# Introduction

The toy should be activatable by connecting a standard assistive switch equipped with a 3.5 mm mono plug.

This adaptation is intended for users that may have difficulty holding the toy and/or activating the small button independently.

# Requirements

## Goals

|  |  |
| --- | --- |
| G01 | Make the toy more accessible by adding the ability to use an assistive switch. |

## Functional Requirements

|  |  |
| --- | --- |
| F01 | Must have a female 3.5 mm jack connected such that when tip and sleeve contacts are closed the toy activates. |

## Non-functional Requirement

|  |  |
| --- | --- |
| NF01 |  |

## Constraints

|  |  |
| --- | --- |
| C01 | Adaptation should be suitable for a volunteer maker to complete. |
| C02 | Adaptation should require simple hand tools; screwdrivers, soldering iron |

# Ideation

This toy has also been switch adapted by using a battery interrupter and using tape or a strap to fix the built-in button in the on position. A custom 3d printed collar could also be used to keep the built-in button depressed. This requires no permanent modification to the toy.

# Conceptual Design

# Prototyping

# Testing

# Detailed Design – V1.0

## Toy

Spinning Light Wand Toy

* SKU 6000201173988
* https://www.walmart.ca/en/ip/spinning-light-wand-yellowblue/6000201173987
* $5 CAD

### Possible Alternatives

**The following toys are a similar style but may have a different size or wiring.**

**Rhode Island Novelty Light-up Magic Ball Wand, One Piece**

* [**https://www.amazon.ca/Rhode-Island-Novelty-Magic-Flashing/dp/B009A6PIVG**](https://www.amazon.ca/Rhode-Island-Novelty-Magic-Flashing/dp/B009A6PIVG)
* **$ 16 CAD**

**ArtCreativity Light up Orbiter Spinning Wand | 7â€� LED Electronic Spin Toy for Kids with Batteries Included | Great Gift Idea for Boys Girls Toddlers | Fun Birthday Party Favor/ Carnival Prize**

* [**https://www.amazon.ca/ArtCreativity-Spinning-Electronic-Batteries-Included/dp/B07D7GQFMZ**](https://www.amazon.ca/ArtCreativity-Spinning-Electronic-Batteries-Included/dp/B07D7GQFMZ)
* **$20 CAD**

**ArtCreativity 7.5 Inch Light Up Magic Ball Toy Wand for Kids - Flashing LED Wand for Boys and Girls - Thrilling Spinning Light Show - Batteries Included - Fun Gift or Birthday Party Favor**

* [**https://www.amazon.ca/ArtCreativity-Inch-Light-Magic-Ball/dp/B07RG7DDW6**](https://www.amazon.ca/ArtCreativity-Inch-Light-Magic-Ball/dp/B07RG7DDW6)
* **$32 CAD**

**Spinning Light-Up Wand for Kids in Gift Box, Rotating LED Toy Wand for Boys and Girls, Magic Princess Sensory Toys for Autistic Children, Best Birthday Gift for Kids 3, 4, 5, 6, 7**

* [**https://www.amazon.ca/Spinning-Light-Up-Rotating-Princess-Autistic/dp/B082VFSJZP**](https://www.amazon.ca/Spinning-Light-Up-Rotating-Princess-Autistic/dp/B082VFSJZP)
* **$43 CAD**

## 3D Printed Base

## 3D Printed Base Bottom Cover

# Opportunities for Improvement

* Optimize design of base to reduce need for support material and reduce print time.
* Investigate options for putting external switch jack in parallel with built-in switch so that toy can be activated using either option