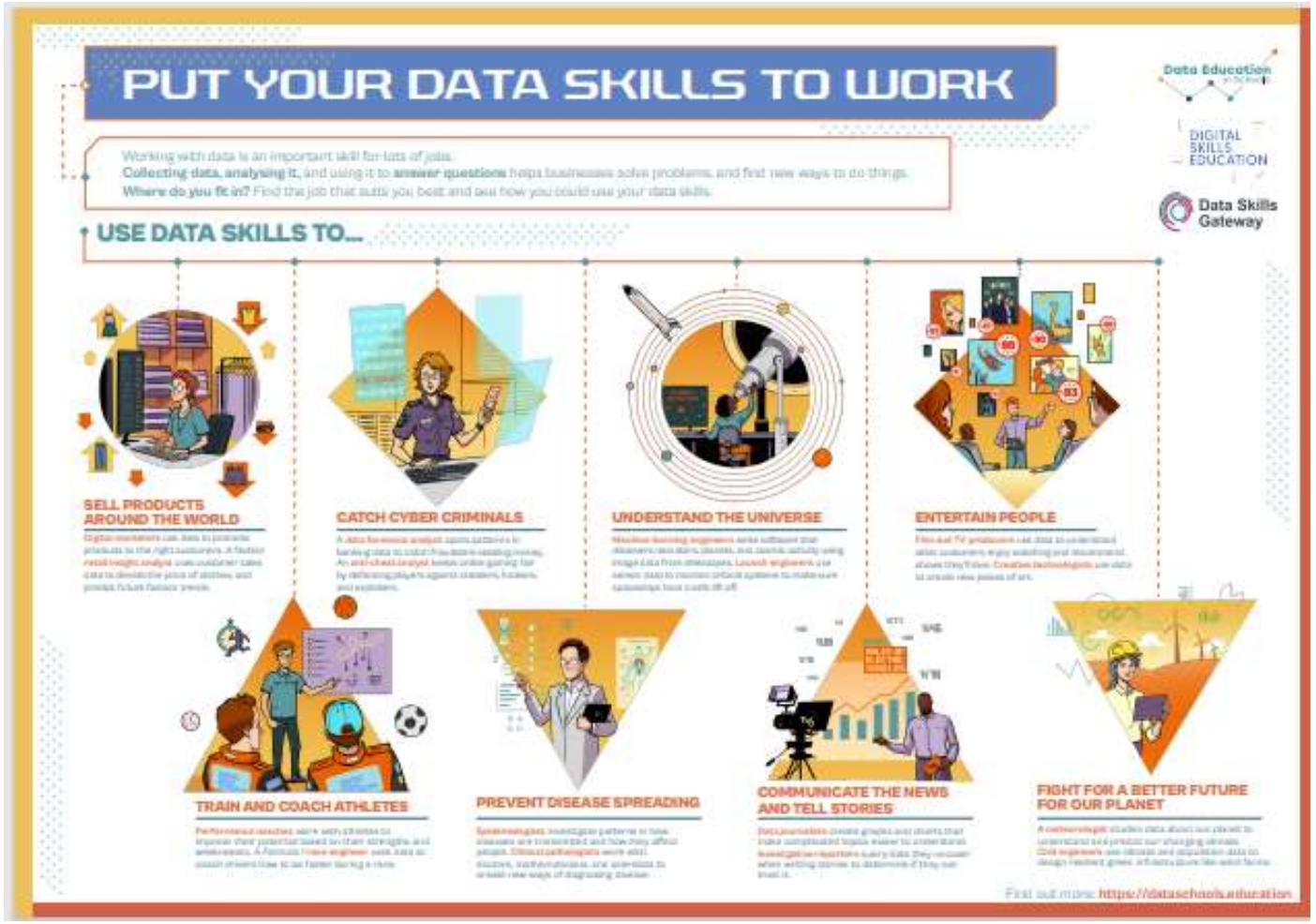
For more information and resources visit: teachdata.science

