

# Technology and Cognitive Support

## Strategies and Tools for Task Completion and Routines

AbleNet University Webinar

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Presenter:

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# Participants will learn about:

- Strategies for task analysis that can be applied to decisions about where and when technology can support task and daily routine completion.
- At least two commonly available tools to support task completion and daily routines.
- At least two specialized tools that are designed to support task completion and daily routines.



## Learned Helplessness

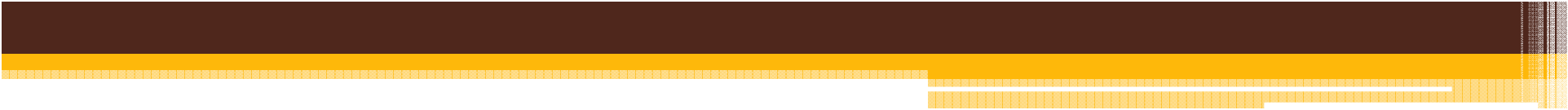
- Continuous exposure to failure
- Withdrawn and passive affect
- Unwilling to approach a new task
- Lack of persistence

*Arnold*

# Task Completion and Daily Routines



- Initiating
- Sequencing
- Follow-through
- Problem solving



# What are the supports that your student uses?

- What are “people-dependent” supports now?
- What are the low tech or high tech supports that make them independent?
- What do you use now?
- What do you use without prompting?

# What aspects of the student's performance will change?

## Speed/Frequency

- Accuracy
- Independence
- Spontaneity
- Duration
- Latency
- Quantity
- Quality



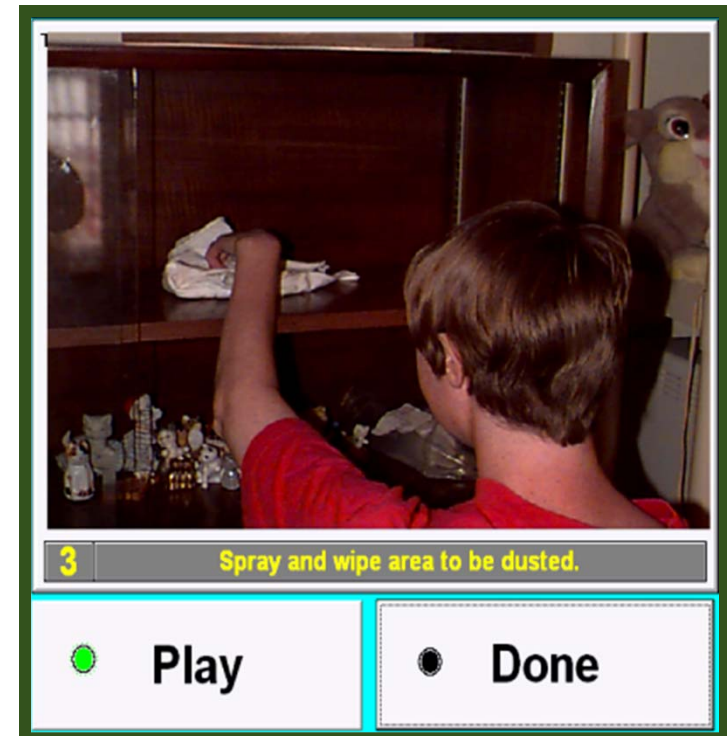
# Task Analysis

Task analysis is the practice of taking a behavior (task) that needs to be learned, analyzing the behavior by identifying the most important steps of the behavior (analysis), and listing the steps in sequence.



