TOY TYPE CONVERTERS

Jessica Craig[1], Nisha Pradhan[1], Jennifer Li[2], Jacqueline Li[3], AJ Kruse[4]
Needs Expert- Molly Mollica
1. Mechanical Engineering, 2.Human Centered Design & Engineering, 3. Electrical Engineering, 4. Bioegineering

HUSKYADAPT
Accessible Design & Play Technology

The Challenge

Children with mobility impairments need a way to learn developmental skills through playing with toys, which are uniquely activated based on each child's diverse ablilites.

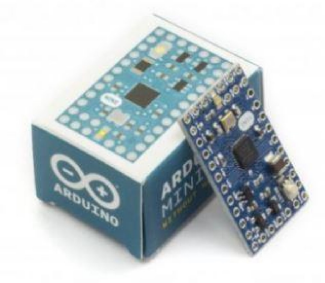
Bump-and-Go	Timed Toy
Activates while holding down the button.	Activates for a specified amount of time at one button press

Some children struggle to activate their switch for longer periods, which is necessary to use a bump-and-go toy. Our experiments this quarter worked to find a practical converter that allows extended toy activation with a single press of a button.

Our Two Designs

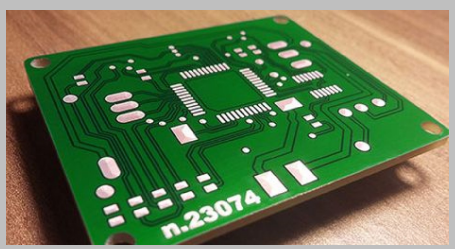
(1) A basic timer (digital and mechanical) as the base for our adaptations.
- Pros: Cheap ($8) and easily manufactured on a mass scale.
- Cons: Most don't have the voltage required to run the toy, meaning we need an additional power supply. Some also are not suited for extra add ins (it will damage the function of the timer).

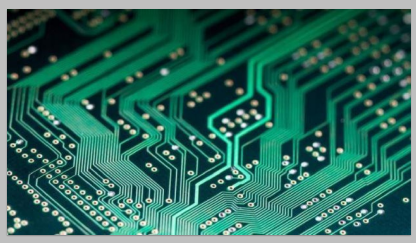
(2) Arduino timed circuit, built from scratch.
- Pros: We decide how long the toy runs and can build it to work for our exact need. They are low cost ($8-$15).
- Cons: Require specific assembly from someone with experience. Not as many options for parents being able to adjust time.



The Future

We plan to transfer our Arduino board designs to a virtual layout in Eagle and eventually print our own functiong circuit boards to be attached to adapted toys.





COLLEGE OF ENGINEERING
UNIVERSITY of WASHINGTON

Acknowledgements
We thank the Mathers Fund to Empower & Improve Human Ability, Jessica Zistatsis, Molly Mollica, and George Zatloka for their on-going support of our team.