

DIGITAL TECHNOLOGY LESSON NOTES

Class: JSS2 | First Term

WEEK 1: REVISION OF JSS1 WORK

Duration: 40 minutes

Topic: Recall ICT Basics, File Management, Coding, and Presentations

INTRODUCTION (5 minutes)

Welcome students back and explain that this week focuses on refreshing their knowledge from JSS1 to build a strong foundation for new concepts.

STEP 1: TOPIC (2 minutes)

Main Topic: Comprehensive Review of JSS1 Digital Technology Concepts **Sub-topics:**

- Basic ICT terminology and concepts
- File organization and management systems
- Introduction to coding principles
- Presentation software fundamentals

STEP 2: EXPLANATION (15 minutes)

ICT Basics Review:

- **Information Technology (IT):** The use of computers and telecommunications to store, retrieve, and transmit data
- **Hardware vs Software:** Physical components (keyboard, monitor) versus programs and applications
- **Data vs Information:** Raw facts (data) become meaningful when processed (information)

File Management Recap:

- **File:** A collection of related data stored with a specific name and extension (.docx, .jpg, .mp4)
- **Folder/Directory:** Container that organizes files into groups
- **File Path:** The location route to find a specific file (C:\Documents\MyFile.docx)

- **File Operations:** Creating, copying, moving, renaming, and deleting files

Basic Coding Concepts:

- **Algorithm:** Step-by-step instructions to solve a problem
- **Programming:** Writing instructions for computers using specific languages
- **Sequence:** Instructions executed in order
- **Input/Output:** Data going into and coming out of programs

Presentation Fundamentals:

- **Slides:** Individual pages in a presentation
- **Multimedia Elements:** Text, images, audio, video, and animations
- **Design Principles:** Consistency, contrast, and clarity in slide creation

STEP 3: COMPARISON (8 minutes)

Traditional vs Digital Methods:

- **File Storage:** Physical filing cabinets vs digital folders
- **Information Sharing:** Hand-written notes vs email/cloud sharing
- **Problem Solving:** Mental calculations vs algorithmic approaches
- **Presentations:** Poster boards vs digital slide shows

Different File Types:

- **Text Files:** .txt, .docx, .pdf
- **Image Files:** .jpg, .png, .gif
- **Audio Files:** .mp3, .wav
- **Video Files:** .mp4, .avi

STEP 4: CONCLUSION (5 minutes)

Students should now recall fundamental ICT concepts, understand basic file management principles, remember simple coding logic, and recognize presentation software capabilities.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Define ICT and give three examples of ICT tools
2. Explain the difference between data and information with examples
3. List four file operations you can perform on a computer
4. What is an algorithm? Give a simple example
5. Name three multimedia elements you can include in a presentation

WEEK 2: COMPUTER HARDWARE (TYPES & FUNCTIONS)

Duration: 40 minutes

Topic: Identify Input, Output, Storage, and Processing Devices

INTRODUCTION (5 minutes)

Explain that computer hardware consists of physical components that work together to make computing possible, and these can be categorized by their specific functions.

STEP 1: TOPIC (2 minutes)

Main Topic: Computer Hardware Components and Classifications **Sub-topics:**

- Input devices and their functions
- Output devices and their purposes
- Storage devices and data retention
- Processing units and computation

STEP 2: EXPLANATION (15 minutes)

Input Devices (Data Entry):

- **Keyboard:** Primary text input device with alphanumeric and function keys
- **Mouse:** Pointing device for navigation and selection with left/right click buttons
- **Microphone:** Audio input device for recording sound and voice commands
- **Camera/Webcam:** Visual input device for capturing images and video
- **Scanner:** Device that converts physical documents into digital format
- **Touchscreen:** Combined input/output device responding to finger or stylus touch

Output Devices (Data Display):

- **Monitor/Display:** Visual output showing text, graphics, and video content
- **Printer:** Produces physical copies of digital documents (inkjet, laser types)
- **Speakers:** Audio output devices for sound, music, and voice playback
- **Headphones:** Personal audio output devices
- **Projector:** Large-scale visual display for presentations and group viewing

Storage Devices (Data Retention):

- **Hard Disk Drive (HDD):** Primary internal storage with magnetic disk technology
- **Solid State Drive (SSD):** Faster storage using flash memory chips

- **USB Flash Drive:** Portable external storage device
- **CD/DVD:** Optical storage media (though becoming less common)
- **Memory Cards:** Small removable storage (SD cards, microSD)

Processing Devices (Computation):

- **Central Processing Unit (CPU):** Main processor executing program instructions
- **Graphics Processing Unit (GPU):** Specialized processor for visual and graphic tasks
- **Random Access Memory (RAM):** Temporary storage for active programs and data
- **Motherboard:** Main circuit board connecting all components together

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Input vs Output Devices:

- **Input:** Sends data TO the computer (keyboard typing, mouse clicking)
- **Output:** Receives data FROM the computer (screen displaying, printer printing)
- **Dual Function:** Some devices do both (touchscreen, smartphone)

Storage Types Comparison:

- **Primary Storage (RAM):** Fast, temporary, loses data when power off
- **Secondary Storage (HDD/SSD):** Slower, permanent, retains data without power
- **Portable vs Fixed:** USB drives (moveable) vs internal drives (permanent installation)

Processing Power Levels:

- **Basic Tasks:** Simple CPU sufficient for word processing, web browsing
- **Advanced Tasks:** Powerful CPU + GPU needed for gaming, video editing, programming

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Students should now identify different hardware categories, understand how each component contributes to computer functionality, and recognize the relationship between input, processing, storage, and output in computing systems.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Classify these devices as input, output, or storage: keyboard, printer, USB drive, speakers, mouse
2. Explain the main function of the CPU in a computer system
3. What is the difference between RAM and hard disk storage?
4. Give three examples each of input and output devices
5. Why might someone choose an SSD over an HDD for their computer?

WEEK 3: SYSTEM SOFTWARE (OPERATING SYSTEMS)

Duration: 40 minutes

Topic: Explain OS Functions; Differentiate Between Windows, Linux, Android

INTRODUCTION (5 minutes)

Introduce operating systems as the fundamental software that manages computer hardware and provides a platform for other programs to run.

STEP 1: TOPIC (2 minutes)

Main Topic: Operating Systems - Functions and Types **Sub-topics:**

- Core functions of operating systems
- Windows operating system features
- Linux operating system characteristics
- Android mobile operating system
- Comparison of different OS types

STEP 2: EXPLANATION (15 minutes)

Operating System Functions:

- **Hardware Management:** Controls and coordinates computer components (CPU, memory, storage, peripherals)
- **File System Management:** Organizes, stores, and retrieves files and folders efficiently
- **Program Execution:** Loads, runs, and manages multiple software applications simultaneously
- **User Interface Provision:** Provides graphical (GUI) or command-line interface for user interaction
- **Security and Access Control:** Manages user accounts, passwords, and permission levels
- **Resource Allocation:** Distributes system resources (memory, processing time) among running programs

Windows Operating System:

- **Developer:** Microsoft Corporation
- **Interface:** Graphical User Interface with Start Menu, Taskbar, and Windows
- **File System:** Uses drive letters (C:, D:, E:) and folder hierarchies
- **Target Users:** Home users, businesses, educational institutions

- **Key Features:** MS Office integration, extensive software compatibility, user-friendly design
- **Versions:** Windows 10, Windows 11 (current), Windows 7 (older)

Linux Operating System:

- **Developer:** Open-source community (free to use and modify)
- **Interface:** Command-line primary, various GUI options available (Ubuntu, Mint)
- **File System:** Uses forward slashes (/) and root directory structure
- **Target Users:** Developers, servers, technical users, security-conscious users
- **Key Features:** High security, customizable, stable, free distribution
- **Distributions:** Ubuntu, Red Hat, SUSE, Debian

Android Operating System:

- **Developer:** Google (based on Linux)
- **Interface:** Touch-based with app icons and widgets
- **File System:** Optimized for mobile devices with app-centric organization
- **Target Users:** Smartphone and tablet users
- **Key Features:** Google services integration, app store access, mobile-optimized
- **Versions:** Named after desserts (KitKat, Lollipop, Marshmallow, etc.)

