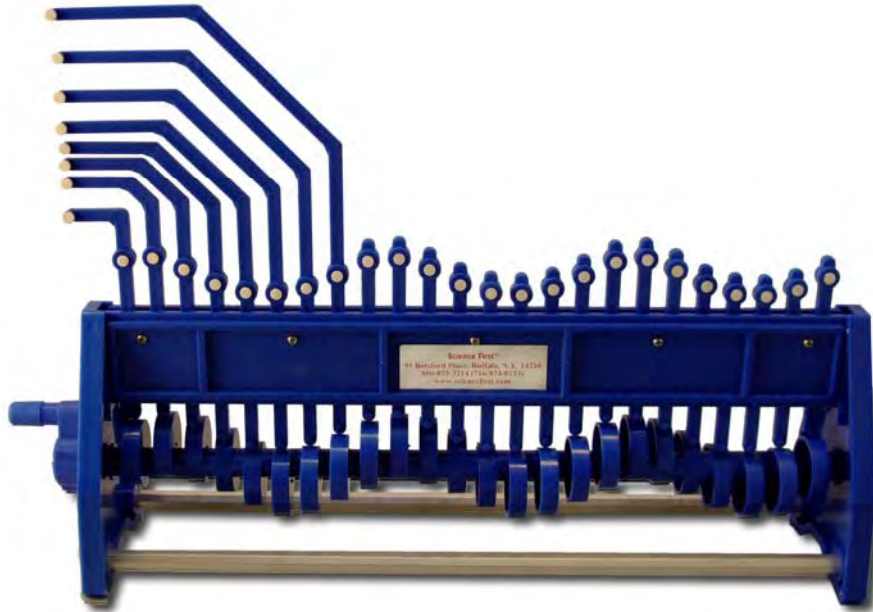


613-0075 (40-610) Wave Model



Introduction:

What are waves? Waves are, essentially, spatial disturbances transported, often through a medium, but not always. Electromagnetic radiation, for example, needs no medium. Essentially, a wave is energy that is transported separately from matter. An earthquake is a good example. Although earthquakes release vast amounts of energy, the energy does not need matter to carry it along. The rocks at the epicenter are not transported along with the energy the earthquake releases. A medium must be flexible and elastic in order for waves to pass through.

Wave theory is an unusual branch of physics, mainly because waves are not well understood. Also, waves are most often studied irrespective of their source. This means that the wave is considered as its own entity, regardless of how it was produced. However, all waves share certain characteristics. They all consist of *troughs* and *crests*. This means that they have high and low points. Also, these troughs and crests move. As the waves propagate, the crests and troughs will move together always maintain their relationship to each other. In other words, a wave can be seen as a single entity composed of a crest and a trough, moving through space. The crest height is always equal to the depth of the trough. There are two major types of waves: longitudinal, which run parallel to the direction the waves propagate in, and Transverse, which run perpendicular to the direction the waves propagate in.

Description:

Our wave generator is a simple but dynamic method of showing wave motion. It consists of twenty-four rods with white marks. The first 8 rods are longer and nest together. Beneath the rods is a shaft, which contains bumpers. These bumpers are held at a precise angle with respect to one another. This allows them to slide the rods at an exact rate, which simulates a wave.

As you turn the handle, observe what happens. You will notice that the rods will move up and down in a precise arrangement, and that the white dots follow the path of a wave. The smaller rods represent the motion of the wave. The larger rods show how a group of molecules in a medium are affected by a wave passing through. You will notice how the white marks compress and spread out, representing the crest and trough of a wave.

Warranty and Parts:

We replace all defective or missing parts free of charge. Additional replacement parts may be ordered toll-free. We accept MasterCard, Visa, checks and School P.O.s. All products warranted to be free from defect for 90 days. Does not apply to accident, misuse or normal wear and tear. Intended for children 13 years of age and up. This item is not a toy. It may contain small parts that can be choking hazards. Adult supervision is required.

May we suggest:

50-060 Ripple Tank: Project waves onto a 10 x 9" screen for viewing from a distance. Tune the wave generation of this self-contained easy-to-use apparatus to match the stroboscopic light. We include light source, adjustable 2 and 3 prong wave generators, 2 baffles and removable 12 x 10" basin. 26" total height.

613-0140 Wave Demonstration Set: Two helical springs: Long spring is 3/4" x 72" and can extend 5 meters. Large spring is 3 x 4". Extends many times its length without distortion. 3 m cotton cord to suspend large spring. Ship weight: 2.5 lb.