Design Problem

1. Our problem is to lift an object of at least 8 ounces, a vertical distance of 6 minutes in less than three minutes using a compound machine.
2. The learning objectives are that we understand how elements of design can affect mechanical advantage, and how simple machines can work together to accomplish a task. We will also compare the efficiency of different simple machines in a working situation, and experience the capabilities and limitations of VEX® components for future projects.
3. The constraints are that the applied effort force may only be provided by a single human input. The final design must include a minimum of three different types of mechanisms: two of the simple machines, and the third mechanism can be a gear system, a pulley or belt system, or a sprocket and chain system. Also, each required mechanism must have a mechanical advantage greater than 1, and the final design must have a mechanical advantage greater than 1.