

# Assistive Technology Resource Centers of Hawaii

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*“Linking individuals with Assistive Technology”*



Assistive Technology  
Resource Centers of Hawaii  
[www.atrc.org](http://www.atrc.org)

# What we are covering:

- ATRC services
- The importance of play
- Easy to access toys
- Basic EADL (Electronic Aids to Daily Living)
  - Battery operated toys and other devices
  - Simple electrical toys and other devices
- Computers
  - Desktop applications
  - Mobile devices – Apps



# Our Mission

- Linking individuals with **technology** so all people can participate in every aspect of community life.
- Empowering individuals to maintain **dignity and control** in their lives by promoting technology through **advocacy, training, information, and education.**

# What is Assistive Technology?



Any item or equipment that has been specially-designed, modified, or made commercially available which enables anyone to maintain or improve their functioning at home, school, work, and play while ensuring their quality of life.

# Our Services

1. Information and Referral
2. Funding and Advocacy
3. *AT Depot* Equipment Loan Bank
4. *Computer Redistribution*
5. *ATRC Financial Loan Program*
6. Demonstration and Training
7. *Camp Cool* and other outreach programs

# The Importance of Play

- Play is far more than recreation
- Play is:
  - Participation
  - Socialization
  - Key to development skills
    - Motor
    - Sensory
      - Visual Auditory
      - Tactile, vestibular, etc.
    - Cognitive



# What are your thoughts?

1. Children under the age of 5 should have minimal screen time
2. Children 2 and under should have no screen time
3. Some screen time is ok, even for infants and toddlers
4. It does not matter how much screen time young children get

# Universal Design for Learning (UDL)

- A framework for guiding educational practice that :
  - provides flexibility in the ways information is presented, in the ways students respond or demonstrate knowledge and skills, and in the ways students are engaged; and
  - reduces barriers in instruction, provides appropriate accommodations, supports, and challenges, and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient.





# 3 Principles of UDL

- multiple and flexible means of representation or presentation of information
- multiple and flexible means of action and expression of learning by children/students
- multiple and flexible means of engaging and maintaining engagement of the learner

# Goal of UDL

To build purposeful, motivated, resourceful, knowledgeable, and strategic goal-directed learners

- there is **no one best way to learn**
- there is **no one best way to demonstrate attainment of proficiency**
- there is **no one best way to motivate and engage**

# The Importance of Play

- Children's play may appear random
- These multi-sensory experiences are directly linked to all areas of development
- This builds a foundation for future learning

Play → Development → Learning

# The Importance of Play

Opportunities to play are reduced for children with limitations in:

- Motor skills
- Sensory abilities
- Cognitive abilities



# Toys

- Toys have changed a lot over the years
- Many toys are challenging to play with
- Some are easier:
  - To manipulate (fine motor)
  - For children with sensory deficits



# Toy Resources

- Toys R Us catalog for children with special needs (closing soon)
- Lekotek
  - [www.lekotek.org](http://www.lekotek.org)
- Be creative



# When Being Creative Isn't Enough

- Some children cannot manipulate even “easy to play with” toys
- Assistive Technology can bridge the gap

# Basic EADLs

**Basic Electronic Aids to Daily Living** provide alternative access to :

- battery operated devices
  - i.e. a toy
- simple electrical devices
  - i.e. a fan
- or provide limited control of an infrared receiving device
  - i.e. television “channel up” command
- Handout



# Access

- Access is almost always by Switch



# Goals

- To provide independent play
- To develop cognitive skills through this play
- Psychosocial development
- To prepare for future assistive technology use



# How Does it Work?

- Direct connection
- Intermittent control
- Battery operated devices
- Electrical devices
- IR receiving devices

# Direct Connection

- Direct connection
- Intermittent control





# Intermittent Control

- Good for developing scanning skills
- Anticipation
- Waiting
- Accurate activation
- Timing



