101 of Sketching
Drawing Kit Tutorial
Children’s Museum Visit
Ideas Milestone

research + bring top 3 new ideas to lab
separate sheets, in your notebook, and as refined sketches

graded on idea quality and sketching effort

using the drawing tools and techniques from class today

Reminder:
One of your team’s ideas will be the starting point for the final toy!
Sketching

why bother?
Sketching
Communication, not art!
Sketching
The language of idea generation

Ping-Pong Ball Blaster
A toy blaster that fires plastic ping-pong balls, stores several at once inside its shell, and automatically resets with each pull of the trigger. New balls are loaded via the port on the top, several can be loaded at a time. Pulling the trigger once fires a ball out of the front and after…
Why sketch clearly?

- clarity
- creativity

kudrowitz, wallace 2010
What’s the process?

Mental Models

Basic Skills (simple shapes)

Basic Rules

Practice
Quiz!

1. Sketch a picture of the side view of a car. any car. *use protective paper

2. Put your name on the back of the sketch
Mental Models
Car Sketching

with strong mental model and drawing ability

with strong mental model

with a weak mental model

high detail ←-------------------------------------------- low detail
Models and Ideas Sketches

Architecture | Proportion | Detail
What's the process?

Mental Models

Basic Skills (simple shapes)

Basic Rules

Practice
The Basic Skills
lines, circles, ellipse
Uncertainty is Visible
What's the process?

Mental Models

Basic Skills (simple shapes)

Basic Rules

Practice
Rules: 3D with perspective!

1 Point

2 Point

3 Point

This Class
The Horizon or Eye Line

Vertical Lines are always vertical
Proportions
The Cube

Close Vanishing Points = High Distortion
Close Up Objects
Where are the Vanishing Points?

Almost Parallel
The Cylinder
The Cylinder

ellipse minor axis inline with cylinder center axis
Cylinder on Cube
Cube on a Cube
Products of Basic Shapes
Start with physical models
Putting it Together
Logistics

Practice your basics

Try using perspective sketching for idea generation

Bring drawings supplies to class again on Wednesday

Select at team finance person 200b-animal@mit.edu
Questions?!