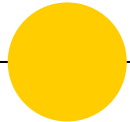


Camp Riley Senstation Team



Design Review Spring 2017

Senstation Team

Katherine Powell

Major: Biomedical Engineering
Graduation Date: May 2017
Project Role: Design Lead/Financial Officer

Emerson Ringger

Major: First Year Engineering
Graduation Date: May 2020

Don Yerkozhanov

Major: Chemical Engineering
Graduation Date: May 2019

Pat Dhanvarjor

Major: First Year Engineering
Graduation Date: May 2020
Project Role: Project Archivist

Pranai Perumareddy

Major: Industrial Engineering
Graduation Date: May 2019
Project Role: Project Partner Liaison





Sensory Trail

Project Background

Sensory Trail Background

- EPICS station creations began in 2014
- Horses stop at stations which stimulate child's senses, promote cognitive, motor, and visual processes, and develop vocabulary and identification skills
- Examples: peg boards, bell tower, drum set, xylophone, ball and toss



Station	Activity
Ball and Toss	Clean
	Check objects
	Check rope
	Check baskets
Peg Boards	Clean
	Check paint
	Check sliding
Sound Tube	Check mount
	Clean
Xylophone	Check mesh
	Clean
	Check rope
Drumset	Tighten rope
	Clean
	Check paint
Bell Tower	Check mounts
	Clean
Mailboxes	Check stability
	Clean
	Check objects
Treefaces	Check stability
	Clean
	Check stability

Spring 2017
Comments
Dirty - need to replace
Objects are dirty - objects do not look weather resistant
Rope is unstable
Baskets stable, need cleaning
Clean
Paint is fine
Sliding is difficult, need to make skinnier peg
Mount is stable
Good
Good
Good
Good
Good
Paint chipping, need to replace buckets
Good
Needs cleaning
Good
Need cleaning
Fine
Good
Good
Good

Summary of Progress

Objective	Status	Issues	Next Steps
Waterproof ball and toss objects and rope	Almost Complete	Two unaccounted stations	Finish last 2 stations
Redesign peg pieces	Completed	N/A	Follow-up necessary
Replace xylophone mallet	Completed	N/A	Follow-up necessary
Paint xylophone	Not Completed	Time constraint	Paint xylophone
Replace painted gold buckets on drumsets	Not Completed	Buckets were flimsy/too small	Find new suitable buckets



Treehouse Path

Project Background

Treehouse Path Background



- The treehouse path is a partnership with Champ Camp to create an accessible ramp to the zipline entry platform.
- Current method to get campers with wheelchairs is uncomfortable and awkward.
- EPICS role is to make the path interactive and full of activities → make ready-to-mount stations to put on treehouse path once built.

