



## Further Thoughts about the Wind Tubes

### Wind Tube Facilitator Debrief August 13, 2007

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These comments are from the facilitator debrief following the installation of the Wind-Powered Wonders Tinkering Studio at the Exploratorium on August 12, 2007. We discussed the goals for the Wind Tube activity, and the impact on visitors' participation, creativity, and learning.



## Further Thoughts about the Wind Tubes

### Discussion of the larger tubes

The Forest of Tubes allowed people to move between the tubes and see what was happening in each one.

The transparency of the tubes enabled people to see what was happening in different tubes and to be inspired by what they saw.

The different heights and levels of power on the fans provided different levels of experimentation.

The table space around the tubes allowed people to leave the things they were working on for others to test.

I was surprised: The little kids loved the big tubes as much as the older visitors did.

Visitors spent an average of 45 minutes at this activity.

At times, there were up to 50 people in the Tinkering Studio.

Containing the wind from the fan made all the difference in the activity.

This could easily be done at home or school, or in an after-school setting.

We couldn't stop playing with this activity as we were developing it. That's a good sign that the activity would be interesting to others too.

The activity provided for the exploration of variables on many levels.

The construction of everyone's contraptions was purposeful, and everyone was focused as they experimented.

Even though the tubes were somewhat fragile and the materials loose, everyone was careful in their use and interactions.

Ideas, such as making parachutes, erupted spontaneously and spread throughout the day.

Different tubes set at different speeds allowed visitors to test their constructions in more than one setting.

We realized the "real" potential of the Elefun game!

The "aha!" moments were clearly visible on the visitors' faces.

This activity was about the sheer joy of finding out "will this float?"

This was an extremely friendly activity. You don't have to build something to start; you can just grab an object and test it out.

There were lots of instances of families and intergenerational collaboration.

We often bumped into strangers as we were experimenting, literally making our own "mental elbow room."

It was fascinating to watch the development of ideas, especially in the young kids.

It's just silly, fun, playful, and mesmerizing to watch.



The small tubes were set in a comfortable setting with carpeting on the floor and a low table for experimenting.

The carpet was a soft receiver of the flying objects.

The small tubes were more like shooters than the large tubes.

Even though the tubes were smaller and weaker, the richness of the experience was in the materials such as the boas, flapping foam, and floating Wiffle golf balls.

This was an interesting study in object permanence for the young kids.

It was important to have more than one small tube.

It was delightful for kids to just shoot things out of the tube.

It was a fun discovery for the kids to put their hands over the top of the tubes to get things to shoot out the bottom!

The sounds that were sometimes made by objects in the tubes were fun to listen to.

It would be good to make the squirrel cage fans visible.

It worked well to ring the studio with benches for parents, who often ended up joining the activity.

This was a good example of a successful rescue of an unsuccessful prototype. I'm really proud of it!

We need more small tubes.

Materials traveled between the large and small tubes.

Although the activity was simple and straightforward, visitors of many ages were actively engaged for a long period of time.