Pearson Edexcel
International GCSE Information Communication Technology (ICT)

How to use the scheme of work

This scheme of work (SoW) has been made available as a Word document rather than PDF, allowing you to edit the document in a way that suits your teaching style and student needs.

International GCSEs have 120 guided learning hours.

Guidance provided within the course planners, schemes of work and lesson plans are suggested approaches that centres can adapt to suit their particular context.

The course planners in our *Getting Started Guide* provide alternative recommendations on the order of approach across two years.

Introduction: The scheme of work uses a blended approach, delivering theory and practical sessions in each term, giving students the opportunity to develop concurrently skills and knowledge. The order of skills allows students to apply skills learned earlier to those introduced later in the scheme of work. For example, file management is taught first to allow students to develop good practice in this area, which will support their work later. Graphics is then taught so that the products and skills developed can be used in the subsequent presentation and web authoring sections of the scheme of work. Opportunities are provided for students to consolidate their understanding through practical activities and sessions are built in that focus on developing students' exam technique, including understanding different question types and time for revision and practice papers.

The columns in this lesson plan indicate:

- an overview of lessons (timing should be adjusted for shorter or longer lesson times)
- the learning objectives for those lessons
- the learning outcomes of those lessons
- specification coverage and activities
- transferable skills support (more information on this can be found below).

Why transferable skills?

In recent years, higher education institutions and global employers have consistently flagged the need for students to develop a range of transferable skills to enable them to respond with confidence to the demands of undergraduate study and the world of work. To support the design of our qualifications, we have mapped them to a transferable skills framework. The framework includes cognitive, intrapersonal skills and interpersonal skills and each skill has been interpreted for each specification to ensure they are appropriate for the subject. Further information on transferable skills is available on the website. Pearson materials, including this scheme of work, will support you in identifying and developing these skills in students.

In the final two columns of this scheme of work we have indicated which transferable skills are explicitly assessed, and also where there are opportunities for them to be developed through teaching. Our intention is that teachers can use these columns to increase opportunities for transferable skills development in students.

Year 1 Term 1

Lesson	Learning objective In this lesson students are learning about:	Learning Outcomes: At the end of this lesson students will be able to:	Specification coverage and activities	Which skills acquired in this lesson are explicitly assessed through examination?	Which skills could be acquired through teaching and delivery in this lesson?
1-2	File management.	Save work regularly and keep information secure. Use sensible filenames and formats. Create and manage files and folder structures.	6.7.1, 6.7.2, 6.7.3 Set up folders for subjects. Discuss consequences of not saving work regularly. Review different naming conventions for files.	Adaptive Learning Self-direction	Executive Function Adaptability Adaptive learning Innovation
3-4	Mainframe computers, microprocessors, Personal Computers.	Describe the purpose and use of mainframe computers and microprocessors. Describe the difference between laptops and desktop computers.	1.1.1, 1.1.2 Investigate features of mainframes, microprocessors, desktops and laptops.	Problem solving Critical thinking	Adaptability
5-6	Processors.	Describe the function of the CPU. State how the speed of a processor is measured.	1.7.1, 1.7.2 Research and then create a diagram to show the function of the CPU. Investigate the speed and number of cores of the CPUs in different digital devices. Compare the effect of CPU speed and cores on performance.	Problem solving Critical thinking	Initiative Self-direction

