HM Government

CYBER SECURITY

A Guide to Programmes and Resources for Schools & Further Education

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A Guide to Cyber Security Programmes and Resources for Schools and Further Education Providers

Cyber security is a hot topic, both at a global level - new cyber attacks on businesses, Government and consumers are reported daily - and in the every-day lives of children and young people, who are regularly confronted with risks to their online safety. The new computing curriculum aims to equip children and young people with the skills they need to participate effectively in the digital world. Good cyber security is essential to this, which is why it will be a key component of the new computer science GCSE and of all computing and digital further education qualifications at Level 3 and Level 4.

There are also many exciting career opportunities in the vibrant and growing cyber security profession, working to protect the UK from cyber attack (see www.bigambition.co.uk moving to www.techfuturecareers.com in spring 2015). With only 7% of information security professionals under the age of 29, many organisations want to recruit young talent.

If you know nothing about cyber security, don't worry! A range of teaching resources and education programmes are available free of charge to help you engage pupils creatively in this interesting and important issue.

TechFuture Classroom (formerly Behind the Screen) *(The Tech Partnership)*

In brief

TechFuture Classroom is a hub of free computing resources for schools, including cyber security projects for Key Stage 4 and Key Stage 5, with Key Stage 3 under development. Projects have been developed with key industry partners who provide real life business cases and ideas for each, and supply industry resources and software for students to use. Projects are presented as problems through a brief, and students are guided through to their solution. Lesson plans, guides, mapping to current qualifications, presentations and exemplar student logs are provided to support delivery.

Aimed at

Key Stage 3 (*available from Autumn 2015*), Key Stage 4 and Key Stage 5/level 3 (*both available now*)

Delivered by

Teachers

Hours of study

Projects take from 3 to 15 hours to complete, depending on route taken.

Find out more

www.techfutureclassroom.com

TechFuture Girls *(The Tech Partnership)*

In brief

TechFuture Girls, formerly known as Computer Clubs for Girls (CC4G), launched in 2005. Since then, more than 150,000 girls have benefited from the mix of activities, games and projects, all designed to build girls' skills and confidence in technology.

Now, all UK schools are able to access the programme for free thanks to the support of Platinum sponsor HP, and Gold sponsors BT, National Grid and Oracle. The programme is aligned with the latest changes in the computing curriculum and reflects the introduction of coding to all age groups.

The materials are developed in close collaboration with employers, and teach universally applicable skills like coding, online safety, data management and video editing, but are themed around girls' interests, like music, sport or dance. A new cyber security learning resource produced in collaboration with HP's cyber security labs will be added to TechFuture Girls and launched in 2015.

Aimed at
Girls aged 9 to 14.

Delivered by
Teachers and (optionally) volunteers.

Hours of study
Variable. Can be run as an after-school or lunchtime club.

Find out more
www.techfuturegirls.com or contact laura.ferguson@e-skills.com

Secure Futures *(The Tech Partnership)*

In brief
Free teaching resources for Key Stages 3 and 4, including online games that simulate real life cyber situations. Students learn about cyber threats and defences in cross-curricular contexts including classics, history, maths and art. The resources link the techniques young people can use to ensure their own online safety, with those used by government and business to protect the nation from cyber attack.

Aimed at
Key Stage 3 and Key Stage 4, but could also be adapted for use in FE institutions.

Delivered by
Teachers

Hours of study
Variable, depending on the resources used.

Find out more
www.bigambition.co.uk/secure-futures (moving to www.techfutureteachers.com during the first quarter of 2015).

Cyber Security Challenge Schools Programme *(Cyber Security Challenge)*

In brief
Raises awareness of exciting careers in cyber security using innovative tools and scenarios to develop practical skills. Teaching packs include touch screen games, infographics and paper based exercises, pitched at different levels and developed by UK cyber security leaders. Students develop 'uncrackable ciphers' for other schools to decipher and the most successful schools qualify for the Cyber Games final, a fun day of industry-set challenges.

Aimed at
KS3 and KS4

Delivered by
Teachers (the teaching pack). The Cyber Games final is delivered by the Cyber Security Challenge and employers).

