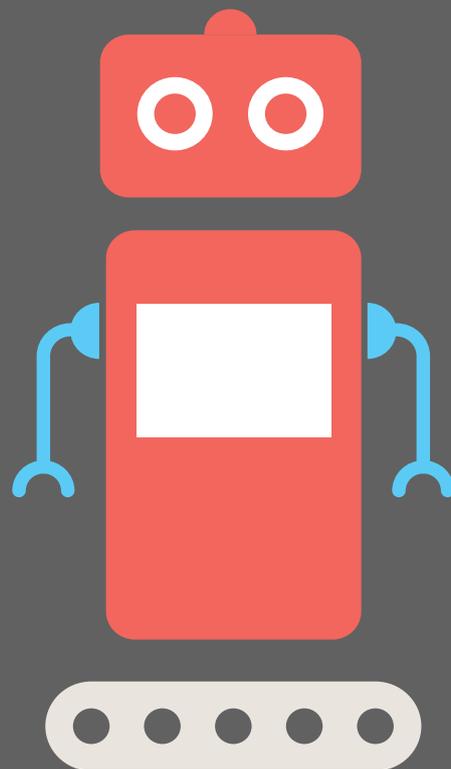


# Nesta...



## BUILDING THE DIGITAL TALENT PIPELINE



**THE BUSINESS BENEFITS AND A HOW TO GET INVOLVED  
GUIDE FOR BUSINESSES SUPPORTING YOUNG DIGITAL  
MAKING THROUGH EMPLOYEE VOLUNTEERING**

Sylvia Lowe and Niel McLean  
October 2015

## **About the Tech Partnership**

**The Tech Partnership is a growing network of employers creating the skills for the digital economy. We work to inspire young people about technology, accelerate the flow of talented people from all backgrounds into technology careers, and help companies develop the technology skills they need for the future.**

## **About Nesta**

**Nesta is an innovation charity with a mission to help people and organisations bring great ideas to life.**

We are dedicated to supporting ideas that can help improve all our lives, with activities ranging from early-stage investment to in-depth research and practical programmes.

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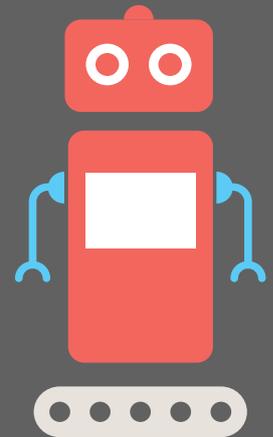
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### **BUILDING THE DIGITAL TALENT PIPELINE**

THE BUSINESS BENEFITS OF  
SUPPORTING YOUNG PEOPLE'S  
DIGITAL MAKING THROUGH  
EMPLOYEE VOLUNTEERING

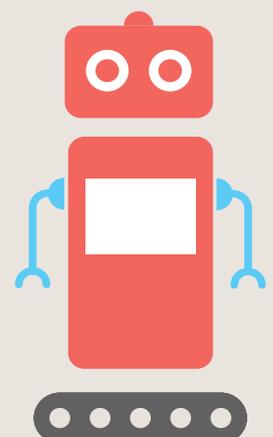


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### **BUILDING THE DIGITAL TALENT PIPELINE**

A 'HOW TO GET INVOLVED' GUIDE  
FOR BUSINESSES SUPPORTING  
YOUNG DIGITAL MAKING THROUGH  
EMPLOYEE VOLUNTEERING

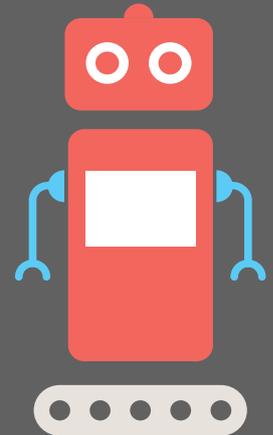


## SECTION 1

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# BUILDING THE DIGITAL TALENT PIPELINE

## THE BUSINESS BENEFITS OF SUPPORTING YOUNG PEOPLE'S DIGITAL MAKING THROUGH EMPLOYEE VOLUNTEERING



## INTRODUCTION

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**T**his briefing has been developed in consultation with employers and providers of digital making opportunities. It sets out the business benefits for employee volunteering to support young people's digital making. It draws on extensive research on the benefits of employees volunteering using the skills they use at work. It highlights the particular benefits for volunteering in the digital space in ways that bring together the altruistic and strategic intent of corporate volunteering.

The briefing is for Corporate Social Responsibility (CSR) and HR departments in companies that work in or around technology, or employ staff in tech-related jobs, as they develop their strategies for corporate volunteering.

The accompanying *How to Get Involved* guide provides practical advice on setting up a company volunteering programme in this area.

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## EMPLOYEE VOLUNTEERING AND DIGITAL MAKING: THE FACTS

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### Meeting an identified industry need:

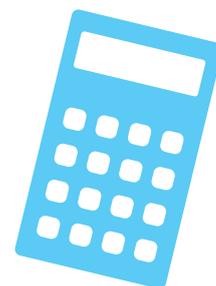
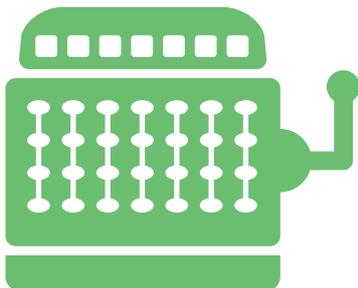
- 1.4 million digital professionals are needed over the next five years in the UK.
- The ICT workforce is estimated to grow by 39 per cent by 2030.
- 93 per cent of tech firms believe the digital skills gap has a direct negative impact on their business.
- 47 per cent of employers in the IT, Digital and Information Services sector say the education system isn't meeting the needs of business.

### Meeting a demand from young people:

- 82 per cent of school age children (or 8.2 million) are interested in making things using digital technologies.
- Over 80 per cent of parents think digital making is a worthwhile activity, important for careers and jobs.

### Enabled by employee volunteers:

- In 2014 there were only c. 130,000 face-to-face learning places offered to young people outside of the school classroom - i.e. only one in 60 young people who are interested in digital making are able to access opportunities to learn outside of school.
- Two-thirds of organisations offering digital making activities are reliant on volunteers.



## THE NEED FOR DIGITAL SKILLS

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The use of digital technologies is almost universal among UK businesses, and the ICT workforce is estimated to grow by 39 per cent by 2030,<sup>1</sup> with 1.4 million digital professionals needed over the next five years.<sup>2</sup> Ninety-three per cent of tech firms believe the digital skills gap has a direct negative impact on their business and almost three-quarters of large tech firms identify skills gaps within their workforce.<sup>3</sup> However, all industries employ tech staff, and the digital skills gap is preventing growth in all sectors.

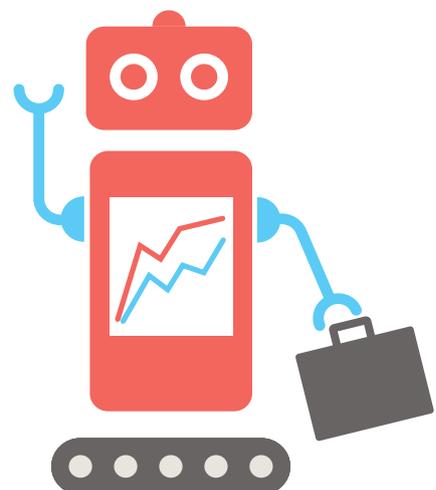
As companies develop their business strategies for succeeding in the digital world, applying information and technology across the business to meet the needs of digitally connected customers, digital skills become even more important. There is a need for people who complement technical skills with business, leadership and communication skills. For example, 47 per cent of employers in the IT, Digital and Information Services sector say the education system isn't meeting the needs of business.<sup>4</sup> This has profound implications for developing existing employees, recruiting new employees, and inspiring the employees of the future.<sup>5</sup>

## YOUNG PEOPLE AND THE FUTURE TALENT PIPELINE

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The good news is that young people are enthusiastic to develop their digital skills. Direct contact with employers gives them further inspiration - motivating them to develop those skills and consider tech-related careers.

These skills are best developed through practical activity where young people create solutions to real problems ('digital making'), rather than simply passively consuming digital products. Eighty-two per cent of school age children (or 8.2 million) are interested in digital making and over 80 per cent of parents think digital making is a worthwhile activity, important for careers and jobs.<sup>6</sup> In the future it will be these 'digital makers' who will make a creative contribution to the economy and an employer's bottom line.



## THE CHALLENGE

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There is a small but growing network of organisations offering opportunities for younger people to get involved with making things using digital technologies. Two-thirds of those organisations rely on volunteers, but they find it difficult to recruit the volunteers they need. Only by mobilising expert volunteers from industry (to both inspire and teach) can we meet the rising demand to develop young people's skills in ways that motivate them to consider a career in the digital economy.

