



## ENVIRONMENTAL HEALTH AND SAFETY

Clover Safe notes are intended primarily for 4-H volunteers and members nine years and older

### #53 BASIC ELECTRICAL SAFETY



According to information from the Electrical Safety Foundation International, every year electrical accidents cause approximately 165,000 electrical fires, 900 deaths, and 7,000 injuries. Electrical accidents can be prevented by understanding how electricity works and recognizing potential hazards.

#### Basic Electrical Information

- Electricity naturally seeks the path of least resistance to the ground.
- If your body happens to be in the path of least resistance due to a shorted wire/receptacle or malfunctioning power tool or appliance, the electricity will pass through you and into the ground (i.e., the earth) unless you are standing on a non-conductive surface.
- You will experience a shock as the electricity passes from you to the ground.
- An electrical path of least resistance that passes through your vital organs can result in a serious injury.

#### Basic Electrical Safety Practices

- If you observe arcing power lines or smoking electrical equipment such as transformers or junction boxes, immediately call 911.
- Do not touch, poke with a stick or pole, climb on, or play near power lines. Keep clear of any downed power lines.
- Do not use frayed, defective, or damaged power cords/plugs, receptacles, switches, cover plates, appliances, or power tools and equipment.
- Never stick anything other than a plug into an electrical receptacle. Always insert plugs into receptacles with similar prong or blade patterns.
- Never alter a plug by removing, bending, or twisting the prongs or blades.
- Flickering/dimming lights, tripped circuit breakers, blown fuses, and warm receptacles or electric cords are signs of potentially overloaded circuits.
- If a circuit appears to be overloaded, reduce the load by disconnecting appliances or power tools and equipment from the circuit.
- Always disconnect the power source before performing maintenance or repairs on power tools or equipment, including changing or adjusting saw blades, drill bits, sand paper, abrasion wheels, belts, pads, discs, or blades
- Never touch energized power tools or appliances that are wet or lying in water. Always de-energize, by unplugging, wet tools or appliances before touching.
- Do not yank on power cords to disconnect appliances, equipment, or tools. Always grip the plug when disconnecting appliances, equipment, or tools.
- Never replace a correctly-sized fuse with a larger-sized fuse.
- Ground fault circuit interrupters (GFCIs) should be used whenever electricity and water are within six feet of each other.
- A grounded three-prong adapter shall be used to connect a three-prong plug to a two-prong receptacle.
- Always be aware of the electrical hazards present in your environment.
- Plug power strips directly into wall outlets. Do not daisy chain (or connect) two or more power strips together.