Year 6 – Communication and collaboration

Unit introduction

In this unit learners explore how data is transferred over the internet. Learners initially focus on addressing, before they move on to the makeup and structure of data packets. Learners then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of communication. Finally, they learn how to communicate responsibly by considering what should and should not be shared on the internet.

Note: Some of the content in this unit was previously included in the Year 5 – 'Computer systems and networks' unit, so some learners may have already completed similar activities. Where this is the case, the context for the activity has been changed.

Overview of sessions

Session	Brief overview	Learning objectives
L1 Internet addresses	Learners explore what is necessary for effective communication and the importance of agreed protocols. They apply this understanding to IP addresses and the rules (protocols) that computers have for communicating with one another. Learners also use a Domain Name Server (DNS) to translate web addresses into IP addresses.	To explain the importance of internet addresses • I can recognise that data is transferred using agreed methods • I can explain that internet devices have addresses • I can describe how computers use addresses to access websites

L2 Data packets	Learners are introduced to the concept of packets. They complete an activity based on transferring an image across the internet, to see that as well as messages (text), other types of data (images, video, and audio) are also transferred over the internet. They gain an understanding of the key parts of a packet: the header and the data payload.	To recognise how data is transferred across the internet • I can identify and explain the main parts of a data packet • I can explain that data is transferred over networks in packets • I can explain that all data transferred over the internet is in packets
L3 Working together	Learners consider how people can work together when they are not in the same location. They discuss ways of working and complete a collaborative online project. The online activity assumes that learners can make simple slides, including text and images. If your learners are unsure how to do this, you may wish to spend some time on the Year 3 – 'Desktop publishing' unit before this session.	To explain how sharing information online can help people to work together • I can recognise how to access shared files stored online • I can send information over the internet in different ways • I can explain that the internet allows different media to be shared
L4 Shared working	Learners are introduced to another approach to online working: reusing and modifying work done by someone else. (**Note:** Using someone else's work needs to be within the bounds of copyright and with the relevant permissions.) This session involves the Scratch programming tool, which allows learners to use other people's work.	To evaluate different ways of working together online • I can identify different ways of working together online • I can recognise that working together on the internet can be public or private • I can explain how the internet enables effective collaboration

L5 How we communicate	Learners deepen their understanding of the term 'communication'. They explore different methods of communication, before they consider internet-based communication in more detail. Finally, learners evaluate which methods of communication suit particular purposes.	To recognise how we communicate using technology • I can explain the different ways in which people communicate • I can identify that there are a variety of ways to communicate over the internet • I can choose methods of communication to suit particular purposes
L6 Communicating responsibly	Learners use information provided in the session and their own prior knowledge to categorise different forms of internet communication. They then choose which method(s) they would use for the scenarios discussed in the previous session. Through these activities, learners explore issues around privacy and information security.	To evaluate different methods of online communication • I can compare different methods of communicating on the internet • I can decide when I should and should not share information online • I can explain that communication on the internet may not be private

Progression

This unit progresses learners' knowledge and understanding of computing systems and online collaborative working.

Please see the learning graph for this unit for more information about progression.

Curriculum links

National curriculum links

- 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
- 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

- I can describe and assess the benefits and the potential risks of sharing information online.
- I can assess and justify when it is acceptable to use the work of others
- I can give examples of content that is permitted to be reused

Assessment

Summative assessment

- Please see the assessment question and answer documents for this unit.

Subject knowledge

In this unit, you will need to have an understanding of the way data is sent over the internet. Some key terms you will need to be familiar with are Internet Protocol (IP) addresses; Domain Name Server (DNS); and data packets, including the main parts of a packet (header and data payload). The terms are discussed in more detail within the session plans.

Part of this unit focuses on collaboration over the internet. These activities assume the use of Google Slides, a free web-based app, which is part of Google Workspace for Education. You will need a school Google account to access this. If your school doesn't have Google Workspace, you can sign up for a free account. Alternative collaborative presentation tools are available, such as Microsoft PowerPoint used with Office 365. However, if you wish to use different software, the session slides will need to be adapted to suit any changes.

We recommend the use of teacher accounts in Scratch for certain activities within this unit. For guidance on setting up teacher accounts, please visit the Scratch website. (https://scratch.mit.edu/educators/faq). It is possible for learners to make changes without 'remixing' the activities, however these changes will not be saved.

Enhance your subject knowledge to teach this unit through the following training opportunities:

Online training courses

If you are a teacher in England, you should access our online courses via the Teach Computing website:

- Get Started Teaching Computing in Primary Schools: Preparing to Teach 5- to 11-Year-Olds - this course provides a general introduction to teaching computing to 5- to 11-year-olds and is suitable for teachers who are new to teaching computing or would like to refresh their subject or pedagogical knowledge.
- Teaching Computing Systems and Networks to 5- to 11-Year-Olds - this course will help you improve your subject knowledge and develop your teaching to help young children understand the computing systems and networks around them.

If you are not a teacher in England, you can still access our online courses via the FutureLearn website:

- Get Started Teaching Computing in Primary Schools: Preparing to Teach 5- to 11-Year-Olds
- Teaching Computing Systems and Networks to 5- to 11-Year-Olds

Face-to-face courses

- National Centre for Computing Education face-to-face training courses (filter by face-to-face or live remote)

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