

IT ESSENTIALS V. 4.1  
Module 3  
Computer Assembly Step-by-Step

3.1 Open the Case		
1.	What does form factor refer to?	Size and shape of the case
2.	How should the workspace be prepared?	Adequate lighting, good ventilation, comfortable room temperature, workbench accessible from all sides
3.2 Install the power supply		
3.	What are the power supply installation steps?	<ol style="list-style-type: none"> <li>1. Insert power supply into case</li> <li>2. Align holes in power supply with holes in case</li> <li>3. Secure power supply to case using proper screws</li> </ol>
Virtual Desktop		
Lab: Install Power Supply		
3.3 Attach the components to the motherboard and install the motherboard		
3.3.1 Install a CPU and a heat sink/fan assembly		
4.	How is the CPU secured to the socket on the motherboard?	With a locking assembly
5.	What is thermal compound used for?	To help conduct heat away from the CPU
6.	How do you clean a used CPU?	Isopropyl alcohol
7.	What is the heat sink/fan assembly?	A two-part cooling device
8.	What is the connection 1 indicator on the CPU lined up with on the CPU socket?	Pin 1
3.3.2 Install the RAM		
9.	What does RAM provide?	Temporary data storage for the CPU while the computer is operating
10.	What is meant by volatile memory?	Its contents are lost when the computer is shut down
3.3.3 Install the motherboard		
11.	What is used to mount the motherboard and to prevent it from touching the metal portions of the case?	Plastic and metal standoffs
Virtual Desktop		
Lab: Install the Motherboard		
3.4 Install Internal Drives		
12.	What are the steps for installing a hard disk drive?	<ol style="list-style-type: none"> <li>1. Position the HDD so it aligns with the 3.5 inch drive bay</li> <li>2. Insert the HDD in drive bay so screw holes in drive line up with screw holes in the case</li> <li>3. Secure the HDD to case using proper screws</li> </ol>
Virtual Desktop		

3.5 Install drives in external bays		
13.	What are external bays?	Allow access to the media without opening the case
3.5.1 Install the optical drive		
14.	What is an optical drive?	A storage device that reads and writes information to CDs and DVDs
15.	What kind of connector provides power to the optical drive from the power supply?	Molex
16.	What kind of cable connects the optical drive to the motherboard?	PATA
3.5.2 Install the Floppy Drive		
17.	What is a floppy disk drive (FDD)?	A storage device that reads and writes information to a floppy disk
18.	What kind of power connector provides the FDD with power from the power supply?	berg
Virtual Desktop		
Lab: Install the Drives		
3.6 Install adapter cards		
19.	Why would you use adapter cards?	To add functionality
3.6.1 Install the NIC		
20.	Why do you need a NIC?	To connect to a network
3.6.2 Install the wireless NIC		
21.	What type of expansion slots do wireless NICs use?	PCI & PCIe
3.6.3 Install the video adapter card		
22.	What is a video adapter card?	The interface between a computer and a display monitor
23.	What type of expansion slots do video adapter cards use?	PCI, AGP, PCIe
Virtual Desktop		
Lab: Install Adapter Cards		
3.7 Connect All Internal Cables		
24.	What are power cables used for?	To distribute electricity from the power supply to the motherboard and other components
25.	What do data cables do?	Transmit data between the motherboard and storage devices
3.7.1 Connect the power cables		
26.	How many pins does the ATX main power connector have?	20 or 24
27.	How many pins are on a SATA power connector?	15
28.	What is a 4-pin berg connector used for?	Floppy drive
3.7.2 Connect the data cable		
29.	What are the types of data cables?	PATA, SATA, floppy drive
30.	What is another name for a PATA cable?	Ribbon cable

31.	What does a stripe on the data cable indicate?	Location of pin 1
32.	Where is the pin 1 indicator on the drive connector?	Closest to the power connector on the drive
33.	If a motherboard has two PATA drive controllers, how many PATA drive can it support?	4
34.	What type of connector does a SATA data cable have?	7 pin
35.	What type of a connector does a floppy drive data cable have?	34 pin
36.	If the floppy drive activity light displays continuously, what is the problem?	Ribbon cable is not installed correctly
Virtual Desktop		
Lab: Install Internal Cables		
3.8 Reattach the side panels and connect external cables to the computer		
3.8.1 Re-attach the side panels		
3.8.2 Connect external cables to the computer		
37.	Should you force a connector?	No
38.	When should you plug in the power cable?	After you have connected all other cables
Virtual Desktop		
Lab: Complete Computer Activity		
3.9 Boot the computer for the first time		
39.	When booting a computer, what performs a check on all of the internal components?	BIOS –basic input/output system
40.	What does POST stand for?	Power-on Self-Test
3.9.1 Identify Beep Codes		
41.	What does POST check for?	To see that all of the hardware in the computer is operating correctly
42.	What does a single beep indicate?	The computer is functioning properly
43.	What determines what the beep codes mean?	The BIOS manufacturer
3.9.2 Describe BIOS setup		
44.	What is contained in BIOS?	Setup programs used to configure settings for hardware devices
45.	What does CMOS stand for?	Complementary Metal Oxide Semiconductor
46.	What key is typically pressed to enter the BIOS setup program?	DEL
LAB: Boot the Computer		