

## Physics: Lab 10.1

### Mobile Project

Name \_\_\_\_\_

Hour \_\_\_\_\_

Lab Partners \_\_\_\_\_

#### Purpose:

To build a creative and attractive mobile using the concept of torque.

#### Equipment:

Create your mobile using household supplies. The bars may be cut from metal hangers, wooden dowels, or any other similar material. Thread, nylon string, and fishing line are recommended for use in connecting the bars of the mobile. The objects hung from the mobile should develop a chosen theme. Objects with great mass may be difficult to support on the mobile, while objects with small mass may be difficult to balance. Do not use fragile objects or objects of great value.

#### Preparation:

Each mobile must have a minimum of 2 bars and 3 objects. All project materials must be brought to class by:

#### Procedures:

1. Each group should turn in a schematic of their mobile. The schematic should include measurements for . . .
  - The mass of each object on the mobile.
  - The distance of each object from the pivot.
  - The clockwise and counter-clockwise torques at each junction of the mobile.
2. When constructing the mobile, first prepare the schematic of the mobile. Determine the distance that each object will need to be from the pivot. Include your calculations for torque and distance with your schematic when you turn in your project. *Have your schematic stamped by your teacher before beginning the actual construction of your mobile!*
3. The finished mobile projects will be judged by members of each class. The winning mobile in each class will receive 5 extra credit points.

#### Project Grade:

1. Materials brought to class on time to assemble mobiles – 5 pts
2. Proper calculations of torque and distance – 10 pts
3. Schematic drawing, including measurements for mass, distance, and torque – 10 pts
4. Finished Product – 5 pts