# Kinds of Tasks to Analyze

- Learning analysis
- Cognitive task analysis
- Activity analysis
- Schedule analysis
- Job or performance analysis



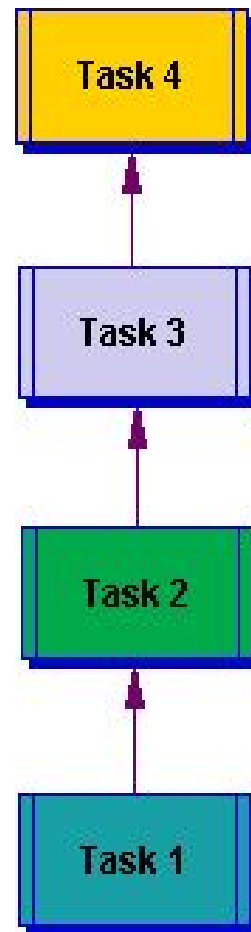


# Steps to Task Analysis

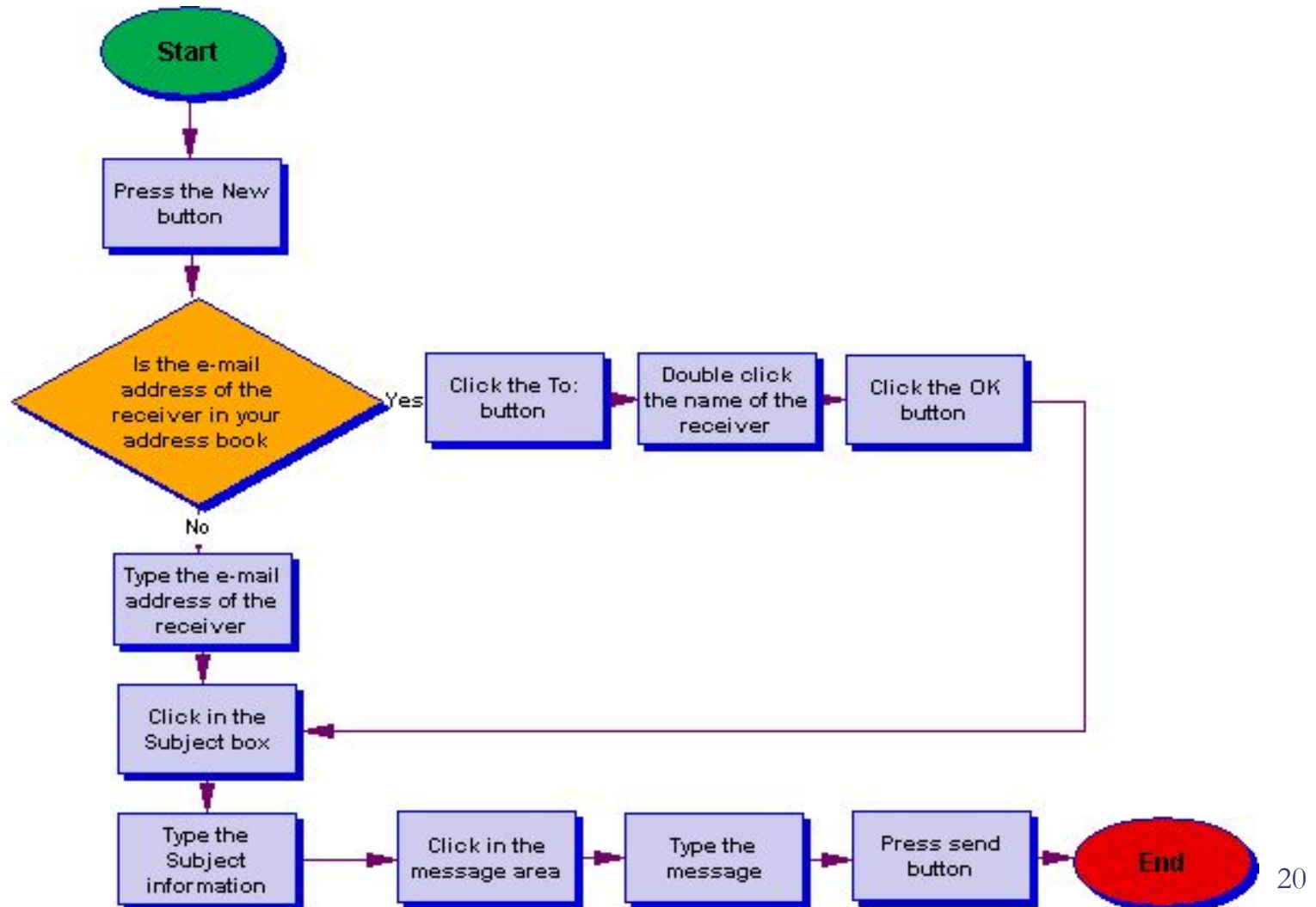
- Select priority tasks
- Identify the components and sequence of the task
- Sequence instruction for tasks and sub-tasks