7-8	Types of mobile phones and tablets.	Compare different types of mobile phone and tablet devices.	1.1.3, 1.1.4 Research and rank mobile phones according to their technical specifications.	Problem solving Critical thinking	Initiative Self-direction
9-10	Personal digital devices.	Describe the purpose and use of a range of digital devices including navigation aids.	1.1.5, 1.1.6 Investigate the use of various devices by themselves and by others.	Problem solving Critical thinking	Initiative Self-direction
11-12	Convergence and multifunctional devices.	Explain ways in which the convergence of different devices' features leads to multifunctional devices.	1.1.7 Analyse the features of various single function and multifunctional devices.	Problem solving Critical thinking	Analysis
13-14	Features of digital devices. How ICT systems can meet specified needs.	Discuss the features of digital devices. Understand that settings of ICT systems can be configured to meet the accessibility needs of individuals. Be able to justify choices made in identifying and configuring hardware and software.	1.2.1, 1.2.2, 1.8.1, 1.8.3, 1.8.4 Investigate specialist devices for people with particular and special needs.	Problem solving Critical thinking Interpretation	Problem solving
15-16	How mobile devices use SIMs to connect to networks.	Compare the different features of mobile phone networks.	1.1.3 Consider benefits and drawbacks of different types of mobile phone networks.	Problem solving Critical thinking	Self-direction
17-18	The purpose of systems software and applications software. Operating systems and system software tools.	Identity the purpose of systems software. Know about operating systems and system tools such as utilities.	1.3.1, 1.3.2 Investigate the purpose of systems software, the operating system and applications software.	Problem solving Critical thinking	

19-20	Bitmap vs Vector graphics. Creating vector graphics.	Explain features of bitmap and vector graphics. Create a graphic product, making effective use of vector graphic tools.	5.1.1, 5.1.2, 6.6.1, 6.6.2 Analyse examples of vector and bitmap graphics. Identify ways in which they are used and discuss why they are each suitable for different uses. Recreate a logo for a familiar brand.	Decision making	Executive function Adaptability Adaptive learning Creativity Interpretation Problem solving Analysis
21-22	The role/function of the operating system.	Describe the role/function of the operating system.	1.3.3 List the main roles of an operating system and investigate the function of each role.	Problem solving Critical thinking	
23-24	Editing bitmap graphics.	Edit bitmap images, making effective use of bitmap image editing tools.	5.1.1, 5.1.2, 6.6.3 Edit existing bitmap graphics to create a poster for a music event.	Decision making	Executive function Adaptability Adaptive learning Creativity Interpretation Problem solving
25-26	The purpose and use of application software.	Describe the purpose and use of a range of application software.	1.3.4, 1.3.6, 1.8.2 Experiment with a range of types of application software. Consider how they can be used to complete particular tasks.	Problem solving Critical thinking	Initiative Problem solving
27-28	Types of software licence.	Explain the need for a software licence. Describe the characteristics of the free/open source and proprietary licences.	1.3.5, 1.3.7 Categorise a range of application and system software into the two main types of licence. Discuss the benefits and drawbacks for developers and users of the key features of the two types of	Reasoning Problem solving Critical thinking	Initiative Self-direction

			licence.		

Year 1 Term 2

Lesson	Learning objective In this lesson students are learning about:	Learning Outcomes: At the end of this lesson students will be able to:	Specification coverage and activities	Which skills acquired in this lesson are explicitly assessed through examination?	Which skills could be acquired through teaching and delivery in this lesson?
1-2	Memory.	Expand the acronyms RAM and ROM. Describe the characteristics of RAM and ROM, and the impact on the user of the size of RAM.	1.6.1, 1.6.2, 1.6.3 Compare the characteristics of RAM ROM and flash memory.	Problem solving Critical thinking	Critical thinking
3-6	Presentation software. Applying ICT.	Create master slides. Create and print content slides Make effective use of presentation software features. Produce information that is fit for purpose and audience.	5.1.1, 5.1.2, 5.3.1, 6.5.1, 6.5.2, 6.5.3 Create a presentation for a teacher of 8-year-olds to use when teaching them about digital devices.	Decision making Self-regulation (metacognition, forethought, reflection)	Adaptability Innovation Interpretation Problem solving
7-9	Input and Output peripherals.	Know about types of input and output peripheral and identify peripherals for particular needs.	1.4.1, 1.4.2, 1.8.1 Create digital posters that include the characteristics and uses of a range of peripheral devices.	Problem solving	Creativity Critical thinking
10-13	Storage peripherals.	Identify storage peripherals for particular needs. Differentiate between storage devices and storage media and describe their characteristics.	1.5.1, 1.5.2, 1.5.3, 1.5.4, 1.5.5, 1.5.6, 1.8.1 Test the transfer speeds of different storage devices for a range of purposes under various conditions.	Problem solving Critical thinking	Interpersonal skills Critical thinking Interpretation

