Introduction to Computers
Supplemental Lesson Ideas

1. **Discuss the types of things students can do with computers and consider how convenient the computer makes it for them to complete these tasks.**
   Have them consider what other devices they use on a regular basis that they think might be similar to the computer.

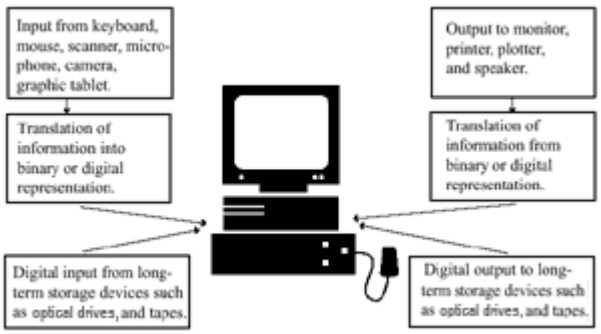
2. **Introduce the idea of mental images and mental models.**
   Ask students to think about what is happening "inside the box" when they use a computer. What do they think occurs? Revisit this activity after students do the online activities and lessons. Ask students to identify ways that their mental model of what goes on "inside the box" has changed since they finished the unit.

3. **Have students identify the important ideas that were presented in the online lessons and activities.**
   Include a discussion on the value of printed material for sharing and storing information. What limitations can they identify in accessing information if the information is not in written form?

4. **Have students identify the one person introduced on the online video that they most admired.**
   Have them explain their choice. Can they identify a person from today's world they think is equally important to the computer field? Have them explain their choice.

5. **Ask your students to consider if the computer is a smart machine.**
   Do they think they are smarter? Do they know more? Can they do things a computer cannot do? After a short discussion of the ideas, assign the Computers handout. Provide time to share answers.

6. **If possible, show students the inside of a personal computer, either working or nonfunctional.**
   Point out as many specific components as possible.



7. **If you have access to vacuum tubes or old computer components of any kind, use them in class.**
   Let students see and touch them.

8. **Have students research some of the history of computers using your library or the Internet.**
   You might have them look for information about Blaise Pascal, Charles Babbage, Ada Lovelace, Herman Hollerith, John Bardeen, Joseph Jacquard, William Shockley, Walter Brittain, Ted Hoff, Robert Noyce, Jack Kilby, Georg Scheutz, Grace Hopper, Gottfried Leibniz, George Stibitz, Konrad Zuse, Howard Aiken, Alan Kay, John von Neumann, Presper Eckert, John Mauchly, Alan Turing,

John Atanasoff, Donald Knuth, or Ed Roberts. There are many other names you could add to this list.

9. **List as many devices containing embedded processors as you can.**
   If you have any magazines or catalogs available, have students find pictures of these devices to form a classroom collage. Have students explain why they think there is an embedded processor in each device and what they believe the processor actually does.

10. **Remind students of the four parts of a computer system.**
    Are humans similar to such an information-processing machine? Have students complete the handout titled An Information Processing Machine and be prepared to share their answers.

11. **Discuss with your students the necessity of a computer system having both hardware and software.**
    Ask them to point out features that they particularly like about the computers they have used. Classify these features as either hardware or software.

    To assist, you might use this analogy: Have students think about the music they listen to from the radio or CDs. The music is like software. They cannot see or touch the music, but they respond to it. They cannot see or feel software either, but the computer does respond to it. The radio, CD, and CD player are like computer hardware. Students can both touch and feel these items. They can also touch and feel computer hardware.

12. **Discuss with students the history of computers as shown on the online video for the lesson "History of Computers."**

    Have them reflect on how computers are becoming more and more available. Gather some information from students about how many of their parents or other adults they know use computers. Have them consider some "What if?" questions.

    - What if their parents were working at their present jobs and there were only 10 ENIACs available in the whole world?
    - What if there was only one personal computer available where their parents work?
    - What if there was only one computer in the entire school?
    - What if every student and teacher had his or her very own computer?

13. **Distribute the Libraries handout.**
    Provide a time limit for students to complete the activities. Discuss their answers in a large group.

14. **Have students read the Historical Perspectives handout.**
    Be prepared to complete this activity during the next period of time used for these activities. Students will need to do some work outside of class.

15. **Have students design a wristwatch of the future.**
    Tell them they can assume they can install all the computing power they need to accomplish the tasks they want their wristwatches to be able to do. Have them write a paragraph describing their wristwatch and explaining what the watch is able to do. You might even have them illustrate their watches and the capabilities of the watches with a diagram.