

Modifications for Conducting Lessons without the Wave Wires® Magnet Station

Lesson 6: Pinball Machine

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; 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 step 1, 2, and 4 in the **EXPLORE IT** section of the lesson (and follow all other steps in the original lesson in the guide):
 1. 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. 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 (inverted) lid to the wooden dowels. Also, carefully tape the wooden dowels to the top of the stacks of books.
 2. Place the steel base plate on the tabletop between the two stacks of books (and underneath that steel ruler).
 4. Slowly turn the steel base plate as it is resting on the tabletop.