

## Balancing Things – Supplementary information

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

### Materials Provided once full-scale drawings (that means life size!) and templates have been completed:

- Some thin sheet metal (start with the scraps first). Good for the stand, object shapes, etc
- 2 inches (5cm) of 1" solid round hot rolled steel
- 12 inches (30 cm) of 3/16" solid round hot rolled steel for the balance bar
- Up to 24 inches of 3/16" solid round hot rolled steel for objects, shapes, design, and for your pivot point.
- Various short ends or "scraps" from the bin

### Skills required for a successful balancing project:

- Hard shapes will be difficult to build. Design based on your skill level!
- Welding with the Mig Welder
- Creating a template and project that looks like your original idea
- Using the lathe to face, center drill, and drill a round/cylindrical object
- Various cutting tools to cut metal!
- Listening and not rushing ahead without the teacher checking your plan!
- Understanding how objects balance and how to find the center of gravity for your metal.

### Recommended order of operations: Check off each step when finished

1. Use the project sheet to design and make full size templates for most of your project
2. Bend the 12" 3/16 solid round steel in the slip roller to form your desired balance bar
3. Use the horizontal bandsaw to cut 2 1" long pieces of 1" solid round steel for your balancing weights. Some students may opt for smaller diameter metal if they project does not require the larger size.
4. Use the lathe to face, center drill, and drill a 13/64" (or a little bigger than 3/16") hole in the 1" solid round steel pieces.
5. Using your previous learned/taught knowledge cut your main objects out of the supplied materials. Cutting, welding, oh my! You are welcome to use metal from the "short ends/scrap bin" but please bring me the metal first to check if it should be in there 😊
6. Depending on your design you will need to find the balancing point to allow your project to either spin or balance perfectly. Please do not weld on your pivot point (object or actually point) until checking with the teacher for their opinion
7. Tidy up all welds, sharp points, sand stuff, file stuff, look at your stuff, paint stuff, etc