

“LIFE’S A SWITCH”

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INTRODUCTION

By simply using different types of switches, the lives of children with disabilities can be changed forever. For example, activating a battery-operated toy with an assistive switch allows children, with even severe disabilities, the opportunity to control external events. This control over external events helps a child to understand cause and effect, predictability, and normality. When a child with developmental disabilities understands the connection between the activation of a switch and the resulting action it triggers, the knowledge of cause and effect is gained. Therefore, the basis for all future learning is established.

Assistive switches also allow equalized play opportunities for children with physical disabilities. A child can participate in group activities through the use of a switch. This gives a child not only a feeling of self-accomplishment but also a sense of belonging to a group. These factors provide many opportunities, not only for the child but also for the family. Most importantly, the realization is gained that the disability need not prevent the child from independently impacting their environment.

These assistive switches are developed through the use of assistive technology. Assistive technology is any device that enhances an individual’s ability to perform activities of daily living, enhances communication, improves mobility, allows participation in education, enhances vocational activities, or enables recreation. One main goal of assistive technology is to provide countless opportunities for children with disabilities to explore, play, learn, and communicate with others. The use of

assistive switches provides the solution for these opportunities.

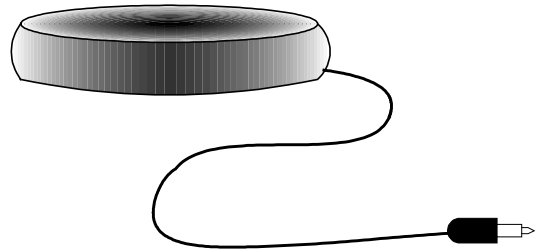


Figure 1. Pillow switch.

SUMMARY OF IMPACT

One of the current problems facing assistive technology users, including switch users, is the cost of the available items. One way to provide more affordable solutions is to educate and teach the families of switch users how to make their own switches and adaptors. For example, some assistive technology vendors sell large button switches from \$25.00 to \$45.00, tread switches for \$40.00, and pillow switches for \$35.00. Amazingly, all of the parts used to make these assistive switches can be bought and custom made into assistive devices for an average cost of around \$10.00. The “Life’s a Switch” manual details for readers of any background how to adapt and make switches to create their own assistive switches.

MANUAL DESCRIPTION

In order to accomplish these objectives and successfully create more cost effective and reliable devices, the “Life’s a Switch” manual covers the following topics: safety, basic circuits, equipment operation, switch technology, switch adaptation, switch design and implementation, and troubleshooting. The manual is written for a generally non-



technical audience with the purpose of enabling readers with the knowledge to construct their own assistive switches.

The safety section of the manual assumes that the reader has limited knowledge of electrical safety and battery care. The purpose of this section is to teach the basics of electrical safety and battery care so the reader is safe and comfortable when working with either power supply.

The basic circuits section provides an overview of voltage, current and resistance, Ohm's law, the basic elements in a circuit, the role of switches, and the difference between parallel and series circuits. The understanding of these subjects is necessary for one to successfully construct an assistive switch.

The tools needed for constructing assistive switches include a multimeter, soldering iron and wire stripper. The equipment operation guide instructs the reader in the use and basic safety of these tools.

The switch technology section introduces the reader to the specific terminology used with switches. With this information, the section also helps the reader choose what type of switch is best suited for a required

application and an overview of commercially available switches.

Adapting normal switches to make assistive switches requires the construction of battery interrupters, extension cords, and jacks and plugs. The switch adaptation section includes instructions for these needs and an overview of how all the components fit together with the switch and a device connected to the switch, such as a toy.

The final switch design and implementation section compiles the knowledge from all previous sections as instructions detailing different applications of assistive switches. This section allows for the most creativity of the reader. A troubleshooting guide following this section helps the reader correct likely mistakes made during the construction of assistive switches.

An accompanying workshop to this manual provides hands-on experience for the public in making assistive switches. The workshop focuses on teaching the basic switch construction skills and the specific application of assistive switches to adapting toys for the use of children with disabilities.