		Use accurately the terms describing the capacity of storage.	Research and discuss when they would be suitable and unsuitable for use.		
14-15	Types of digital communications.	Describe how and explain why digital devices communicate device to device and by using networks.	2.1.1, 2.1.2 Investigate communication methods and how they are used to connect devices directly and using networks.	Reasoning Problem solving Critical thinking	Critical thinking
16-17	Wireless communication.	Describe how different methods of wireless communication can be used: Compare Wi-Fi and Bluetooth and explain when each is best used.	2.1.3, 2.1.4 Investigate wireless communication technologies and how they are used to connect devices directly and using networks.	Problem solving Critical thinking	Critical thinking Problem solving
18-19	Requirements for connecting to a network.	State the features of network operating systems and describe how devices are identified on a network. Describe the function of components of wired and wireless systems.	2.3.1, 2.3.2 Create a table that compares the features of a network operating system to a stand-alone operating system. Identify the name, an IP address and MAC address of devices on a network. Research the components of network systems and create a labelled diagram of a network that includes these components: PCs, smartphones, cable, wireless access point, router, gateway, booster, and server.	Problem solving Critical thinking	Critical thinking Interpretation
20	Requirements for connecting to the internet.	Describe the role of these for connecting to and using the internet: • web browser • ISP • search engine	2.3.3 Extend the network diagram from before to include these: • web browser • ISP • search engine	Problem solving Critical thinking	Creativity Critical thinking

		• filter software.	• filter software Include a written description of how they are used for connecting to and using the internet.		
21	Data and information.	Describe how data and information are different.	5.2.1 Gather data (e.g. the height of a group of people). Analyse the data and apply meaning, producing a graph. Display information based on the data gathered.	Problem solving Critical thinking	Analysis Initiative Self-direction
22	Database management - Data types and structures.	Identify data types and explain the structure of a database.	6.2.1, 6.2.2 Investigate the fields that would need to be used to store data about an individual, a destination and a holiday that an individual could take to a destination. Identify the data types that could be used for the fields.	Interpretation Executive function	Innovation
23	Database management - Data structures.	Create the structure for a database.	6.2.2 Plan the structure for a database for a travel agency including primary keys, foreign keys, and their relationships. Create an entity relationship diagram. (Example of tables: customer, destination, holiday.)	Critical thinking Interpretation Executive function	Executive function Adaptability Adaptive learning Creativity
24-26	Database management - Data structures, validation, data input and output.	Create the structure for a database and explain the need for validation. Input and sort data. Produce output.	6.2.5 Create a table to hold the details of holidays. 6.2.3 Identify the need for validation and identify validation checks that can be	Self-regulation (metacognition, forethought, reflection)	Executive function Adaptability Adaptive learning Creativity Innovation

			used during data entry. 5.2.2, 6.2.5 Create a form to populate the table and then edit data in the table. 6.2.4 Sort the data within the table. 6.2.7 Output the table in design view.		
27	Database management - Querying data.	Use search/query.	6.2.6 Create simple queries that use relational and logical operators to select data from the tables produced earlier.	Self-regulation (metacognition, forethought, reflection)	Executive function Adaptability Adaptive learning Creativity
28	Database management - Outputting data.	Produce a report.	6.2.7 Produce a report to summarise the results of the queries created earlier.	Critical thinking Interpretation Executive function	Executive function Adaptability Adaptive learning Creativity