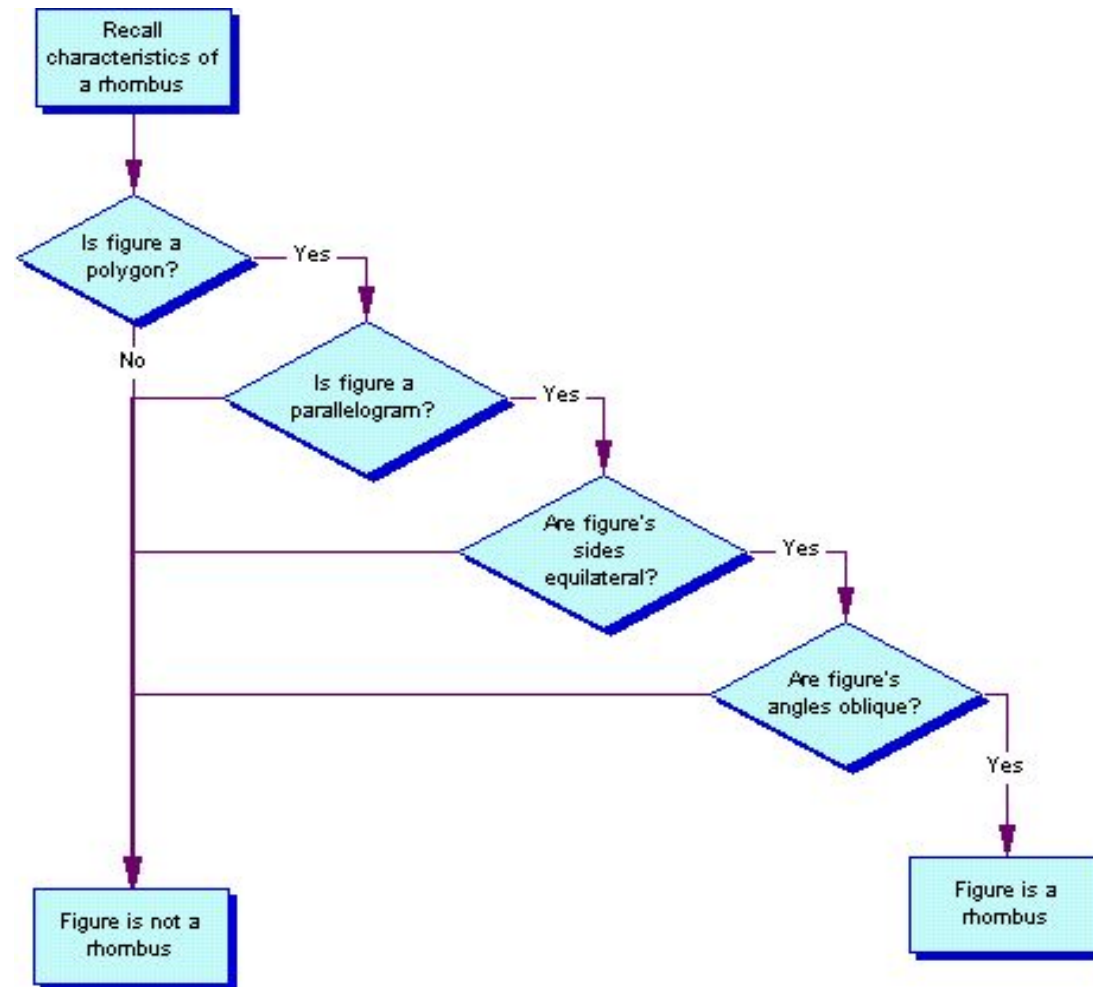
# Hierarchical Task Analysis



# Procedural Task Analysis



# Information Processing Task Analysis (Expert System)



# Determine Level of Detail

- Characteristics of the individual
- Importance of the task
- Safety issues
- Environmental concerns

# Tying Shoes: A sample Task

- Cross the shoe laces.
  - Pull the front lace around the back of the other.
  - Put that lace through the hole.
  - Tighten the laces with a horizontal pull.
- 

- Make a bow.
- Tighten the bow.



## The same task: Make a bow

- Hang the ends of the laces from the sides of the shoe.
- Pick up the laces in the corresponding hands.
- Lift the laces above the shoe.
- Cross the right lace over the left one to form a tepee.
- Bring the left lace toward the student.
- Pull the left lace through the tepee.
- Pull the laces away from one another.



# Teaching a Task Analysis Sequence

- Backward Chaining:  
Learning the last step first
- Forward Chaining:  
Learning the first step first
- Total Chaining:  
Learning all the steps in sequence  
with support and prompts



# Listening to Voice Mail

- Return home
- Check for flashing light
- Listen to voice mail
- List calls to return

---

- Add caller to address book

---

- Choose next call to return

# More to Listening to Voice Mail

- Return home
- Check for flashing light
- Listen to voice mail
- List calls to return
  - People I know
  - People I don't know
  - Commercial Call
- Add caller to address book
  - Keep this number
  - Enter number
  - Save number
- Choose next call to return

# Assistive Technology for Cognitive support

- What steps in the task analysis are difficult or impossible because of the individual's disability?
- Would the use of assistive technology allow this individual to become more functional and independent on this task?