STEP 3: COMPARISON (8 minutes)

Cost Comparison:

- **Windows:** Commercial license required (paid)
- **Linux:** Free and open-source
- **Android:** Free for device manufacturers

Ease of Use:

- **Windows:** Most user-friendly for beginners
- **Android:** Intuitive touch interface
- **Linux:** Requires more technical knowledge

Security Levels:

- **Linux:** Highest security, less malware targeting
- **Android:** Good security with regular updates
- **Windows:** More vulnerable due to popularity, but improving

Device Compatibility:

- **Windows:** Desktop and laptop computers primarily
- **Linux:** Computers, servers, embedded systems

- **Android:** Smartphones, tablets, smart TVs

STEP 4: CONCLUSION (5 minutes)

Students should understand that operating systems are essential software managing computer resources, and different OS types serve different purposes - Windows for general computing, Linux for technical applications, and Android for mobile devices.

STEP 5: EVALUATION (5 minutes)

Questions:

1. List five main functions of an operating system
 2. What are three key differences between Windows and Linux?
 3. Why is Android specifically designed for mobile devices?
 4. Which operating system would you recommend for: a) a small business office, b) a web server, c) a smartphone? Explain your choices.
 5. Explain what "open-source" means in relation to Linux
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WEEK 4: APPLICATION SOFTWARE

Duration: 40 minutes

Topic: Define Word Processors, Spreadsheets, Graphics Tools; Identify Uses

INTRODUCTION (5 minutes)

Explain that application software are programs designed to help users accomplish specific tasks, unlike system software that manages the computer itself.

STEP 1: TOPIC (2 minutes)

Main Topic: Application Software Categories and Functions **Sub-topics:**

- Word processing software and applications
- Spreadsheet software and calculations
- Graphics design tools and creativity
- Other application software types
- Practical uses in various fields

STEP 2: EXPLANATION (15 minutes)

Word Processing Software:

- **Definition:** Programs designed for creating, editing, formatting, and printing text documents
- **Core Features:** Text entry, spell check, grammar check, formatting (fonts, colors, sizes)
- **Advanced Features:** Headers/footers, page numbering, tables, mail merge, references
- **Examples:** Microsoft Word, Google Docs, LibreOffice Writer, Pages (Mac)
- **Document Types:** Letters, reports, essays, resumes, newsletters, books
- **Professional Uses:** Business correspondence, academic papers, legal documents, marketing materials

Spreadsheet Software:

- **Definition:** Programs for organizing, calculating, and analyzing numerical data in rows and columns
- **Core Features:** Data entry in cells, basic calculations (+, -, ×, ÷), sorting and filtering
- **Advanced Features:** Complex formulas (SUM, AVERAGE, IF), charts and graphs, pivot tables
- **Examples:** Microsoft Excel, Google Sheets, LibreOffice Calc, Numbers (Mac)
- **Data Types:** Financial records, grade books, inventory lists, statistical analysis
- **Professional Uses:** Accounting, budgeting, project management, data analysis, scientific research

Graphics Design Tools:

- **Definition:** Software for creating, editing, and manipulating visual content and images
- **Types:**
 - **Raster Graphics:** Pixel-based images (photos, digital art)
 - **Vector Graphics:** Mathematical shapes and lines (logos, illustrations)
- **Core Features:** Drawing tools, color palettes, layers, filters, text insertion
- **Examples:**
 - **Professional:** Adobe Photoshop, Illustrator, CorelDRAW
 - **Free/Simple:** GIMP, Paint.NET, Canva, MS Paint
- **Creative Uses:** Posters, logos, web graphics, photo editing, digital art, presentations
- **Professional Uses:** Marketing materials, web design, print media, branding, advertising

Other Application Categories:

- **Database Software:** Managing large amounts of organized data (Access, MySQL)
- **Presentation Software:** Creating slideshows (PowerPoint, Google Slides)
- **Web Browsers:** Accessing internet content (Chrome, Firefox, Safari)
- **Media Players:** Playing audio and video files (VLC, Windows Media Player)

STEP 3: COMPARISON (8 minutes)

Document Creation Comparison:

- **Word Processors:** Text-heavy documents with formatting

- **Spreadsheets:** Number-heavy documents with calculations
- **Graphics Tools:** Image-heavy documents with visual design

Complexity Levels:

- **Basic Users:** Simple features for personal/school use
- **Advanced Users:** Complex features for professional/business use
- **Specialized Users:** Industry-specific tools for experts

File Output Formats:

- **Word Processors:** .docx, .pdf, .txt
- **Spreadsheets:** .xlsx, .csv, .pdf
- **Graphics Tools:** .jpg, .png, .pdf, .svg

Collaboration Features:

- **Cloud-based:** Google Docs/Sheets (real-time collaboration)
- **Traditional:** Microsoft Office (sharing and review features)
- **Graphics:** Online tools like Canva (team design projects)

STEP 4: CONCLUSION (5 minutes)

Students should recognize that application software serves specific user needs - word processors for text documents, spreadsheets for numerical data and calculations, and graphics tools for visual content creation. Each type has both simple and advanced features depending on user requirements.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Explain the main difference between word processing and spreadsheet software
2. Give three examples each of word processors and graphics design tools
3. What type of application software would you use to: a) create a school newsletter, b) calculate class grades, c) design a poster?
4. List four advanced features commonly found in word processing software
5. Why might a business need all three types of software (word processing, spreadsheet, and graphics)?

WEEK 5: INTERNET SAFETY & DIGITAL FOOTPRINT

Duration: 40 minutes

Topic: Explain Cyberbullying, Online Privacy; Safe Browsing Practices

INTRODUCTION (5 minutes)

Discuss how the internet, while providing amazing opportunities, also presents risks that require awareness and protective strategies to navigate safely.

STEP 1: TOPIC (2 minutes)

Main Topic: Internet Safety and Digital Responsibility **Sub-topics:**

- Understanding cyberbullying and its prevention
- Online privacy protection strategies
- Safe browsing practices and habits
- Digital footprint awareness and management
- Responsible digital citizenship

STEP 2: EXPLANATION (15 minutes)

Cyberbullying Understanding:

- **Definition:** Using digital technology to repeatedly harass, threaten, or humiliate others
- **Forms:** Mean messages, spreading rumors online, sharing embarrassing photos/videos, exclusion from online groups
- **Platforms:** Social media, messaging apps, gaming platforms, email, forums
- **Impact:** Emotional distress, academic problems, social isolation, mental health issues
- **Prevention Strategies:**
 - Think before posting - consider how words might hurt others
 - Report bullying behavior to platforms and adults
 - Block or unfriend people who behave inappropriately
 - Keep evidence (screenshots) of bullying incidents
 - Support others who are being bullied

Online Privacy Protection:

- **Personal Information:** Never share full name, address, phone number, school name, or family details with strangers
- **Password Security:** Use strong, unique passwords for different accounts; include letters, numbers, and symbols
- **Privacy Settings:** Adjust social media settings to limit who can see your posts and personal information
- **Photo Sharing:** Be cautious about sharing photos that reveal location, school uniforms, or personal details
- **Friend/Contact Lists:** Only connect with people you know in real life
- **Public Wi-Fi Risks:** Avoid accessing sensitive accounts on public networks

Safe Browsing Practices:

- **Website Verification:** Look for "https://" and padlock symbols for secure sites
- **Download Caution:** Only download from trusted sources; avoid suspicious free software
- **Link Awareness:** Don't click on suspicious links in emails or messages
- **Pop-up Management:** Close pop-ups without clicking; they may contain malware
- **Antivirus Software:** Keep security software updated and running
- **Regular Updates:** Install browser and system updates for security patches

