Big Spring

Can you set up a standing wave?

Swing the handle to and fro.

What happens on the spring?

Continue swinging the handle regularly to and fro.

When you swing the end of the spring, you set up a wave which travels down the spring to the end, where is gets reflected and travels back again. If you swing the handle at an appropriate frequency, the waves you send overlap the returning waves to produce a standing wave pattern. In this the spring seems to be vibrating on the spot: with alternate places of maximum swing and places with virtually no movement at all.

Waves like these which have sideways peaks and troughs are called transverse waves – the disturbances being at right angles to the waves' direction of travel. Examples of transverse waves are ripples on the surface of water and the vibrations of a guitar string.