4565: Computing Foundations for a Digital Age
Unit 1

Day 2 Lesson Plan: The Why and History of Computing

Objective

Students will explore the personal and societal relevance of computer science by connecting their interests to real-world computing applications and examining how computing has evolved over time.

Word Bytes

- **Computer Science (CS)** – The study of computers and algorithmic processes, including their principles, hardware and software designs, applications, and impact on society.

Materials

- Then & Now Game cards (printable matching set)
- "Who Likes To..." slides or teacher-led discussion prompts

Activities

Warm-Up Prompt

- Ask students: “What is something you use every day that you think was made possible by computer science?”
- Give a few examples to help them warm up (e.g., phone, smartwatch, social media, Netflix).

Who Likes To...? Interactive Discussion

- Use a slideshow or verbal prompts to connect everyday interests with fields of CS.
- Example prompts: more here
    - Who likes to play video games? → Game development, AI, graphics rendering
    - Who likes YouTube or TikTok? → Recommendation algorithms, video compression
    - Who likes to listen to music? → Audio streaming, compression, AI music suggestions
    - Who likes to design or build things? → CAD software, 3D printing

- Keep the energy high—this is designed to help students realize how CS connects to their lives.
- Ask students to call out their favorite activities and suggest how tech makes them possible.

Then & Now Game: Technology Timeline Match-Up

- Print or display a set of cards showing "Old Tech" and "Modern Equivalent" (e.g., rotary phone → smartphone).
- Each student gets one card and must find their match by walking around and comparing items.
- After students find their match, they sit together and answer: "What problem did this solve, and how did it improve over time?"
- Sample card set: Then & Now Printable Cards

Mini-Lesson: Evolution of Computing

- Use a few slides or short video clips (such as from *Crash Course Computer Science* or other teacher-selected media) to walk through major milestones:
  - ☐ Early calculators
  - ☐ First computers (ENIAC)
  - ☐ Personal computers
  - ☐ Internet and mobile devices
  - ☐ Today's cloud computing and AI
- Emphasize: Computer science is constantly evolving to meet the needs of society.

Discussion Prompt

- "What do you think is one of the most important inventions in computing so far, and why?"
- Students add **"algorithm"** to their Word Bytes dictionary with an example.
  - **Suggested example:** Algorithm – A recipe for chocolate chip cookies.
- Optional exit ticket: Write one sentence predicting how computing might look in 20 years.