Year 1 Term 3

Lesson	**Learning objective** In this lesson students are learning about:	**Learning Outcomes:** At the end of this lesson students will be able to:	**Specification coverage and activities**	**Which skills acquired in this lesson are explicitly assessed through**	**Which skills could be acquired through teaching and delivery in this lesson?**

				examination?	
1-2	Factors influencing the choice of digital communication in a network.	Describe factors that influence the speed and volume of data transfer. Describe the benefits and drawbacks of wired versus wireless communication in local networks. Describe the features of broadband, mobile broadband and cellular networks.	2.2.1, 2.2.2, 2.2.4 Carry out a speed test on the internet connections of both fixed line and mobile broadband devices. Discuss any differences or similarities. Investigate and then create a presentation that describes the benefits and drawbacks of wired and wireless networks.	Problem solving Critical thinking Interpretation	Critical thinking
3-4	Impact of the choice of digital communication on the user experience.	Explain the significance of bandwidth and latency.	2.2.3 Investigate the ways in which bandwidth and latency impact on user experience in home and office environments.	Problem solving Critical thinking Interpretation	Initiative Self-direction
5-6	Benefits of using a LAN/home network.	Describe peer-to-peer and client-server networks. Explain the role of servers. Describe the benefits of using local area network. Understand the benefits of using a client-server network.	2.4.1, 2.4.2, 2.4.3, 2.4.4 Create a small network using a switch and three laptops. Compare it to a client server network in your school. Have a 'field trip' to the server room of your school. Produce a matching exercise that compares the features of peer-to-peer and client-server networks. Investigate and then create a presentation that describes the benefits to users of using a LAN and client-server network.	Problem solving Critical thinking Interpretation	Initiative Self-direction

7-10	Web authoring.	Use a template. Format a web page. Use HTML code.	6.4.1, 6.4.2, 6.4.3, 6.4.4 Create a website that summarises the key points from topics covered so far this year. Keep adding to it as the course progresses.	Self-regulation (metacognition, forethought, reflection)	Executive function Adaptability Adaptive learning Creativity Innovation
11-12	Securing data.	Describe the use of log-ins and passwords, firewalls, WEP/WPA, encryption, VPN, file access rights, transaction logs and backups. Select suitable methods of securing data for a particular context.	2.5.1, 2.5.2 Investigate different methods of securing data. Carry out some 'code making/breaking' (encryption/decryption) activities.	Critical thinking Personal and social responsibility	Problem solving
13-14	Exam technique: Short and open questions.	Interpret command words and question structures (including stems). Structure appropriate responses.	Analyse the key features of short and open questions and methods for responding.	N/A	Interpretation Analysis
15	Potential risks to data and personal information.	Describe risks to data and information. Describe methods for securing data and personal information online.	3.1.1, 3.1.2 Produce a fact sheet for students to make them aware of the risks to data and the methods available to reduce those risks.	Personal and social responsibility	Interpretation
16		Describe the use of online payment systems, bank cards, contactless payments and how payments are protected.	3.1.3 Investigate how payment systems are used and the methods used to secure payments.	Personal and social responsibility	Initiative Self-direction
17-18	Availability of information online and the use of online	Describe how information can be gathered from a wide range of sources. Select and use appropriate	3.9.1 – 3.9.6 Gather information for a report on climate change.	Interpretation Personal and social responsibility	Interpretation Initiative Self-direction

	information.	sources of information. Use search engines effectively. Evaluate the fitness for purpose of available information in terms of accuracy, age, relevance, reliability, bias. Discuss issues related to copyright and plagiarism.			
19-24	Word processing Applying ICT.	Enter, organise, develop, refine and format information. Bring together different types of information to achieve a purpose. Use styles appropriately, including serif and sans serif fonts and colour choices. Work accurately and proofread, using software facilities where appropriate for the task.	6.1.1, 6.1.2, 6.1.3, 6.1.4, 6.1.5, 6.1.6, 6.1.7, 6.1.8, 5.2.3, 5.2.4, 5.3.2, 5.3.3 Produce a report on climate change.	Decision making Self-regulation (metacognition, forethought, reflection)	Executive function Adaptability Adaptive learning Creativity Innovation Interpretation Critical thinking Problem solving
25	Exam technique – Extended questions.	Interpret command words and question structures (including stems). Structure appropriate responses.	Analyse the key features of extended questions and methods for responding.	N/A	Interpretation Analysis
26-27	Practice theory paper.				
28	Feedback from Practice theory paper.				Continuous learning

