

Teachers Answers for Electrical Current Creates A Magnetic Field

Part I

1. A magnetic field is created when the circuit is complete. Iron filings will react to this field by forming an oval pattern around the magnetic field. The filings will “stand up”.
2. The magnetic field is strongest nearest the nail when the circuit is complete. The magnetic field becomes weaker, the further away you move from the nail and the completed circuit

Part 2: Exploring the magnetic effect of various electrical currents

1. As the power supply strengthens, the magnetic field becomes stronger.

Data Analysis

1. Increasing the power source will increase the electrical current flowing through the wire and therefore create a stronger magnetic field.

Part 2

1. A solar storm or a coronal mass ejection can cause ill affects on board the space station. They can cause power surges or outages causing all electrical systems to be effected.
2. The astronauts would have to use solar power until power was restored. If the space station was not in sun light, technical support would have to make decisions to shut certain power sources down and maybe decrease other sources such as life support.