## THE BUSINESS BENEFITS OF EMPLOYEE VOLUNTEERING

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*“The business case for employer-supported volunteering is well established, with firms reporting that the practice boosts staff retention rates and morale, enables employees to develop new skillsets, generates new recruitment channels and enhances corporate reputation. Recent research indicates that this practice also enables employees to feel more comfortable in and connected to communities in which they work, and to develop empathy for people who are different from them.”*

**The Social Integration Commission<sup>7</sup>**

Volunteering is increasingly seen as a cost-effective tool for creating healthy, motivated and engaged employees and delivering learning and development objectives, particularly where companies' CSR and HR teams work together to integrate it into core business. Some businesses, such as Lloyds Banking Group, TalkTalk and PwC, feel that volunteering is so important they tie it into performance reviews, with the skills developed through volunteering explicitly mapped onto the company's competency framework.

Approximately 70 per cent of FTSE 100 companies already have an employer-supported volunteering programme<sup>8</sup> but this percentage is much lower in smaller organisations - 20 per cent of employees of medium businesses, and 14 per cent of employees of small businesses, have an employer-supported volunteering scheme.

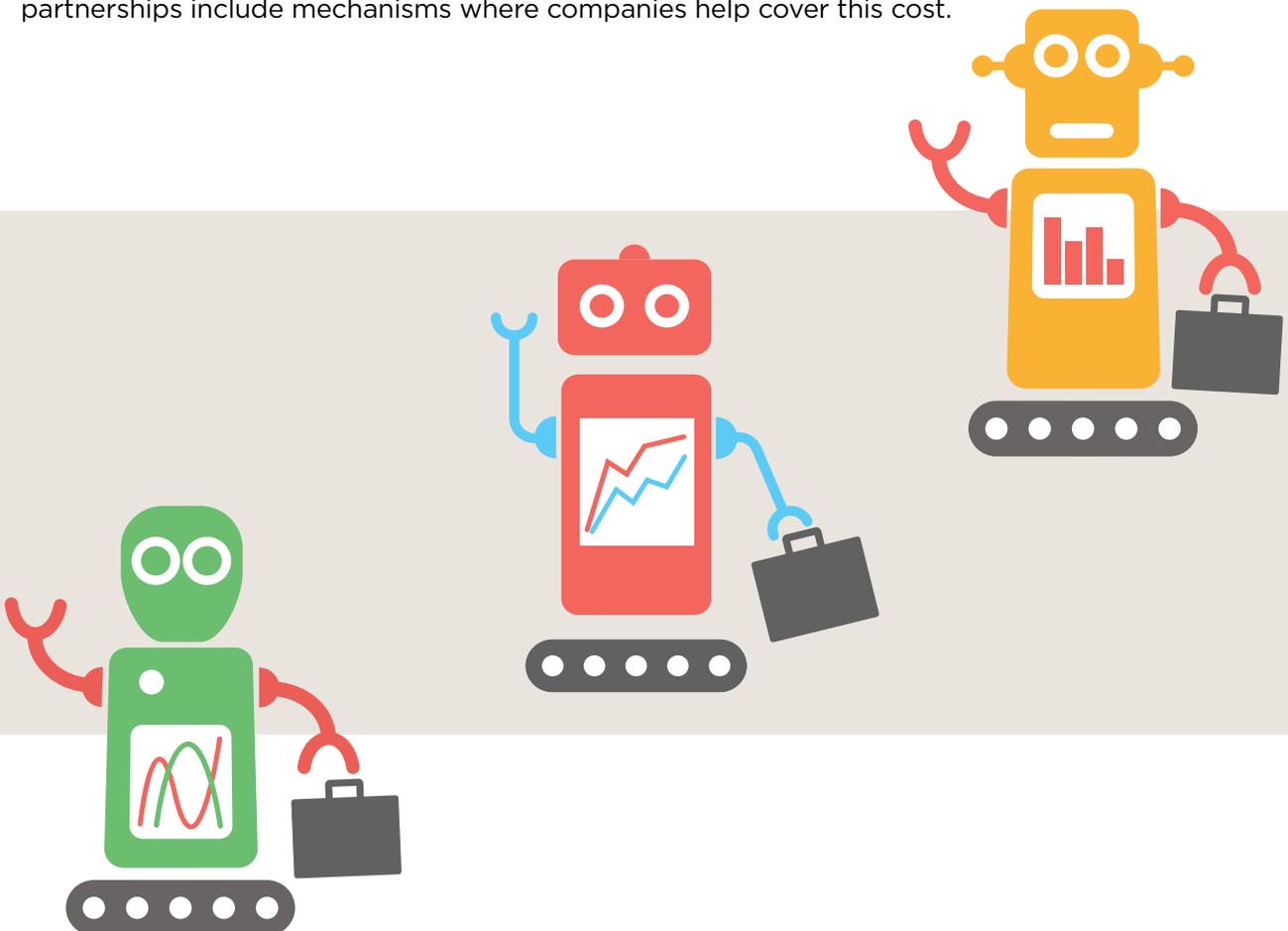
Research<sup>9</sup> identifies a number of clear business benefits for employee volunteering schemes. Nesta's consultation with a range of companies<sup>10</sup> has identified how these general benefits of employee volunteering translate into the particular business benefits of supporting young people's digital making.

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## The business benefits of supporting young digital making through employee volunteering

1. Corporate profile enhancement: building visibility and brand reputation in the digital world
2. Customer insight: understanding the post-millennial generation of future customers
3. Developing and motivating existing talent at different stages of their careers
4. Recruiting new talent
5. Inspiring future talent

Before going into these benefits in more detail, it is worth remembering that volunteering does carry an overhead cost for providers, particularly small organisations. So while it is a cost efficient option for companies, it is not free, and some of the best partnerships include mechanisms where companies help cover this cost.



## The business benefits of supporting young digital making through employee volunteering

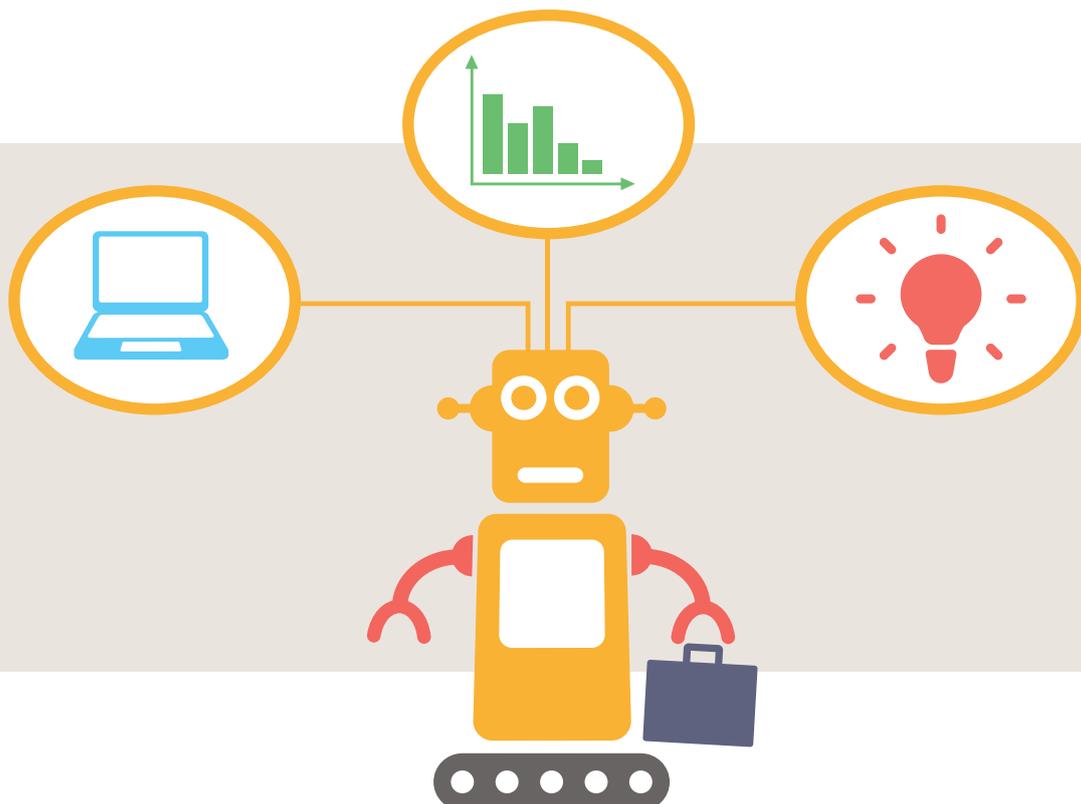
### 1. Corporate profile enhancement: building visibility and brand reputation in the digital world

Raised company profile and reputation with customers and stakeholders, has been shown to have positive effects on brand value and reputation, and bringing corporate values to life.<sup>11</sup> **Supporting young people's digital making sends a powerful message to customers, partners and stakeholders that the company 'gets' digital, particularly in the age of social media.** It demonstrates that the company 'walks the walk'; and that it understands how digital technology is reshaping the relationships between companies and customers, and that the skills of digital making help young people become effective customers.

Employee volunteers help communicate the company's digital vision externally, and demonstrate the positive association between the company's brand, its digital vision and the needs of young people. For example, TalkTalk's decision to support Apps for Good was very much influenced by a strategic decision to support volunteer activities with a strong alignment with the company's brand and culture.

