General Topic: Introduction to Computers; ICT Sectors, Trends, and Career Opportunities

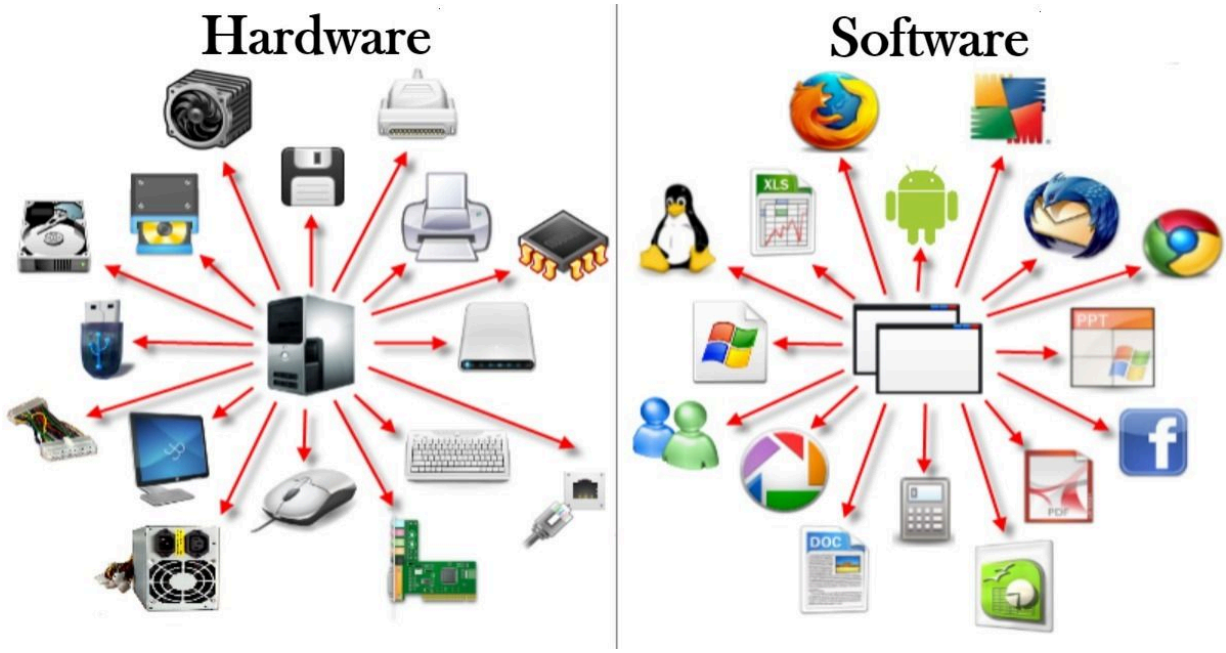
Lesson Overview:

This lesson introduces students to the fundamentals of computing, including what a computer is, the diverse sectors of ICT, emerging trends in the field, and the related career and business opportunities. It aims to build awareness of ICT's relevance in modern society and connect students to future pathways.

Key Concepts and Subtopics:

1. What is a Computer?

A device composed of hardware and software that processes data to perform tasks.



Reference: *[Hardware e software: o que são, diferenças e exemplos]*

2. ICT Sectors & Career Opportunities

- **Programming:** Web and game developers
- **Visual Arts:** Animators, illustrators, graphic designers
- **Computer System Servicing:** Technicians
- **Telecommunications:** Call center and contact center roles

3. Trends and Issues in ICT

- Cybersecurity and data privacy
- Rise of AI and automation
- Digital divide and access challenges

Real-Life Applications

Imagine Alex, a Grade 7 student who loves video games. In ICT class, he learns the basics of programming and starts building a simple game using drag-and-drop coding. He also explores graphic design tools. By discovering his interests early, he's already on track to pursue a career in game development.

Remember This!

- *ICT is a broad field with many exciting sectors to explore.*
- *Being updated with trends like cybersecurity and AI gives you an edge.*
- *Understanding ICT now builds the foundation for future digital careers.*
- *Every digital skill you learn today can become a valuable tool tomorrow.*

General Topic: Occupational Safety and Health (OSH) Standards in ICT

Lesson Overview:

This lesson focuses on the importance of **health and safety practices** when using ICT tools and environments. It highlights proper ergonomics, safety guidelines, and best practices to avoid injury, promote wellness, and ensure a safe working space while using computers and other digital equipment.

Key Concepts and Subtopics:

1. What is OSH in ICT?

Occupational Safety and Health (OSH) refers to the standards and practices that ensure safety and well-being in the workplace — including digital work environments such as computer labs, offices, or home workspaces.

