

Notes to the Future – Hyperbolic Slot

1. When presenting your ExploratoRIO project, make sure you bring an extra dowel that is the same length of the one that is on your project (11 in.) in order to better explain how the project works. Put the straight dowel up to the curved slot to illustrate the “illusion” that takes place. This helps get kids more involved as well and makes them more interested. One thing I strongly recommend is when explaining the exhibit to kids, don’t hand them the dowel to try to put it through: although it makes the exhibit more interactive, elementary school children are stubborn and won’t stop trying to put the dowel through the slot even if you tell them it is impossible. Several children were even pulling the foam board out and breaking it in an attempt to get the extra dowel through; this can be very frustrating.
2. Make sure the measurements of all the pieces are EXACT. This is one of those projects that needs exact measurements for the project to work. Even stuff that may seem like it doesn’t matter as far as length, etc. does. (Our wood board we used as a base was several inches longer than the project says, and it messed everything else up.)
3. This may seem obvious, but make sure to thoroughly test your project before bringing it to class. Also try to transport the project as safely as possible; if the angle of the dowel gets messed up on the way to ExploratoRIO it can be annoying trying to get it back to the optimum angle.
4. The project will probably look ugly and bare after finishing it, so I recommend painting the whole thing to make it more presentable. My partner and I painted it green and gold for Rio colors and it turned out nicely.
5. The materials needed for the project are pretty basic and I happened to have most of them around the house already, but if you need to buy supplies I got every thing cheaply and quickly at Ace Hardware. The whole thing can be built cheaply and the materials are common enough to be found at any hardware store.
6. When explaining the project to children, make sure you “dumb it down” so they better understand it or they will be quickly uninterested and walk away. Show them the dowel and put it up to the slot, then ask if it is possible to put the straight dowel through the curved slot. Most will say it can’t be done, and then rotate the dowel on the project through the slot. If they ask how it is done, explain that the dowel is at a 45 degree angle and that allows it to pivot through. Although it is condescending, I recommend this same approach for adults too. Several parents and two elementary school teachers had trouble understanding how it worked even when I used the simplistic explanation.