



Using Assistive Technology to Make GPS Accessible for Students with Significant Disabilities

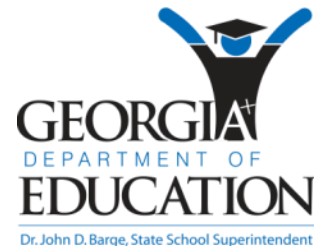
Kayse Harshaw

Georgia Department of Education

Jessie Moreau

Gwinnett County Schools

And contributions from other CATS



CATs and Teachers who participated in this presentation

Core Access Teachers

- Jessie Moreau, Gwinnett County Schools
- LaWanda Dalton, Hart County Schools
- Juanita Pritchard, Cobb County Schools
- Penni Singleton, Cherokee County Schools
- Summer Hall, Colquitt County Schools
- Karen Barineau, DeKalb County Schools

Teachers

- Claire Farmer, Cobb County Schools
- Holly Adams, DeKalb County Schools
- Cathy Wentworth, Colquitt County Schools
- Brandon Medley
Colquitt County Schools

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Assistive Technology Device

Section 300.5 Assistive technology device.

Any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability.

The term does not include a medical device that is surgically implanted, or the replacement of such device.

(Authority 20 U.S.C. 1401(1))

Providing AT

- Can the child access the curriculum without supports?
- Assistive technology evaluation
- IEP Team determines individual child needs
- Classroom assistive technology
 - Teacher tools for providing curriculum access

Student Skills

- Assess student skills
 - How can the student access the environment?
 - Cause and Effect
 - Manipulation of materials
 - How can the student communicate with others?
 - Choice making
 - Answer questions or give information



Student Response for Access

- Choose the most reliable response for assessment
 - More prompting may be used for instruction
 - For example: Eye gaze shows more independent intent than hand-over-hand guidance



Eye gaze can indicate choices or answers



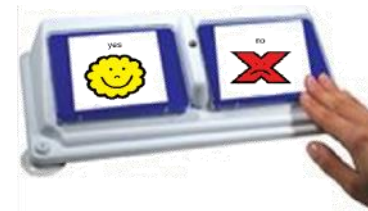
Instruction using AT

Physical prompting may be used during instruction to help shape a response.



Assistive Technology for Access can include

- Augmentative Communication
 - Voice Output Devices
 - Picture Boards and symbols



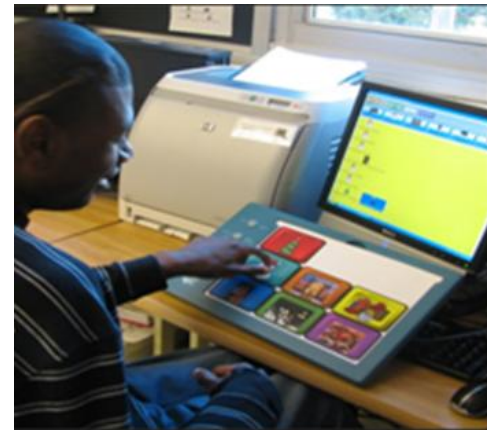
Assistive Technology for Access can include

- AT for Physical Access
 - Switches to allow access to electronic devices,
 - AAC, computers, etc.
 - Physical Adaptation of materials



Assistive Technology for Access can include

- Tools for Computer Access
 - Adapted Input/keyboard/display
 - Switch Interface
 - Adapted keyboard e.g. Intellikeys
 - Electronic whiteboards



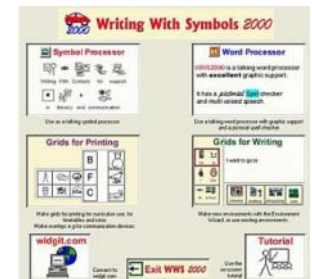
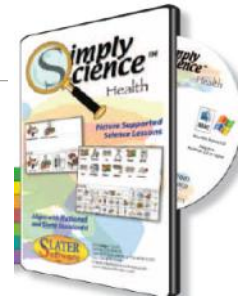
Assistive Technology for Access can include

