TEAM TRIPLE J

EDUCATIONAL DESIGN KIT FOR CHILDREN WITH DISABILITIES

A B S T R A C T

R.**A**.**F**.**T**. (**R**esource **A**rea **f**or **T**eaching)

- Innovative hands-on educational activity kits
- Desires new multi-subject kit for teachers
- New kit must be accommodate students with disabilities

PROBLEM STATEMENT

Currently, teachers of students with disabilities have very limited resources to support their classroom. There are little to no affordable options in existence that can accommodate this specific set of needs.

We hope that these educational design kits will be accessible to **ALL** children, both with and without disabilities, and **ENGAGE** them in learning, teamwork, and creative thinking.

PROBLEM MAGNITUDE

- Many different disabilities affect motor control and skills
- 0.14% - 0.4% of children are born with cerebral palsy
- 1.47% of children are identified with autism spectrum disorder
- 11% of children (6.4 million) have been diagnosed with ADHD (2011)

cdc.gov

I N T E R V I E W S

- GREG BROWN: Director of Education Initiatives (RAFT)
- EVE SUTTON: Tutor (Above and Beyond)
- AMY KRAUS: Special Education Teacher (Palo Alto Unified)
- AGNES KAISER: Math Instructor (Isaac Newton Graham Middle School)

STATEMENT OF SPECIFIC NEED

- Current lessons plans unable to accommodate students with disabilities
- Unique and targeted lesson plan must be made
- Must develop daily living skills for these students

EXISTING SOLUTIONS

Current RAFT kits:

- Egg-Drop kit
- Survival Design kit
- Earthquake Simulation Tool
- Solar Cooker
- Rubberband Car

DESIGN CONCEPTS

- Design Kit encourages using critical thinking skills to build something
- “Toy” that teaches an engineering principle
- Game that enforces using design thinking to come up with a solution

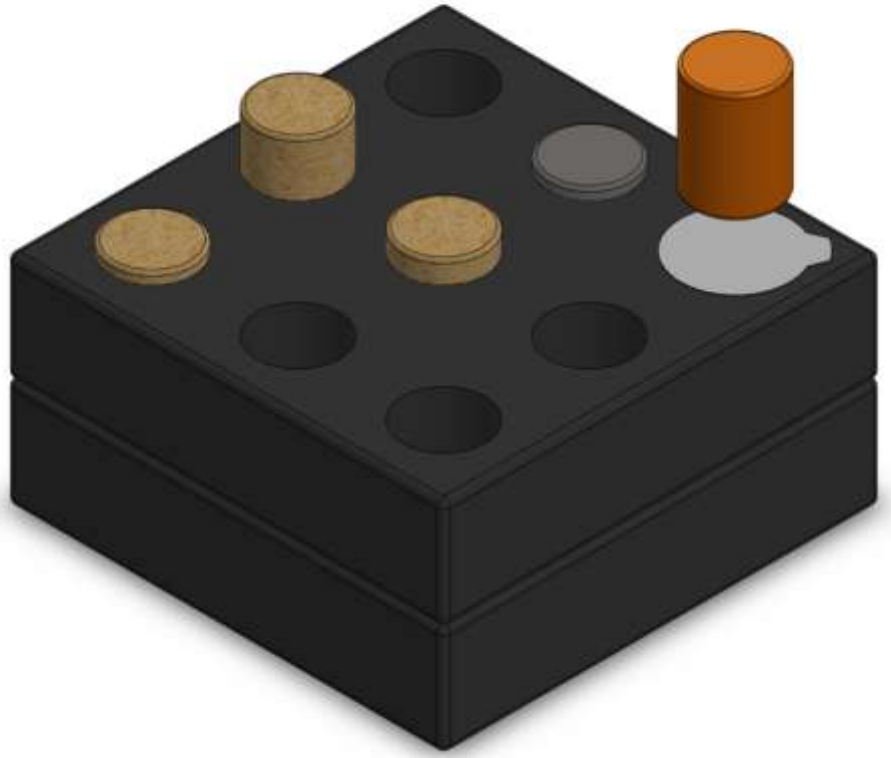
DESIGN ALTERNATIVES

- Game that teaches about fluids and viscosity
- Catapult design challenge
- Tool that develops motor skills with line-tracing

TOP DESIGN CONCEPTS

- Teaches engineering design concepts and mathematical optimization
- 2-stage game emphasizing motor skills
- Students work together as teams
- Promotes learning through trial and error

DESIGN VISUALIZATIONS



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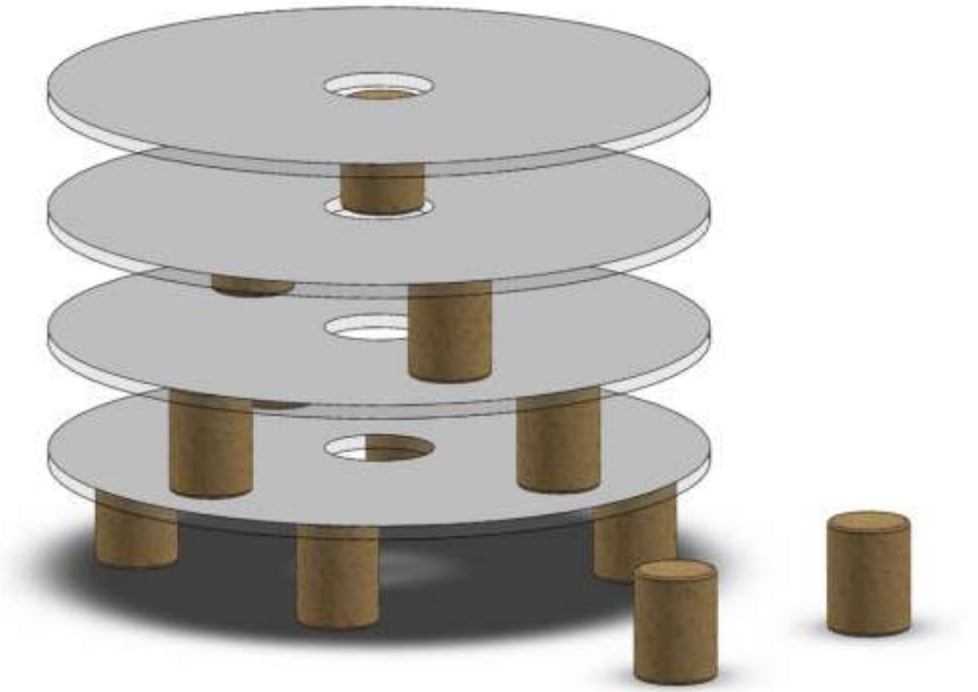

FUTURE WORK + CHALLENGES

- Test game with students and educators
- Finalize rules and logistics of the game
- Create a instructional video for educators