# Range of Technologies

**GET READY**

Morning Checklist

Shower


- \_\_\_ Wash my body
- \_\_\_ Wash my hair
- \_\_\_ Get out and dry off well
- \_\_\_ Put on my robe

Get Ready


- \_\_\_ Wash my face
- \_\_\_ Brush my teeth
- \_\_\_ Use deodorant
- \_\_\_ Blow dry and style my hair

Get dressed

- \_\_\_ Put on underclothes
- \_\_\_ Put on shirt
- \_\_\_ Put on pants
- \_\_\_ Put on belt (if needed)
- \_\_\_ Put on socks
- \_\_\_ Put on shoes















NOT READY



READY

**Morning**

	6:30		Get out of bed
	6:35		Get dressed
	6:50		Eat breakfast
	7:20		Get book bag and lunch
	7:25		Wait by front door
	7:30		Get on bus and go to school



# Cognitive Support Technology

- Task completion
- Daily routines



# People Who Use Cognitive Support Technology can stay on task while on the job or at school



2 Load Sheets in Linen Press

Play  Done










# Low-Tech Tools and Strategies for Cognitive Support

- Dry-erase board reminders
- Reminder signs
- Timers
- Talking timers
- Picture sequences/ Task analysis charts
- Talking photo albums with sequences
- Programmable phones
















# Picture It

**Afternoon**

1. Hang up coat and book bag  
2. Eat a snack 
3. Leisure time  
 watch TV     play video game     listen to stereo 
4. Eat dinner 
5. Take a bath 
6. Go to bed 

**Morning**

	6:30		Get out of bed
	6:35		Get dressed
	6:50		Eat breakfast
	7:20	 	Get book bag and lunch
	7:25		Wait by front door
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## Fire Safety Checklist


- 1        
Change the batteries in your smoke alarms.
- 2      
Check your smoke alarms.
- 3      1   
Count your smoke alarms. Have one in each bedroom.
- 4     
Change flashlight batteries.
- 5       
Put in a fire extinguisher in the kitchen.



