Hardware Specifications

Digital Technologies, Digital Systems

Year 7 & 8

Content Description

Explain how hardware specifications affect performance and select appropriate hardware for particular tasks and workloads. (AC9TDI8K01)

VR Learning Activities

Listening and Understanding: Students explore the role of computer hardware in AI performance through guided explanations and animations. They learn how components like CPUs, GPUs, RAM, and storage affect processing speed, multitasking, and data handling, especially in AI training environments.

Interactive Exploration: Students interact with a virtual computer lab where they can assemble and modify computer systems. By swapping components (e.g., upgrading a CPU to a GPU), they observe the impact on AI model training time, system responsiveness, and energy consumption.

Questioning and Critical Thinking: Students are prompted with questions like: “Why is a GPU preferred over a CPU for AI training?” and “What hardware setup would be most efficient for editing high-resolution video versus training a generative AI model?” These questions encourage evaluation of task requirements and informed hardware selection.

Key Learning Areas

Understanding Hardware Components: Students explore the role and function of hardware components such as CPUs, GPUs, RAM, and storage, gaining foundational knowledge of computer architecture.

Hardware and Task Suitability: Learners investigate how different hardware components are suited to various digital tasks, such as AI model training, gaming, or media production.

Performance and Efficiency: Students analyze how hardware specifications impact system performance, with a focus on processing speed, parallel computing, and energy efficiency.

AI and Computational Demands: This area examines the specific requirements of artificial intelligence systems and how certain hardware, like GPUs, supports rapid data processing and model training.

Making Informed Hardware Choices: Students apply their knowledge to select appropriate hardware setups for specific workloads, justifying their choices based on performance needs and efficiency.

Technological Change and Innovation: Learners explore how evolving hardware technology influences the development of cutting-edge fields such as AI, automation, and data science.