Digital Footprint Awareness:

- **Definition:** The trail of data you leave behind through online activities
- **Permanent Nature:** Most online content can be saved, shared, and searched even after "deletion"
- **Future Impact:** Colleges and employers may review social media profiles
- **Positive Footprint:** Share content that reflects your best qualities and interests
- **Content Audit:** Regularly review and clean up your online presence

STEP 3: COMPARISON (8 minutes)

Traditional vs Cyberbullying:

- **Traditional:** Face-to-face, limited audience, stops when separated
- **Cyberbullying:** 24/7 potential, massive audience, permanent record, anonymous possibility

Public vs Private Information:

- **Safe to Share:** Interests, hobbies, general opinions, creative work
- **Never Share:** Home address, phone numbers, passwords, financial information, travel plans

Secure vs Insecure Websites:

- **Secure Sites:** https://, padlock icon, reputable companies, encrypted data
- **Insecure Sites:** http://, suspicious URLs, unknown sources, requests for unnecessary information

Positive vs Negative Digital Footprint:

- **Positive:** Educational content, creative projects, respectful interactions, community involvement
- **Negative:** Inappropriate photos, offensive comments, cyberbullying, illegal activities

STEP 4: CONCLUSION (5 minutes)

Students should understand that internet safety requires active awareness and responsible behavior, including preventing cyberbullying, protecting personal information, browsing safely, and maintaining a positive digital footprint that will benefit them in the future.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Define cyberbullying and give three examples of cyberbullying behavior
 2. List five pieces of personal information you should never share online with strangers
 3. What should you look for to identify a secure website?
 4. Explain what a digital footprint is and why it matters for your future
 5. If you witnessed cyberbullying online, what steps should you take to help?
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WEEK 6: INTERMEDIATE WORD PROCESSING

Duration: 40 minutes

Topic: Insert Headers/Footers, Page Numbers, and References

INTRODUCTION (5 minutes)

Explain that intermediate word processing skills help create professional-looking documents with proper formatting, navigation aids, and academic/business standards.

STEP 1: TOPIC (2 minutes)

Main Topic: Advanced Document Formatting and Organization **Sub-topics:**

- Headers and footers creation and customization
- Page numbering systems and formats
- Reference insertion and management
- Document navigation and structure
- Professional document standards

STEP 2: EXPLANATION (15 minutes)

Headers and Footers:

- **Definition:** Text or graphics that appear at the top (header) or bottom (footer) of every page
- **Purpose:** Provide consistent information across all pages, professional appearance
- **Header Content:** Document title, chapter names, company logo, author name, date
- **Footer Content:** Page numbers, copyright information, document version, contact details

- **Insertion Process:**
 1. Insert → Header & Footer (in ribbon menu)
 2. Choose from preset designs or create custom
 3. Type desired text and format as needed
 4. Use different headers/footers for first page or odd/even pages if required
- **Customization:** Font styles, alignment, borders, background colors, images/logos

Page Numbering Systems:

- **Basic Numbering:** Simple sequential numbers (1, 2, 3...)
- **Format Options:**
 - Arabic numerals (1, 2, 3)
 - Roman numerals (i, ii, iii or I, II, III)
 - Letters (a, b, c or A, B, C)
- **Position Options:** Top/bottom of page, left/right/center alignment
- **Advanced Features:**
 - Different numbering for different sections
 - Starting from specific numbers
 - "Page X of Y" format showing total pages
- **Insertion Methods:**
 1. Insert → Page Number
 2. Choose position and format
 3. Customize appearance through header/footer tools

Reference Systems:

- **Purpose:** Give credit to sources, allow readers to verify information, avoid plagiarism
- **Types of References:**
 - **In-text Citations:** Brief source identification within the document text
 - **Footnotes:** Detailed information at bottom of specific pages
 - **Endnotes:** References collected at document end
 - **Bibliography/Works Cited:** Complete list of all sources used
- **Citation Formats:** APA, MLA, Chicago styles (basic introduction)
- **Insertion Process:**
 1. References → Insert Citation or Insert Footnote
 2. Choose source type (book, website, journal)
 3. Fill in source details
 4. Word processor automatically formats according to chosen style

Document Navigation Features:

- **Table of Contents:** Automatically generated from heading styles
- **Bookmarks:** Create clickable links to specific document sections
- **Cross-references:** Link to figures, tables, or other document elements
- **Find and Replace:** Locate and modify specific text throughout document

STEP 3: COMPARISON (8 minutes)

Headers vs Footers:

- **Headers:** Top of page, often contains titles and section information
- **Footers:** Bottom of page, typically contains page numbers and dates
- **Both:** Can contain same types of information based on preference and document type

Footnotes vs Endnotes:

- **Footnotes:** Appear at bottom of each page, easier reference for readers
- **Endnotes:** Appear at document end, cleaner page appearance
- **Usage:** Academic papers often use footnotes, books may use endnotes

Manual vs Automatic Formatting:

- **Manual:** Type headers/page numbers individually (time-consuming, inconsistent)
- **Automatic:** Use word processor features (consistent, updateable, professional)

Different Document Types:

- **Academic Papers:** Require specific citation formats, page numbers, headers
- **Business Reports:** May include company headers, professional formatting
- **Personal Documents:** Simpler formatting, basic page numbers

STEP 4: CONCLUSION (5 minutes)

Students should now understand how to create professional documents using headers, footers, page numbering, and reference systems. These skills are essential for academic work, business communication, and any formal document preparation.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Explain the difference between headers and footers, giving examples of what each might contain
 2. Describe the steps to insert automatic page numbering in a document
 3. What is the purpose of using references in academic or professional documents?
 4. List three different page numbering formats and when you might use each
 5. Why is using automatic headers/footers better than manually typing this information on each page?
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GENERAL ASSESSMENT FOR WEEKS 1-6

Practical Activities:

1. Create a simple document demonstrating file management skills
2. Identify hardware components on a computer system
3. Compare different operating systems using a chart
4. Use word processing, spreadsheet, and graphics software for a mini-project
5. Design an internet safety poster using graphics tools
6. Format a multi-page report with headers, footers, page numbers, and references

Project Assignment: Create a 3-page document about "Technology in My Community" including:

- Proper headers and footers
- Page numbering
- At least three references (with citations)
- Mixed content from word processing and graphics tools
- Demonstration of internet research safety practices

DIGITAL TECHNOLOGY LESSON NOTES

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Aligned with NERDC New Curriculum & Oyo State TESCOME Method

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- **Target Users:** Developers, servers, technical users, security-conscious users
- **Key Features:** High security, customizable, stable, free distribution
- **Distributions:** Ubuntu, Red Hat, SUSE, Debian

Android Operating System:

- **Developer:** Google (based on Linux)
- **Interface:** Touch-based with app icons and widgets
- **File System:** Optimized for mobile devices with app-centric organization
- **Target Users:** Smartphone and tablet users
- **Key Features:** Google services integration, app store access, mobile-optimized
- **Versions:** Named after desserts (KitKat, Lollipop, Marshmallow, etc.)

STEP 3: COMPARISON (8 minutes)

Cost Comparison:

- **Windows:** Commercial license required (paid)
- **Linux:** Free and open-source
- **Android:** Free for device manufacturers

Ease of Use:

- **Windows:** Most user-friendly for beginners
- **Android:** Intuitive touch interface
- **Linux:** Requires more technical knowledge

Security Levels:

- **Linux:** Highest security, less malware targeting
- **Android:** Good security with regular updates
- **Windows:** More vulnerable due to popularity, but improving

Device Compatibility:

- **Windows:** Desktop and laptop computers primarily
- **Linux:** Computers, servers, embedded systems
- **Android:** Smartphones, tablets, smart TVs

STEP 4: CONCLUSION (5 minutes)

Students should understand that operating systems are essential software managing computer resources, and different OS types serve different purposes - Windows for general computing, Linux for technical applications, and Android for mobile devices.

