Project 1: Convoluted Contraption

Inspiration: Rube Goldberg
“A comically involved, complicated invention, laboriously contrived to perform a simple operation.”
- Webster’s New World Dictionary

"Rube Goldberg (1883-1970) was a Pulitzer Prize winning cartoonist, sculptor, and author. Through his "INVENTIONS", Rube Goldberg discovered difficult ways to achieve easy results. He was sometimes skeptical about technology, which contributed to making his own mechanical inventions primitive and full of human, plant, and animal parts. While most machines work to make difficult tasks simple, his inventions made simple tasks amazingly complex. Dozens of arms, wheels, gears, handles, cups, and rods were put in motion by balls, canary cages, pails, boots, bathtubs, paddles, and live animals for simple tasks like squeezing an orange for juice or closing a window in case it should start to rain before one gets home.”
<http://www.rube-goldberg.com/>

Goal
Design and build a Rube Goldberg-like invention that reflects his spirit of exerting maximum effort to accomplish minimal results. Use animation to bring the invention to life. Please limit your animation to approximately 20-30 seconds.

Purpose
Exercise the newest animation principles and techniques that you have been learning over the past few weeks. Integrate group and parenting hierarchies, pivot points, as well as the animation principles of:
- Squash and Stretch - rigidity and mass of an object by distorting its shape during an action.
- Timing - Spacing actions to define the weight and size of objects and the personality of characters.
- Anticipation - The preparation for an action.
- Staging - Presenting an idea so that it is unmistakably clear.
- Follow Through and Overlapping Action - termination of an action and establishing its relationship to the next action.
- Ease-In/Outs - spacing of the in-between frames to achieve subtlety of timing and movement.
- Arcs - The visual path of action for natural movement.
- Exaggeration - Accentuating the essence of an idea via the design and the action.
- Secondary Action - The action of an object resulting from another action.

Readings/Tutorials
- Readings: Lassiter’s Principles of Animation
- Tutorials from Maya’s online tutorials at Learning Resources - Tutorials
  - Animation: Lesson 1, Keyframing and the Graph Editor

Final Documentation
- Invention Planning Drawings
- 640 x 480 Quicktime Movie of the animation, rendered with Maya’s vector renderer, white lines on black background. See the PDF on vector rendering for help.

Helpful Resources:
- Rube Goldberg Official Site http://www.rube-goldberg.com/