### 2. Customer insight: understanding the post-millennial generation of future customers

In the modern digital company where customer-facing processes integrate seamlessly with operational processes, all aspects of the business need to understand customers.<sup>12</sup> As the overall age profile of the workforce increases, the gap between companies and their future customers (the post-millennial generation born after the creation of the World Wide Web) risks widening. Supporting young people's digital making helps **develop a deep understanding across the business of the values, aspirations and behaviours of these future customers** in a way that impacts on employees' day-to-day work.



### 3. Developing and motivating existing talent at different stages in their careers

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Volunteering can increase productivity and reduce staff turnover<sup>13</sup> as a result of increased employee engagement and improved morale,<sup>14</sup> and even improve physical and emotional health for employees.<sup>15</sup>

**For new staff**, digital volunteering could offer a cost effective and low risk way of providing the skills they will need to progress their careers, especially when compared with the cost of formal training programmes. By working with young people to inspire them and develop their digital skills, they develop self-awareness, leadership, mentoring and team-working skills, and their ability to manage competing demands.<sup>16</sup> It also offers a powerful mechanism for engaging new employees in the company's digital vision.

**For established employees**, particularly technical staff whose roles are changing as technology becomes mainstream in the digital business, digital volunteering can support career transitions. Volunteers develop the communication and mentoring skills needed to work alongside non-technical staff.<sup>17</sup> They develop their creativity and adaptability by participating in activities using their existing technical expertise which take them out of their comfort zone. It encourages reflection on one's own career or life experiences. It can increase commitment to the company because it demonstrates the employer's commitment.<sup>18</sup>

**For employees towards the end of their career**, it offers a powerful mechanism for ensuring they remain engaged in the company's digital vision and mission, feeling that they are inspiring the next generation. Where the company has entered into a strategic relationship with a provider this provides opportunities for internal networking and the shared reflection on experiences necessary to secure skill development - well-established staff can mentor new staff, increasing internal engagement and teamwork.<sup>19</sup>

### 4. Recruiting new talent

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The competition to attract new talent is fierce. **Socially aware, digitally literate millennials bring with them a blend of technical and social skills. They seek greater fulfilment from work, are led by their values,<sup>20</sup> and look for an immediate connection between their actions and their impact.**<sup>21</sup> Corporate volunteering programmes in general appeal to these potential recruits.<sup>22</sup> Programmes that support young people's digital making identify the company as one that recognises the link between digital technology and social good, forming part of a strategy to become an 'employer of choice' for the millennial generation.<sup>23</sup>

### 5. Inspiring future talent

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**The current digital talent pipeline is insufficient to meet most employers' future needs. By supporting young people's digital making, and demonstrating the careers that digital skills can lead to, companies can help grow the talent pool they will need for the future.** Young people are inspired by role models, especially when they are able to engage directly with those role models in practical activity related to their interests and the volunteers' work. Through digital making supported by credible volunteers, young people develop their digital skills and the motivation to use those skills to participate in the world, contribute to the future digital workforce and support its future growth.

## ANNEX

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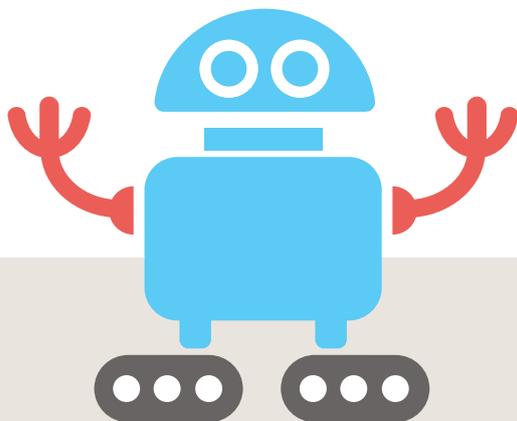
### Organisations consulted by Nesta in 2015 for the purpose of this report

**Companies:** Accenture, Apple UK, BT, Google, Fujitsu, IBM, Intel, Microsoft, O2 Telefonica, Samsung, Talk Talk, TCS Tata Consultancy Services, Vodafone, Barclays, Lloyds Banking Group, PricewaterhouseCoopers, BBC, Freerange Industries.

**Bodies representing tech employers:** CBI, The Tech Partnership, techUK, Institute of Directors.

**Digital Making learning providers:** Apps for Good, Code Club, Manchester Digital Laboratory, CoderDojo, Barefoot Computing, the Raspberry Pi Foundation.

**Other interested parties:** Greater London Authority, STEMNET, Founders4Schools, Centre for London, NCVO.

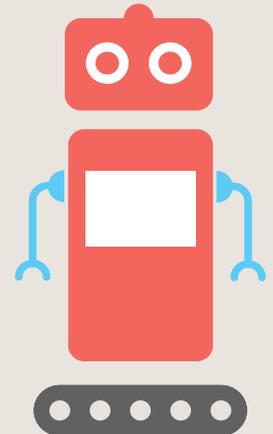


## SECTION 2

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# BUILDING THE DIGITAL TALENT PIPELINE

## A 'HOW TO GET INVOLVED' GUIDE FOR BUSINESSES SUPPORTING YOUNG DIGITAL MAKING THROUGH EMPLOYEE VOLUNTEERING



### WHY NOW?

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**T**oday we have a unique opportunity to increase the number of people who begin, and go on to forge, lifelong skills in digital making.

- Computing is now a compulsory part of the National Curriculum in England, as is Computing Science in Scotland (the UK is the first G20 country to do this). Wales is undergoing curriculum reform to build the subject of Computer Science into the Science and Technology area of learning in the curriculum and place Digital Competence as one of three core competencies across the curriculum, alongside Literacy and Numeracy.
- Familiar, loved brands from across the BBC have reinforced and built on the work being done in schools as part of the BBC Make it Digital initiative.
- High profile campaigns such as the Hour of Code have raised awareness with parents and young people.
- Organisations like Code Club are on their way to becoming household names. For example, Code Club has over 3,600 active clubs across the UK offering digital skills to over 41,000 children, run by over 2,000 adult volunteers (plus teachers). And Apps for Good have reached over 50,000 students with the help of over 1,000 volunteers.
- The digital skills gap is rising up the agenda as more companies move into growth.

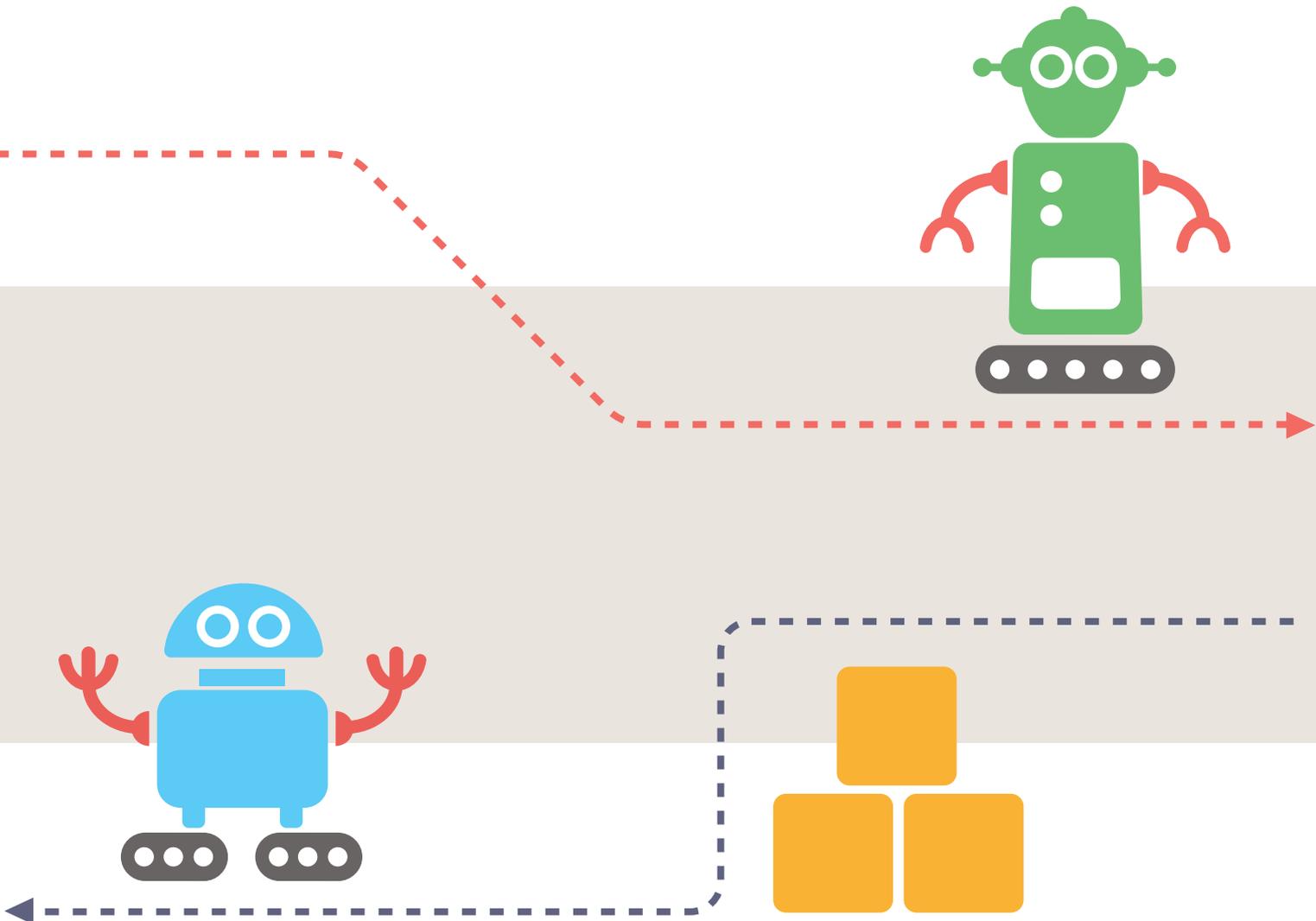
Now is the time to foster a generation with the skills and confidence to harness technology to participate in a digital workforce, tackle the social and environmental problems of the future, support the UK's thriving digital economy and foster new means of self-expression and community building.

