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.**