# In Sequence: Daily Living Skills From Judy Lynn Software

Play Video Start Review Putting on a coat by flipping it over your head Back to the Task Selection Menu

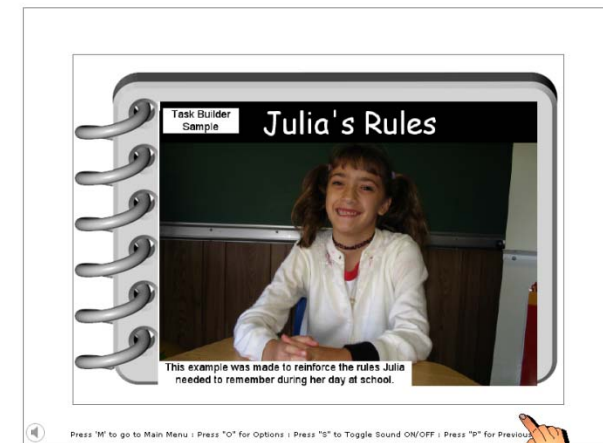
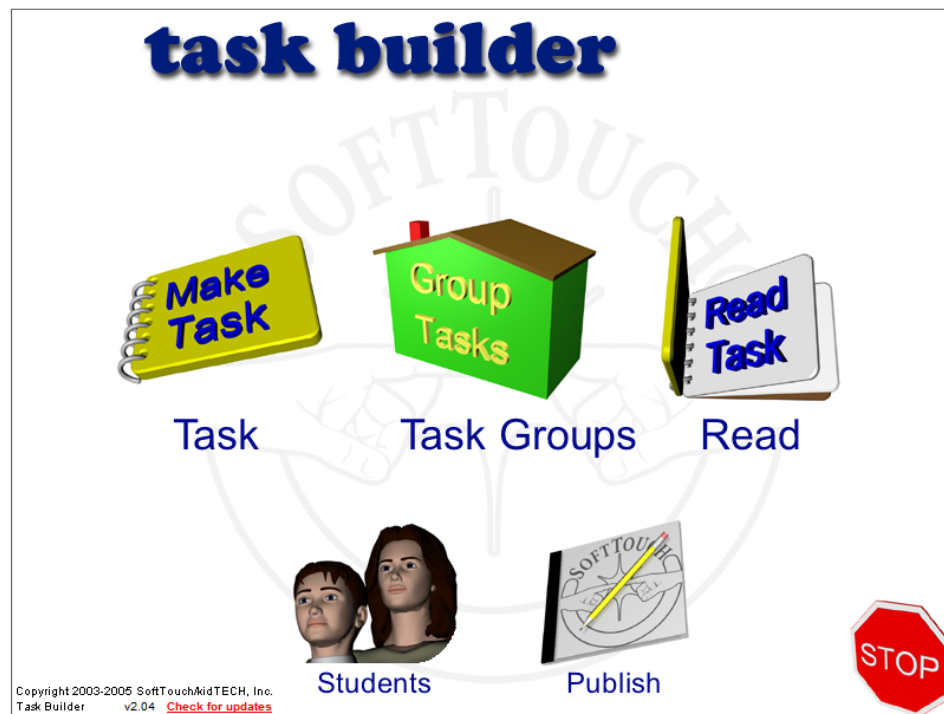
Lay the coat upside down on the floor Zipper up the coat Place arms in sleeves Pull overhead



1 → 2 → 3 → 4

Logged on as: Gayl Controls: Drag and Drop with a mouse

# Soft Touch Task Builder



Social Scripts & Story Scripts  
Add on to My Own Bookshelf

*Soft Touch*

# People Who Use Cognitive Support Technology can follow daily routines



# GET READY

## Morning Checklist

### Shower

- Wash my body
- Wash my hair
- Get out and dry off well
- Put on my robe

### Get Ready

- Wash my face
- Brush my teeth
- Use deodorant
- Blow dry and style my hair

### Get dressed

- Put on underclothes
- Put on shirt
- Put on pants
- Put on belt (if needed)
- Put on socks
- Put on shoes



