

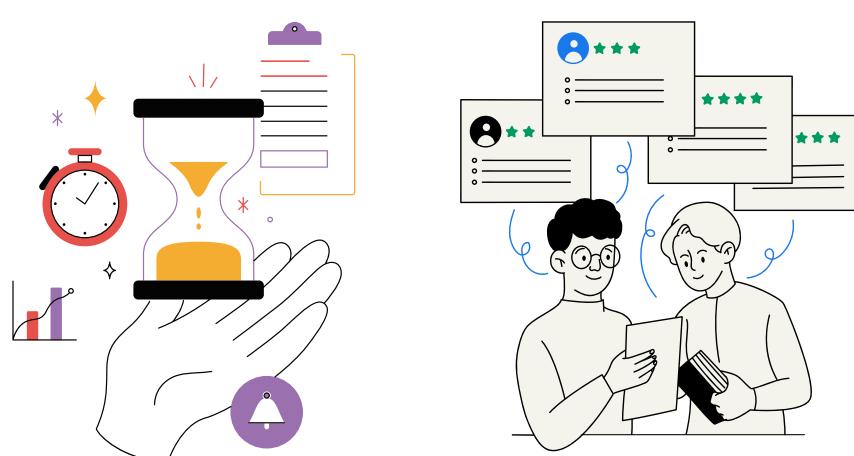
BRICK-BY-BRICK LEGO SORTER



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Problem Statement

Natalie's cerebral palsy limits her mobility and fine motor skills which makes it difficult for her to sort Legos. Our solution will allow her to sort Legos by herself with minimal mistakes and increased speed, allowing her to maximize building time with Jason.



Market Research

1. Candy dispenser
 - An easy way to dispense
2. Multi-layer Compartments
 - Compact way to store
3. Sifter
 - Sort Legos by size
4. Automatic Color Sorter
 - Sorts Legos like Natalie



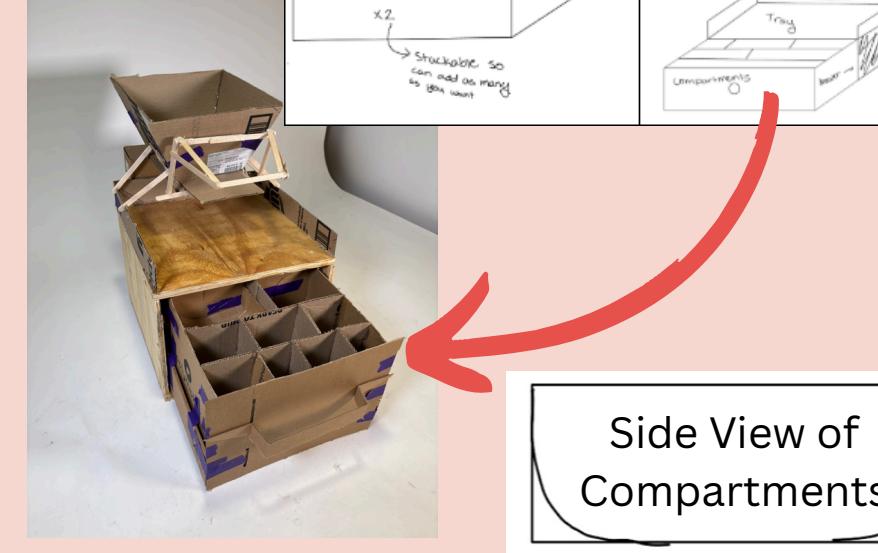
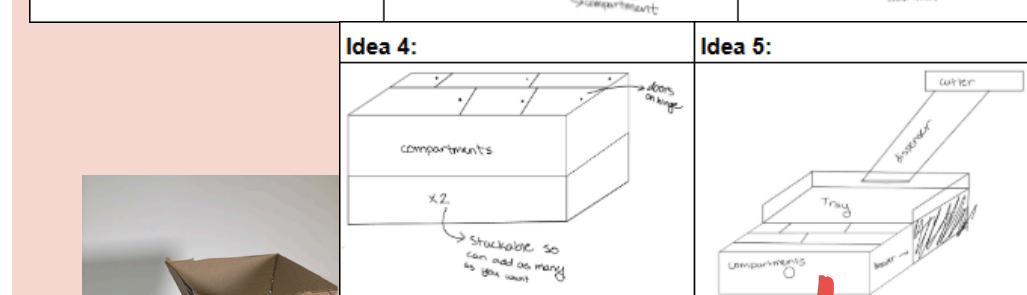
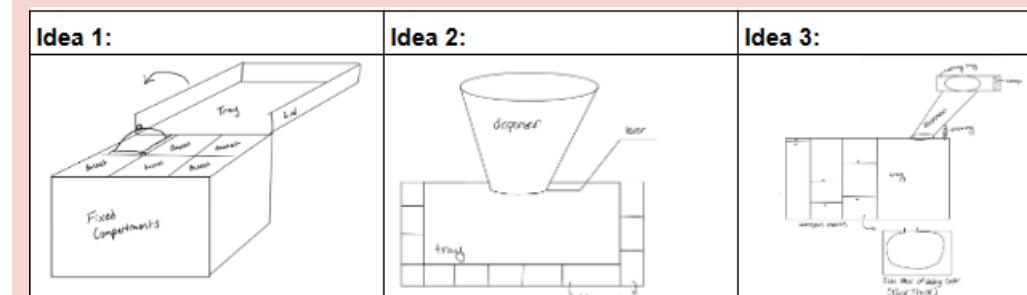
User Needs and Engineering Requirements

- Increased speed of sorting
- Operational without excessive mental or physical strain
- Can accommodate all sizes and shapes of Legos
- Maintain small gaps in pinch points
- Sorting mistakes can be easily resolved
- Reliable through continuous use
- Able to be stored away
- Opens Lego bags



Idea Development

Started by narrowing 5 ideas down into 1 prioritizing aspects that would work best for Natalie like removable compartments and dispensing few Legos at a time. After the initial prototype, we made small adjustments and various material changes to get to our final prototype.



Prototype

Key Features:

- Removable bag opener
- Easily stored through drawer and removable transparent funnel
- Transparent removable compartments of various sizes



Future Directions

- Smaller, more compact design
- Lighter design so Natalie can move it for storage without requiring assistance
- Drawer slides with stops that stop at each row
- Compartment sizes that match the sizes of pieces and colors that Natalie will be sorting
- Easier opening of the drawer