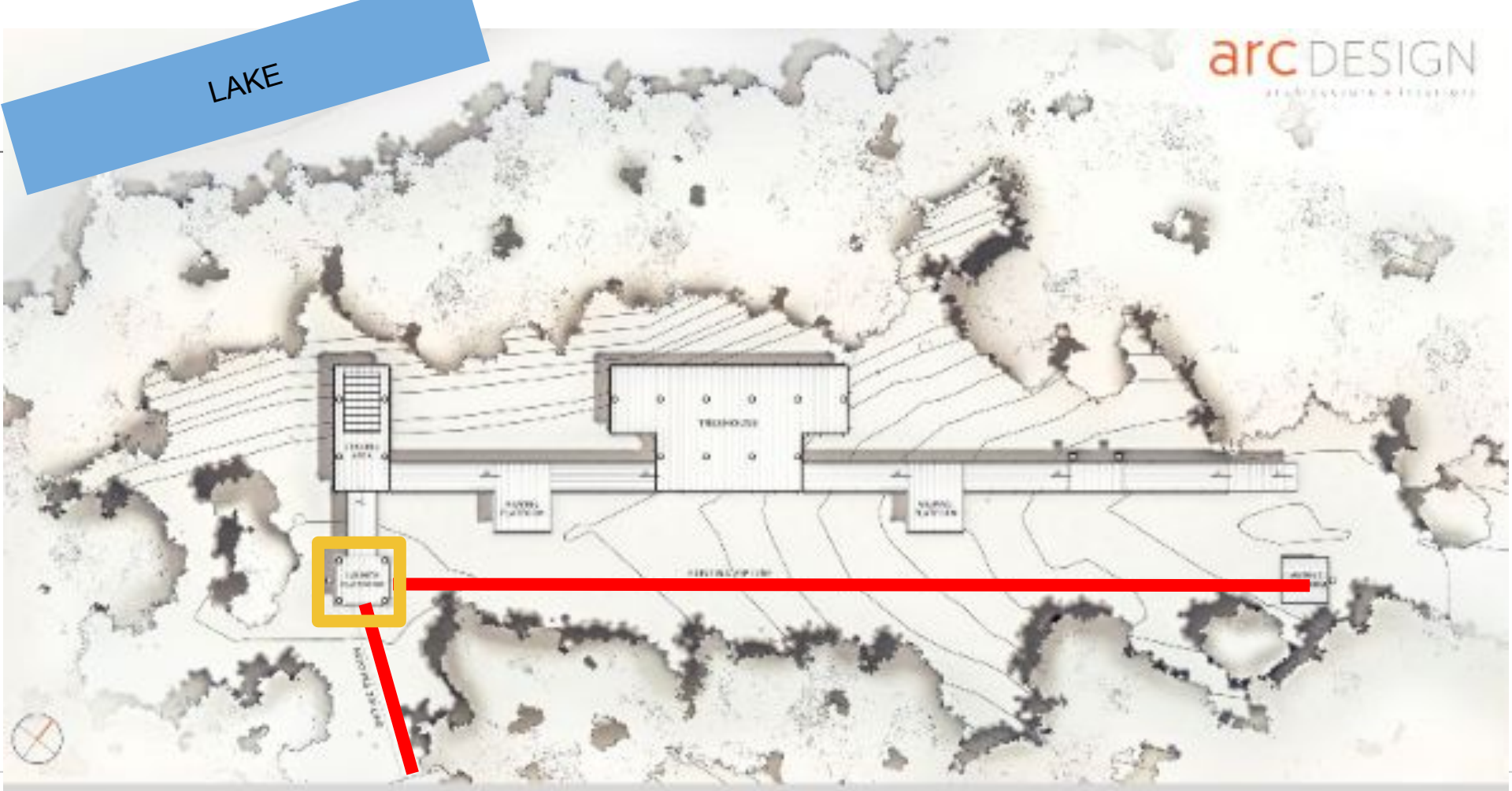






LAKE

LAKE





Progress

Our plans to create stations for the treehouse path.

Idea Selection

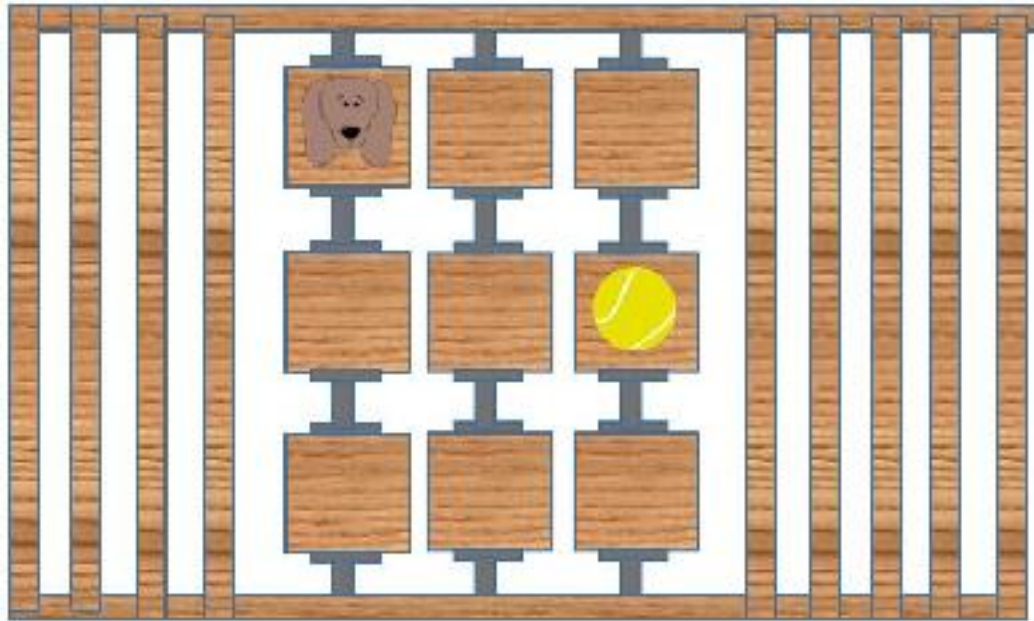
- **Xylophone**
- **Rain sticks**
- **Wind chimes**
- ~~Drums~~
- ~~Piano~~: *need electronics*
- ~~Windpipe with PVC~~:
universal use problems
- Kaleidoscope
- **Telescope/binoculars**
- Basket Toss
- Corn holes
- ~~Slingshots~~: *dangerous*
- **Enlarged fidget cube**
- ~~Puzzles~~: *Difficult to implement*
- **Calming bottles**
- ~~Obstacle course~~: *universal use problems*
- ~~Spider web walk~~: *universal use problems*
- **Activity wall (gears, water, marble and pipes)**:
water and marbles hard to manage
- ~~Wheels~~
- **Spinning match game**
- ~~Kinetic sand station~~: *Not outdoor friendly*

