Year 4 – The Internet

Unit introduction

Learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet, and will be given opportunities to explore the World Wide Web for themselves in order to learn about who owns content and what they can access, add, and create. Finally, they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information.

Software and Hardware requirements

You will need digital devices for learners to interact with during this unit, with access to the internet. Chrome Music Lab is used in one lesson to demonstrate content which can be produced on the World Wide Web.

If you've adapted this unit to better suit your school, please share your adapted resources with fellow teachers in the STEM community. Alternatively, if this unit isn't quite right for your school, why not see if an adapted version which better suits has already been shared?

Overview of lessons

Lesson	Brief overview	Learning objectives
1 Connecting networks	Learners will explore how a network can share messages with another network to form the internet. They will consider some of the network devices involved in this, such as routers, and will also discuss what should be kept in and out of a network to keep safe.	To describe how networks physically connect to other networks • I can describe the internet as a network of networks • I can demonstrate how

		information is shared across the internet • I can discuss why a network needs protecting
2 What is the internet made of?	Learners will describe the parts of a network and how they connect to each other to form the internet. They will use this understanding to help explain how the internet lets us view the World Wide Web and recognise that the World Wide Web is part of the internet which contains websites and web pages.	To recognise how networked devices make up the internet • I can describe networked devices and how they connect • I can explain that the internet is used to provide many services • I can recognise that the World Wide Web contains websites and web pages
3 Sharing information	Learners will explore what can be shared on the World Wide Web and where websites are stored. They will also explore how the World Wide Web can be accessed on a variety of devices.	To outline how websites can be shared via the World Wide Web (WWW) • I can explain the types of media that can be shared on the WWW • I can describe where websites are stored when uploaded to the WWW • I can describe how to access websites on the WWW
4 What is a website?	Learners will analyse a website and identify the key parts. They will then consider what content can be added to websites and what factors they should consider before adding content to a website. Finally, they will use a website which enables them to create their own content online.	To describe how content can be added and accessed on the World Wide Web (WWW) • I can explain what media can be found on websites

		• I can recognise that I can add content to the WWW • I can explain that internet services can be used to create content online
5 Who owns the web?	Learners will explore who owns the content on the World Wide Web (or 'web' for short). They will explore a variety of websites and will investigate what they can and cannot do with the content on them. They will also relate this to principles of ownership and sharing in the real world.	To recognise how the content of the WWW is created by people • I can explain that websites and their content are created by people • I can suggest who owns the content on websites • I can explain that there are rules to protect content
6 Can I believe what I read?	Learners will gain an appreciation of the fact that not everything they see on the internet is true, honest, or accurate. They will review images and decide whether or not they are real, before looking at why web searches can return ambiguous (and sometimes misleading) results. Finally, learners will complete a practical activity, demonstrating how quickly information can spread beyond their control.	To evaluate the consequences of unreliable content • I can explain that not everything on the World Wide Web is true • I can explain why some information I find online may not be honest, accurate, or legal • I can explain why I need to think carefully before I share or reshare content

Subject knowledge and CPD opportunities

Teachers will need a knowledge of computer networks, including how data is routed around the internet. Teachers will need to be aware that the World Wide Web is one of many services which are offered over the internet. They will need to know the difference between a web page and a website, and a knowledge of where websites are stored. A knowledge of what content you can find on websites will also be useful. An awareness of copyright (and the reasons for it) and that people create and share false and inaccurate information is important for the last two lessons in this unit.

The YouTube video titled 'A Packet's Tale' (www.youtube.com/watch?v=ewrBalT_eBM) provides an overview of networks and the internet. That the World Wide Web is part of the internet is explained in this video: www.bbc.co.uk/newsround/47523993

Continual Professional Development

Enhance your subject knowledge to teach this unit through the following free CPD:

- Getting started in Year 4 – short course
- Teaching computing systems and networks to 5- to 11-year-olds
- Introduction to primary computing remote or face to face

Teach primary computing certificate

To further enhance your subject knowledge, enrol on the teach primary computing certificate. This will support you to develop your knowledge and skills in primary computing and gain the confidence to teach great lessons, all whilst earning a nationally recognised certificate!

Progression

This unit progresses students' knowledge and understanding of networks from that developed in the Year 3 Connecting Computers unit. In Year 5, they will continue to develop their knowledge and understanding of computing systems and understand how search engines work via the internet and the world wide web.

Common Misconceptions

A key misconception pupils face within this unit is that the internet and the World Wide Web are the same thing, which they are not. They internet is a global system of computer networks, whereas the World Wide Web is an application that runs on the internet, which can be accessed through websites. When looking at the World Wide Web, leaners may confuse search engines and browsers. Some learners may confuse Google as a browser, that 'Google' is needed to access to internet. However, a browser is a piece of software that retrieves and displays web pages, such as Chrome, Firefox, etc. In contrast, Google is a search engine that use crawlers to find specific information on the web.

You may also need to address the many misconceptions around trusting what learners see on the internet, and the issues of fake news. There is a high volume of inaccurate, misleading, or false content on the internet, which learners need to be aware of, alongside the fact search results can be influenced by adverts and sponsored content.

Curriculum links

Computing

- 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
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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 collecting, analysing, evaluating, and presenting data and information
- Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Education for a Connected World links

Managing online information

- I can analyse information to make a judgement about probable accuracy, and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others.
- I can explain what is meant by fake news, e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn't.

Relationships Education, Relationships and Sex Education (RSE) and Health Education

Online relationships

- Pupils should know how information and data is shared and used online

Internet safety and Harms

- Pupils should know how to be a discerning consumer of information online
- Pupils should know that for most people the internet is an integral part of life and has many benefits

Assessment

Formative assessment

Assessment opportunities are detailed in each lesson plan. The learning objectives and success criteria are introduced in the slide decks at the beginning of each lesson and then reviewed at the end. Learners are invited to assess how well they feel they have met the learning objective using thumbs up, thumbs sideways, or thumbs down.

Summative assessment

Please see the summative assessment document of multiple-choice questions for this unit. This can be downloaded as a paper copy, with answers, or in a digital format to be shared.

Resources are updated regularly — the latest version is available at: ncce.io/tcc.

Attribution statement

This resource was created by Raspberry Pi Foundation and updated by STEM Learning for the National Centre for Computing Education.

The contents of this resource are available for use under the Open Government License (OGL v3) meaning you can copy, adapt, distribute and publish the information. You must acknowledge the source of the Information in your product or application, by attributing Raspberry Pi Foundation and STEM Learning as stated here and are asked to provide a link to the OGL v3.

The original version can be made available on request via info@teachcomputing.org.