For companies supporting young digital making it can align Corporate Social Responsibility (CSR) efforts with investment in a future digital workforce. There are already some inspiring examples of tech businesses working with digital making provider organisations to provide volunteers, funding, space or equipment - established examples include Google's partnership with Code Club Pro, Talk Talk's support for Apps for Good, Tata Consultancy Services' support for TechFuture Ambassadors run by STEMNET, or BT's support for Barefoot Computing. But currently fewer than 1 per cent of tech employees volunteer in this area and a lot more could be done.<sup>24</sup>

## ISN'T THE NEW COMPUTING CURRICULUM ENOUGH? WHY NOT LEAVE IT TO SCHOOLS?

It's tremendous progress to see computing as part of the national curriculum in England and Scotland, but this isn't enough to foster a new generation of digital creators. TechUK<sup>25</sup> and the UK Digital Skills Taskforce<sup>26</sup> have called for significantly more support to ensure schools are equipped to teach computing (through more teacher training, teacher support networks to exchange best practice, and providing teachers with better insights into the tech industry).

In addition, even when in full-time education, young people only spend 18 per cent of their waking hours in school.<sup>27</sup> That leaves a lot of time for learning outside the formal system. In the same way that we encourage kids to read books, as well as study English; or to play sport as well as take PE lessons; we believe that young people need access to engaging digital making experiences outside, as well as inside, the classroom. Think about the passions in your life when you were growing up. Informal learning is a critical component of an effective education. But only one in 60 young people who are interested in digital making are able to access opportunities to learn outside of school.<sup>28</sup>



## OPPORTUNITIES AREN'T EVENLY SPREAD - GEOGRAPHICAL AND GENDER GAPS NEED FILLING

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The high demand from parents and young people for digital making is consistent across the UK - but this is not matched by provision. With only 130,000 face-to-face learning places offered to young people outside of the school classroom in 2014<sup>29</sup> (compared to 8.2 million school age children interested in digital making), all areas have potential for growth - but regions of England other than London and the North West have very few clubs, classes and events, compared to the numbers of young people who live there.

London currently accounts for the most activity (18 per cent of the face-to-face learning opportunities available) but is by no means saturated, with around 24,000 local opportunities to engage with digital making serving a population of 1.4 million school age children. Nesta research has shown that the creative and high-tech economies are disproportionately based in London and the South East. Although interest in digital making is spread across the country, there is a concern that educational opportunities could reinforce the current<sup>30</sup> geographically-limited reach of these opportunities for employment.

Interest levels are different for girls and boys (although high from both camps). In Nesta's research 87 per cent of boys and 76 per cent of girls said they were interested in digital making, with girls significantly less confident in their digital making abilities. Action is needed to change the numbers of women working in the tech sector, which currently stands at 17 per cent.<sup>31</sup> More girls need to be made enthusiastic and confident about pursuing a tech career, and role models from industry are a great place to start.

## TECH VOLUNTEERS INSPIRING A NEW GENERATION OF DIGITAL CREATORS

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Young digital making is powered by volunteers. Two-thirds of the organisations offering digital making activities rely on volunteers. Volunteers from the corporate sector bring with them a set of experiences of how digital technology shapes our world and a passion for the application of technology and their line of work. Adult volunteers can also provide much needed positive role models - building young people's aspirations and confidence.

However, national digital making organisations find it difficult to recruit the volunteers they need. For example, Code Club operates in approximately 2,300 primary schools but have over 1,200 schools on their waiting list looking for volunteers.

Only by mobilising expert volunteers from industry (as well as enthusiasts, interested amateurs, hobbyists and parents) can we meet the need. This could be volunteers from the typical tech industries, but all industries employ tech people who could be potential volunteers - for example industries where digital creation is becoming increasingly important, such as design, fashion or music.

## WHAT KINDS OF VOLUNTEERING OPPORTUNITIES ARE THERE?

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There are opportunities for all to get involved, from experienced technical staff who'd be well suited to helping children write their first lines of code through to enthusiastic beginners who can learn alongside and facilitate others' progress. Volunteers can provide mentorship and careers inspiration, or they can help with skills acquisition. Time committed can be as little as an hour or two and you can even play your part remotely via Skype, for example. Staff in your organisations are well placed to help ensure that young people, inspired perhaps by the BBC Make it Digital activity, are able to take the next steps on their digital skills journey.

There are many different programmes available locally and nationally - below are a few selected because they have demonstrated best practice and have wide geographical coverage.

### 1. Providing mentorship and careers inspiration - usually in the school curriculum/timetabled day



**TechFuture Ambassadors** - a scheme run by the Tech Partnership in collaboration with Tata Consultancy Services and STEMNET to enable tech industry employees to share their enthusiasm about the sector. TechFuture Ambassadors join the wider network of 30,000 STEMNET role models to deliver inspirational talks or lead after school clubs, such as TechFuture Girls Clubs (see below).

[thetechpartnership.com/inspire/techfuture-ambassadors](http://thetechpartnership.com/inspire/techfuture-ambassadors)

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**founders4schools** - a nationwide service that draws upon 10,000 business leaders from the tech community who make themselves available (on a voluntary basis) to teachers to give talks in primary or secondary schools about their company and the skills and subjects that were useful to them in their chosen career path. They also provide a service that allows those responsible for careers fairs in schools to call upon the HR people from these fast-growing companies to participate. The founders4schools platform allows teachers to identify and invite speakers from their area.

[founders4schools.org.uk/about](http://founders4schools.org.uk/about)

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## Digital Day

**Digital Day** - organised by BIMA, links digital industry professionals with schools and colleges across the UK to raise awareness of the opportunities for young people in digital.

[bimadday.org.uk](http://bimadday.org.uk)

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**Barefoot Computing** - Barefoot volunteers go into schools in England to talk to teachers about the new curriculum, the value of computer science and the importance of pupils being able to understand the new and developing technologies around them. Volunteering efforts are coordinated by regional partners.

[barefootcas.org.uk/barefoot-volunteers](http://barefootcas.org.uk/barefoot-volunteers)

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**TeenTech Events** - highly interactive experiences with a supporting award scheme, designed to inspire young teenagers and their teachers about careers in the contemporary world of Science, Engineering and Technology, and the skills needed to take advantage of them. TeenTech gives students and teachers the opportunity to take part in immersive activities alongside the engineers, technologists and scientists influencing their 21<sup>st</sup> century lives. There are a number of different volunteering opportunities to suit time commitments, which include running sessions at the events, or mentoring students through the award process (see below).

[teentech.com/sponsors-and-partners/getting-involved/volunteering-opportunities-with-teentech](http://teentech.com/sponsors-and-partners/getting-involved/volunteering-opportunities-with-teentech)

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**Inspiring the Future** - a free service connecting state schools and colleges with employers and people from the world of work. Employees (from any sector or level of experience) pledge just one hour a year to volunteer in a state school or college and talk to young people about their job and career route. Teachers and volunteers are connected through a secure website which profiles the needs of the students, and the background and interests of the volunteer - with the option to filter by technology-related careers.

[inspiringthefuture.org/volunteers](http://inspiringthefuture.org/volunteers)

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**Apps for Good** - see below.

[appsforgood.org/public/get-involved/become-an-expert](http://appsforgood.org/public/get-involved/become-an-expert)

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## 2. Sharing digital making skills - usually outside of school time

Six organisations with wide geographical reach are listed below, but there may be a locally active group on your doorstep. There are also organisations who can help if your company has a particular interest in one skills area - such as 3D printing, robotics, or making digital music or fashion. [Makethingsdostuff.co.uk](http://Makethingsdostuff.co.uk) will also have information on organisations in your area.



**CoderDojo** - is a global network of free, volunteer-led, independent, community-based programming clubs for young people. These young people, between seven and 17, learn how to code, develop websites, apps, programs, games and explore technology in an informal and creative environment. The majority of Dojos are held at weekends and there are opportunities for technical and non-technical volunteers.

[coderdojo.com/volunteer](http://coderdojo.com/volunteer)



**Code Club** - is a nationwide network of free volunteer-led coding clubs for children aged 9-11. They create projects for volunteers to teach at after-school clubs or at non-school venues such as libraries. Their projects teach children how to program by showing them how to make computer games, animations and websites. Volunteers do not require any prior technical knowledge and go to their local club for an hour a week and teach one project a week.

