

Communicating Level 5 - 6

From level 5, pupils learn to:	To level 6, pupils learn to:
Select appropriate methods of exchanging digital information and recognise that the format affects the method of exchange	Recognise and describe the technical limitations and strengths associated with a range of digital communication methods
Typically, pupils can:	Typically, pupils can:
Choose a file format based on the purpose of the task and the chosen method of exchanging information, e.g. consider file type, compatibility with recipient's software, file size, recipient's download capacity and technology	Demonstrate an understanding of technical issues when sharing information for specific purposes, e.g. compression techniques for images, ZIP files, refresh rates, video streaming, bandwidth, WiFi, RSS data feeds
	Typical activity
Activity	Pupils undertake a series of comparisons of transmitted information. They receive and open large ZIP files. They compare the time it takes to transmit zipped and unzipped files. They open image files that have been compressed in different ways and compare the effect of compression technique on image resolution and quality.
Activities that will result in a step change	Pupils investigate and make decisions about different methods of exchanging large files, e.g. sending an email with a link to a large uploaded file, and zipping files. They investigate folder structures when using ZIP files.
Key questions (to help make a judgement about appropriateness and understanding)	<p>Why is it important to reduce file size?</p> <p>Is it always a good idea to compress a file?</p> <p>What is the significance of bandwidth figures quoted by ISPs?</p> <p>What file types may be blocked by anti-virus software?</p>
Common misconceptions: pupils sometimes think...	<p>Bandwidth is no longer an issue.</p> <p>ZIP files are always small files.</p> <p>When zipping up files, you lose the folder structure.</p> <p>Compression reduces the resolution of an image.</p> <p>Video streaming is the means of downloading a video file.</p>

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From level 5, pupils learn to:	To level 6, pupils learn to:
Use digital communications for the sharing and collaborative development of ideas for a variety of purposes	Use a range of tools to automate the sharing of information and communication for a range of purposes
Typically, pupils can:	Typically, pupils can:
Use ICT to collaborate and develop ideas responsibly using several methods, e.g. email groups, wikis, forums using given protocols	Use automated facilities, such as mail merge, email lists and RSS feed creation, to make the sharing of information more efficient, e.g. when podcasting school news information on the school's website
	Typical activity
Activity	Pupils investigate how to automate using different RSS feeds and automated forum emails. They explore the difference between using 'reply to all' and 'reply' in emails.
Activities that will result in a step change	Pupils post to a forum and receive an email to confirm the posting. They link RSS feeds to a web page. They populate a contact list and use this to send out a questionnaire to collect information.
Key questions (to help make a judgement about appropriateness and understanding)	<p>When should online groups be used?</p> <p>How can sending emails get you into trouble?</p> <p>Why are RSS feeds useful?</p>
Common misconceptions: pupils sometimes think...	<p>The more emails you send, the longer it takes.</p> <p>If group email lists are used, you should always use 'reply to all'.</p>

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From level 5, pupils learn to:	To level 6, pupils learn to:
Work in a safe and responsible way when communicating with others	Be responsible, safe and secure in all communications
Typically, pupils can:	Typically, pupils can:
Make informed decisions about safe and responsible practices, while respecting others, e.g. what personal information to share, downloading from unknown websites, respecting copyright, the need for virus control	Incorporate safe practice and discuss issues of security of information exchange in all communication, e.g. considerations relating to backups, treating unknown sources with caution, encryption, firewalls, virus control, blocking EXE files, sending ZIP files
	Typical activity
Activity	Pupils research examples of computer viruses. What was the most widely damaging virus of last year and what was its effect? What is the estimated number of users that were affected? How are the originators traced?
Activities that will result in a step change	Pupils write a simple one-page pamphlet on protecting your computer. They keep this under review and update it as their understanding grows.
Key questions (to help make a judgement about appropriateness and understanding)	<p>Should you always forward emails to others when encouraged to do so (by a sender you do or do not know)?</p> <p>How do viruses get into your computer?</p> <p>How does anti-virus software work? What is the difference between anti-virus software and a firewall?</p> <p>How does spyware work?</p> <p>Why should you make frequent backups?</p>
Common misconceptions: pupils sometimes think...	<p>If you install anti-virus software, your computer will not get a virus.</p> <p>It is easy to hide where you have been on the internet.</p>