Year 2 Term 1

Lesson	Learning objective In this lesson students are learning about:	Learning Outcomes: At the end of this lesson students will be able to:	Specification coverage and activities	Which skills acquired in this lesson are explicitly assessed through examination?	Which skills could be acquired through teaching and delivery in this lesson?
1-2	Types of online community.	Describe key features of online communities. Work safely and responsibly when using ICT.	3.6.1, 3.8.4 Create accounts with a range of types of communities, set appropriate privacy/security settings. Add classmates to your network and share content.	Problem solving Critical thinking Interpretation	Interpersonal skills
3-9	Spreadsheets.	Format a worksheet. Use formulae and functions: SUM, AVERAGE, IF, VLOOKUP /LOOKUP, MAXIMUM, MINIMUM, COUNT (COUNTA, COUNTIF), LENGTH, PRODUCT. Use multiple worksheets, linked tables, sorting and filtering. Select, add and format graphs and charts. Set print options and print outputs.	6.3.1, 6.3.2, 6.3.3, 6.3.4, 6.3.5, 6.3.6, 6.3.7, 6.3.8 Create a spreadsheet that produces a unique username for students in the class and totals their grades from different tests, producing a report with an overall grade calculated from the maximum test mark and based on a grade lookup table.	Self-regulation (metacognition, forethought, reflection)	Executive function Adaptability Adaptive learning Creativity Innovation
10-12	Use of online communities.	Describe the functions and target audience of different forms of online communities.	3.7.1, 3.7.2, 3.7.3, 3.7.4 Create user guides for new users that explains the uses for different types of online communities and	Personal and social responsibility	Creativity Innovation

		Understand the ways in which online communities are used to communicate and collaborate on a global scale. Be aware of the purpose of responsible use and acceptable behaviour policies. Understand how to stay safe online.	how to stay safe online. Produce an acceptable behaviour policy for different types of community.		
13-15	Practice practical paper.				
16	Feedback from practical paper.				Continuous learning
17-18	Implications of the use of digital technologies.	Know about data protection, the legal requirements of those storing data about individuals and an individual's legal rights. Understand how copyright legislation affects the use of digital information and media.	3.8.1, 3.8.2 Investigate copyright and data protection laws in different countries and any reciprocal agreements that may exist. Create a poster that highlights the key points.	Personal and social responsibility Problem solving Critical thinking Interpretation	Initiative Self-direction Critical thinking Creativity
19-20		Understand that individuals' movements and communications can be monitored.	3.8.3 Investigate the different ways in which movements and communication can be monitored. Collaborate to produce a web page that highlights the key points.	Personal and social responsibility Problem solving Critical thinking Interpretation	Initiative Self-direction Collaboration Interpersonal skills
21-22		Understand sustainability issues and ways of	3.8.5 Write a formal letter to your	Personal and social	Creativity Innovation

		mitigating the environmental impact of digital devices.	government, highlighting the issues that affect your country and the wider planet, suggesting ways to mitigate the impact of the use of digital devices.	responsibility Problem solving Critical thinking Interpretation	
23-24		Understand the health and safety issues that arise from individuals' use of ICT and know how they can be minimised.	3.8.6 Produce a series of posters highlighting the ways to minimise the health and safety risks associated with the use of ICT.	Personal and social responsibility	Creativity Innovation
25-28	Reviewing outcomes.	Review the outcomes of the use of software applications by comparing the digital product with the original requirements. Identify strengths and weaknesses in a digital product and suggest possible improvements. Make modifications to improve the outcomes. Evaluate the selection, use and effectiveness of ICT tools and facilities used.	5.4.1, 5.4.2, 5.4.3, 5.4.4 Classmate peers review a range of products, provide constructive criticism and improve the outcomes. Analyse existing evaluations and identify key features. Produce an evaluation of practical tasks carried out during the course so far.	Responsibility Self-regulation Perseverance	Executive function Reasoning/argumentation Analysis Interpersonal skills