[codeclub.org.uk/start-a-club/volunteers](http://codeclub.org.uk/start-a-club/volunteers)



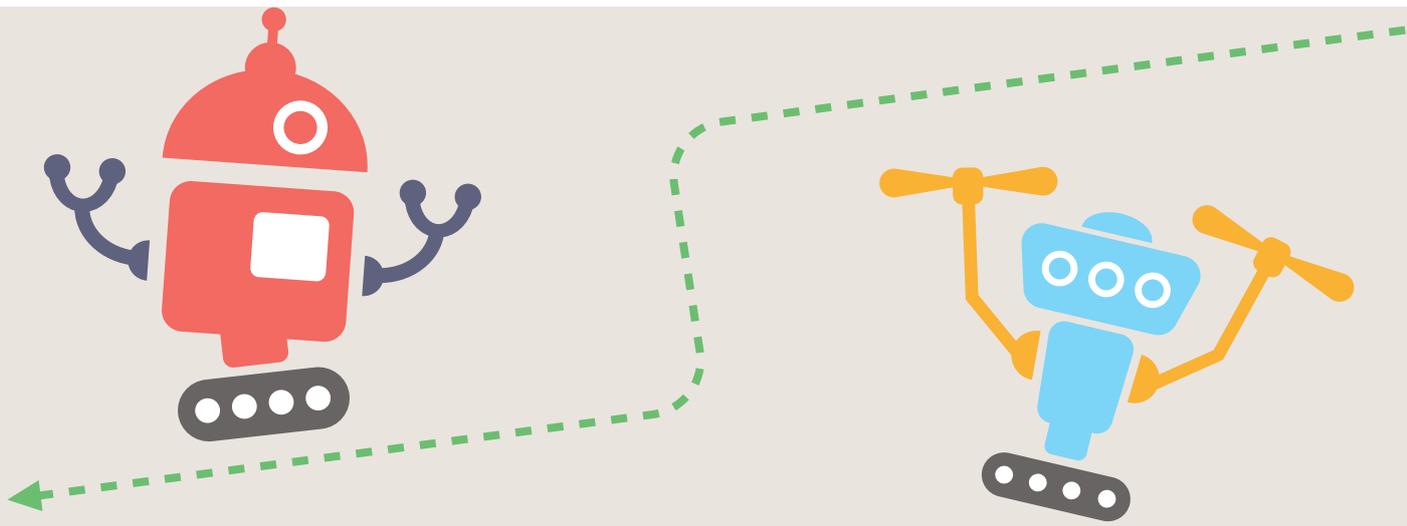
**Young Rewired State Festival of Code** - the largest annual hack event for young people in the world! It is a week long event across local centres where young people combine technical skills with open data to solve real world problems, culminating in a weekend finale where they come together in one location and showcase what they've built to industry experts, parents and press. Volunteers help as Local Centre Leads, Mentors (who assist Festival participants with their projects over the course of the week), and organisational roles at the local and national events.

[festival.yrs.io](http://festival.yrs.io)



**TechFuture Girls Clubs** - an [out-of-the-box after-school club](#) devised by the Tech Partnership, in collaboration with businesses such as HP, that has been specifically designed to encourage girls to stay engaged in IT through a series of carefully-graded challenges themed around their interests (like fashion, music, sport and celebrity). The clubs are free for schools and are run by volunteers, who do not need to be IT specialists (or qualified teachers). STEMNET provides training for volunteers, and coordinates DBS checks.

[techfuturegirls.com/support](http://techfuturegirls.com/support)



## TEENTECH awards

**TeenTech Awards** - are for UK students from 11-18 working in small school teams on long-term cross-curriculum projects. The students, who may never have thought of themselves as scientists, engineers or technologists, develop their own ideas to make life better, simpler, safer or more fun. Volunteers can act as mentors - providing support and feedback via email, Skype, Google HangOuts or a visit to the school. Support can be ongoing or a one-off review of their idea - giving feedback on the quality of the idea, research suggestions, the actual tech or how to market it.

[teentech.com/sponsors-and-partners/getting-involved/volunteering-opportunities-with-teentech](http://teentech.com/sponsors-and-partners/getting-involved/volunteering-opportunities-with-teentech)

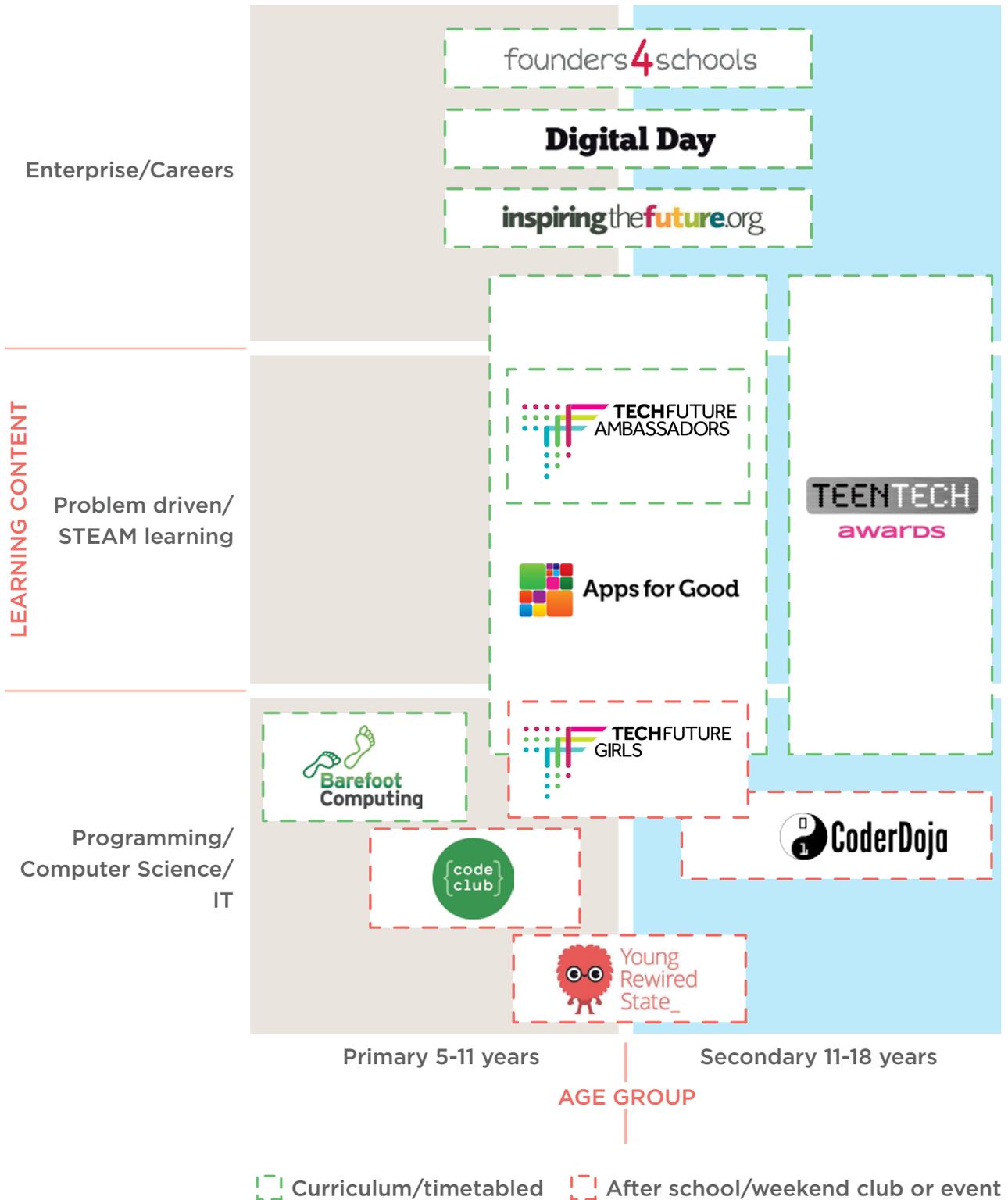
## Apps for Good

**Apps for Good** - encourages young people (age 10-18) to use technology to create innovative solutions to problems they care about. It is an open-source technology education movement that partners with educators in schools and learning centres to deliver courses - in classroom time, or in extra curricular clubs. They provide course content, training and connections to 'expert volunteer' mentors, and then let teachers do what they are best at - inspiring and guiding young people. Expert volunteers help students develop their own app ideas from problem to prototype and can volunteer as little as an hour from anywhere in the world by mentoring via Skype.

[appsforgood.org/public/get-involved/become-an-expert](http://appsforgood.org/public/get-involved/become-an-expert)

Alternatively businesses or individual employees could contact local schools, colleges and Education Business Partnerships ([irebp.org.uk](http://irebp.org.uk)) directly and set up their own volunteering opportunities. Microsoft UK have taken this approach with their Get On programme and reach 15,000 young people a year. They have also developed an online starter kit for any parent, educator or volunteer wanting to start their own coding club - available at [msdn.microsoft.com/learn/learn-about](http://msdn.microsoft.com/learn/learn-about). Similarly, Mozilla provide the resources and tools for their model of Hive Learning Networks ([hivelearningnetworks.org/resources](http://hivelearningnetworks.org/resources)) - where individual volunteers work with organisations like libraries, museums and schools, to teach young people digital literacy skills outside of the classroom.