NOT READY



READY

# Plan Your Day

have dinner  
have lunch  
health  
hockey  
homeroom  
industrial arts  
language  
leave for school  
leave for work

↑

compact pictures

ATTDAY.TXT

↓

(1) have breakfast  
(2) morning personal care  
(3) leave for work  
(4) transportation  
(5) go to work  
(6) see supervisor  
(7) break  
(8) see supervisor  
(9) break  
(10) have lunch  
(11) take your medication

↑

19

view

QuickList

open

save

print


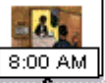


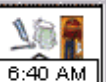

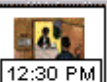





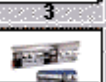






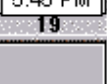
clear

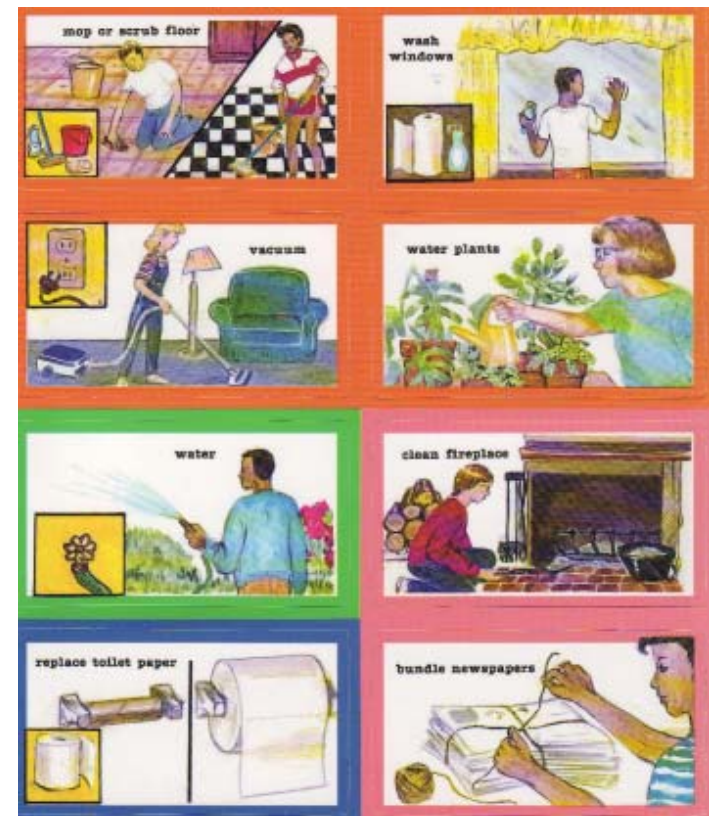
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Monday, May 15

