**Compound Machine Project**

 To better understand the concepts of simple machines such as levers, pulleys, and planes, you will create a compound machine that breaks an egg using levers, pulleys, and inclined planes. You will work in groups (no more than 3 people per group), it is due at the end of the semester (approximately 4 weeks), it is worth 100 points, and you should use time outside of class time to prepare and create your project. The projects will be tested in class. To receive a total of 100 points, the following must be fulfilled :

 **1. A sketch of the project is created before construction.** (5 Points)

 **2. Five levers are part of the machine.** (15 Points)

 **3. Five pulleys are part of the machine.** (15 Points)

 **4. Five inclined planes are part of the machine.** (15 Points)

 **5. The machine meets the following maximum size requirements.** (5 Points)

 (No larger than : Height = 4 ft., Width = 2 ft., Length = 3 ft.)

 **6. No two levers, pulleys, or inclined planes can be used back-to-back.** (5 Points)

 **7. The machine breaks the egg.** (5 Points)

 **8. Label each lever, pulley, and plane on the compound machine.** (15 Points)

 **9. Workmanship** *(Grade based on 40% Mr. Reuter, 40% Student Vote, 20% Outside Judge)*

 - **Construction**  (10 Points)

 - Was the machine well-constructed or is it flimsy?

 - Was the machine painted or made to look attractive?

 - Was obvious effort and creativity present or lacking?

 - **Machine Efficiency** (10 Points)

 – How well does the machine operate?

 - Can the device break the egg the first time?

 - Can the machine break the egg consistently?

\*\* A log sheet will be administered and the final grade will reflect the percentage of involvement recorded, if necessary.\*\*