## Sample Rube Goldberg Machine



## Explanation of Machine:

Step Explanation
1 Windup robot toy is released. Toy moves rightward across platform, knocking the ball off the platform.
2 The ball rolls off of the platform and falls into cup A. This upsets the balance of the Atwood Machine, causing cup A to accelerate downward while cup B accelerates upward.
3 Cup B knocks the left side of the lever upwards. The lifting up of the left side of the lever causes a steel marble to roll downwards into the set of marble tracks.
4 The marble zigzags down the angled tracks. During the first section, the marble rolls through a set of chimes of varying length. After the last ramp, the steel marble collides with a lighter steel ball.
5 The ball rolls from the angled tracks into a funnel where it falls onto the trigger of a mousetrap.
6 The mousetrap goes off, with its metal arm swinging from left to right.
7 The clothespin is squeezed open by the swinging arm of the mousetrap, releasing a string.
8 The released string causes the weight on the opposite side of the pulley system to accelerate downwards.
9 The downward accelerating mass collides with the arm of a rotating lever. The bottom lever spins counter-clockwise, knocking into the arm of the lever above it. The levers continue to spin, transferring the energy upward to the top lever.
10 The top lever swings into a domino, beginning another chain of falling dominoes. The final domino collides with a ball from a Newton's Cradle toy that sits perched on the platform with the dominoes.
11 The first ball of the Newton's Cradle swings into the other four balls. The rightmost ball swings
forward, knocking into a domino on the adjacent platform where they initiate another chain of domino collisions, eventually knocking into a marble.
12 The marble rolls down through the curved tubing into the left compartment of a lever.
13 The weight of the marble causes the left side of the lever to move. The upward motion of the right side of the lever lifts the rod that supports the platform above.
14 The left side of the platform lifts upwards, causing the car to roll downwards from left to right, eventually falling into a cup that is attached to a string and pulley system.
15 The car falling into the cup causes the cup to accelerate downwards. The string on the opposite side of the pulleys moves upwards, raising the flag and finishing the machine.