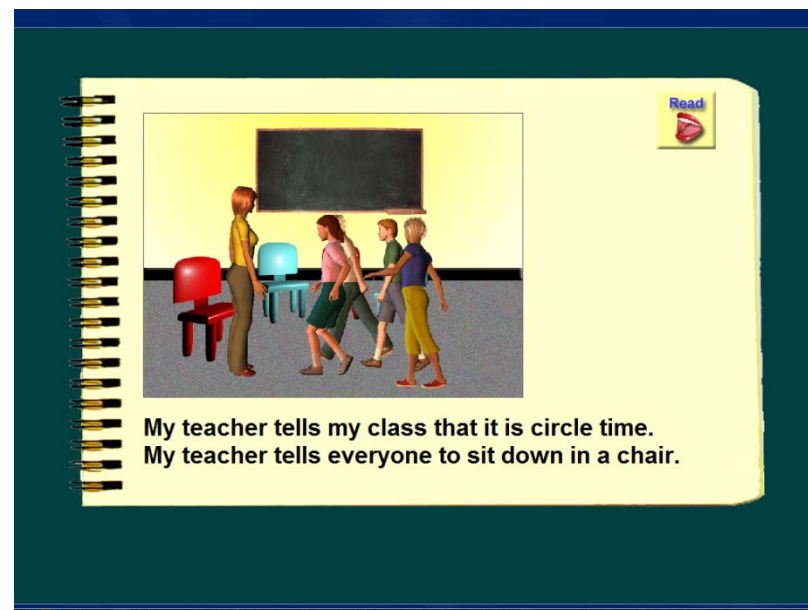
EXIT

Plan Your Day

 6:15 AM 1	 8:00 AM 6	 12:15 PM 11	 3:55 PM 16
 6:40 AM 2	 9:30 AM 7	 12:30 PM 12	 4:30 PM 17
 7:15 AM 3	 9:45 AM 8	 2:00 PM 13	 4:45 PM 18
 7:25 AM 4	 10:45 AM 9	 3:30 PM 14	 5:45 PM 19
 7:55 AM 5	 12:00 PM 10	 3:45 PM 15	 20



# Story Builder



# Connover

## Functional Planning System



<http://www.youtube.com/watch?v=dBnYqh9AVh8>

# Everyday Life



Home > All Topics > Everyday Life



## Everyday Life

Life is filled with chaos, and we have to learn how to work and solve problems in the midst of it everyday.

These interactive lessons give you the opportunity to experience these daily challenges without real-world consequences. Are you an educator? Learn more [about the Everyday Life project](#).