Team 1





Matching Game



Progress

- Make bars horizontal
- Face for each side of block (tic tac toe, matching pictures with nature incorporation)
- Suitable material (weather resistant)

Gears and Crank

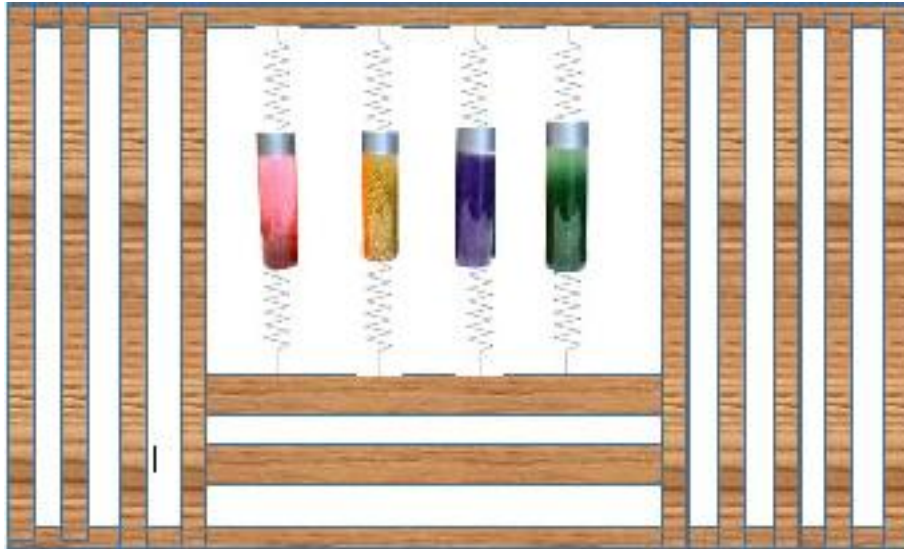


Progress

- Prototype: toy gears in plywood with nut and bolts
- Durability of the gears
- Usability (how difficult will it be to turn)
- Incorporation with enlarged fidget cube



Calming Bottles



Calming Bottle

- The glitter inside the bottle would settle at the bottom.
- The bottle needs to be rotated in order for the effect of the calming bottle to be seen
- Potential location includes waiting areas in the treehouse