2. Common ICT-Related Hazards

- Eye strain (due to long screen time)
- Carpal tunnel syndrome (from poor typing posture)
- Back/neck pain (from improper chair and monitor setup)
- Electrical hazards (overloaded outlets, exposed wires)
- Tripping hazards (loose cables)

3. Ergonomics and Safe Work Practices

- Use a chair with back support.
- Position monitor at eye level.
- Keep wrists straight while typing.
- Follow the 20-20-20 rule (every 20 minutes, look 20 feet away for 20 seconds).
- Keep workspace clean and clutter-free.

4. Safety Guidelines in the Computer Laboratory

- No food or drinks near devices.
- Report damaged cables or devices to the teacher.
- Handle equipment with clean and dry hands.
- Shut down computers properly before turning off power sources.

5. Personal Hygiene and Health Practices

- Wash hands before and after using shared equipment.
- Avoid touching your face while using shared computers.
- Practice proper posture and take regular breaks.

Real-Life Example:

Ella spends hours using the computer for schoolwork. She starts to feel wrist pain and eye strain. After learning about OSH, she adjusts her monitor height, uses a wrist rest, and follows the 20-20-20 rule. Now, she can work longer without discomfort.

Remember This!

- *Safety and health are just as important in digital environments as in physical ones.*
- *Practicing proper posture and using equipment correctly protects your body.*
- *A clean, organized, and hazard-free workspace boosts productivity and prevents injuries.*

General Topic: Computer Number Systems and Conversion

Lesson Overview:

Computers use different number systems to represent and process data. In this lesson, students will learn the four main number systems—binary, decimal, octal, and hexadecimal—and practice converting numbers between them. Understanding these systems is essential in programming, memory addressing, and digital electronics

Key Concepts and Subtopics:

1. Types of Number Systems

- **Decimal (Base-10):** Uses digits 0 to 9; most common in daily life.
- **Binary (Base-2):** Uses only 0 and 1; fundamental in computing.
- **Octal (Base-8):** Uses digits 0 to 7; sometimes used in digital systems.
- **Hexadecimal (Base-16):** Uses 0–9 and A–F (A=10 to F=15); common in programming and memory addresses.

2. Conversions Between Number Systems

- Decimal ↔ Binary
- Decimal ↔ Hexadecimal
- Binary ↔ Octal (grouping bits)
- Step-by-step method: division-remainder (for decimal to others), positional notation (for others to decimal)

Real-Life Example:

Imagine you're tinkering with a computer simulation. You need to set memory addresses or colors using hexadecimal values—like `#FF5733` for orange. Being able to switch between hexadecimal and decimal helps you understand how computer hardware interprets these commands.

Remember This!

- *Computers rely on non-decimal systems like binary and hexadecimal to store and process info.*
- *Conversion between number systems helps you understand computing fundamentals and programming logic.*
- *Practicing these conversions builds your digital literacy—key for future tech skills.*

General Topic: Productivity Software (Word Processing, Spreadsheet, and Presentation Tools)

Lesson Overview:

This lesson introduces productivity software — essential digital tools used for creating, organizing, and presenting information. Students will learn about word processors, spreadsheets, and presentation software, and how to use basic features of each to improve academic work and digital communication.

Key Concepts and Subtopics:

1. What is Productivity Software?

Productivity software refers to applications used to produce documents, manage data, and create visual presentations. Common examples include:

Software Type	Common Tools	Function
Word Processing	Microsoft Word, Google Docs	Create and edit text documents
Spreadsheet Software	Microsoft Excel, Google Sheets	Organize data using tables, formulas, charts
Presentation Software	Microsoft PowerPoint, Google Slides	Create slide shows and visual presentations

2. Word Processing – Basic Features

- Formatting text (font size, style, color)
- Paragraph alignment and line spacing
- Inserting images, tables, and hyperlinks
- Spell check and grammar tools
- Saving and exporting files

3. Spreadsheet Software – Basic Features

- Entering data into rows and columns
- Basic formulas (e.g., =SUM, =AVERAGE)
- Sorting and filtering data
- Creating charts (bar, pie, line)

- Cell referencing and formatting

4. Presentation Software – Basic Features

- Creating slides and slide layouts
- Inserting images, text boxes, and shapes
- Adding animations and transitions
- Using templates and themes
- Presenting slides in slideshow mode

5. Importance of Productivity Software

- Helps students complete school projects efficiently
- Improves communication and information sharing
- Enhances digital literacy and workplace readiness

Real-Life Example:

Josh is assigned a group project. He uses a word processor to write the report, a spreadsheet to calculate survey results, and a presentation tool to share their findings in class. Each tool helps him and his team work better and faster.

Remember This!