Empowering blind and low-vision users of  
Apple products and related applications

### Latest Additions to the AppleVis App Directory

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iOS App Directory

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#### **Eye-D**

iOS App Directory: Added to the Productivity category on 20 April, 2018 by Snorlax

**Usability Rating:** The app is fully accessible with VoiceOver and is easy to navigate and use.

#### **Melodist - Let photos sing**

iOS App Directory: Added to the Music category on 20 April, 2018 by Sabrina

**Usability Rating:** The app is fully accessible with VoiceOver and is easy to navigate and use.

#### **Ridekick**

iOS App Directory: Added to the Travel category on 19 April, 2018 by Darrell Shandrow Hilliker

**Usability Rating:** The app is fully accessible with VoiceOver and is easy to navigate and use.

#### **Birdees - Birthday Reminder**

iOS App Directory: Added to the Lifestyle category on 9 April, 2018 by cool cat

**Usability Rating:** The app is fully accessible with VoiceOver and is easy to navigate and use.

#### **Libby, by OverDrive**

iOS App Directory: Added to the Books category on 5 April, 2018 by Kelly Ford

**Usability Rating:** Some parts of the app are accessible with VoiceOver, but not enough to make it usable.

#### **iLights Flashlight**

iOS App Directory: Added to the Utilities category on 4 April, 2018 by cool cat

**Usability Rating:** The app is fully accessible with VoiceOver and is easy to navigate and use.

#### **Eyes-Free Fitness**

iOS App Directory: Added to the Health and Fitness category on 2 April, 2018 by Lisa Salinger

**Usability Rating:** The app is fully accessible with VoiceOver and is easy to navigate and use.

#### **DecibelMeter-measure db level**

iOS App Directory: Added to the Utilities category on 2 April, 2018 by cool cat

**Usability Rating:** There are some minor accessibility issues with this app, but they are easy to deal with.

#### **Apogee MetaRecorder**

iOS App Directory: Added to the Utilities category on 2 April, 2018 by HoldenM

**Usability Rating:** The app is fully accessible with VoiceOver and is easy to navigate and use.

#### **Nura**

iOS App Directory: Added to the Music category on 29 March, 2018 by HoldenM

**Usability Rating:** There are some minor accessibility issues with this app, but they are easy to deal with.

#### **Smart Headset**

iOS App Directory: Added to the Photo and Video category on 29 March, 2018 by HoldenM

# SKOOG 2.0

- The **Skoog** is a customizable electronic musical instrument that has been designed to be inclusive and accessible – especially to those unable to play conventional musical instruments







# The iPad



# “Camp Cool”



**A computer exploration camp for children with disabilities and their friends/siblings. Campers learn website development, video production, digital photography, computer-based applications as they explore, learn and play with AT.**

# Camp Cool







Control of simple infrared controlled devices

Typically control of devices that receive Infrared (IR) signals is done through a Multifunction EADL system. This provides more complete control and through a wider array of access methods. However, some clients do not require this level of control and benefit from a simpler and less costly option. Some of these Basic EADLs are controlled directly through large buttons and some by switch. Control has been simplified on most of these EADLs to accommodate cognitive limitations.

Home audiovisual systems can be quite complex these days. More than one remote control may be required to control the TV (often Power and Volume controls are on the TV remote, but Channel controls are on the Cable remote). Also, some audiovisual equipment remote controls send both IR and Radio Frequency (RF) signals. These Basic EADLs cannot learn or send RF signals and so will not be able to execute those functions controlled by RF.

Some individual devices are switch adapted, including CD Players, MP3 Players and DVD Players. Many of these can be found at Enabling Devices and RJ Cooper.