STEP 5: EVALUATION (5 minutes)

Questions:

1. List five main functions of an operating system
2. What are three key differences between Windows and Linux?
3. Why is Android specifically designed for mobile devices?
4. Which operating system would you recommend for: a) a small business office, b) a web server, c) a smartphone? Explain your choices.
5. Explain what "open-source" means in relation to Linux

WEEK 4: APPLICATION SOFTWARE

Duration: 40 minutes

Topic: Define Word Processors, Spreadsheets, Graphics Tools; Identify Uses

INTRODUCTION (5 minutes)

Explain that application software are programs designed to help users accomplish specific tasks, unlike system software that manages the computer itself.

STEP 1: TOPIC (2 minutes)

Main Topic: Application Software Categories and Functions **Sub-topics:**

- Word processing software and applications
- Spreadsheet software and calculations
- Graphics design tools and creativity
- Other application software types
- Practical uses in various fields

STEP 2: EXPLANATION (15 minutes)

Word Processing Software:

- **Definition:** Programs designed for creating, editing, formatting, and printing text documents
- **Core Features:** Text entry, spell check, grammar check, formatting (fonts, colors, sizes)
- **Advanced Features:** Headers/footers, page numbering, tables, mail merge, references
- **Examples:** Microsoft Word, Google Docs, LibreOffice Writer, Pages (Mac)
- **Document Types:** Letters, reports, essays, resumes, newsletters, books
- **Professional Uses:** Business correspondence, academic papers, legal documents, marketing materials

Spreadsheet Software:

- **Definition:** Programs for organizing, calculating, and analyzing numerical data in rows and columns
- **Core Features:** Data entry in cells, basic calculations (+, -, ×, ÷), sorting and filtering
- **Advanced Features:** Complex formulas (SUM, AVERAGE, IF), charts and graphs, pivot tables
- **Examples:** Microsoft Excel, Google Sheets, LibreOffice Calc, Numbers (Mac)
- **Data Types:** Financial records, grade books, inventory lists, statistical analysis
- **Professional Uses:** Accounting, budgeting, project management, data analysis, scientific research

Graphics Design Tools:

- **Definition:** Software for creating, editing, and manipulating visual content and images
- **Types:**
 - **Raster Graphics:** Pixel-based images (photos, digital art)
 - **Vector Graphics:** Mathematical shapes and lines (logos, illustrations)

- **Core Features:** Drawing tools, color palettes, layers, filters, text insertion
- **Examples:**
 - **Professional:** Adobe Photoshop, Illustrator, CorelDRAW
 - **Free/Simple:** GIMP, Paint.NET, Canva, MS Paint
- **Creative Uses:** Posters, logos, web graphics, photo editing, digital art, presentations
- **Professional Uses:** Marketing materials, web design, print media, branding, advertising

Other Application Categories:

- **Database Software:** Managing large amounts of organized data (Access, MySQL)
- **Presentation Software:** Creating slideshows (PowerPoint, Google Slides)
- **Web Browsers:** Accessing internet content (Chrome, Firefox, Safari)
- **Media Players:** Playing audio and video files (VLC, Windows Media Player)

STEP 3: COMPARISON (8 minutes)

Document Creation Comparison:

- **Word Processors:** Text-heavy documents with formatting
- **Spreadsheets:** Number-heavy documents with calculations
- **Graphics Tools:** Image-heavy documents with visual design

Complexity Levels:

- **Basic Users:** Simple features for personal/school use
- **Advanced Users:** Complex features for professional/business use
- **Specialized Users:** Industry-specific tools for experts

File Output Formats:

- **Word Processors:** .docx, .pdf, .txt
- **Spreadsheets:** .xlsx, .csv, .pdf
- **Graphics Tools:** .jpg, .png, .pdf, .svg

Collaboration Features:

- **Cloud-based:** Google Docs/Sheets (real-time collaboration)
- **Traditional:** Microsoft Office (sharing and review features)
- **Graphics:** Online tools like Canva (team design projects)

STEP 4: CONCLUSION (5 minutes)

Students should recognize that application software serves specific user needs - word processors for text documents, spreadsheets for numerical data and calculations, and graphics tools for visual content creation. Each type has both simple and advanced features depending on user requirements.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Explain the main difference between word processing and spreadsheet software
 2. Give three examples each of word processors and graphics design tools
 3. What type of application software would you use to: a) create a school newsletter, b) calculate class grades, c) design a poster?
 4. List four advanced features commonly found in word processing software
 5. Why might a business need all three types of software (word processing, spreadsheet, and graphics)?
-

WEEK 5: INTERNET SAFETY & DIGITAL FOOTPRINT

Duration: 40 minutes

Topic: Explain Cyberbullying, Online Privacy; Safe Browsing Practices

INTRODUCTION (5 minutes)

Discuss how the internet, while providing amazing opportunities, also presents risks that require awareness and protective strategies to navigate safely.

STEP 1: TOPIC (2 minutes)

Main Topic: Internet Safety and Digital Responsibility **Sub-topics:**

- Understanding cyberbullying and its prevention
- Online privacy protection strategies
- Safe browsing practices and habits
- Digital footprint awareness and management
- Responsible digital citizenship

STEP 2: EXPLANATION (15 minutes)

Cyberbullying Understanding:

- **Definition:** Using digital technology to repeatedly harass, threaten, or humiliate others
- **Forms:** Mean messages, spreading rumors online, sharing embarrassing photos/videos, exclusion from online groups
- **Platforms:** Social media, messaging apps, gaming platforms, email, forums
- **Impact:** Emotional distress, academic problems, social isolation, mental health issues
- **Prevention Strategies:**
 - Think before posting - consider how words might hurt others

- Report bullying behavior to platforms and adults
- Block or unfriend people who behave inappropriately
- Keep evidence (screenshots) of bullying incidents
- Support others who are being bullied

Online Privacy Protection:

- **Personal Information:** Never share full name, address, phone number, school name, or family details with strangers
- **Password Security:** Use strong, unique passwords for different accounts; include letters, numbers, and symbols
- **Privacy Settings:** Adjust social media settings to limit who can see your posts and personal information
- **Photo Sharing:** Be cautious about sharing photos that reveal location, school uniforms, or personal details
- **Friend/Contact Lists:** Only connect with people you know in real life
- **Public Wi-Fi Risks:** Avoid accessing sensitive accounts on public networks

Safe Browsing Practices:

- **Website Verification:** Look for "https://" and padlock symbols for secure sites
- **Download Caution:** Only download from trusted sources; avoid suspicious free software
- **Link Awareness:** Don't click on suspicious links in emails or messages
- **Pop-up Management:** Close pop-ups without clicking; they may contain malware
- **Antivirus Software:** Keep security software updated and running
- **Regular Updates:** Install browser and system updates for security patches

Digital Footprint Awareness:

- **Definition:** The trail of data you leave behind through online activities
- **Permanent Nature:** Most online content can be saved, shared, and searched even after "deletion"
- **Future Impact:** Colleges and employers may review social media profiles
- **Positive Footprint:** Share content that reflects your best qualities and interests
- **Content Audit:** Regularly review and clean up your online presence

STEP 3: COMPARISON (8 minutes)

Traditional vs Cyberbullying:

- **Traditional:** Face-to-face, limited audience, stops when separated
- **Cyberbullying:** 24/7 potential, massive audience, permanent record, anonymous possibility

Public vs Private Information:

- **Safe to Share:** Interests, hobbies, general opinions, creative work
- **Never Share:** Home address, phone numbers, passwords, financial information, travel plans

Secure vs Insecure Websites:

- **Secure Sites:** https://, padlock icon, reputable companies, encrypted data
- **Insecure Sites:** http://, suspicious URLs, unknown sources, requests for unnecessary information

Positive vs Negative Digital Footprint:

- **Positive:** Educational content, creative projects, respectful interactions, community involvement
- **Negative:** Inappropriate photos, offensive comments, cyberbullying, illegal activities

STEP 4: CONCLUSION (5 minutes)

Students should understand that internet safety requires active awareness and responsible behavior, including preventing cyberbullying, protecting personal information, browsing safely, and maintaining a positive digital footprint that will benefit them in the future.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Define cyberbullying and give three examples of cyberbullying behavior
2. List five pieces of personal information you should never share online with strangers
3. What should you look for to identify a secure website?
4. Explain what a digital footprint is and why it matters for your future
5. If you witnessed cyberbullying online, what steps should you take to help?

