# How to use the TechFuture Classroom

**This guide explains how to use the TechFuture Classroom projects and the associated Badge Academy.**

Alongside this guide, you will find a selection of other documents to help you make full use of the materials and badges on this platform. There are guides to the 15 TechFuture Classroom projects, as well as how to make use of the Badge Academy. Within each project, there are lots more downloadable guides and resources that are all free to use for all UK schools, alongside e-learning modules that explain and explore key areas of technology, many relevant to the curriculum. There are also teacher CPD materials, including the Cyber Security Awareness course.

We hope you enjoy using our platform!

## Getting registered

The platform is based on Moodle and requires all users to have an account. Teachers can sign up by clicking on the Login button and completing a short registration form, which also requires you to identify your school from the search facility. We have endeavoured to include all UK schools on this database, but if you find your school is not listed, contact sue@thetechpartnership.com and we will add your school to the list.

Once registered as a teacher, you can add any number of students to the platform. Clicking on the 'About' button in the top navigation bar provides you with a facility to upload a CSV file of your student cohort. Much more information on how to do this is available in the '**Guide to Uploading Students**'. These students will then be aligned with you, and you will be able to track their activity on the platform.

## Getting started – teacher CPD content

Under the Teachers tab at the top of the page you will find a selection of CPD materials that are freely available to teachers in the UK. These are:

> **Cyber Security Accreditation Level 1** – a suite of ten e-learning modules that have been created with support from the Department of Business, Innovation and Skills in partnership with NAACE. These cover all the key areas of cyber security, are focused upon relevant issues for schools including Ofsted requirements and e-safety, and have lesson plans and other resources downloadable for use in your teaching. A Certificate of Achievement is awarded automatically on completion.

> **ARM Academy for Teachers** e-learning – three modules that cover some of the challenging areas of teaching for the Computing curriculum, Algorithms, Computational Thinking and Principles of Programming, sponsored by ARM and suitable for both primary and secondary teachers.

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## Getting started – TechFuture Classroom

TechFuture Classroom is a suite of 15 projects, covering all areas of technology, based on real-world contexts, and which provide students with interactive e-learning, which on completion awards an Open Badge (or a Digital Badge for under-13s). Each project has a downloadable Teacher Guide to Delivery that explains the project and gives suggestions for lesson planning.

The table below details the content of each project, and its relevance to the Programmes of Study for Computing in England.

## Table 1: The TechFuture Classroom projects

| Project name | Detail | Key Stage 3 Programmes of Study | Open Badges available |
|---|---|---|---|
| Coding in HTML5 with Intel and CoderDojo | Students learn over 20 HTML5 tags in the e-learning and apply these using Notepad++. Progress is recorded in the provided Student Log. They are provided with code for a Piano App and are asked to debug it, and challenged to code their own webpage. | Use two or more programming languages, at least one of which is textual | HTML Coder<br><br>HTML Debugging<br><br>Webpage Coder |
| Coding in CSS with Intel and CoderDojo | Students learn how to use CSS to style a web page using Notepad++. Progress is recorded in the provided Student Log. They are provided with code for a Piano app with bugs affecting the style and are asked to debug it. They are challenged to style their own web page. | Use two or more programming languages, at least one of which is textual | CSS Coder<br><br>CSS Debugging<br><br>Webpage Styling |
| Coding in JavaScript with Intel and CoderDojo | Students learn how to use JavaScript to add interactive features to a web page using Notepad++. Progress is recorded in the provided Student Log. They are provided with code for a Piano app and are asked to add tunes to it and a scoring mechanism to turn it into a game. They are challenged to add dynamic features to their own web page | Use two or more programming languages, at least one of which is textual<br><br>Design and develop module programs that use procedures or functions<br><br>Understand simple Boolean logic and some of its uses in circuits and programming | JavaScript Coder<br><br>Gamification<br><br>Dynamic Web Developer |
| Cyber Security Key Stage 3 | Countdown to Chaos – simulated real-time cyber-attack on the power grid over four acts where students have | Understand a range of ways to use technology safely, respectfully, | Cisco Cyber Detective |

| Project name | Detail | Key Stage 3 Programmes of Study | Open Badges available |
|---|---|---|---|
| | to find the perpetrator before the lights go out | responsibly and securely, including protecting their online identity and privacy. | |
| Cyber Security Key Stage 4 | A set of seven Open Badges that introduce key aspects of cyber security including social engineering, hacking and online safety through e-learning materials. Badges are awarded automatically. | Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy. Recognise inappropriate content, contact and conduct and know how to report concerns.<br><br>Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to report a range of concerns (KS4) | Digital Footprint<br><br>Hacking<br><br>Online Safety<br><br>Social Engineering<br><br>Encryption<br><br>Threats<br><br>Network Security |
| Cyber Security Key Stage 5 | More advanced material on cyber security for KS4 and 5 students that looks at a historical timeline of technological development and a simulation of a hacking attack on a small business | | |
| IBM Wimbledon | Students create a mobile app for a new player at Wimbledon whose English is poor, making use of icons and images. Students can use the AppShed platform and gain App Developer badges through the AppShed Basics Course (parts 1-3). | Undertake creative projects that involve selecting, using and combining multiple applications preferably across a range of devices to achieve challenging goals. | App Builder Bronze<br><br>App Builder Silver<br><br>App Builder Gold<br><br>IBM WImbledon |
| AppShed App Development | Students create a mobile app to a brief, providing information on university and apprenticeships using the AppShed platform. | Undertake creative projects that involve selecting, using and combining multiple applications preferably across a range of devices to achieve challenging goals. | App Builder Bronze<br><br>App Builder Silver<br><br>App Builder Gold<br><br>App Builder Platinum |