Year 2 Term 2

Lesson	**Learning objective** In this lesson students are	**Learning Outcomes:** At the end of this lesson students will be able to:	**Specification coverage and activities**	**Which skills acquired in this lesson are explicitly**	**Which skills could be acquired through teaching and**

	learning about:			**assessed through examination?**	**delivery in this lesson?**
1-2	Revision.				Continuous learning
3-6	Mock exams.				
7-8	Feedback from mocks.				Continuous learning
9-10	Types of service.	Describe key examples of online services. Describe the features and characteristics of online services and local services.	4.1.1, 4.2.5 Produce a presentation highlighting features and characteristics of key online services.	Problem solving Critical thinking Interpretation	Creativity Innovation
11-13	Impact of services.	Discuss the impact on an individual's lifestyle and behaviour of the availability of goods and services online. Discuss the impact of the internet on the ways that organisations do business.	4.2.1, 4.2.2 Create two tables, one that lists the online services used by individuals and one by organisations. In each table, create a second column where you can.	Problem solving Critical thinking Interpretation	Critical thinking Interpretation
		Describe how transactional data is collected and used: what is collected, cookies, transaction tracking. Describe targeted marketing and personalisation techniques.	4.2.3, 4.2.4 Investigate how websites use cookies to personalise the user experience and target advertisements. Investigate 'filter bubbles' that may limit the scope of information presented to individuals.	Problem solving Critical thinking Interpretation	Initiative Self-direction

14-15	Online software.	Describe the features and characteristics of online storage and software & local storage and software. Explain the impact of cloud-based services: hosted applications, storage.	4.3.1, 4.3.2, 4.3.3 Produce a table that compares the features of hosted and local storage and software. Investigate the impact for individuals and organisations.	Problem solving Critical thinking Interpretation	Critical thinking Interpretation
16-17	Online working from home.	Describe how the availability of digital devices and the internet enables individuals to work from home. Explain the benefits and drawbacks of working from home for individuals and organisations.	3.3.1, 3.3.2 Write a proposal from an employee requesting their employer allow them to work from home, including how the internet enables them to do so. Create a reply from the employer that explains the benefits and drawbacks for the organisation and the employee and concludes with a decision.	Problem solving Critical thinking Interpretation	Creativity Innovation
18-21	Impact of the internet on individuals.	Discuss the impact on employment. Discuss the impact on working practices. Better access to information and services. Discuss about social impacts. Describe how to stay safe online.	3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5 Research the key areas from the specification. Then prepare for and take part in a debate about the impact of the internet on individuals.	Analysis Personal and social responsibility Problem solving Critical thinking Interpretation	Initiative Self-direction Assertive communication
22-24	Impact of the internet on organisations.	Discuss positive and negative impacts.	3.4.1, 3.4.2 Research and discuss the benefits to organisational communication, access to global markets and workforce and the changes in the way information is managed and used. Research and discuss the drawbacks	Analysis Problem solving Critical thinking Interpretation	Initiative Self-direction Interpersonal skills Assertive communication

			of security issues, risk of hacking and increased competition. Prepare for and take part in a debate.		
25-28	Impact of the internet on society.	Discuss the impact on society of the ability of individuals to have less-restricted access to networks at any time. Explain the gap between information rich and information poor. Discuss the causes and implications of unequal access to ICT (locally, globally). Discuss the impact on individuals and communities of limited or no access to digital technologies. Discuss the impact of changes in ways of socialising.	3.5.1, 3.5.2, 3.5.3, 3.5.4, 3.5.5 Investigate the causes and effects of the digital divide. Create a mind map that highlights the causes and effects of the digital divide and its impact on society.	Analysis Problem solving Critical thinking Interpretation Personal and social responsibility	Initiative Self-direction

Year 2 Term 3

Lesson	**Learning objective** In this lesson students are learning about:	**Learning Outcomes:** At the end of this lesson students will be able to:	**Specification coverage and activities**	**Which skills acquired in this lesson are explicitly assessed through examination?**	**Which skills could be acquired through teaching and delivery in this lesson?**
1-2	Practice theory paper.				Continuous learning

3-4	Feedback from Practice theory paper.
5-28	Exams leave.