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WK4 COMPUTER SUPPORT

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1.

A gaming PC setup relies heavily on both a stable power supply and carefully chosen peripherals to ensure smooth performance and immersive gameplay. The power supply unit (PSU) is the backbone of the system, converting AC power from the wall into regulated DC power for components like the CPU, GPU, and motherboard. A high-quality PSU with sufficient wattage is essential, especially for gaming rigs equipped with powerful graphics cards that demand extra energy during peak loads. Alongside the PSU, peripherals such as a mechanical keyboard, high-DPI gaming mouse, and surround sound headset enhance user interaction and experience. For instance, RGB-lit keyboards not only improve visibility but also add a customizable aesthetic, while a responsive mouse ensures precision in fast-paced games. Together, the PSU provides reliable performance, and the peripherals create an engaging, efficient interface, making the overall gaming setup both powerful and enjoyable.

2.

80 PLUS Efficiency is a certification standard for computer power supply units (PSUs) that measures how efficiently they convert AC power from the wall into usable DC power for system components. A PSU with higher efficiency wastes less electricity as heat, reducing energy costs and improving overall system reliability. The certification has multiple levels, including Bronze, Silver, Gold, Platinum, and Titanium, each representing increasing efficiency percentages under different load conditions. In IT, 80 PLUS efficiency plays a key role in ensuring sustainable, cost-effective operation of systems, especially for gaming PCs, servers, and data centers where energy demands are high.

3.

Testing a PSU with a multimeter or configuring a peripheral provides deep, practical insight into the functioning and reliability of computer systems. When testing a power supply unit, the multimeter allows you to measure the voltage output on different rails, such as +12V, +5V, and +3.3V. This hands-on process demonstrates how critical stable power is to system stability and component longevity. Even small deviations can lead to system crashes, data corruption, or hardware damage. Learning to perform these measurements also reinforces an understanding of electrical safety and proper diagnostic procedures, which are essential skills in IT maintenance.

Configuring peripherals, such as keyboards, mice, or printers, complements this by teaching the importance of correct setup and driver installation. It shows how hardware and software interact, affecting performance, responsiveness, and usability. For instance, adjusting DPI settings on a gaming mouse or configuring a printer for network use requires attention to detail and problem-solving skills. Both exercises emphasize precision, patience, and analytical thinking. Overall, these tasks strengthen technical competence, highlight the interdependence of hardware and software, and build confidence in troubleshooting and maintaining reliable IT systems

4.

Creating a PSU or peripheral connection diagram in Canva helps visualize how power and data flow within a computer system. In a typical PSU connection diagram, the power supply is placed at the center, showing its main outputs: the 24-pin ATX connector to the motherboard, the 8-pin CPU connector, PCIe connectors for the GPU, SATA power for storage drives, and Molex connectors for older peripherals. Each cable is clearly labeled, with arrows indicating the direction of power flow to components, making it easy to understand which parts depend on which connections.

For peripherals, the diagram can illustrate USB connections from devices like keyboards, mice, printers, and external drives to the motherboard's USB ports or hub. Additional connections, such as audio jacks or network cables, can also be included to show the complete interaction between input/output devices and the system.

This type of diagram is essential in IT for planning and troubleshooting. It helps technicians quickly identify where components receive power and data, reducing errors during installation or maintenance. Moreover, it serves as an educational tool, demonstrating how all parts of a computer rely on correct connections, highlighting the interdependence between the PSU, motherboard, and peripherals, and reinforcing understanding of overall system architecture.

PSU

24 pin ATX

Motherboard

PCIe

GPU

SATA Power

Molex

Keyboard

USB

Printer

HDMI
or
Network