

Magnetic Pendulums

These pendulums can act like either a motor or a generator.

Try this:

- Set the Phase Switch to IN. Pull back and release either pendulum, letting it swing freely. Notice that the other pendulum begins to swing in the same direction.
- Set the Phase Switch to OUT. Pull back and release either pendulum. Notice that the two pendulums swing in opposite directions.
- Hold down the Loop Switch, and notice that both pendulums quickly stop.

What's going on?

The two pendulums contain coils of wire that are connected in a single circuit. Near each pendulum is a magnet.

When you push a pendulum, its coil moves near the magnet, creating an electric current in the wire. The current flows to the coil in the other pendulum and makes a magnetic field there. This field either attracts or repels the nearby magnet, causing the second pendulum to move.

So what?

This exhibit models how both a *generator* and a *motor* work. Like the moving pendulum that made a current in the wire, generators use an object's motion to create electricity. Generators, for instance, can make electricity from the rotation of a windmill.

Like the pendulum that moves on its own, motors—such as the ones in blenders and fans—use electricity to make motion.