**Basic Electricity and Welding**

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**The Arc Welding Circuit**

* The electricity flows from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, through the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and across the \_\_\_\_\_\_\_\_\_\_\_\_\_, through the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the work lead and back to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.



**Basic Electricity**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_– The electrical potential or pressure that causes current to flow
	+ *Measured in Volts*
* Current – The movement of charged particles in a specific direction
	+ *Measured in Amps*
* Polarity
	+ ***DC-*** *(Direct Current
	Electrode Negative)*
	+ ***DC+*** *(Direct Current
	Electrode Positive)*
	+ ***AC*** *(Alternating Current)*



**Metal**

* Most metals can be welded, but \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The three most common weldable metals include:
	+ *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - inexpensive and strong*
	+ *Stainless Steel – does not rust*
	+ *Aluminum – does not rust and is light weight*

**Gauge**

* Material thickness is sometimes measured by gauge from 36 (.004 in) to 3 (.2391 in)
	+ *For example, steel gauge and measurement in inches:*

 16 gauge = .051” 14 gauge = .064” 12 gauge = .081” 10 gauge = .102”

**\*\*\*\*\*PLEASE NOTE: As the gauge number gets smaller … the material thickness gets larger.**

**Types of Joints**

There are \_\_\_\_\_\_\_\_\_\_\_\_ types of welds:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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