

Name _____

The Power of Outlets

Open-Ended Response Answer Key

1. Safety features in electrical outlets are crucial for preventing electrical accidents. Shutters in outlets protect against accidental contact with live electrical parts, while ground wires provide a safe path for excess electricity during faults. Circuit breakers in the electrical panel protect outlets and devices by cutting off the electricity in case of surges or overloads, preventing damage and potential hazards.
2. Alternating current (AC) is efficient and reliable for electricity distribution in households due to its ability to travel efficiently over long distances without significant energy loss. It can easily adapt to the needs of various devices, making it suitable for powering homes and appliances.
3. In a world without electrical outlets, accessing electricity for daily needs would be challenging. Charging devices, running appliances, and even lighting homes would require alternative methods, possibly involving more complex and less convenient setups.
4. A real-life example of an electrical outlet innovation is the development of smart outlets that can be controlled remotely through smartphone apps or voice commands. These outlets offer features like scheduling, energy monitoring, and the ability to turn devices on or off from a distance, enhancing convenience and energy efficiency.