WEEK 6: INTERMEDIATE WORD PROCESSING

Duration: 40 minutes

Topic: Insert Headers/Footers, Page Numbers, and References

INTRODUCTION (5 minutes)

Explain that intermediate word processing skills help create professional-looking documents with proper formatting, navigation aids, and academic/business standards.

STEP 1: TOPIC (2 minutes)

Main Topic: Advanced Document Formatting and Organization **Sub-topics:**

- Headers and footers creation and customization
- Page numbering systems and formats
- Reference insertion and management
- Document navigation and structure
- Professional document standards

STEP 2: EXPLANATION (15 minutes)

Headers and Footers:

- **Definition:** Text or graphics that appear at the top (header) or bottom (footer) of every page
- **Purpose:** Provide consistent information across all pages, professional appearance
- **Header Content:** Document title, chapter names, company logo, author name, date
- **Footer Content:** Page numbers, copyright information, document version, contact details
- **Insertion Process:**
 1. Insert → Header & Footer (in ribbon menu)
 2. Choose from preset designs or create custom
 3. Type desired text and format as needed
 4. Use different headers/footers for first page or odd/even pages if required
- **Customization:** Font styles, alignment, borders, background colors, images/logos

Page Numbering Systems:

- **Basic Numbering:** Simple sequential numbers (1, 2, 3...)
- **Format Options:**
 - Arabic numerals (1, 2, 3)
 - Roman numerals (i, ii, iii or I, II, III)
 - Letters (a, b, c or A, B, C)
- **Position Options:** Top/bottom of page, left/right/center alignment
- **Advanced Features:**
 - Different numbering for different sections
 - Starting from specific numbers
 - "Page X of Y" format showing total pages
- **Insertion Methods:**
 1. Insert → Page Number
 2. Choose position and format
 3. Customize appearance through header/footer tools

Reference Systems:

- **Purpose:** Give credit to sources, allow readers to verify information, avoid plagiarism
- **Types of References:**
 - **In-text Citations:** Brief source identification within the document text

- **Footnotes:** Detailed information at bottom of specific pages
 - **Endnotes:** References collected at document end
 - **Bibliography/Works Cited:** Complete list of all sources used
- **Citation Formats:** APA, MLA, Chicago styles (basic introduction)
- **Insertion Process:**
 1. References → Insert Citation or Insert Footnote
 2. Choose source type (book, website, journal)
 3. Fill in source details
 4. Word processor automatically formats according to chosen style

Document Navigation Features:

- **Table of Contents:** Automatically generated from heading styles
- **Bookmarks:** Create clickable links to specific document sections
- **Cross-references:** Link to figures, tables, or other document elements
- **Find and Replace:** Locate and modify specific text throughout document

STEP 3: COMPARISON (8 minutes)

Headers vs Footers:

- **Headers:** Top of page, often contains titles and section information
- **Footers:** Bottom of page, typically contains page numbers and dates
- **Both:** Can contain same types of information based on preference and document type

Footnotes vs Endnotes:

- **Footnotes:** Appear at bottom of each page, easier reference for readers
- **Endnotes:** Appear at document end, cleaner page appearance
- **Usage:** Academic papers often use footnotes, books may use endnotes

Manual vs Automatic Formatting:

- **Manual:** Type headers/page numbers individually (time-consuming, inconsistent)
- **Automatic:** Use word processor features (consistent, updateable, professional)

Different Document Types:

- **Academic Papers:** Require specific citation formats, page numbers, headers
- **Business Reports:** May include company headers, professional formatting
- **Personal Documents:** Simpler formatting, basic page numbers

STEP 4: CONCLUSION (5 minutes)

Students should now understand how to create professional documents using headers, footers, page numbering, and reference systems. These skills are essential for academic work, business communication, and any formal document preparation.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Explain the difference between headers and footers, giving examples of what each might contain
 2. Describe the steps to insert automatic page numbering in a document
 3. What is the purpose of using references in academic or professional documents?
 4. List three different page numbering formats and when you might use each
 5. Why is using automatic headers/footers better than manually typing this information on each page?
-

GENERAL ASSESSMENT FOR WEEKS 1-6

Practical Activities:

1. Create a simple document demonstrating file management skills
2. Identify hardware components on a computer system
3. Compare different operating systems using a chart
4. Use word processing, spreadsheet, and graphics software for a mini-project
5. Design an internet safety poster using graphics tools
6. Format a multi-page report with headers, footers, page numbers, and references

Project Assignment: Create a 3-page document about "Technology in My Community" including:

- Proper headers and footers
 - Page numbering
 - At least three references (with citations)
 - Mixed content from word processing and graphics tools
 - Demonstration of internet research safety practices
-

WEEK 7: SPREADSHEET FORMULAS & FUNCTIONS

Duration: 40 minutes

Topic: Apply Formulas for Budgeting, Averages, and Grades

INTRODUCTION (5 minutes)

Explain that spreadsheets become powerful calculation tools when we use formulas and functions to process data automatically, making tasks like budgeting and grade calculations much easier and more accurate.

STEP 1: TOPIC (2 minutes)

Main Topic: Practical Spreadsheet Calculations and Applications **Sub-topics:**

- Basic formula syntax and cell references
- Mathematical functions for calculations
- Budget planning and financial tracking
- Grade calculation and academic analysis
- Data validation and error checking

STEP 2: EXPLANATION (15 minutes)

Formula Fundamentals:

- **Formula Structure:** Always begin with = sign, followed by calculation (=A1+B1)
- **Cell References:** Use cell addresses (A1, B2, C3) instead of typing numbers directly
- **Relative References:** Change automatically when copied (A1 becomes A2 when copied down)
- **Absolute References:** Stay fixed when copied (use \$ symbol: \$A\$1)
- **Basic Operators:** + (addition), - (subtraction), * (multiplication), / (division)
- **Order of Operations:** Parentheses first, then multiplication/division, then addition/subtraction

Essential Functions for Students:

- **SUM Function:** =SUM(A1:A10) adds all values in range A1 to A10
- **AVERAGE Function:** =AVERAGE(B1:B5) calculates mean of values in B1 to B5
- **COUNT Function:** =COUNT(C1:C20) counts cells containing numbers
- **MAX Function:** =MAX(D1:D15) finds highest value in range
- **MIN Function:** =MIN(E1:E10) finds lowest value in range
- **IF Function:** =IF(F1>70,"Pass","Fail") displays text based on conditions

Budget Planning Applications:

- **Income Tracking:** List all income sources (allowance, part-time work, gifts)
- **Expense Categories:** Food, transportation, entertainment, school supplies, savings
- **Monthly Totals:** Use SUM function to calculate total income and expenses
- **Balance Calculation:** =Total Income - Total Expenses
- **Percentage Analysis:** =Category Expense/Total Expenses*100
- **Budget vs Actual:** Compare planned spending with actual spending

- **Savings Goals:** Track progress toward financial objectives

Grade Calculation Systems:

