Zero-G Thinking
Vehicles for gravity-defying ideas

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Drawings from Le Petit Prince by Antoine Saint-Exupéry
We are enchanted by stars glimmering faintly in the distant sky.

We wish to reach the stars, but we do not know how...
How can we ever reach the stars?

We begin our journey by flying to a nearby planet.
From there, we aim for the next planet... and the next... and the next...

Along the way, we may meet others to aid us in our quest.
As we progress on our journey, we begin to see the stars more clearly.

The final destination may be entirely different from what we have imagined in the beginning.
Vehicles to take us to the stars...

* Sketching
* Physical Mock-Up
* Video Prototyping
* Working Demo
* Sketching
  Visualizing concepts for the self and others

Drawing Exercise!
* Sketching

Don’t worry about realism
Better that sketches are not realistic

Drawing “Star People”

More expressive than stick figures

from Bill Verplank

From Understanding Comics
by Scott McCloud
* Sketching

Scenarios: Illustrating temporal events

From *Understanding Comics* by Scott McCloud
*Physical Mock-up*

Designing by *playing pretend*

- Paper
- Foam
- Clay
- Legos
- Everyday Objects
* Physical Mock-up

Some example objects

Focus on form or behavior
Video Prototyping
Weaving visions of alternate realities

Stop-Motion Video
Enables anyone with a digital camera to create video fiction

Western Spaghetti by PES
http://www.youtube.com/watch?v=qBjLW5_dGAM
* Video Prototyping
Weaving visions of alternate realities

Stop-Motion Video
Example from Media Lab student

MediaLab@night by Leonardo Bonanni
http://www.youtube.com/watch?v=0lg3p3NsrJl
* Video Prototyping
  (Free!) tools for stop-motion video

Frame by Frame
for Mac

Stop Motion Maker
for PC
* Working Demo
Partial or fully-functioning prototype

What we do at the Media Lab

Example: I/O Brush

- Built in two weeks
- Simple circuitry and software to demonstrate idea
* Working Demo
Partial or fully-functioning prototype

Example: I/O Brush
* Working Demo
Partial or fully-functioning prototype

Example: MirrorFugue
An interface for remote collaboration on the piano

Photographic mockup of vision

Interface prototype

Did not implement actual remote communication
| Form | Hardware | Software |

* Working Demo
Toolkits to support prototyping
* Working Demo

Hardware tools

Arduino

- Simplifies prototyping electronics
- Several versions for different applications (e.g. Lilypad)
- Additional modules (e.g. XBee for wireless communication)

More info: arduino.cc
* Working Demo

**Software tools**

Programming environments for quickly trying out ideas

[Image: Processing - 0.110 Beta]

**Processing**

processing.org

**Open Frameworks**

openframeworks.cc
Tools for Zero-G Thinking
* Sketching
* Physical Mock-Up
* Video Prototyping
* Working Demo

Refining your ideas

Communicating your vision

Building on each other’s ideas
Questions?