

Spinning Light Wand Toy Adaptation

DESIGN RATIONALE

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.
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Functional Requirements

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

NF01	
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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



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DESIGN RATIONALE

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>
- \$ 16 CAD

ArtCreativity Light up Orbiter Spinning Wand | 7 LEDs 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>
- \$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>
- \$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>
- \$43 CAD

3D Printed Base



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Files available at <https://makersmakingchange.com/project/spinning-light-wand-toy-adaptation/>

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DESIGN RATIONALE

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