- **Individual Scores:** Enter test scores, assignment grades, project marks
- **Weighted Averages:** Different assignments have different importance levels
- **Semester Grades:** Combine multiple assessment types (tests 40%, assignments 30%, projects 30%)
- **Class Statistics:** Calculate class average, highest score, lowest score
- **Grade Letters:** Use IF statements to convert numbers to letter grades
- **Progress Tracking:** Monitor improvement over time

Practical Examples:

- **Personal Budget:** Track monthly allowance spending
- **Study Schedule:** Calculate time allocation for different subjects
- **Sports Statistics:** Analyze team performance data
- **Event Planning:** Budget for school events or parties

STEP 3: COMPARISON (8 minutes)

Manual vs Formula Calculations:

- **Manual:** Prone to errors, time-consuming, must redo when data changes
- **Formula:** Accurate, fast, automatically updates when data changes
- **Flexibility:** Formulas can be copied and modified easily

Simple vs Complex Functions:

- ***Basic (+, -, , /):** Good for simple calculations
- **Functions (SUM, AVERAGE):** Better for multiple data points
- **Advanced (IF, nested functions):** Handle complex decision-making

Different Function Applications:

- **SUM:** Total costs, total points, combined values
- **AVERAGE:** Grade point average, mean temperature, typical spending
- **IF:** Pass/fail decisions, budget warnings, performance categories

Budgeting Methods:

- **Traditional:** Pen and paper, basic calculator
- **Spreadsheet:** Automatic calculations, easy modifications, visual charts
- **Mobile Apps:** Convenient but less customizable than spreadsheets

STEP 4: CONCLUSION (5 minutes)

Students should understand how to create and use basic formulas and functions in spreadsheets, apply these skills to practical situations like budget planning and grade tracking, and recognize the advantages of using spreadsheet calculations over manual methods.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Write the formula to calculate the total of cells A1 through A10
 2. How would you calculate the average of five test scores in cells B1 to B5?
 3. Create an IF statement that shows "Above Average" if a score in cell C1 is greater than 75, otherwise shows "Below Average"
 4. List three advantages of using spreadsheet formulas over manual calculations
 5. Design a simple budget with at least 3 income sources and 5 expense categories, showing which functions you would use
-

WEEK 8: GRAPHICS DESIGN BASICS

Duration: 40 minutes

Topic: Create Posters or Simple Digital Artwork Using Paint/Canva

INTRODUCTION (5 minutes)

Introduce graphics design as a creative and practical skill that combines artistic elements with communication purposes, useful for school projects, personal expression, and future career possibilities.

STEP 1: TOPIC (2 minutes)

Main Topic: Fundamental Graphic Design Principles and Digital Creation **Sub-topics:**

- Basic design principles and visual elements
- Color theory and effective color combinations
- Typography and text integration
- Digital tools for graphic creation
- Project planning and design process

STEP 2: EXPLANATION (15 minutes)

Design Principles:

- **Balance:** Visual weight distribution (symmetrical vs asymmetrical)
- **Contrast:** Differences that make elements stand out (light vs dark, big vs small)

- **Emphasis:** Making important elements more prominent through size, color, or position
- **Unity:** All elements working together harmoniously
- **Proportion:** Relative size relationships between different elements
- **Alignment:** Proper positioning and organization of text and images

Color Theory Basics:

- **Primary Colors:** Red, blue, yellow (cannot be created by mixing other colors)
- **Secondary Colors:** Green, orange, purple (created by mixing primary colors)
- **Complementary Colors:** Opposite colors on color wheel (red-green, blue-orange)
- **Color Temperature:** Warm colors (red, orange, yellow) vs cool colors (blue, green, purple)
- **Color Psychology:** Red (energy, urgency), blue (trust, calm), green (nature, growth)
- **Color Schemes:** Monochromatic (one color variations), analogous (neighboring colors), triadic (three equally spaced colors)

Typography Fundamentals:

- **Font Categories:** Serif (decorative lines), Sans-serif (clean lines), Script (handwriting style)
- **Font Pairing:** Combining different fonts that complement each other
- **Readability:** Ensuring text is easy to read (appropriate size, contrast, spacing)
- **Hierarchy:** Different text sizes and weights to show importance levels
- **Text Alignment:** Left, center, right, justified - choose based on design purpose

Digital Tools Overview: Microsoft Paint:

- **Strengths:** Simple interface, basic drawing tools, comes with Windows
- **Tools:** Brush, pencil, shapes, fill bucket, text insertion, color picker
- **Best For:** Simple drawings, basic image editing, quick sketches
- **Limitations:** No layers, limited effects, basic functionality

Canva (Online Platform):

- **Strengths:** Professional templates, extensive image library, user-friendly interface
- **Features:** Drag-and-drop elements, pre-designed layouts, stock photos, icons
- **Templates:** Social media posts, posters, presentations, business cards
- **Collaboration:** Share designs, team projects, comment system
- **Export Options:** Various formats and sizes for different purposes

Design Process Steps:

1. **Planning:** Define purpose, audience, and message
2. **Research:** Gather inspiration, study similar designs
3. **Sketching:** Create rough ideas on paper first
4. **Digital Creation:** Build design using chosen software

5. **Review:** Check for errors, get feedback
6. **Revision:** Make improvements based on feedback
7. **Finalization:** Export in appropriate format for intended use

Poster Creation Guidelines:

- **Clear Hierarchy:** Most important information should be largest and most prominent
- **White Space:** Don't overcrowd - leave breathing room around elements
- **Image Quality:** Use high-resolution images that won't appear pixelated
- **Purpose-Driven:** Every element should serve the poster's main goal
- **Target Audience:** Design choices should appeal to intended viewers

STEP 3: COMPARISON (8 minutes)

Traditional vs Digital Design:

- **Traditional:** Physical materials (paper, paints, markers), permanent changes, unique originals
- **Digital:** Software tools, unlimited undo/redo, easy duplication and modification
- **Advantages:** Digital allows experimentation without waste, easy sharing

Simple vs Professional Tools:

- **Paint:** Free, basic tools, good for learning fundamentals
- **Canva:** More features, templates, professional results with less skill required
- **Professional Software:** (Photoshop, Illustrator) Advanced features but steeper learning curve

Different Design Purposes:

- **Informational Posters:** Clear text, organized layout, factual content
- **Promotional Posters:** Eye-catching colors, persuasive language, emotional appeal
- **Artistic Creations:** Creative expression, experimental techniques, personal style

Color Scheme Effects:

- **High Contrast:** Attention-grabbing, energetic, good for important information
- **Low Contrast:** Calm, sophisticated, good for background elements
- **Monochromatic:** Unified, professional, focuses attention on content rather than colors

STEP 4: CONCLUSION (5 minutes)

Students should understand basic graphic design principles, know how to apply color theory and typography effectively, and be able to create simple but effective posters and digital artwork using available tools like Paint and Canva.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Name and explain three basic design principles
 2. What are complementary colors? Give two examples
 3. Compare the advantages of using Canva versus Microsoft Paint for poster creation
 4. List the steps in the design process from planning to finalization
 5. Design a poster concept for a school event, describing your choices for colors, fonts, and layout
-

WEEK 9: INTRODUCTION TO HTML BASICS

Duration: 40 minutes

Topic: Write Simple HTML Tags (<p>, <h1>,)

INTRODUCTION (5 minutes)

Explain that HTML (HyperText Markup Language) is the foundation of all websites, and learning basic HTML helps students understand how web pages are structured and created.