| Project name | Detail | Key Stage 3 Programmes of Study | Open Badges available |
|---|---|---|---|
| Game Building with Radiant Worlds | Students learn about the gaming industry, how games are designed and built and the relevance of coding and programming to game development | Create, reuse, revise and repurpose digital artefacts for a given audience with attention to trustworthiness, design and usability | Radiant Worlds Gaming |
| Game Design with BAFTA and Radiant Worlds | Students learn about game design, the need to research, understanding of audience, platform and controllers, and where ideas come from. They produce a game concept document that forms the basis of an entry for the BAFTA Young Game Designers' Competition | Undertake creative projects that involve selecting, using and combining multiple applications preferably across a range of devices to achieve challenging goals. | Radiant Worlds and BAFTA Game Designer |
| Web Design with Skylark | Students learn about web design by coming up with a wireframe and prototype for a musician (a real one) who wants a website. They learn about requirement specifications, research, user journey, mood and story boarding and wireframing | Undertake creative projects that involve selecting, using and combining multiple applications preferably across a range of devices to achieve challenging goals. | Web Designer Bronze<br><br>Web Designer Silver<br><br>Web Designer Gold<br><br>Logo Designer |
| Understanding data with Capgemini | Students learn about data, what it is, how it is represented, the binary system and data storage before making decisions about the location of a new data centre based on multiple variables | Understand how numbers can be represented in binary and be able to carry out simple operations on binary numbers<br><br>Understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally in the form of binary digits | Capgemini Understanding Data |
| Squawk Software Architecture | Students work with a software architect to find a solution for a new social media application, including problem solving and understanding social media and GPS | Understand the hardware and software components that make up computer systems and how they communicate with other another and with other systems | Squawk Software Architect |

| Project name | Detail | Key Stage 3 Programmes of Study | Open Badges available |
|---|---|---|---|
| O2 Wearable Technology | Students learn about the Internet of Things and the rise of wearable technology, evaluating the pros and cons, before creating their own wearable device for a child that warns parents if the child moves too far away | Undertake creative projects that involve selecting, using and combining multiple applications preferably across a range of devices to achieve challenging goals.<br><br>Understand a range of ways to use technology safely and securely | O2 Wearable Tech – Knowledge<br><br>O2 Wearable Tech – Technology<br><br>O2 Wearable Tech – Security<br><br>O2 Wearable Tech – Design<br><br>O2 Wearable Tech – Project completion |
| Data Analytics with SAS UK | Students have access to industry standard software and use this to analyse data and find an answer to the problem of how a disease is making students ill. They are provided with detailed tutorials within the e-learning to demonstrate how to use the software to create charts and look for patterns and trends. All schools have access to the JMP Data Analysis software. | Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems<br><br>Make appropriate use of data structures | SAS Data Analyst<br><br>SAS Data Analyst Expert |
| IBM Energy Monitoring with the Raspberry Pi | Students are shown how to use a Raspberry Pi in a system that can monitor energy consumption. | Understand the hardware and software components that make up computer systems and how they communicate with other another and with other systems | IBM Energy Monitoring |

## Getting started – the Tech Partnership Badge Academy

Open Badges, as created by Mozilla Foundation and made open (shareable) through the Mozilla Backpack accounts that anyone over 13 years old can have, are integrated into our platform. You can find the Badge Academy by clicking on Badges on the top navigation.

All badges on the platform are supported and endorsed by employers and feature their logos on the badges. There are currently over 40 badges available, supported by employers including Capgemini, TCS, Fujitsu, Intel, O2, CGI, Samsung, Intel, SAS UK, BAFTA and Radiant Worlds.

All students of any age can gain badges on our site and see them in their My Badges section. However, only students aged 13 and above can share these badges more widely on social media and websites by using the Mozilla Open Backpack account. There is a separate guide to opening and using a Mozilla account. As with all social media accounts, these are restricted to over 13s. *Note, we are not able to monitor students' use of Open Backpack accounts.*

There is a separate guide to awarding badges to students in the Guides area. As a short overview, there are several ways that badges are awarded to students:

> **Automatically awarded –** badges with a red icon are automatically awarded by the platform when students complete associated e-learning modules. The platform monitors their progress through the e-learning, some of which is quiz-based, and awards the badge on completion (where scores are needed, this is around 80 percent)

> **Teacher verified –** badges where evidence for award is required, such as completion of the Web Coding or O2 Wearable Tech – Design tasks, we will issue a code to teachers that is changed regularly (to avoid students sharing the code). When you are satisfied that the student has achieved the criteria, and this is made clear in the Teacher Guide for the relevant project, you can issue the code. Students input the code into the platform to receive the badge.

> **Participation badges –** some employer programmes require students to attend their events. An example is the Capgemini Digital Maker badge. When students attend an event, they receive the code and can claim the badge from the platform.

We hope this guide will answer most of the questions you have about the platform. If not, do let us know by emailing [sue@thetechpartnership.com](mailto:sue@thetechpartnership.com) and we will respond to your query within 48 hours.