

# SEMtech!

## Week 3 Lesson Plans: Introduction to Computing:

### 1. Introduction (5 minutes)

Welcome and Overview:

- Greet the students and provide an overview of the class.
- Importance of Computing: Briefly discuss how computers are integral to modern life.
- **VIDEO: Past, Present, future of communications:**  
<https://curiositystream.com/video/6952>

### 2. Computers Are Everywhere (10 minutes)

- Everyday Examples: Show visuals/examples of computers in various devices like smartphones, ATMs, and cars.
- Discussion: Ask students to name unusual places where they might find computers to ensure engagement.
- **VIDEO: What is Ubiquitous?** <https://curiositystream.com/video/562>
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### 3. Digital Revolution (10 minutes)

- Historical Perspective: A quick overview of the transition from analog to digital.
- Impact on Society: Discuss how the digital revolution has changed the way we work, learn, and communicate.
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### 4. Embedded Computers (5 minutes)

- Definition and Explanation: Explain what embedded computers are and how they differ from personal computers.
- Real-World Examples: Provide examples of embedded computers in household appliances, medical devices, and transportation systems.
- **VIDEO:** <https://curiositystream.com/video/2552>
- **INNOVATION Nation, Baby Tech**

### 5. Communication Technologies (10 minutes)

- Evolution of Communication: Highlight how communication has evolved with computing technologies.
- Internet and Connectivity: Focus on the internet as a communication tool and its global impact.
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## 6. Emerging Technologies (5 minutes)

- Introduction to Trends: Introduce AI, IoT, and blockchain as examples of emerging technologies.
- Potential and Challenges: Discuss their potential to transform industries and the challenges they present.
- VIDEO

### Conclusion (5 minutes)

Recap: Summarize the key points covered in the lesson.

Q&A: Allow time for students to ask questions.

#### Homework/Assignment:

- If applicable, give a simple assignment like identifying computing devices at home.

#### Interactive Elements:

- Throughout the lesson, include interactive elements such as:
  - Polls/Quizzes: To engage the students and test their understanding.
  - Group Discussion: Encourage students to share their thoughts on how technology affects their lives.

#### Teaching Tools:

- **Presentation Slides:** Use slides with visuals to help illustrate concepts.
- **Videos:** Short clips demonstrating the evolution of computers and emerging tech.
- **Demonstrations:** If possible, show real embedded devices or simulations.
- For the practical part, if there's time and the resources allow, you could have a small hands-on activity where students identify the components of the computer they are using or navigate to a website that shows live data from embedded systems around the world.

The goal of such a lesson is not only to impart knowledge but also to stimulate interest and curiosity about computing. Encourage the students to think critically about how computing technology is woven into the fabric of their daily lives and the broader implications for society.

## Week Three Lesson Plans: Computers in the Workplace

### Introduction (5 minutes)

#### Greetings and Objectives:

- Warmly welcome the students and outline the objectives for the class.

#### Relevance:

- Briefly explain why understanding the role of computers in the workplace is crucial.
- **VIDEO: Computer and Turing.** <https://curiositystream.com/video/4986>
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### Worker Productivity (10 minutes)

#### Definition and Importance:

- Explain how computers enhance productivity.

#### Case Studies:

- Present a couple of brief case studies or examples illustrating the impact of computers on productivity.
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### Current Employment (10 minutes)

#### Job Market Analysis:

- Discuss how computers have transformed various industries and created new job roles.
- Skill Sets: Highlight the importance of computer literacy in the current job market.
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### Future Employment (10 minutes)

#### Trends and Predictions:

- Share insights on how computers might further change the job market.

#### Preparing for the Future:

Discuss skills that will be valuable in the future, such as coding, data analysis, and digital literacy.

### Interactive Session (5 minutes)

#### Group Activity:

- Divide the class into small groups to discuss how computers might change their chosen career paths.

#### Presentation:

- Have a representative from each group share their discussion points with the class.
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### Conclusion (5 minutes)

#### Summary:

- Recap the key points discussed during the lesson.
- Q&A: Allow students to ask questions about the topic.

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**Further Study or Homework:**

- Assign research on how computers are used in a field of interest to them.

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**Interactive Elements:**

**Real-Time Polls:** Use classroom technology to gather opinions on the future of employment with computers.

**Role-Playing:** Have students role-play as job seekers with different levels of computer skills navigating the job market.

**Teaching Tools:**

**Infographics:**

- Use infographics to visualize employment trends and statistics.

**Guest Speaker:** If possible, invite a guest speaker who can share firsthand how computers have impacted their workplace.

By actively engaging students through discussion, interactive activities, and concrete examples, you can help them understand the profound impact of computers on the workplace and the importance of developing relevant skills for their future careers. This approach aligns with SEMtech's goal of fostering an understanding of STEM fields and preparing students for the demands of the future job market.

## Lesson Plan: Challenges of a Digital Society

### Introduction (5 minutes)

- **Welcome and Context Setting:** Start with a brief introduction to the digital society and its relevance.
- **Learning Objectives:** Clarify what the students will learn and why it matters.
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### Cultural and Societal Issues (15 minutes)

- **Overview of Issues:** Introduce how digital society impacts culture and society, including privacy concerns, information overload, and cyberbullying.
- **Discussion:** Engage students in a discussion about the impact of digital technologies on their own cultural experiences and societal interactions.
- **Case Studies:** Share real-life examples or case studies that highlight these issues.

### Closing the Digital Divide (15 minutes)

Explanation of the Digital Divide: Define the digital divide and explain its significance in global and local contexts.

Strategies to Bridge the Gap: Discuss initiatives and strategies that are in place or proposed to close the digital divide, including education programs, infrastructure development, and policy initiatives.

- **Role of Students:** Involve students in brainstorming how they can contribute to closing the digital divide in their own communities.
- **VIDEO "World Wide WiFi"**
- <https://curiositystream.com/video/6952>

### Interactive Activity (5 minutes)

- **Group Work:** Split students into small groups to discuss a particular challenge of the digital society and propose solutions or coping strategies.
- **Sharing:** Have each group share their discussion points with the class, fostering a collaborative learning environment.

### Conclusion (5 minutes)

- **Recap:** Summarize the key challenges and potential solutions discussed.
- **Q&A:** Encourage questions to clarify any uncertainties and deepen understanding.
- **Homework/Assignment:** Assign a reflective essay or project on how students can make a positive impact on digital society challenges.

- **Interactive Elements:**
- **Real-World Scenarios:** Present students with scenarios to consider and respond to, enhancing critical thinking.
- **Debate:** Organize a debate on a contentious issue related to the digital society to develop argumentation skills.

**Teaching Tools:**

- **Slideshows:** Use slides to present statistics and infographics related to cultural and societal issues.
- **Videos:** Short documentaries or talks that highlight the challenges of the digital society.

Online Resources: Direct students to online resources for further research and learning. This lesson plan emphasizes SEMtech's mission of addressing technology education gaps and fosters diversity in STEM by highlighting the importance of inclusive digital access. By discussing cultural and societal issues, students can develop a holistic understanding of the complexities of a digital society. Engaging students in the discussion about the digital divide encourages them to be part of the solution, aligning with SEMtech's strategic goals.