Caitlyn, Carly 2013

Critical Angle: Notes to the Future

Lucky you! You got the best experiment there is! So to start off, you need a clear two liter plastic soda bottle with a hole low on the side so that a stream of water flows out unwrinkled on a nice trajectory. We made the hole by drilling it, but you can use other methods like heating a nail and melting the plastic, but use your imagination. Once you make the hole put a non-transparent surface around it. We used duck tape and hole-punched it. Ask Mr. Baird for a laser holder so that you don't have to hold the laser in place. Place the bottle on an elevated surface, like a bucket, that way the water can flow downward. Place a bucket so that the water can be collected at the bottom. Make sure the bucket the bottle is placed on is not too high so that the water doesn't splash out. There is leakage, splattering, and flooding so bring lots of towels, but not paper towels; conserve the environment. Cut off the top of the bottle so it is easy to continue putting water inside. Keep the water level high enough above the hole and keep it constant that way the water doesn't create a flood because it will, a lot. To stop the stream of water, tilt the bottle over the collector bucket until the water level is below the hole. When the water level reaches the hole, major flooding will occur. Let the kids run their hand under the water stream and some will want to cycle the water themselves which will create more leakage but it keeps the kids happy.

Ask Mr. Baird for three or four lasers, a skinny fish tank, and his fiber optic blocks. Fill the fish tank with water and a touch of mop-n-glow which will show the laser light more clearly. Stir with Mr. Baird's clear stirring stick and don't make bubbles!! Make the solution the night

before when you set up the exhibit. Have the fiber optic blocks set out for the kids to play with. Demonstrate everything first and then hand the kids the lasers.

As for the PhyzGuide, we got most of the info out of the book and followed the outline of Mr. Baird's previous PhyzGuides. It is important that you understand the concept of what is going on before you write it. Include pictures to visualize it. Don't use big words because otherwise the kids lose interest when describing the exhibit to the kids. However, it is good to demonstrate your knowledge in the PhyzGuide so feel free to use big words. Some parents will ask hard questions so make sure you know what you are talking about and if you don't know, it's ok to say you don't know.

The day before set everything up completely so you don't have to do anything in the morning. Do the exhibit in the dark room, but it gets really hot in there so dress accordingly. Make sure the other exhibits in the dark room are set up where they need to be because they need electrical outlets and this exhibit can be anywhere. If you can, have two people at the exhibit. One person should demo the fish tank and the blocks, the other do the bottle because it is hard to do both with only one person. We wish you the best of luck and use your imagination! May the force be with you.