# NAVIGATING THE DIGITAL MAKING VOLUNTEERING OPPORTUNITIES



Adapted from a diagram developed by Apps for Good.

## WHAT TO EXPECT FROM VOLUNTEERING?

A checklist of things to consider when directing employees towards volunteering to support young digital making:

What are the digital needs of my future workforce and do we want employees to focus volunteering on any particular digital making skills? (E.g. programming, robotics, digital creativity, 3D printing and design.)

Does the provider organisation need to be a registered charity in order for us to support it within the company volunteering policy? (Not all digital making learning providers are registered charities, though most will be not-for-profit organisations.)

What are the objectives of this activity - is there a clear business case for long-term investment in digital skills for my company, or is it more about short-term staff and local workforce engagement? (See the accompanying section: 'The business benefits of supporting young people's digital making through employee volunteering'.) Do we want to actively support the filling of particular gender or geographical gaps in young people's access to digital skills development?

What child safeguarding provision does the provider organisation have in place - e.g. will volunteers need a DBS check and who will arrange this? Some providers manage this process as part of their volunteer support - such as TechFuture Ambassadors or TechFuture Girls who work with STEMNET.

What existing relevant programmes or initiatives does the business support?

How closely do we want to manage the volunteering 'brokerage' - e.g. can we simply promote and raise awareness of volunteering in this field to our staff and point them towards provider organisations, or do we want to manage the recruitment/matching process in a more hands-on way? Do we want to set company targets? How will we track this?

What time commitment can we support from staff volunteers? - from one off, to regular commitments of weekly or monthly time, on weekdays or weekends (the table below gives an indication of which providers demand what kind of commitment).

Do we want to reward/recognise staff volunteering in this field - and how? (Tried and tested methods include thank you letters, award schemes, articles in press and internal channels, and some companies go further and link volunteering to performance reviews.)

Do we want our volunteers to use digital or face-to-face channels? Can we support digital involvement (eg. via LinkedIn, Skype, Google Hangout)?

Can we help the provider organisation in other ways? - could we take on some of the administration of volunteers by our company, or provide funding, equipment (e.g. software or hardware) or space, as well as volunteers themselves. Managing volunteers requires overhead costs and different providers will have a sense of how much time is needed from the volunteer compared to the overheads involved. Financial contributions allow the organisation to buy extra kit - through to funding for expanding their programmes. Other companies assist providers with space - e.g. Thoughtworks, Autotrader and UK Fast have been providing use of space in their Manchester HQs to hold digital making events.

Do we want our employees to help teach young people new digital skills, or to play more of an inspirational/motivational role (e.g. giving careers talks)? (The former might require greater time commitments or preparation than the latter, but could foster a deeper connection and sense of achievement between the volunteer and young people.)

Do we want to work with local or national learning providers? In or out of schools? (the table below gives an indication of reach by provider).

What level of technical ability or skills do we want to require from volunteers? (the table below gives an indication by provider).

How do we want to communicate our employer supported volunteering? There can be great opportunities for a business to meet CSR targets and promote the good work that they do, as well as offering valuable publicity for the work of the organisation they are supporting.

Some questions for businesses to ask prospective partner learning providers:

- What age groups do you work with?

- How many young people do you work with every year nationally/in this area?

- Which other companies do you work with nationally/locally?

- What is the primary purpose of your programme?

For example:

Developing specific technical/digital skills

Encouraging and developing 21<sup>st</sup> century skills such as creativity, communication, collaboration

Showcasing technology-related careers and career pathways

Demonstrating tech is open to everyone, regardless of gender or social background

- How do you measure your impact and will you share the specific impact made by our volunteers with us?

- Specifically, what would you wish our volunteers to do?

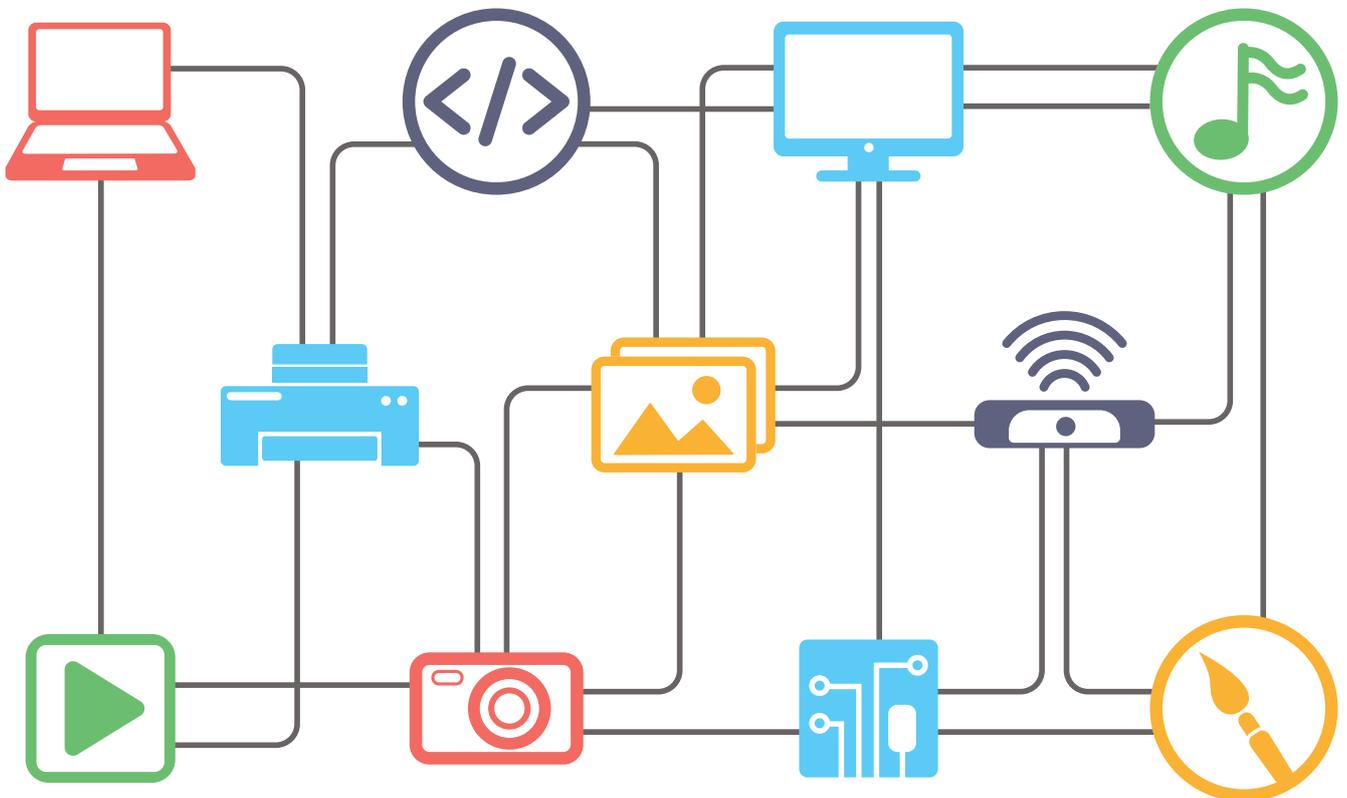
- What time commitment is needed from our volunteers?

- Where will the volunteering activity take place?

- Does the volunteering activity have a specified timeframe or will it be ongoing?

- Can we work with you to shape the opportunity?

- How do you manage child safeguarding provision?



## CASE STUDIES

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Examples of employer support for young digital making through volunteering

### Barclays Digital Driving License and Digital Eagles

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The Barclays Digital Eagles (17,000 trained members of staff) run two hour monthly coding sessions for young people age 7-17 in selected branches - called Code Playground, in partnership with CoderDojo.

Barclays has also developed the Digital Driving License for 14 year olds and above (including those who don't bank with Barclays). Topics are developed with experts such as Freeformers, Accenture, IBM, CoderDojo and Microsoft to raise digital confidence in various areas - including coding, online security and social media . Every module is endorsed by City & Guilds and there are opportunities to earn open badges.

### BT and CAS (Computing at School)/ Barefoot Computing

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BT fund the Computing At School Barefoot Computing Project, led by BCS, The Chartered Institute for IT. Launched in 2014, it has trained 3,000 teachers from 800 schools to teach the new computing curriculum which became compulsory in schools throughout England in September 2014. The scheme provides cross-curricular computer science resources and training for primary school teachers with no previous computer science knowledge. The initiative is being supported through a programme of free in-school computing workshops for primary school teachers across England - run by volunteer professionals from the IT/computing and education sectors.

### Google and Code Club Pro

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Code Club Pro is a training programme to teach computing skills to British primary school teachers, backed by £120,000 of funding from Google. Code Club aims to provide its training to more than 20,000 teachers by 2016, with the help of expert volunteers donating eight hours per year of their time to share knowledge with teachers in their local areas.

### IBM On Demand Community and MentorPlace

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IBM have a significant corporate commitment to volunteering, with 160,000 staff involved in community service efforts worldwide. Their On Demand Community portal houses kits of downloadable materials for volunteers, tailored for both schools and nonprofit organisations. The solutions include hundreds of related state-of-the art online presentations, videos, website reference links, software tools and documents to increase volunteers' effectiveness in these areas. There is also a volunteer activity management tool, enabling volunteers both to search for volunteer opportunities of interest to them and post information about them.

