# Tonline

Thank you for joining, I'm Jerry Naidoo, your host. Today's topic will be The Motherboard.

#### THE MOTHERBOARD

#### SESSION 1







<u>RAM/MEMORY SLOTS:</u>

 ALWAYS CONSULT THE
 MOTHERBOARD MANUAL
 TO KNOW WHICH SLOTS
 TO POPULATE.



#### ATX POWER CONNECTORS:



4+4 PIN CPU POWER CONNECTOR



20+4 PIN MOTHERBOARD POWER CONNECTOR



#### CASE AND CPU FAN CONNECTORS







# EXPANSION SLOTS

Provides additional functionality to a computer.



### FRONT PANEL, USB, AND AUDIO CONNECTORS

Note:

 Connecting the front panel connectors can be very confusing.
 Always, and I mean ALWAYS, consult your motherboard manual to know exactly where to plug each cable into.



# SATA CONNECTORS





#### FIRMWARE AND CMOS BATTERY





# CMOS AND FIRMWARE CONTINUED:

- Motherboards use integrated flash memory that stores the motherboard's firmware.
- Motherboards also use one of two different types of firmware. BIOS or UEFI.
- BIOS configuration settings is saved in the CMOS chip, which uses volatile memory.
- CMOS battery supplies power to this memory so that the settings aren't erased when the computer is turned off.
- The CMOS battery on motherboards is also used to retain accurate day and clock times when the computer is unplugged.

# MOTHERBOARD CHIPSET



# I/O PORTS/CONNECTORS

#### END OF SESSION CHALLENGE

### LIST THE CONNECTORS OF A MOTHERBOARD



#### THE MOTHERBOARD

#### SESSION 2



#### <u>STEP 1 - INSTALL THE I/O SHIELD</u>



#### <u>STEP 2 – INSTALLING THE MOTHERBOARD STANDOFFS</u>





# STEP 2 CONTINUED



# STEP 3 - INSTALL THE MOTHERBOARD



#### END OF SESSION CHALLENGE

#### <u>SESSION 2 QUIZ</u> <u>YOU HAVE 5 MINUTES TO ANSWER 2 QUESTIONS</u>

1. You are in the process of installing a motherboard in a system case. Which of the following objects should you place between the motherboard and the system case?

- a. Passive heat sink
- **b.** Fans
- c. Heat spreaders
- d. Support manual
- e. Standoffs

2. You have just finished replacing the motherboard in your friend Ethan's computer with the same type of motherboard that the computer had originally. You tested the motherboard by powering it on and by verifying that the operating system started and that the applications work.

Now Ethan is complaining that his computer no longer recognizes his external hard drive, which he had connected to the previous motherboard.

Which of the following is MOST likely causing the external hard drive not to function?

- **a.** The USB front panel connector was not properly connected.
- **b.** The replacement motherboard does not support external hard drives.
- c. The hard drive has failed.
- **d.** The computer's power supply was not connected properly.

# Tonline 家

Please feel free to reach out to me if you have any further questions.

jerry@itonlinelearning.com