

Standing wave

Can you set a motor speed at which parts of the spring are hardly moving at all?



Use the black knob to slowly adjust the speed of the motor.

Try to find a speed at which parts of the spring are hardly moving at all.

Run your hand over the spring. Do you feel the stagnant parts?

At a motor speed of about 740 there is one stationary part of the spring. At a speed of about 980 there are two stationary parts of the spring. Between these places the spring vibrates strongly.

The motor vibrates one end of the spring. This sends a wave down the spring, which reflects off the fixed end. When the original and reflected waves meet up, can they combine to form a standing wave in which some parts of the spring do not move. This occurs at certain motor speeds only.