Tutorial



ATM



Deposit



Cash Back



Time Sheet



Grocery List



Check Your Receipt



Measure



Mix



Bake



Prescription



Pay Debt



Grill Safety



Fire Plan



Bus Map



Classifieds



Job Application



Subway Map



Vending Machine



Count Change

- ❖ Mix a cake
- ❖ Bake a cake
- ❖ Use a Debit card
- ❖ Make a deposit

<http://www.gcflearnfree.org/everydaylife>



# Portable Impact



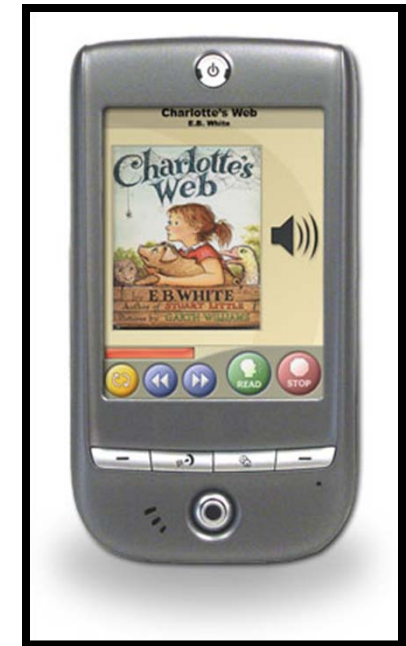
Discovery Desktop



Visual Assistant



Pocket Ace

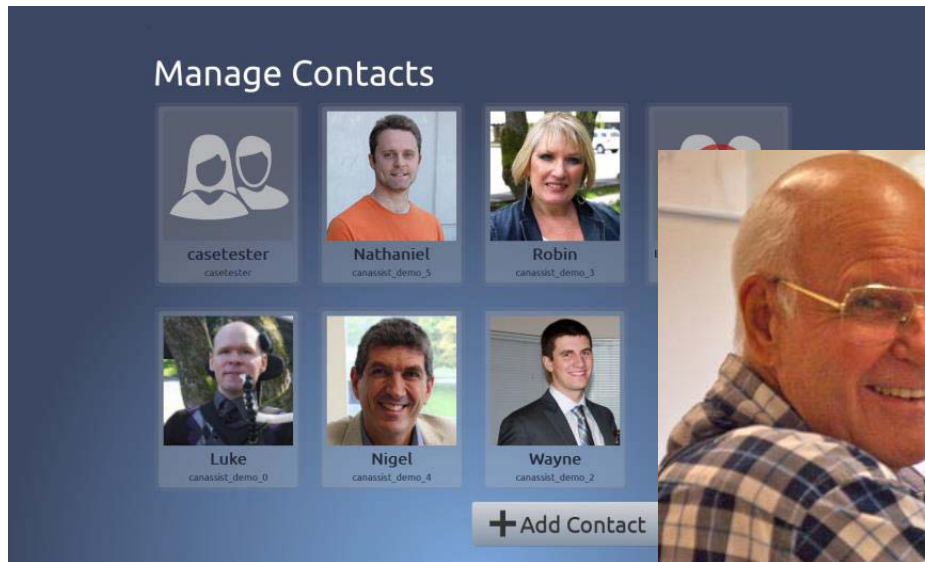


Rocket Reader

# Cognitopia Pocket Picture Planner



# People Who Use Cognitive Support Technology can maintain communication with family members and caregivers



# Portable Hi-Tech - smart phones



*Blackberry*

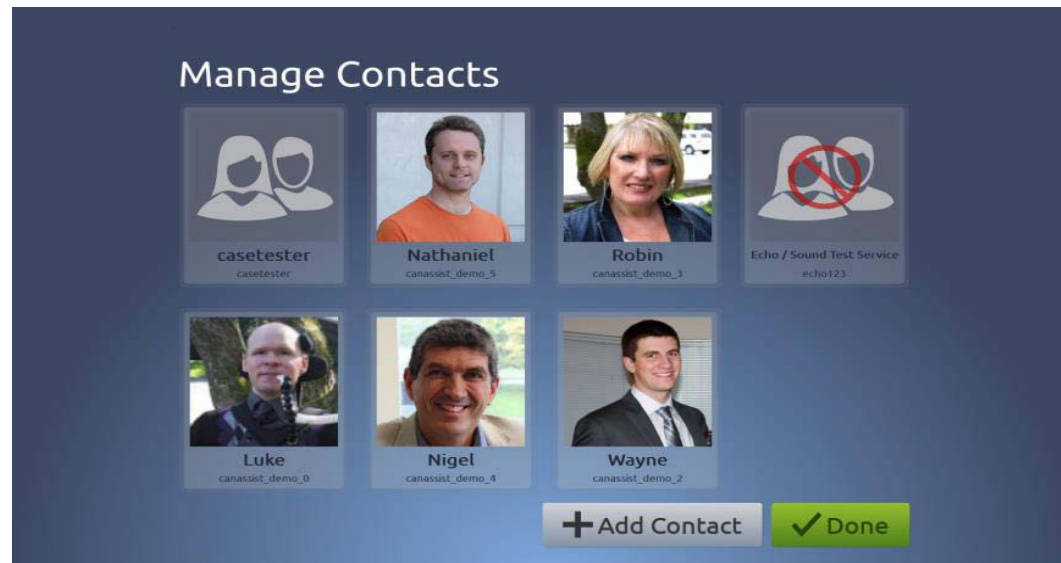


*HTC Titan*



*iPhone*

# CanConnect



An accessible, user-friendly interface to Skype, developed by CanAssist at the University of Victoria. It allows people with a wide range of disabilities to communicate easily with family, friends, caregivers and health-care providers in real-time over the Internet.

# AbleLink Community Integration Suite - Phone Edition



A picture-based cell phone program that instantly shows who is calling or initiates a call to the person pictured in the address book with a simple touch.

When do you stop using cognitive supports?



- Careful consideration must be given before removing support systems
- Planning for removing supports
- Instruction for

# Barriers to Use of Technology for Cognitive Support

- Cost
- Training
- Complexity of the Device
- Lack of Assessment Strategies
- Lack of Knowledge About Technology Uses