Volunteering activity kits for staff include introducing kids to programming, cyber safety issues, engineering and robotics. Their MentorPlace tool links IBM volunteers with teachers and volunteers for e-mentoring - developing employability skills and providing career guidance.

## Localglobe and founders4schools

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Localglobe, a seed-focused Venture Capital firm dedicated to investing in and supporting London's most capable and ambitious founders, has been supporting the mentoring pilot programmes of founders4schools - starting with a ten-week long mentoring programme at UCL Academy in North London. Working in partnership since August 2015, Localglobe's employees identify mentors from their portfolio of companies that commit to support students in 30 minute sessions, and a member of the Localglobe team attends every meeting to ensure continuity between mentoring sessions.

## O2 Telefonica Think Big and Open Badge Academy

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Through their Think Big programme, and with the help of their staff, O2 Telefonica are funding young people to harness digital to solve community problems. They are also supporting the launch of the Open Badge Academy (through the Tech Partnership) - a means of bringing coherence to digital skills training in many channels. Open Badges can provide a mechanism for young people to showcase their digital skills, and employers to discover potential candidates.

## Microsoft and CoderDojo

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Microsoft have a European partnership with the CoderDojo Foundation & Movement to scale the movement and reach more kids in more countries. This support is part of Microsoft YouthSpark, a global, company-wide initiative, which aims to improve education, employability and entrepreneurship opportunities for young people worldwide. The support includes promotion of CoderDojo, supporting the creation of new Dojos, funding new content and training for volunteers to help facilitate Dojo sessions, access to Microsoft tools and platforms, and access to Microsoft's 20,000 plus employees across Europe as mentors who will support existing Dojos and facilitate the establishment and hosting of new Dojos.

## Skype Guest Speakers in Computer Science with code.org

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Skype and Code.org have created a pairing platform for school teachers to find volunteer IT industry experts who can interact with their class over Skype - to give insight into the different careers available to them in IT, and to gather additional information which will help students to pursue a career in IT. It also enables students to access IT experts from another country.

## Talk Talk and Apps for Good

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Talk Talk's relationship with Apps for Good sprang from a strategic rethink of its CSR activity, bringing it in line with both its strategic positioning as a value for money broadband provider, leading on internet safety and digital inclusion, and the company's skill set and need to develop its people. The partnership has CEO buy in and board level sponsorship. Volunteering as an Apps for Good mentor was built into the personal development objectives process led by HR - ensuring that the right people were identified to volunteer and managers were bought in. Apps for Good provide the necessary processes to screen volunteers for child protection issues, train volunteers, allocate volunteers to projects, and to manage the interface between the school and the volunteer.

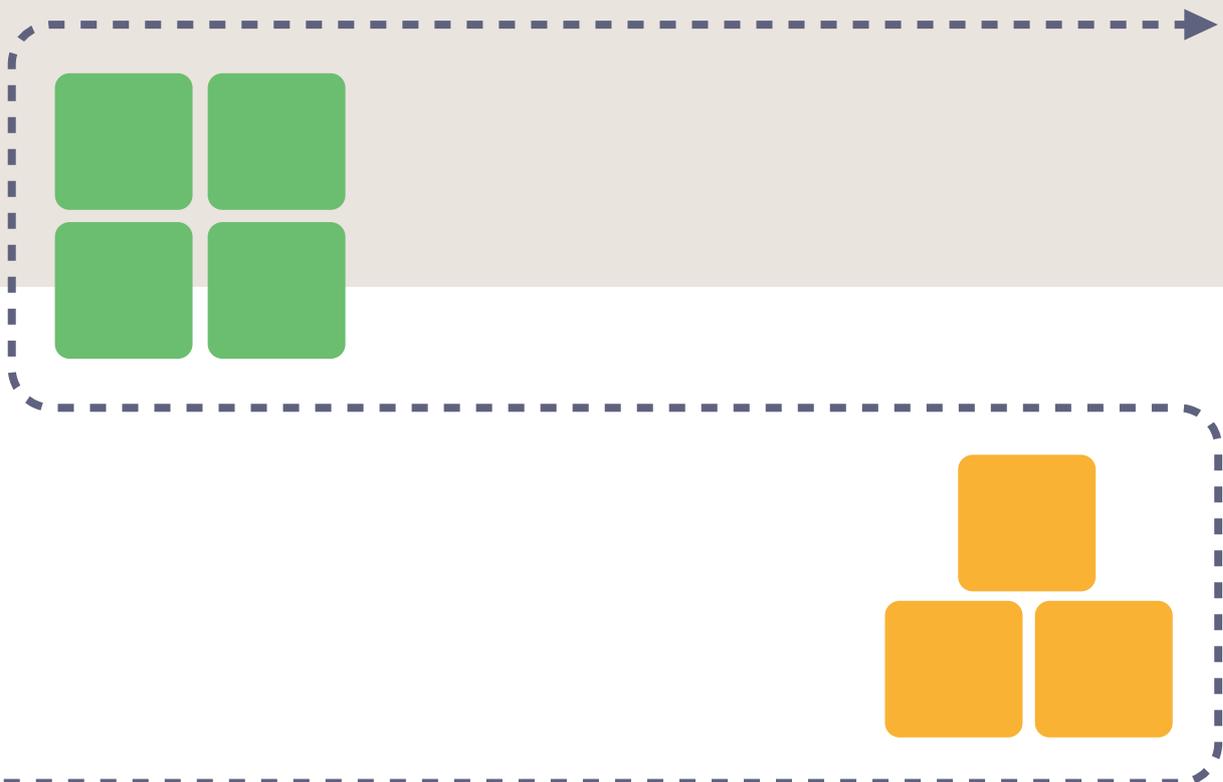
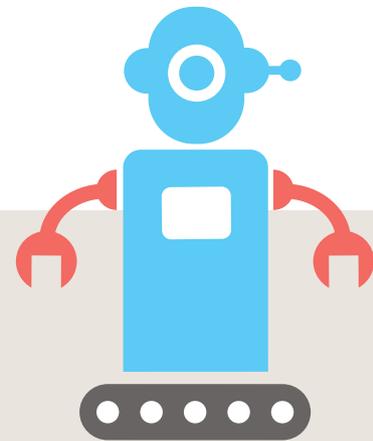
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## Tata Consultancy Services (TCS) and TechFuture Ambassadors

TCS are one of the driving forces behind TechFuture Ambassadors (along with the Tech Partnership and STEMNET). This scheme is about garnering industry volunteering expertise (not just from TCS staff) to inspire young people to pursue a career in tech. They launched in 2015 and have already recruited 300 plus volunteers.

## HP and TechFuture Girls (also supported by BT, Oracle and National Grid)

TechFuture Girls is a related initiative to TechFuture Ambassadors from the Tech Partnership: a free, out-of-the-box after-school club designed to be run by volunteers to encourage girls age 10-14 to develop their skills in IT through a series of challenges themed around their interests (like fashion, music, sport and celebrity). Since its launch in 2005, more than 150,000 girls have benefited from its mix of activities, games and projects.



# VOLUNTEERING OPPORTUNITIES WITH COVERAGE IN MULTIPLE REGIONS

MINIMUM VOLUNTEER TIME COMMITMENT			VOLUNTEER ROLES AVAILABLE		WHEN		WHERE			
ONE OFF	AROUND MONTHLY	WEEKLY	RANGE OF BUSINESS SKILLS EXPERIENCE VALUED	TECHNICAL KNOWLEDGE REQUIRED	WEEKENDS	WEEK DAYS	REMOTE/VIA VIDEO CALL	IN CLASS ROOM	AFTER SCHOOL CLUB	OTHER OUT OF SCHOOL VENUES
<b>1. PROVIDING MENTORSHIP AND CAREERS INSPIRATION - USUALLY IN THE SCHOOL CURRICULUM/TIMETABLED DAY:</b>										
<b>TechFuture Ambassadors</b>										
	●			Experience of working in the tech industry		●		●	●	
<i>Other details:</i> All Ambassadors must register as STEM Ambassadors. <i>Web:</i> <a href="http://thetechpartnership.com/inspire/techfuture-ambassadors">thetechpartnership.com/inspire/techfuture-ambassadors</a>										
<b>founders4schools</b>										
●			Founders of 'scale up' businesses			●		●		
<i>Other details:</i> Volunteer time commitment varies depending on the volunteer's ability and the teacher's needs. <i>Web:</i> <a href="http://founders4schools.org.uk">founders4schools.org.uk</a>										
<b>Digital Day</b>										
●			People working in creative digital industries			●		●		
<i>Other details:</i> Annual event on one day of the year. <i>Web:</i> <a href="http://bimadday.org.uk">bimadday.org.uk</a>										
<b>Barefoot Computing</b>										
	●			Background in computing				●		
<i>Other details:</i> Looking for volunteers who share a high level of knowledge and enthusiasm about computing science. <i>Web:</i> <a href="http://barefootcas.org.uk/barefoot-volunteers">barefootcas.org.uk/barefoot-volunteers</a>										
<b>TeenTech Events</b>										
●			Shareable STEM Skills and experience			●		●		●
<i>Other details:</i> Three different types of volunteering opportunities for local businesses to an event: running an interactive stand, acting as an industry ambassador and being a Newsroom editor. Volunteers can sign up as individuals or corporate teams. The ideal volunteer has: a desire to engage with hard to reach audiences, confidence working with young people, excellent communication skills, a strong understanding of the tech industry, shareable STEM skills and experiences. <i>Web:</i> <a href="http://teentech.com/sponsors-and-partners/getting-involved/volunteering-opportunities-with-teentech">teentech.com/sponsors-and-partners/getting-involved/volunteering-opportunities-with-teentech</a>										
<b>Inspiring the Future</b>										
●			Open to anyone working in any sector			●		●	●	
<i>Other details:</i> Volunteers commit to a minimum of one hour per year <i>Web:</i> <a href="http://inspiringthefuture.org">inspiringthefuture.org</a>										
<b>Apps for Good</b>										
'Experts' commit to min. of one hour via video call or in person per year			●	●		●	●	●	●	●
<i>Other details:</i> Spans classroom and after school clubs. Ideally Expert Volunteers will have professional experience in new product development, UX design, programming, business development, marketing, public speaking or other entrepreneurial skills. <i>Web:</i> <a href="http://appsforgood.org/public/get-involved/become-an-expert">appsforgood.org/public/get-involved/become-an-expert</a>										