STEP 1: TOPIC (2 minutes)

Main Topic: Fundamental HTML Structure and Basic Tags **Sub-topics:**

- HTML document structure and syntax
- Text formatting and heading tags
- Paragraph organization and line breaks
- Image insertion and basic attributes
- Creating simple web page layouts

STEP 2: EXPLANATION (15 minutes)

HTML Fundamentals:

- **Definition:** HTML stands for HyperText Markup Language - the standard language for creating web pages
- **Purpose:** Structures content and tells browsers how to display text, images, and other elements
- **Tag Structure:** Uses opening and closing tags: <tagname>content</tagname>
- **Attributes:** Additional information about elements: <tag attribute="value">content</tag>
- **Case Sensitivity:** HTML is not case-sensitive, but lowercase is recommended practice

Basic HTML Document Structure:

```
<!DOCTYPE html>
<html>
<head>
  <title>Page Title</title>
</head>
<body>
  Content goes here
</body>
</html>
```

Essential Tags for Beginners:

Heading Tags (<h1> to <h6>):

- **Purpose:** Create headings of different sizes and importance levels
- **Hierarchy:** <h1> largest and most important, <h6> smallest and least important
- **Usage:** <h1>Main Title</h1>, <h2>Section Title</h2>
- **SEO Importance:** Search engines use headings to understand page structure
- **Best Practice:** Use only one <h1> per page, use headings in logical order

Paragraph Tags (<p>):

- **Purpose:** Organize text into separate paragraphs
- **Automatic Spacing:** Browsers add space between paragraphs automatically
- **Usage:** <p>This is a paragraph of text.</p>
- **Nesting:** Don't put paragraphs inside paragraphs
- **Line Breaks:** Use
 tag for single line breaks within paragraphs

Image Tags ():

- **Self-Closing:**
- **Required Attributes:**
 - **src:** Source file path or URL to the image
 - **alt:** Alternative text for accessibility and when images don't load
- **Optional Attributes:**
 - **width:** Set image width in pixels
 - **height:** Set image height in pixels
 - **title:** Tooltip text that appears on hover
- **Accessibility:** Alt text is crucial for screen readers and SEO

Additional Useful Tags:

- **
:** Line break (self-closing tag)
- **<hr>:** Horizontal rule/line (self-closing tag)
- **:** Bold text for emphasis
- **:** Italic text for emphasis

File Organization:

- **File Extensions:** HTML files must end with .html or .htm
- **Folder Structure:** Keep images in separate folder (usually named "images")
- **File Naming:** Use lowercase, no spaces (use hyphens or underscores)
- **Relative Paths:** Link to images in same folder: src="images/photo.jpg"

STEP 3: COMPARISON (8 minutes)

HTML vs Word Processing:

- **HTML:** Code-based, works in web browsers, universal compatibility
- **Word Processing:** Visual editing, works in specific software, format limitations online
- **Flexibility:** HTML can be viewed on any device with a browser

Different Heading Levels:

- **<h1>:** Page title, main topic (largest)
- **<h2>:** Major sections
- **<h3>:** Subsections
- **<h4>-<h6>:** Further subdivisions (progressively smaller)

Text Formatting Options:

- **<p>:** Regular paragraphs with automatic spacing
- **
:** Single line breaks within paragraphs
- **:** Bold text for important information
- **:** Italic text for emphasis or quotes

Image Considerations:

- **File Formats:** .jpg (photos), .png (graphics with transparency), .gif (simple animations)
- **File Size:** Smaller files load faster, but quality may suffer
- **Dimensions:** Larger images take longer to load

STEP 4: CONCLUSION (5 minutes)

Students should understand basic HTML structure, be able to create simple web pages using fundamental tags, and recognize how HTML forms the foundation of web development and digital communication.

STEP 5: EVALUATION (5 minutes)

Questions:

1. What does HTML stand for and what is its purpose?

2. Write the HTML code to create a main heading that says "Welcome to My Website"
 3. How would you create a paragraph of text about your school?
 4. Write the complete tag to display a photo called "mydog.jpg" with alternative text "My pet dog Max"
 5. Arrange these heading tags in order from largest to smallest: <h3>, <h1>, <h5>, <h2>
-

WEEK 10: CAREERS IN ICT (DEEP DIVE)

Duration: 40 minutes

Topic: Explore ICT Careers Such as Data Analyst, Web Developer

INTRODUCTION (5 minutes)

Discuss how ICT has created numerous career opportunities across different industries, and understanding these careers helps students make informed decisions about their future education and professional paths.

STEP 1: TOPIC (2 minutes)

Main Topic: ICT Career Paths and Professional Opportunities **Sub-topics:**

- Technical ICT careers and their requirements
- Creative ICT careers in media and design
- Business-focused ICT roles and responsibilities
- Emerging ICT careers in modern technology
- Educational pathways and skill development

STEP 2: EXPLANATION (15 minutes)

Data Analyst Career Path:

- **Job Description:** Collect, process, and analyze data to help organizations make informed decisions
- **Daily Tasks:** Clean and organize data, create reports and visualizations, identify trends and patterns
- **Required Skills:** Mathematics, statistics, spreadsheet expertise, database knowledge, critical thinking
- **Tools Used:** Excel, SQL databases, Python/R programming, Tableau, Power BI
- **Industries:** Healthcare, finance, marketing, government, sports, retail
- **Educational Path:** Mathematics, statistics, computer science, or business degrees
- **Salary Range:** Entry-level to senior positions with good growth potential
- **Career Growth:** Senior analyst → Data scientist → Analytics manager

Web Developer Career Path:

- **Job Description:** Design, create, and maintain websites and web applications
- **Specializations:**
 - **Frontend:** User interface, visual design, user experience (HTML, CSS, JavaScript)
 - **Backend:** Server-side programming, databases, application logic
 - **Full-stack:** Both frontend and backend development
- **Daily Tasks:** Write code, test websites, fix bugs, collaborate with designers, update content
- **Required Skills:** Programming languages, problem-solving, creativity, attention to detail
- **Tools Used:** Code editors, web browsers, version control systems, frameworks
- **Work Environment:** Tech companies, agencies, freelance, or in-house for any organization
- **Educational Path:** Computer science, web development bootcamps, self-taught with portfolio

Other Important ICT Careers:

Software Engineer/Programmer:

- **Focus:** Create applications, mobile apps, and software systems
- **Languages:** Java, Python, C++, Swift (for iOS), Kotlin (for Android)
- **Opportunities:** Gaming, mobile apps, enterprise software, operating systems

Cybersecurity Specialist:

- **Purpose:** Protect organizations from digital threats and cyber attacks
- **Responsibilities:** Monitor security, implement protective measures, respond to incidents
- **Growing Field:** High demand due to increasing cyber threats

Digital Marketing Specialist:

- **Role:** Promote products and services through online channels
- **Skills:** Social media management, content creation, SEO, advertising platforms
- **Creativity:** Combines technology with creative marketing strategies

Game Developer:

- **Focus:** Create video games for various platforms
- **Skills:** Programming, 3D modeling, storytelling, user interface design
- **Platforms:** Mobile games, console games, PC games, virtual reality

IT Support Specialist:

- **Role:** Help people solve computer and network problems

- **Skills:** Hardware troubleshooting, software installation, customer service
- **Entry-level:** Good starting point for ICT careers

Database Administrator:

- **Purpose:** Manage and maintain organizational data systems
- **Responsibilities:** Database design, backup systems, security, performance optimization

STEP 3: COMPARISON (8 minutes)

Technical vs Creative Roles:

- **Technical:** Data analyst, cybersecurity, database administration (logic-focused)
- **Creative:** Web design, game development, digital marketing (creativity-focused)
- **Hybrid:** Web development, multimedia design (combines both aspects)

Education Requirements:

- **Formal Degree:** Traditional university computer science or related programs
- **Certification Programs:** Specialized training in specific technologies
- **Self-Taught:** Online resources, tutorials, building personal projects
- **Bootcamps:** Intensive short-term training programs

Work Environment Options:

- **Corporate:** Large companies with structured teams and benefits
- **Startup:** Small, fast-paced companies with varied responsibilities
- **Freelance:** Independent work with multiple clients and flexible schedule
- **Remote Work:** Many ICT careers allow working from home or anywhere

Career Progression Patterns:

- **Technical Track:** Specialist → Senior specialist → Technical lead → Architect
- **Management Track:** Individual contributor → Team lead → Manager → Director
- **Entrepreneurial:** Employee → Consultant → Business owner → Tech entrepreneur

STEP 4: CONCLUSION (5 minutes)

Students should understand the variety of ICT career opportunities available, recognize the different skill requirements and educational paths for various roles, and be able to identify which careers might align with their interests and strengths.

