Unit Goals

- Identify the major components of a personal computer.
- Students will learn how to put a computer together.
- Students will learn the function of each part of a computer.
- Explain how all of the components of a computer work together.
- Describe input devices and how they operate.
- Describe output devices and how they operate.
- Be able to identify and explain the role of primary storage.
- Explain the role of the CPU and how it operates.

New Jersey Core Curriculum Content Standards – Technology

8.1 Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaboratively and to create and communicate knowledge.

8.1.2.A.1 Identify the basic features of a computer and explain how to use them effectively.

8.1.2.A.2 Use technology terms in daily practice.

8.1.2.A.3 Discuss the common uses of computer applications and hardware and identify their advantages and disadvantages.

Characteristics of the students for whom this unit is:

This unit is intended for use in the 10th-grade basic computer class. There are 25 students in the class. There are no physical or social adaptations. No IEP’s.
Student’s Present Level of Performance and Knowledge

All students have taken the basic intro to computers class. This class provided each student with background information on the history of the personal computer along with a brief introduction on computer components. Along with this class all students have been taught how to use basic hand tools (screwdriver, multi-meter, pliers, and Allen wrenches). They should all have the adequate knowledge necessary to successfully complete this unit.

Classroom Layout and grouping of students

Students will be put in groups. Each group will consist of five students. Instruction will take place in the computer lab. This will provide the suitable environment for the hands-on part of the workshop. The state-of-art bench repair stations are designed for working specifically on computers.

Introductory procedures

A video will be shown and used as an example to demonstrate the proper procedure in the removal of the various components of the computer. After all students have watched the video, an instruction manual will be handed out. The manual will have detailed, step by step instructions that describe the components of a computer and how to successfully diagnose, remove, troubleshoot, and replace the various components that make up the computer.

Materials and Media

- **40 piece computer repair toolkit**-This toolkit will provide learners with all the necessary tools to remove and install the various system components.
- **Dell Dimension Test workstations**- Each group of five students will get a working Dell Dimension workstation that will be used to disassemble and reassemble during the lesson.
- **Instruction Manual**-downloadable PDF
- **Video Presentation**- will demonstrate the removal of system components

Visuals

1. Computer Troubleshooting Flowchart
2. Memory Installation Procedure
3. Computer Hardware Parts Description
4. Computer Inner Hardware Labeling Lesson
5. Hard Drive Removal Instructions
6. How a CPU Processes Data
7. Hard Drive Errors Troubleshooting Flowchart
8. Computer Ports Labeling Lesson
Assessment and evaluation of learner understanding

- Students will be given a written exam consisting of 50 test items. The test will include installing, configuring, diagnosing and troubleshooting; system boards, processors, memory, and I/O devices.

- Student’s parts labeling worksheet will be graded.

- Using a rubric, students will be graded on their ability to disassemble a computer and then reassemble it and have it working. This rubric will be used as a final reflection of the completed project.

* Adapted from Unit Plan at [http://edtech.tennessee.edu/~bobannon/unit_plans.html](http://edtech.tennessee.edu/~bobannon/unit_plans.html)