**Basic Metals and Metallurgy Job Sheet Handout**

**Directions**

Conduct *Spark Tests* to identify common metals used for welding.

1. **Tools and Materials**
   1. Safety glasses
   2. Face shield
   3. Locking pliers
   4. Pedestal grinder
   5. Metal samples selected by teacher
2. **Procedure**
   1. Check the work area for safe working conditions
   2. Provide as dark a back-drop as possible to assist with better spark recognition
   3. Check grinder for proper working order
   4. Check grinding wheel to make sure it has been dressed
   5. Turn off light on grinder (if there is one)
   6. Put on face shield
   7. Lock pliers onto first metal sample
   8. Turn on grinder and allow it to reach maximum rpm
   9. Position yourself at the grinder so that all sparks will be free of obstructions and easy to observe
   10. Place metal sample on tool rest, hold pliers lightly, and move metal into grinding wheel until it makes light contact
   11. Grind metal sample long enough to produce a stable spark pattern
   12. Observe color close to wheel and color of sparks at the dying end of the spark stream
   13. Observe the shape of the spark pattern or stream pattern
   14. Observe the volume and length of spark stream