

Modifications for Conducting Lessons without the Wave Wires® Magnet Station

Lesson 3: It's Alive!

To maximize the number of small groups that can simultaneously experience the lessons in the Wave Wires Teacher's Guide, you may choose to have students do some of the hands-on lessons in the Wave Wires Teacher's Guide without using the Magnet Station. The following modification tips for this lesson are provided in order to assist you:

- Additional **MATERIALS** needed: several books (preferably hardcover), 2 wooden dowel rods (approximately 10–12”L), masking tape, scissors; clear, plastic lid to a disposable pie or brownie pan (make sure the lid does not have any holes in it)
- Substitute the following steps for steps 1, 2, 3, 4, and 6 in the **EXPLORE IT** section of the lesson (and follow all other steps in the original lesson in the guide):
 1. Put the steel base plate on a tabletop. Place one magnet wires at each corner of the plate. Make sure all the same poles (colors) of the magnets are pointing down (stuck to the plate).
Make two stacks of books with equal heights (about 9–10”H each) by stacking books on top of one another on a tabletop. Place the wooden dowels across the top of the stacks of books at a distance apart that is slightly less than the width of the clear, plastic pie or brownie pan lid.
 2. Place the clear, plastic lid (upside down) on top of the dowels, so the lid's top and bottom edges rest on the wooden dowels. Use masking tape to tape the edges of the lid to the wooden dowels. Also, carefully tape the wooden dowels to the top of the stacks of books.
 3. Place the steel base plate (with the magnet wires that you placed on it already) between the two stacks of books (and underneath the inverted plastic lid). Adjust the height of the stacks of books (if needed), so the bottom of the (inverted) clear, plastic lid is as close as possible to (without touching) the magnets at the tops of the four wires.
 4. Use scissors to trim the paper grid to fit the bottom of the clear lid. Place the paper grid inside the inverted lid. Carefully sprinkle, in a thin layer, a spoonful of the iron filings all over the grid.
 6. When the wires stop, turn the steel base plate as it's resting on the tabletop. Observe the fillings. Try it again but activate the wires immediately before turning the steel base plate.