STEP 5: EVALUATION (5 minutes)

Questions:

1. Describe the main responsibilities of a data analyst and give three industries where they might work
 2. What is the difference between frontend and backend web development?
 3. List five different ICT careers and one key skill required for each
 4. Compare the advantages and disadvantages of pursuing formal education versus self-taught learning for ICT careers
 5. Which ICT career interests you most and why? What steps could you take now to prepare for this career?
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WEEK 11: COMPREHENSIVE REVISION

Duration: 40 minutes

Topic: Review and Consolidate First Term Learning

INTRODUCTION (5 minutes)

Explain that revision helps consolidate learning, identify knowledge gaps, and prepare for examinations while connecting different topics covered throughout the term.

STEP 1: TOPIC (2 minutes)

Main Topic: Integrated Review of First Term Digital Technology Concepts **Sub-topics:**

- Hardware and software knowledge integration
- Internet safety and digital citizenship review
- Practical application skills assessment
- ICT career awareness consolidation
- Problem-solving using learned concepts

STEP 2: EXPLANATION (15 minutes)

Core Concept Integration:

Computer Systems Understanding:

- **Hardware Components:** Input (keyboard, mouse) → Processing (CPU, RAM) → Output (monitor, speakers) → Storage (HDD, SSD)
- **Software Layers:** Operating Systems (Windows, Linux, Android) manage hardware and run Application Software (Word, Excel, Canva)
- **File Management:** Organizing digital content using folders, understanding file types and extensions
- **System Interaction:** How hardware and software work together to accomplish user tasks

Digital Creation and Communication:

- **Document Creation:** Word processing with advanced formatting, headers, footers, references
- **Data Analysis:** Spreadsheet formulas and functions for practical calculations and data organization
- **Visual Design:** Graphics creation using design principles, color theory, and digital tools
- **Web Development:** Basic HTML understanding for web content structure and presentation

Digital Citizenship and Safety:

- **Online Behavior:** Understanding cyberbullying prevention, respectful digital communication
- **Privacy Protection:** Safeguarding personal information, using strong passwords, understanding digital footprints
- **Critical Evaluation:** Assessing website credibility, recognizing secure connections, avoiding suspicious content
- **Ethical Use:** Respecting copyright, avoiding plagiarism, giving proper credit to sources

Future Preparation:

- **Career Awareness:** Understanding ICT career paths, required skills, and educational pathways
- **Skill Development:** Building foundational skills applicable to various ICT professions
- **Technology Trends:** Awareness of emerging technologies and their potential impact

Problem-Solving Applications:

- **Academic Tasks:** Using ICT tools for research, presentation, and academic writing
- **Personal Organization:** Managing digital files, creating budgets, tracking information
- **Creative Expression:** Designing posters, creating multimedia content, basic web pages
- **Professional Skills:** Developing workplace-relevant technology competencies

STEP 3: COMPARISON (8 minutes)

Beginning vs End of Term Knowledge:

- **Week 1:** Basic recall of simple concepts
- **Week 11:** Integrated understanding of complex relationships between hardware, software, and applications

Practical Skills Development:

- **Basic Level:** Simple file operations, basic software use

- **Intermediate Level:** Advanced formatting, formula creation, design principles, HTML coding

Digital Awareness Growth:

- **Initial:** Limited understanding of online risks
- **Current:** Comprehensive safety strategies and responsible digital citizenship

Career Preparation:

- **General Awareness:** Knowing ICT exists as a field
- **Specific Knowledge:** Understanding various career paths, requirements, and preparation strategies

STEP 4: CONCLUSION (5 minutes)

Students should demonstrate integrated understanding of computer systems, practical application of digital tools, responsible online behavior, and awareness of ICT career opportunities, preparing them for continued learning and practical application.

STEP 5: EVALUATION (5 minutes)

Comprehensive Review Questions:

1. Explain how input, processing, output, and storage components work together in a computer system
2. Design a workflow showing how you would create a professional report using multiple software applications
3. Create a digital safety checklist for a new internet user
4. Compare and contrast three different ICT careers in terms of skills, education, and daily responsibilities
5. Plan a multimedia presentation about your school, listing all the ICT tools and skills you would use

WEEK 12: FINAL EXAMINATION AND PRACTICAL ASSESSMENT

INTRODUCTION (10 minutes)

Explain examination format, expectations, and how different sections will assess various aspects of learning throughout the term.

EXAMINATION STRUCTURE

SECTION A: MULTIPLE CHOICE (20 minutes - 20 marks) *Sample Questions:*

1. Which of the following is an input device? (a) Monitor (b) Keyboard (c) Speakers (d) Printer
2. The main function of an operating system is to: (a) Create documents (b) Manage hardware resources (c) Design graphics (d) Browse the internet
3. HTML stands for: (a) High Tech Markup Language (b) HyperText Markup Language (c) Home Tool Management Language (d) Hard Text Making Language

SECTION B: SHORT ANSWER QUESTIONS (25 minutes - 30 marks) *Sample Questions:*

1. List three functions of an operating system (6 marks)
2. Explain the difference between cyberbullying and traditional bullying (8 marks)
3. Write the HTML code to create a heading and paragraph about your favorite subject (8 marks)
4. Name two ICT careers and describe one skill needed for each (8 marks)

SECTION C: PRACTICAL DEMONSTRATION (25 minutes - 30 marks) *Students must demonstrate:*

1. **File Management:** Create folder structure, organize files by type (8 marks)
2. **Word Processing:** Create formatted document with header, footer, page numbers (10 marks)
3. **Spreadsheet Skills:** Use formulas to calculate averages and totals (8 marks)
4. **Internet Safety:** Identify secure websites and explain privacy settings (4 marks)

ASSESSMENT CRITERIA:

Knowledge and Understanding (40%):

- Accurate recall of facts and concepts
- Understanding of relationships between different ICT components
- Demonstration of technical vocabulary usage

Application and Analysis (35%):

- Practical use of software applications
- Problem-solving using ICT tools
- Application of safety principles in digital environments

Communication and Presentation (25%):

- Clear explanations of concepts
- Professional presentation of digital work
- Demonstration of digital citizenship values

GRADING SCALE:

- 90-100%: Excellent (A) - Comprehensive understanding and superior practical skills
- 80-89%: Very Good (B) - Good understanding with competent practical application
- 70-79%: Good (C) - Satisfactory understanding with basic practical skills
- 60-69%: Fair (D) - Limited understanding requiring additional support
- Below 60%: Poor (F) - Significant gaps in knowledge requiring remediation

POST-EXAMINATION REVIEW:

- Individual feedback sessions for students needing additional support
 - Recognition of outstanding achievements
 - Planning for second term continuation and skill building
 - Identification of areas for continued emphasis and practice
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FIRST TERM SUMMARY AND PREPARATION FOR SECOND TERM

Key Achievements Expected:

- Solid foundation in computer hardware and software concepts
- Competent use of basic productivity applications
- Awareness and practice of internet safety principles
- Understanding of ICT career possibilities and requirements
- Development of digital citizenship values and behaviors

Skills Developed:

- File organization and management
- Document creation and professional formatting
- Basic data analysis using spreadsheets
- Simple graphic design and web page creation
- Critical evaluation of digital information and sources

Preparation for Second Term:

- Review areas of weakness identified in examinations
- Practice using learned skills in personal and academic contexts
- Stay updated on technology trends and safety practices
- Begin exploring specific ICT career interests in more detail
- Prepare for more advanced topics in networking, databases, and multimedia