Locations of calming bottle

Team 2





Telescope/Binoculars



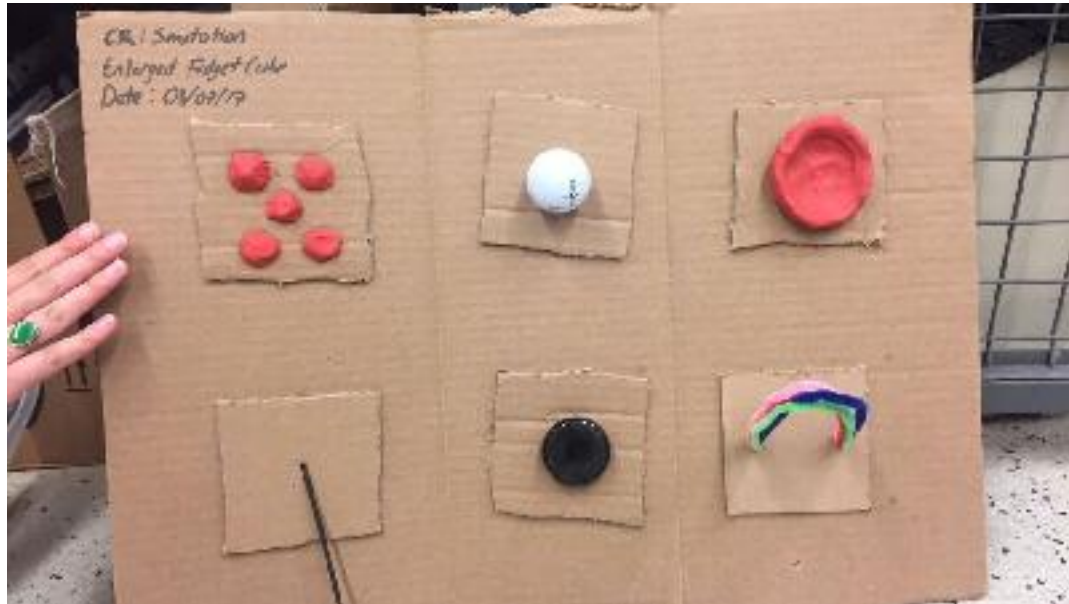
Goals for telescope:

- Telescope must be located at a place where the lake and eagle's nests can be viewed
- Telescope must be protected from the weather.





Enlarged Fidget Cube

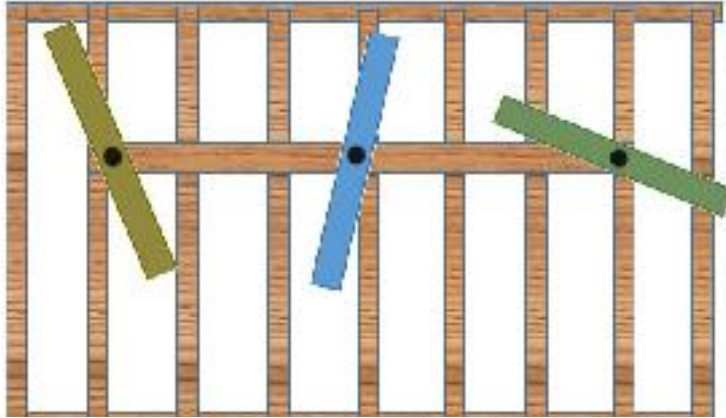


Progress

- Determined mechanisms too difficult to implement on large scale
- Take ideas (texture, switches, rolling) and make large scale
- Incorporation with gears and crank (large activity wall)



Rainstick



First Prototype

- Create spinning axis first
- Inside of rainstick is concentrated down the middle (does not make enough sound)





Second Prototype

- Create insert with spinning pegs
- Clear PVC pipe
- Need finalized CAD design to fit in PVC pipe

LAKE

Possible locations for rain stick

Possible locations for telescope

Possible locations for enlarged fidget cube or calming bottles

Possible locations for matching games or gears and crank





Moving Forward

The next steps to acheive our goals.

Summary of Project

Station	Next Steps (Future Teams)
Matching Game	<ul style="list-style-type: none">- Find suitable block material- Build the next prototype
Gears and Crank	<ul style="list-style-type: none">- Investigate durability of gears- Investigate usability of gears
Calming Bottles	Need to make a bigger scale prototype
Telescope/Binoculars	Purchase telescope with protective cover
Enlarged Fidget Cube	Create the next prototype by implementing the same concepts but different designs
Rainstick	Create the next prototype with CAD insert





Thanks!

Any **questions** ?