**BASIC ELECTRONIC AIDS TO DAILY LIVING – Simple Infrared Control**

NAME	PHOTO	SWITCH INPUT	SWITCH OUTPUT	COST	PROD. #	DIMENSIONS	COMMENTS
Relax AbleNet		Direct or 1 switch	None IR output	\$425.00	10000020	7.36 x 2.91 x 1.06	8 programmable IR commands, adjustable scanning speed  Each location can only learn one IR pulse (i.e. cannot program multi-number channels)
TV Remote Control Enabling Devices		direct or 5 switches	None IR output	\$229.95	1521	15.75 x 10.5 x 3.5	2" buttons or any 5 switches to control power, channels, volume  Several versions available  IR commands are pre-stored. This device may not be able to control all functions if TV and Cable signals are required.
TV Remote Module Enabling Devices		1-5 switches	None IR output	\$144.95	5150	10 x 4 x 2.5	switch for each desired function: power, volume up, volume down, channel up, channel down.  IR commands are pre-stored. This device may not be able to control all functions if TV and Cable signals are required.
TV-Cable/Satellite Remote RJ Cooper		2 switches	None IR output	\$99.00	H-68-TV		Universal remote with 2 switches. First switch for power (both or either TV and Cable Box). Second switch Channel Up (can store 10-15 favorites so less channels have to be gone through).

Electronic Aids to Daily Living (EADLs) control devices in the environment using an alternative method to provide independent control for persons with physical, sensory and/or cognitive impairments. Basic EADLs provide limited control of battery operated or simple electrical devices (on/off or limited infrared control) through switch access. Multifunction EADLs provide control of multiple electrical devices (i.e. Television) and functions (i.e. Volume Up) through a variety of access methods (i.e. Direct, Switch, Voice, or Eye Gaze).

#### How does this technology work?

To operate a battery powered device, such as a toy, a switch is connected to the device which essentially completes the battery connection upon activation. Some battery devices are pre-adapted and include a switch jack, others require a battery device adaptor (not all devices can be activated with a battery device adaptor, for example toys that are activated by pressing the "paw", rather than turning on a switch by the battery). Activating the switch completes the connection and power is provided to the device. Switch activation must be sustained to continue device operation. This can help to develop Cause and Effect concepts, however many clients have difficulty sustaining switch activation.

Some battery powered devices are controlled through infrared (IR) using a remote control. Some basic EADLs can learn and send these IR signals. The device does not have to be adapted.

These Basic EADLs provide Intermittent switch control of battery operated devices. Depending on the Basic EADL used, various control modes are available. Direct (or Momentary) Mode requires a sustained switch activation. In Latch mode, the first switch activation turns the device on and the second activation turns the device off. In Timed Mode, a switch activation turns the device on for a programmed amount of time, generally 1-60 seconds or 1-60 minutes. The device then turns off and another switch activation is required to start up the device again. Any type of switch placed in any location which provides independent control for an individual client can be used.

#### Why is this technology important?

Many people with cognitive, sensory and/or motor limitations have difficulty manipulating toys and other objects for play. Play is more than just recreation; play provides independence as well as participation and socialization with others. Object manipulation develops critical developmental concepts such as Cause and Effect, Object Permanence, and Stop and Go. Object manipulation is also important for development of vision and visual perception. Finally, use of this technology can help to prepare a client to use more sophisticated assistive technology in the future. For example, use of a Switch Latch and Timer or PowerLink develops scanning concepts and skills: switch activation, waiting, anticipation, timing and accuracy (using Timed Mode).

AbleNet, Inc.	800-322-0956	<a href="http://www.ablenetinc.com">www.ablenetinc.com</a>
Adaptivation	800-723-2783	<a href="http://www.adaptivation.com">www.adaptivation.com</a>
Enabling Devices	800-832-8697	<a href="http://www.enablingdevices.com">www.enablingdevices.com</a>
Inclusive TLC	800-462-0930	<a href="http://www.inclusivetlc.com">www.inclusivetlc.com</a>
RJ Cooper	800-752-6673	<a href="http://www.rjcooper.com">www.rjcooper.com</a>



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