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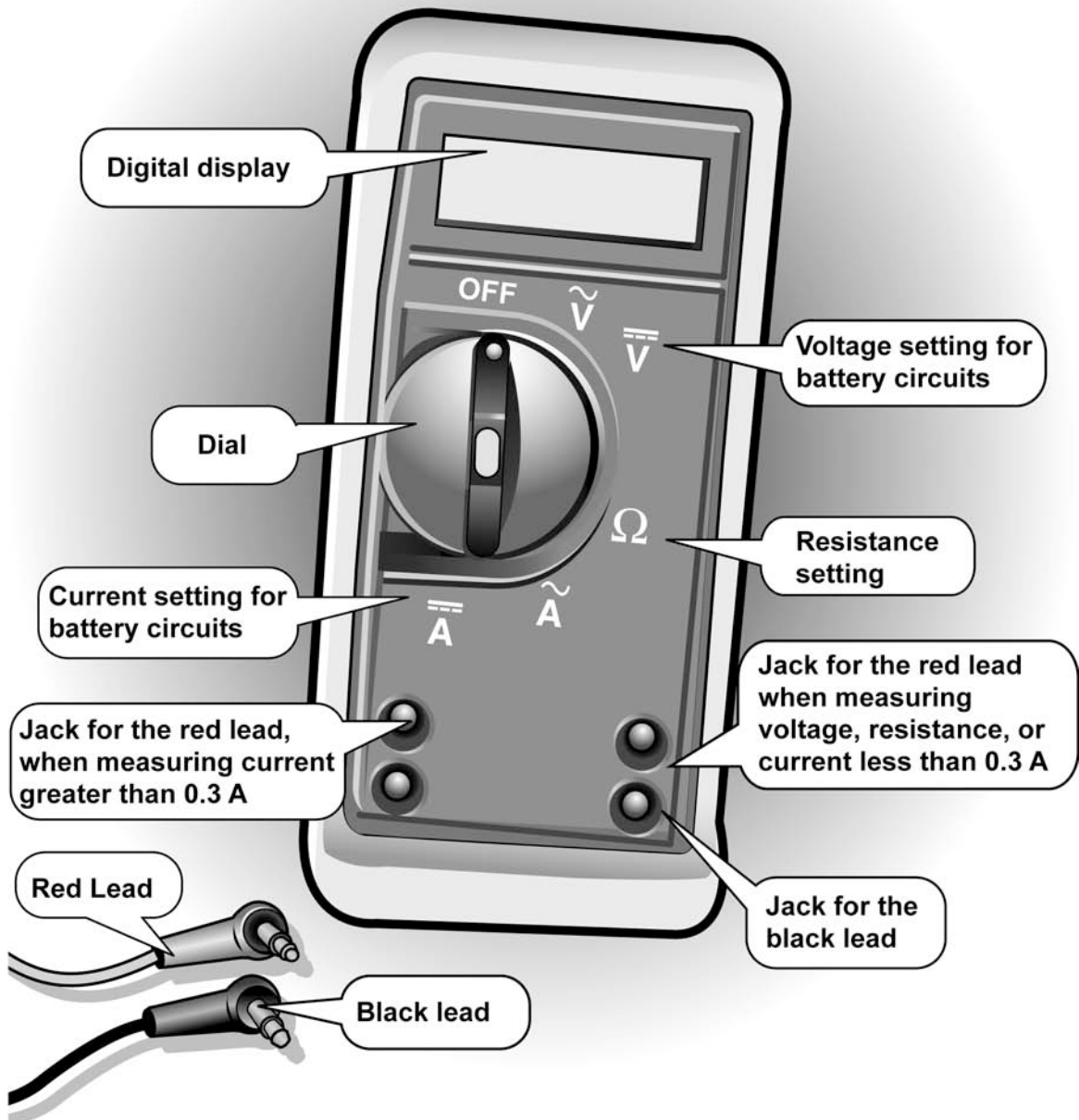
Skill Sheet 19.2

Using an Electric Meter

What do you measure in a circuit and how do you measure it? This skill sheet provides useful tips to help you use an electric meter and understand electrical measurements.

1. The digital multimeter

Most people who work with electric circuits use a *digital multimeter* to measure electrical quantities. These measurements help them analyze circuits. Most multimeters measure voltage, current, and resistance. A typical multimeter is shown below:



2. Using the digital multimeter

This table summarizes how to use and interpret any digital meter in a battery circuit. Note: A *component* is any part of a circuit, such as a battery, a bulb, or a wire.

Measuring voltage	Measuring current	Measuring resistance
Circuit is ON	Circuit is ON	Circuit is OFF
Turn meter dial to voltage, labeled V, VDC, or $\overline{\overline{V}}$	Turn meter dial to current, labeled A, ADC, or $\overline{\overline{A}}$	Turn meter dial to resistance, labeled Ω
Connect leads to meter, following meter instructions	Connect leads to meter, following meter instructions	Connect leads to meter, following meter instructions
Place leads at each end of component (leads are ACROSS the component)	Break circuit and place leads on each side of the break (meter is IN the circuit)	Place leads at each end of component (leads are ACROSS the component)
Measurement in VOLTS (V)	Measurement in AMPS (A)	Measurement in OHMS (Ω)
Battery measurement shows relative energy provided Component measurement shows relative energy used by that component	Measurement shows the value of current at the point where meter is placed Current is the flow of charge through the wire	Measurement shows the resistance of the component When the resistance is too high, the display shows OL (overload) or ∞ (infinity)
