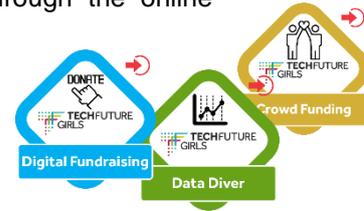# Guide to the Tech for Good topic

Club members learn about how technology is being used to do good things through data analytics, crowd funding and digital fundraising.

There are three Digital Badges for members to gain by working through the online challenges.

- Data Diver

- Crowd Funding

- Digital Fundraising

How a TechFuture Girls topic works

Within each topic – chosen to be particularly interesting to girls – there are three or more challenges for members to complete. Each challenge has an online e-learning module, which explores key concepts within a topic, with embedded quiz questions to assess understanding along the way. Members who score 80 percent or more automatically receive a Digital Badge, which appears in their profile once earned.

Alongside the online challenge, an offline challenge document is provided which asks members to go further with the topic. This is supported with sets of how2 documents that help build skills as the offline challenge is completed.

Online challenges can take between 30 and 45 minutes. Offline challenges can typically take longer, usually over several sessions. The offline challenges also lend themselves to team work and collaboration.

The online challenge format

The online challenges are built as e-learning. They are a series of screens that often include hotspots, where clicking on images or markers bring up more information. In most cases, all the hotspots have to be checked before the 'next' button appears. So if one of your members/students can't see the next button, it is because there is an unchecked hotspot!

In the screenshot on the right, each bird is a hotspot. Only after exploring each of these will be next button appear so the learner can move on.

The challenges in the Tech for Good topic

There are three challenges in Tech for Good.

Challenge 1: Data Diver

In this challenge, members are introduced to different ways in which data is used for good. They find out about data analytics, and how trends and patterns in data can help people, animals and the environment. Using case studies of where data is being used, members find out how the emergency services are able to better plan for fires and emergency responses, how the RSPB are better able to understand the

difficulties that bird species face, and how charities can maximise their fund raising activities by better understanding their supporter.

The offline challenge is to analyse some simple data collected from a fictitious charity (Save the Toads) to understand how the data can help the charity target its fundraising activities, to do more of the things that are popular and less that are not. The dataset is provided both in a MS Word document and as an Excel spreadsheet. Members are asked to present their findings to the charity as a presentation, with recommendations that come from the data analysis. A folder of copyright-free images of toads is available to enhance their presentation.

They are also given a How2 create a pie chart in MS Excel, for those who want to use the spreadsheet software.

Challenge 2: Crowd Funding

This topic introduces members to crowd funding as a way of encouraging lots of people to provide small amounts of money to fund projects, good causes, books and films.

Girls learn about the different ways that crowd funding works through websites such as Crowdfunder, GoFundMe, Kickstarter and Unbound. They hear how communities benefit from crowd funding, how individuals can be supported through GoFundMe, and how books and films are funded through Unbound and Kickstarter.

The offline challenge is to tell the world about crowd funding through the production of a creative product, which can be a video, podcast, poster, animation, document or presentation. They can use role play to do interviews for a news broadcast (which aligns with the BBC School Report activities), or create a guide or leaflet.

Challenge 3: Digital Fundraising

In this topic, members learn about how charities are making use of digital technology to raise more support and more money. They find out about websites, and how charities can sign up members, provide information and take online donations through a well-constructed web presence. They also find out about the new trend of giving through text message and what that means for both the donor and the charity. The relatively new technology of contactless is also explored, with charities making use of contactless collecting boxes which address the issue of fewer people carrying cash. Members also think about the need for secure cyber practices by charities who carry personal and financial information on their members.

The offline challenge is to create a web page for a charity, using either MS Word or PowerPoint to create a prototype (which could be used as completion of the challenge) or to actually use a web building program to create the page. Members who have completed the Coding topic could code the page with HTML5 from scratch! Members can make use of the copyright-free images of toads if they choose to build their web page for the Save the Toad charity.

Going further

Members and facilitator/teachers of TechFuture Girls now have access to additional content on TechFuture Classroom. At the bottom of each topic page, there are links to do more. For this topic, a link is provided to the SAS Data Analytics topic which takes the analysis of data much further, including providing all schools with the JMP software, which is industry standard. The topic explores the scenario of a breakout of a virus in a school – students use a provided dataset to find out how the virus spread, what it is and how it can be treated.

How2s included in this topic

Each challenge has a set of how2s – guides on skills and concepts – to help members complete the offline challenges and build on knowledge acquired in the online challenges. The table below shows all the how2s in the Tech for Good topic.

Table 1: The How2 documents provided in this topic

Challenge	How2
Data Diver	How2 create a pie chart in MS Excel

Learning Outcomes and curriculum mapping for the Tech for Good topic

The table below displays the learning outcomes for each topic and their relevance to the Programmes of Study for Computing (Key Stages 2 and 3).

Table 2: Learning outcomes and Computing PoS mapping

Challenge	Learning Outcomes	Programmes of Study for Computing
Data Diver	Understand how data is collected and used by organisations	**Pupils should be taught to:** Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information *(Key Stage 2)* Undertake creative projects that involve selecting, using and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users *(Key Stage 3)*
	Understanding how data analysis can generate understanding of trends and patterns	
	Understand how data analysis can help decision making by organisations, in the field of environmental protection	
	Understand how data analysis can help the emergency services to predict events that require their services and intervene in advance	
	Understand how data analysis can be used by charities and good causes to maximise their fundraising activities and success	
Crowd Funder	Understand what crowd funding is	**Pupils should be taught to:** Understand computer networks, including the Internet; how they can provide multiple

Challenge	Learning Outcomes	Programmes of Study for Computing
	Understand how online platforms support crowd funding for groups, individuals and projects	services, such as the World Wide Web, and the opportunities they offer for communication and collaboration *(Key Stage 2)*
	Understand how creative ideas such as books and films can be funded through crowds	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including …. presenting data and information *(Key Stage 2)*
	Understand how good causes and individuals with personal needs can raise money through crowd funding	Undertake creative projects that involve selecting, using and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users *(Key Stage 3)*
Digital Fundraiser	Understand how charities, in the same way as other businesses, make use of digital technology	**Pupils should be taught to:** Understand computer networks, including the Internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration *(Key Stage 2)*
	Understand how charities make use of websites to provide information to their supporters, register members and take online donations	Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including …. presenting data and information *(Key Stage 2)*
	Understand how charities make use of mobile devices and text messages to increase donations	
	Understand how charities make use of contactless technology to address the issue of supporters in the street not carrying cash	Undertake creative projects that involve selecting, using and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users *(Key Stage 3)*
	Understand how charities have to think about cyber security because of the data they collect on their members	

If you require any help setting up your TechFuture Girls club, wish to use the resources, and TechFuture Classroom, in school, or have any questions about our platform, email us at helpdesk@techfuture.com and we will respond to your request within 48 hours.