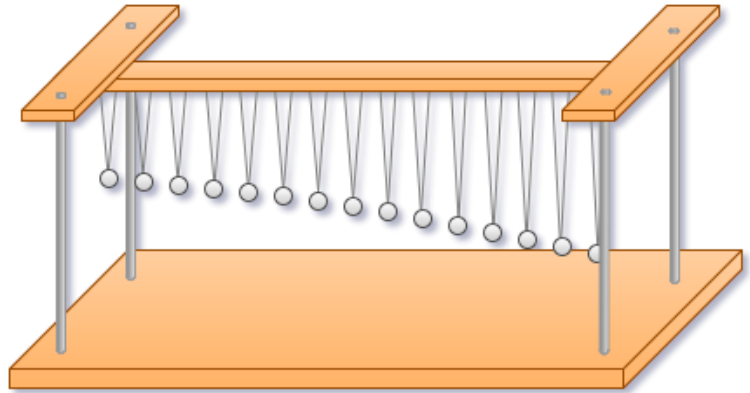


Pendulum Wave Machine

The pendulum wave machine is a fun and exciting way to learn about the periodicity of oscillating objects. Each pendulum has common period of 1 minute. Having a common period of 1 minute means that, 1 minute after you release the pendulums, it will be almost back to the same position that it began in.



In addition to each of the pendulums having a common period of 1 minute, they also have a frequency of oscillation that has been carefully selected, which is what creates the pendulum wave effect. The longest pendulum swings back and forth 60 times every minute. The next longest pendulum swings back and forth 61 times every minute. The third longest pendulum swings back and forth 62 times every minute. This pattern continues all the way until the shortest pendulum, which swings back and forth 74 times every minute.

To use the pendulum wave machine

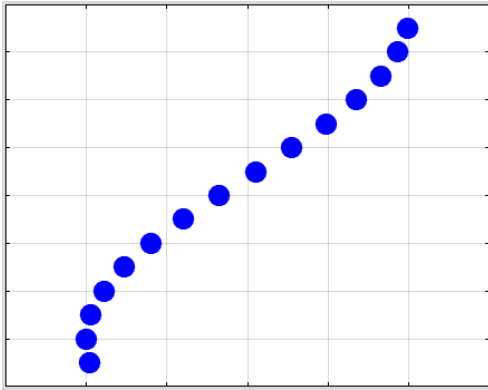


Step 1: Pull the balls back with the board provided

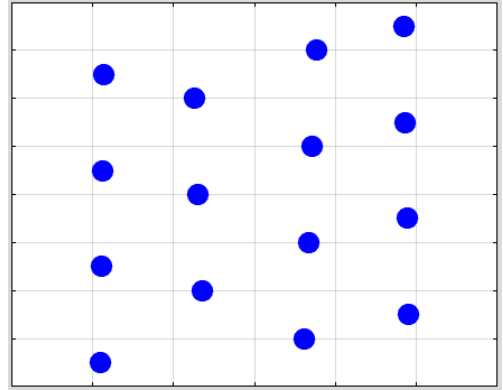


Step 2: Quickly release the balls with a swift forward and downward motion

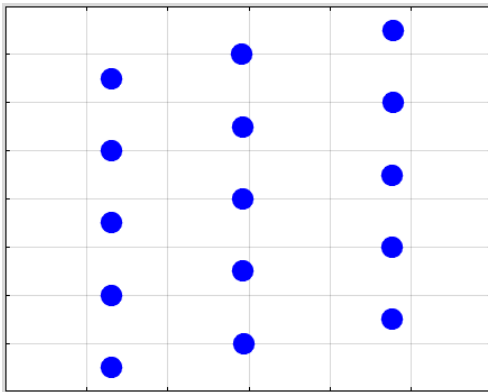
Patterns to look for



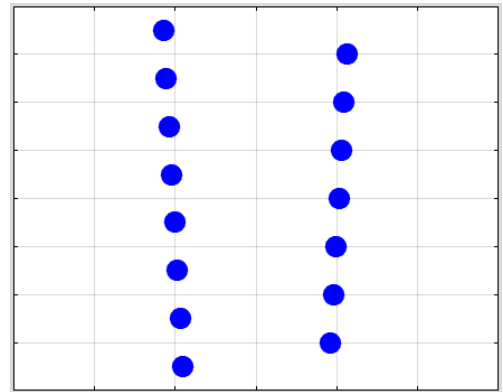
Pattern 2: Shortly after balls are released



Pattern 1: 15 seconds after balls are released



Pattern 3: 20 seconds after balls are released



Pattern 4: 30 seconds after balls are released