Data Education in Schools

Data Skills Gateway

Pioneering Data Literacy in Schools

Routes to qualifications and careers shared with region's secondary schools



Pioneering Data Literacy in Schools

Supporting Teachers

Taster sessions – facilitated – Day of Data

Student/ DES led sessions – Microbits on the Move

Professional Learning Sessions – in school

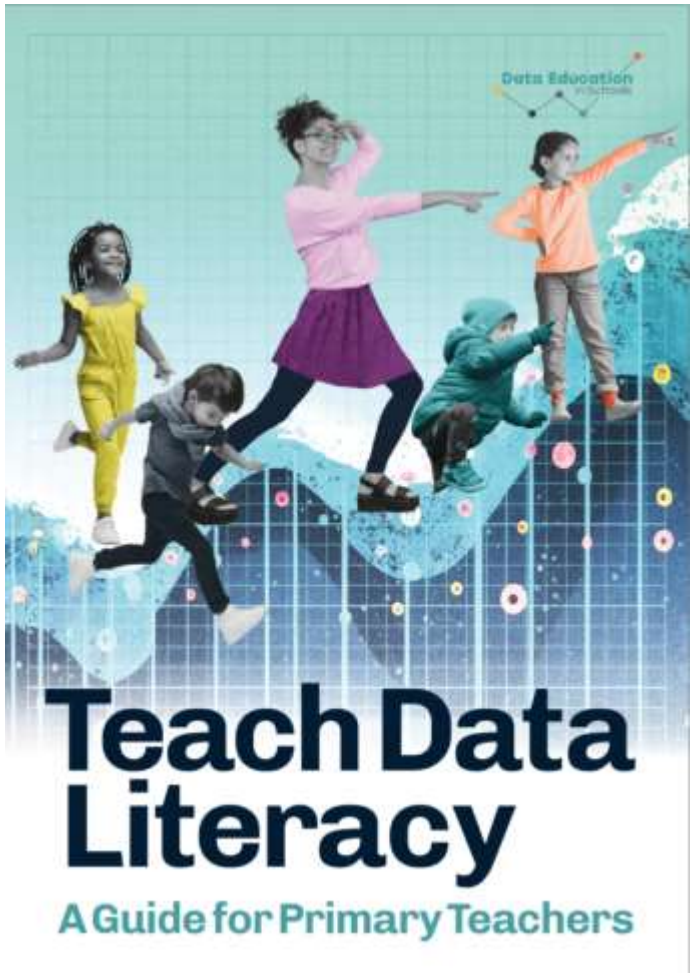
Data Literacy for Primary Teachers

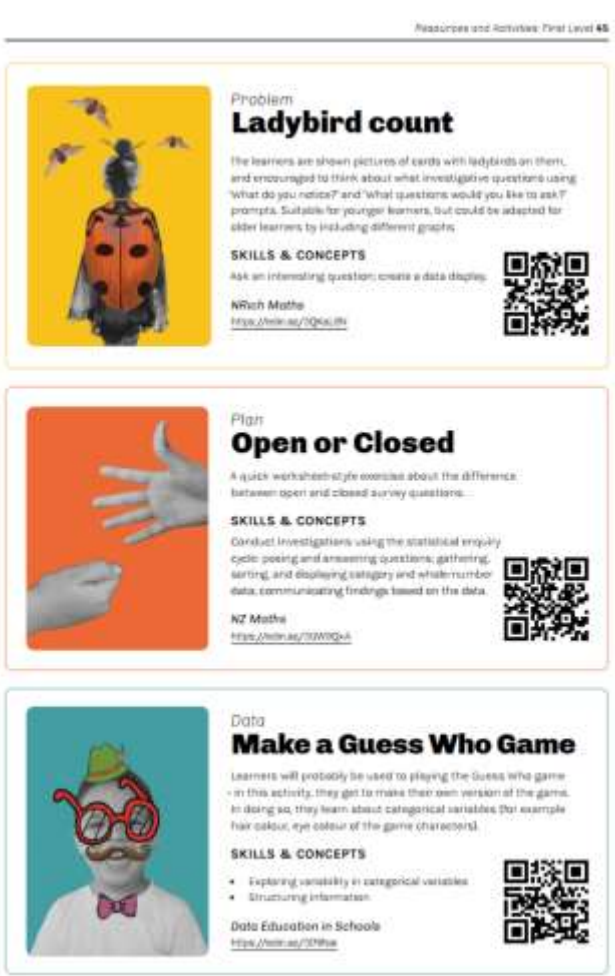
Data Science in the Secondary Classroom

Data Education in Schools
www.dataschools.education

Data Skills Gateway

Teach Data Guide for Primary Teachers





Gender and Hard to Reach Communities

- Microbits on the Move – addressing rural / urban divide

- Data for Good – appealing to different interests and subjects

Boosting Inclusion and Diversity

- Developing a British Sign Language Glossary for Data Science

BSL

Data Skills Gateway

How British Sign Language is changing in Computer Science - 28 March 2022

What if the language you need to do your job simply does not exist?

A team of eight British Sign Language and Tech experts have now created 500 words and phrases to help members of the deaf community access education and jobs in Computer Science. BBC Scotland visited the University of Edinburgh Robotic Labs to look at the positive impact this will have on our future generations.

Sign language glossary aims to widen tech access

Experts at Edinburgh have helped to produce a sign language glossary for deaf people who are engaged in digital technology.

British Sign Language Glossaries of Curriculum Terms

BSL Data Science Glossary - Public data

Award winning programme

Data Skills Gateway

WINNER

Skills Development Award

Data Education in Colleges

Edinburgh College

ACCESS TO INDUSTRY

ScotlandIS CEO, Karen Meechan, with Unsung Hero winner, Tommy Lawson

Data Skills Gateway

- Exceeded original objectives
- Diversity of offer is enhancing reach
- Pathways are encouraging progression
- Demonstrating the value of a partnership approach
- A model which can be applied to other sectors

Data Skills FOR WORK

Data Education in Schools

Data Education in Colleges

Queen Margaret University EDINBURGH

Edinburgh Napier UNIVERSITY

Scotland's AI Strategy

Data Skills Gateway

COMING NEXT ……

- Working with AI Alliance to consider impact on skill requirements of advances in AI

Data Skills FOR WORK

Data Education in Schools

Data Education in Colleges

Queen Margaret University EDINBURGH

Edinburgh Napier UNIVERSITY