Journal for the Blacklights

Blake Sorenson, Kadon Springer, Caden Youngerberg, Elizabeth Reinhart, Andrew Schull, Austin Segal

9/13: Designed steps 15-18 which consist of using syringes in various positions to complete the fluid power and chemical steps. 1 syringe moves vinegar to baking soda which inflates a balloon, the balloon sets off a hydraulic system which in turn, sets off the last step which uses batteries to power a light bulb.



9/14: Designed steps 13 & 14 which uses a ball on a string to knock a brick on to the previously mentioned syringe in step 15



9/15: Designed step 12 which uses a piece of wood (2x4?) on a hinge to knock the ball (same ball as step 13) off a seesaw-like contraption and down to the brick because it is attached to the lower black board with a string. Also screwed the floor onto the lower



pallet.



9/16: Brought in 10ft of $\frac{1}{2}$ " PVC pipe and cut it into 8 6 inch pieces along with 9 feet of 5/16" wooden dowels which were cut into 8 9 inch pieces and then threaded through two boards to create a "ramp" of sorts which a heavy enough object could roll down.



9/17: Designed steps 11 and 10 which involve a mousetrap pulling a piece of wood out of a tube when set off, this drops a ball which hits the standing 2x4 as previously mentioned in step 12.



9/20: Designed steps 8 and 9 which uses a PVC pipe rolling into another ball which then lands onto the trigger of the aforementioned mousetrap.



9/21:Designed a "Plinko" style step which drops a ball into a box with pegs and lets the ball fall into the pvc pipe mentioned previously in step 8.



9/22: Designed step 6&7 which knocks the ball into the plinko machine by launching the ball onto slide using a rubber band launcher which is triggered by a golf ball hitting, and knocking out, the platform beneath a peg which holds the rubber band back.



9/27: Designed step 5 which knocks the previous ball down the ramp using a stick that swings down.



9/28: Worked on step 4 which knocks over the board, which hits the above-mentioned ball, using a ball on a string.



9/29: Designed step 3 which knocks the ball off a ledge using a pvc pipe that rolls down and hits it



9/30: Worked on step 2 which uses a small piece of wood on the end of a string to knock the PVC pipe down the ramp.



10/1: Worked on step 1 which knock the pieces of wood into a PVC pipe using a golf ball.



10/4: Set up podium for step 1 and screwed everything down.



10/5: Added second pill and screwed down



10/6 Added support and overhang between pillars with string



10/7: Repositioned and screwed down over hang, added holding for PVC, this step is now consistent



10/8: Added next step which is a ball on string knocked off by the PVC pipe.



10/11: Added new support leg and piece of wood on hinge for ball to hit.



10/12: Added peg to wood to wood to more powerfully hit next bal



10/13: Drilled hole through wood for next ball to pass through and sit in



10/14: Started foundations of next plinko step



10/15: Screwed in support and plinko step, will finish pegs next week



10/18: Unscrewed first two supports, cut four inches so it would be under 5 ft and then rescrewed everything back down



10/25: Added new support leg and track and added edges and roof to keep ball from bouncing off



10/26: Added holding piece for pvc pipe to be hit by ball in plinko machine



10/27: Screwed in next leg of project 34 inches tall



10/28: Added mousetrap and guard for the ball that triggers the mousetrap so it doesn't fly away



10/29: Added holding spot for platform to be pulled by string that is connected to the pull bar of the mousetrap



11/1: Screwed new leg down



11/2: Added backstop and roof for mousetrap section



11/3: Glued three legs together to secure them



11/4: Redid first step with stronger parts and screws



11/8: Screwed in platform on side of newest base leg



11/9: Set up next step and cut pieces for see saw



11/10: Measured and glued down base for see saw



11/11: Set up previously made pvc ramp step 11/12: Screwed down pvc ramp after measuring



11/15: Reacrewed down with new board for mousetrap step



11/16: Added collection system for ball to hit mousetrap more effectively



11/17: Added backstop for hinge mechanism to rest on



11/18: Tested and ran through multiple times

11/19: Didn't work11/22: Added peg to pvc hinge to hit it easier



11/23: Added under shelf to help organize and keep area clean



11/29: Waiting for materials to be brought in on Tuesday 11/30: Brought In and started testing hydraulic stuff



12/1: Tweaked project and ran through to make sure everything works 12/2: Drilled hole and cut platform to fit through support leg



12/3: Started work on cutting angled wedge out of support leg 12/6: Halfway done with angled wedge



12/7: Finished cutting wedge and step works smoothly now



12/8: Rescrewed and glued down support for platform after the mousetrap platform catch



12/9: Tested hydraulic stuff again

12/13: Screwed in platform and set up bottle for chemical reaction step



- 12/14: Didn't get anything done
- 12/15: Ran through to find mistakes
- 12/16: Added bigger stops so the first PVC pipe doesn't ramp over



12/17: Added screwed in supports so ramps weren't only supported by glue



1/3-1/7: Tested to make sure all steps worked.

1/10: Added support beam to stabilize legs



1/11: Switched our smaller leg for 2x4



1/12: Numbered steps



1/25:Rebuilt guard



1/26:Added slanted piece



1/27: Screwed in hinge for chemical step



1/31: Added second syringe for hydraulic step



2/1: Added first syringe for hydraulic step



2/2: Screwed in base for hydraulic and chemical step



2 /3: Added wall for last electric step



2/4: Tested project



2/7-2/9: Added strings and set up pulley system



2/10-2/14: Added extra tension point with screws to change the direction the strings pull



2/15-2/17: Added and wired light switch for syringe to turn on



2/18-2/21: Wired up light bulbs with correct wires



2/22-2/25: Set up all of the remaining electrical wires and tested them



2/28-3/4: Screwed in base and added extra support for pulley step



3/7-3/9: Added extra weights for first hydraulic syringe and tested



3/10-3/14: Finishing touches for chemical steps



3/15-3/24: Tested all steps, ran through repeatedly, get repair kit together, updated journal, etc.