Hours of study
Teaching pack can be delivered in a 50 minute lesson, expanded over several lessons, issued as a homework assignment or delivered during an after school computing club.

Find out more
www.cybersecuritychallenge.org.uk/education/schools/

Cyber Centurion *(Cyber Security Challenge)*

In brief
CyberCenturion sits between the existing Cyber Security Challenge schools programme for secondary schools and the main Challenge competition programme and has been designed to inspire future professionals towards careers in cyber security. It is a chance for anyone interested in the world of cyber security to get their first real experience of the scenarios and challenges existing professionals have to undertake on a daily basis.   CyberCenturion is modelled after the U.S. CyberPatriot program.

Aimed at
CyberCenturion teams are made up of UK-based schools, after school clubs, scouts, cubs, guides, cadet forces teams, social clubs and must consist of one responsible Adult (the Coordinator), usually a teacher or a group leader, and between 4 – 6 students, the age range is 12 – 18 years of age.

Delivered by
Adult Team Co-ordinators

Hours of study
Teams have a window of approximately six hours each day over 3 available days, twice each year, to identify and fix vulnerabilities, patch their systems and keep them running successfully.

Find out more
http://cybersecuritychallenge.org.uk/competitors/cybercenturion/

STEM Ambassadors (*STEMNET*)

In brief
STEM Ambassadors are role models who inspire and support young people across the UK in understanding the relevance of science, technology, engineering and maths (STEM) skills in their lives, and the opportunities that studying these subjects can lead to. A growing number of STEM Ambassadors have a cyber security background. STEM Ambassadors can deliver careers talks, technical advice or practical support for STEM projects in the classroom or after school STEM clubs and speed networking with pupils, parents and teachers.

Aimed at
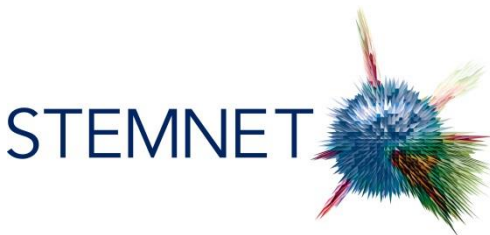Primary and secondary school and FE students

Delivered by
STEM Ambassadors – professionals and specialists in their fields

Hours of study
Flexible

Find out more
www.stemnet.org.uk

Cryptoy (*GCHQ*)

In brief
Cryptoy is a fun and educational app which teaches people about the mysterious world of cryptography. It helps them to understand ciphers and keys, and to create encrypted messages that they can share with friends. Cryptoy is suitable for use as a teaching aid.

Aimed at
Anyone with an interest, but aimed at secondary school pupils, particularly KS4.

Delivered by
Available online as an app.

Hours of study
15 minutes, used as a teaching aid.

Find out more
www.gchq.gov.uk/press_and_media/news_and_features/Pages/cryptoy-app-released.aspx

Coming Soon...

From autumn 2015, teachers of all subjects will be able to strengthen their own cyber security knowledge and skills through completing accredited on-line learning.

TechFuture Teachers professional development (*Tech Partnership and NAACE*)

In brief

A suite of 10 e-learning modules that cover all aspects of cyber security, made specifically relevant to education, will provide teachers with a route to gain level 1 Cyber Aware NAACE accreditation. Further evidence of teachers' application of the knowledge through their teaching practice (e.g. by teaching students) or involvement in cyber security practices and initiatives in school can lead to level 2 accreditation. Level 3 will be available to teachers with a leadership role in cyber security. Schools with sufficient numbers of accredited teachers, and who display exemplary approaches to cyber security, can gain NAACE Cyber Aware Institution status.

Aimed at

Teachers and other staff in schools and FE institutions

Delivered by

TechFuture Teachers and NAACE (online delivery)

Hours of study

Approximately 15 hours for level 1.

Find out more

www.techfutureteachers.com

For more general information on cyber security please visit:

www.gov.uk/government/policies/keeping-the-uk-safe-in-cyberspace

www.cyberstreetwise.com

www.getsafeonline.org.uk

Contacts us if you have any enquiries about this publication, including requests for alternative formats, at:

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