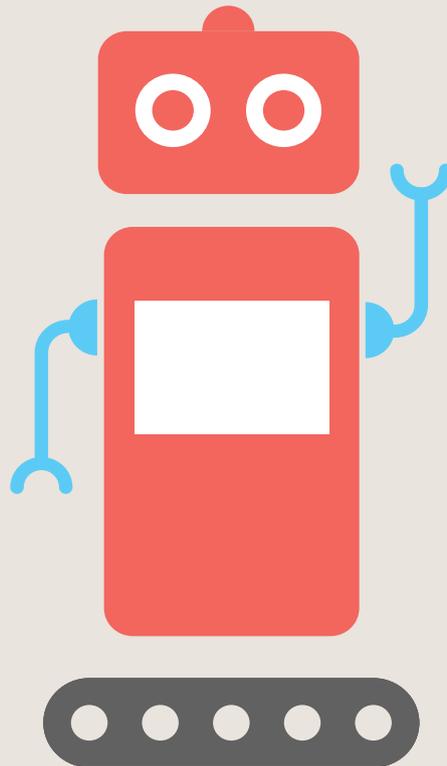
VOLUNTEER MINIMUM VOLUNTEER TIME COMMITMENT			VOLUNTEER ROLES AVAILABLE		WHEN		WHERE			
ONE OFF	AROUND MONTHLY	WEEKLY	RANGE OF BUSINESS SKILLS EXPERIENCE VALUED	TECHNICAL KNOWLEDGE REQUIRED	WEEKENDS	WEEK DAYS	REMOTE/VIA VIDEO CALL	IN CLASS ROOM	AFTER SCHOOL CLUB	OTHER OUT OF SCHOOL VENUES
<b>2. SHARING DIGITAL MAKING SKILLS - USUALLY OUTSIDE OF SCHOOL TIME</b>										
<b>CoderDojo</b>										
		A couple of hours per week	●	●	●					●
<i>Other details:</i> Looking for non technical 'Champions' for organisational roles, as well as tech savvy 'Mentors' to help young people with projects. Encourage business teams to sign up, as well as individuals. <i>Web:</i> <a href="http://coderdojo.com/volunteer">coderdojo.com/volunteer</a>										
<b>Code Club</b>										
		One hour in the classroom per week every week for three months	●	●	●	●			●	●
<i>Other details:</i> Code Club prefer a basic knowledge of Scratch, HTML/CSS and Python but offer training so volunteers have all the info they need. DBS Statement required. <i>Web:</i> <a href="http://codeclub.org.uk/start-a-club/volunteers">codeclub.org.uk/start-a-club/volunteers</a>										
<b>Young Rewired State Festival of Code</b>										
One week per year			●	●	●	●	●			●
<i>Other details:</i> Opportunities for technically skilled Mentors - e.g. development or design, open data or data mining, ideation, videography, presentation skills, user experience - but other skills needed for Centre Leads/event support roles. <i>Web:</i> <a href="http://festival.yrs.io">festival.yrs.io</a>										
<b>TechFuture Girls</b>										
	●		●	●		●			●	
<i>Other details:</i> Guide for volunteers: <i>Web:</i> <a href="http://techfuturegirls.com/CC4G/Public/Volunteer%20guide/TechFutureGirls_Volunteer_Guide.pdf">techfuturegirls.com/CC4G/Public/Volunteer%20guide/TechFutureGirls_Volunteer_Guide.pdf</a>										
<b>TeenTech Awards</b>										
●			●	●		●	●	●	●	
<i>Other details:</i> Volunteer mentors can offer a one-off review of young people's projects through to ongoing support. <i>Web:</i> <a href="http://teentech.com/sponsors-and-partners/getting-involved/volunteering-opportunities-with-teentech">teentech.com/sponsors-and-partners/getting-involved/volunteering-opportunities-with-teentech</a>										
<b>Apps for Good</b>										
●			●	●		●	●	●	●	●
<i>Other details:</i> See above. <i>Web:</i> <a href="http://appsforgood.org/public/get-involved/become-an-expert">appsforgood.org/public/get-involved/become-an-expert</a>										

## ENDNOTES

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1. 2014 Estimate from the Science Council.
2. (2014) 'Digital Sector Skills Assessment.' Parthenon Analysis.
3. The Tech Partnership (2015) 'Employer Insights: skills survey 2015.' London: The Tech Partnership.
4. 2013 City and Guilds research.
5. techUK (2015) 'We're just not doing enough - Working together to meet the digital skills challenge.' London: techUK.
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7. Social Integration Commission (2015) 'Kingdom United?' London: Social Integration Commission.
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9. For example, (2010) 'Volunteering - the Business Case.' London: Corporate Citizenship; YouGov (2010) 'Volunteering is the Business.' London: YouGov; Lloyd, J. (Ed.) (2010) 'More than CV points? The Benefits of Employee Volunteering.' London: The Social Market Foundation.
10. See Annex 1 for a list of companies consulted by Nesta in 2015.
11. Eighty-eight per cent of consumers are more likely to buy from a business that visibly supports activities to improve society, Brooks, K. and Schlenkhoff-Hus, A. (2013) 'Employee Volunteering: Who is benefitting now?' CSV.
12. Capgemini (2012) 'The Digital Advantage: How digital leaders outperform their peers in every industry.' Capgemini Consulting.
13. British Gas's involvement in Cardiff Cares saw the employee retention rate reach 99.6 per cent for those participating. Employee volunteering, BITC.
14. Where employees are more engaged profitability increased by 16 per cent, productivity is 18 per cent higher, customer loyalty is 12 per cent higher and quality increases by 60 per cent. Gallup Inc. 'The Relationship Between Engagement at Work and Organisational Outcomes.'
15. UnitedHealthcare/VolunteerMatch - Do Good Live Well study in the USA in 2010.
16. In CIPD's Volunteering to learn: employee development through community action, 66 per cent of respondents asserted that their communication skills had improved; their ability to help others (65 per cent); adaptability (54 per cent); Influencing/negotiating skills (45 per cent); team working (43 per cent); leadership skills (41 per cent), willingness to continually improve (41 per cent); planning and organisation (40 per cent); decision making (39 per cent); problem solving (39 per cent); ability to build relationships and networks (39 per cent).
17. Fifty-eight per cent of Barclay's managers reported a visible improvement in staff cooperation: Brews, G. (2004) 'Beyond Banking: Lessons from an impact evaluation of employee volunteering at Barclays Bank.' Institute for Volunteering Research.
18. Prudential found that 70 per cent of employee volunteers say their volunteering has had a positive influence on how they feel about working at Prudential.
19. Fifty-eight per cent of Barclay's managers reported a visible improvement in staff cooperation: Brewis, G. 'Beyond Banking: Lessons from an impact evaluation of employee volunteering at Barclays Bank.' Institute for Volunteering Research.
20. Eighty-eight per cent believe that businesses should be proactively addressing social concerns: Net Impact (2010) 'Undergraduate Perspectives: The Business of Changing the World.'
21. Fifty-three per cent of the under-35s want to volunteer more than they do, this reaches 60 per cent in the youngest 18-24 age group and compares to 35 per cent in the 55+ age group. Pharoah, C. and Walker, C. (2015) 'More To Give: London Millennials Working Towards A Better World.' London: City Philanthropy.
22. Workplace schemes and initiatives are the largest influence on the volunteering activity of under-35s, with over one-quarter (26 per cent) mentioning its positive influence, dropping to 15 per cent in the 35+ age group. Pharoah, C. and Walker, C. (2015) 'More To Give: London Millennials Working Towards A Better World.' London: City Philanthropy.
23. Deloitte's Volunteer Impact Study: millennials who volunteer are twice as likely to rate their corporate culture as very positive (56 per cent v 28 per cent). PWC (2011) 'Millennials at work: Reshaping the workplace.' PWC: 59 per cent of millennials would deliberately seek out employers whose corporate social responsibility values matched their own.
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