- *Productivity software helps you create, manage, and share information more effectively.*
- *Mastering basic tools like Word, Excel, and PowerPoint makes schoolwork easier and more professional.*
- *These digital skills are useful not only in school but also in future careers.*

General Topic: Software Applications and Graphic Design Tools

Lesson Overview:

This lesson introduces students to common software applications used for digital tasks, with a focus on basic graphic design tools. It helps learners understand how these tools are used to create, edit, and enhance visual materials like posters, logos, and digital art — essential in modern communication, school projects, and future careers in ICT or media.

Key Concepts and Subtopics:

1. Types of Software Applications

Software applications are programs used to perform specific tasks on a computer.

Software Category	Examples	Purpose
Word Processing	Microsoft Word, Google Docs	Create and edit documents
Spreadsheets	Microsoft Excel, Google Sheets	Manage data and perform calculations
Presentations	PowerPoint, Google Slides	Create slides for reports or talks
Multimedia	VLC Player, Windows Media Player	Play audio and video files
Graphic Design	Canva, GIMP, Adobe Photoshop	Create and edit images and layouts

2. Introduction to Graphic Design Tools

Graphic design tools help users make visual content. These may include:

- 🖌️ *Drawing tools* – shapes, lines, brushes
- 🖼️ *Image editing* – crop, resize, filters
- 🎨 *Color tools* – palettes, gradients
- 🔤 *Text tools* – add and style text on images
- 📐 *Layout and alignment* – arrange objects neatly on a canvas

3. Common Graphic Design Platforms for Beginners

- **Canva** – Web-based tool for creating posters, infographics, and presentations
- **GIMP** – Free image editor, like Photoshop
- **Paint / Paint 3D** – Simple tools available on Windows for drawing and coloring

- **Pixlr** – Online editor that works like a lightweight Photoshop

4. Practical Uses in School

- Designing project covers, infographics, or campaign materials
- Creating social media graphics for school activities
- Editing photos for digital portfolios or presentations

5. Basic Design Principles (for Beginners)

- *Alignment* – Keep elements neatly lined up
- *Contrast* – Make text and visuals stand out
- *Balance* – Distribute content evenly on the page
- *Simplicity* – Avoid clutter; focus on the message
- *Font pairing* – Use 1–2 fonts that work well together

Real-Life Example:

Lara's group was asked to make a digital poster for a school campaign. She used Canva to choose a layout, added their group's slogan using bold fonts, and inserted relevant icons. Their work stood out because it was clean, readable, and attractive.

Remember This!

- *Graphic design tools help you express ideas visually and creatively.*
- *Using the right software makes your work more attractive, organized, and professional.*
- *These skills are useful for school and future jobs in design, marketing, or media.*

General Topic: Video Editing Tools and Their Functions

Lesson Overview:

This lesson introduces students to video editing tools, their basic functions, and how they are used to create digital video content. Whether for school projects, vlogs, or digital storytelling, understanding these tools allows learners to present ideas creatively through visual and audio elements.

Key Concepts and Subtopics:

1. What is Video Editing?

Video editing is the process of arranging and modifying video clips to create a final product. It includes cutting scenes, adding music, inserting text, and applying transitions or effects.

2. Common Video Editing Tools for Beginners

Tool/Application	Platform	Key Features
Windows Video Editor	Windows	Basic trimming, titles, music
iMovie	macOS/iOS	Transitions, filters, audio tools
CapCut	Android/iOS	Mobile editing, effects, subtitles
Canva (Video Feature)	Web-based	Drag-and-drop editing, templates
OpenShot / Shotcut	Windows/macOS/Linux	Free, open-source editors with timeline

3. Basic Video Editing Functions

- ✂️ Trimming and Splitting – Cutting parts of a video
- 🎵 Adding Audio – Music, voiceover, sound effects
- 📝 Text and Titles – Inserting captions, subtitles, or headings
- 🔄 Transitions – Smooth changes between scenes (fade, slide, etc.)
- 🎨 Filters and Effects – Change the look and feel (color grading, blur, etc.)
- 🎬 Timeline – Organizes clips and elements in order
- 📤 Exporting – Saving the final video in desired quality or format

4. Uses of Video Editing in School and Life

- Creating digital storytelling videos
- Editing school project presentations
- Making awareness videos or campaign content
- Vlogging or content creation for school clubs

Real-Life Example:

Miguel recorded clips for a science project about recycling. He used CapCut to trim the extra parts, added background music, and placed text overlays explaining each step. The final video was clear, engaging, and submitted as a digital presentation.

Remember This!

- *Video editing allows you to tell stories and present ideas in a creative, dynamic way.*
- *Even simple tools can produce impressive results when used effectively.*
- *Practice makes perfect — the more you explore editing tools, the better your videos will become!*