Software

- PowerPoint
- Adapted Curriculum



- Authoring Software
 - Boardmaker
 - Pix Writer
 - WWS2000



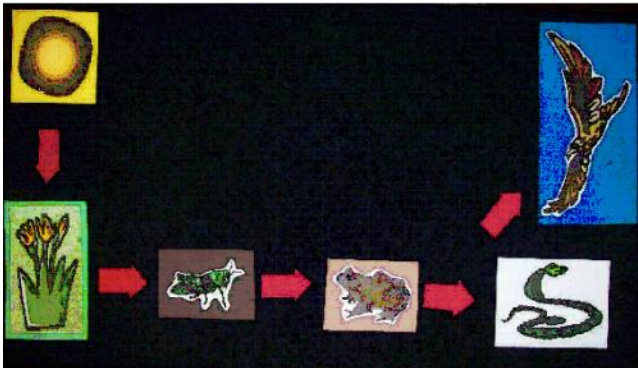
Participating in Classroom Activities

- Picture symbols
 - Represent core vocabulary of lesson
 - Illustrate main ideas and key points
- Tactile object symbols

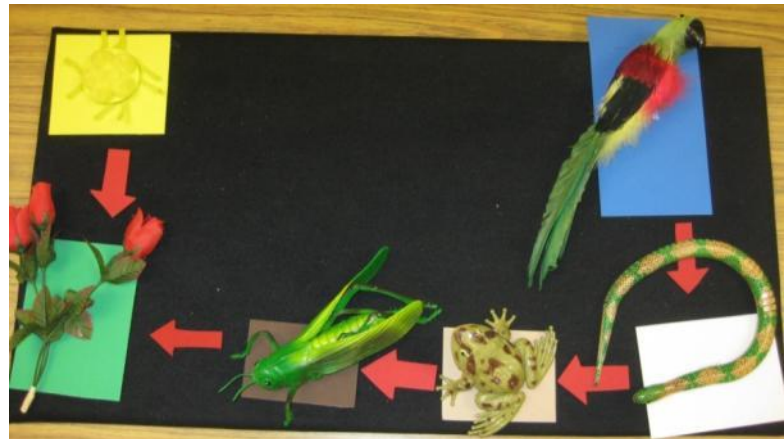


Class Discussions

- Provide method for getting teacher attention to respond
- Provide access to picture or tactile symbols such to illustrate key points in the discussion



Jessie Moreau, Gwinnett County Schools



What is “writing” ?

- A set of visible or tactile signs used to represent units of language in a systematic way, with the purpose of recording messages which can be retrieved by everyone who knows the language in question ..

From the *The Blackwell Encyclopedia of Writings Systems*

- A functional, visual, symbolic means to permanently convey a message.







Why do we write?

- Make visual reminders/cues for ourselves and others

- Shopping lists
- Schedules
- Notes



MY DAILY SCHEDULE
WRITE THE TIME YOU DO EACH ACTIVITY EACH DAY IN THE BOXES.
THEN DRAW THE HANDS ON THE CLOCK TO MATCH THE TIME.

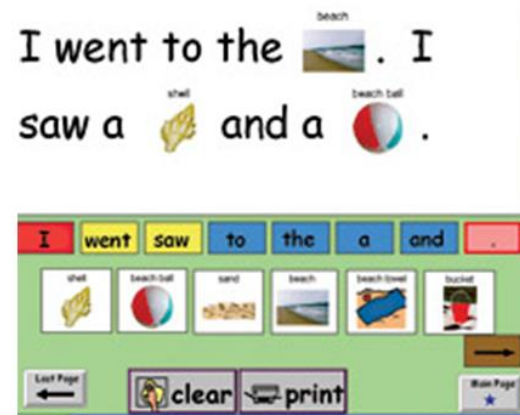
	1. WAKE UP WRITE THE TIME 7:00
	2. EAT LUNCH WRITE THE TIME 11:30
	3. EAT DINNER WRITE THE TIME 6:00
	4. BED TIME WRITE THE TIME 8:30



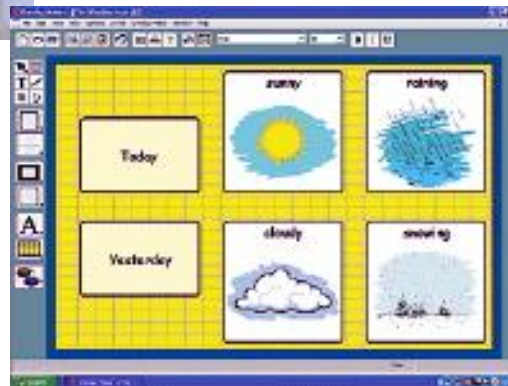
- Share information
 - To give a message when we are not there
- Record our thoughts

Writing without a pencil— Forming thoughts, Not just words

- Keyboards
- Computer Software
- Dictation/Scribes
- Stamps
- Symbols



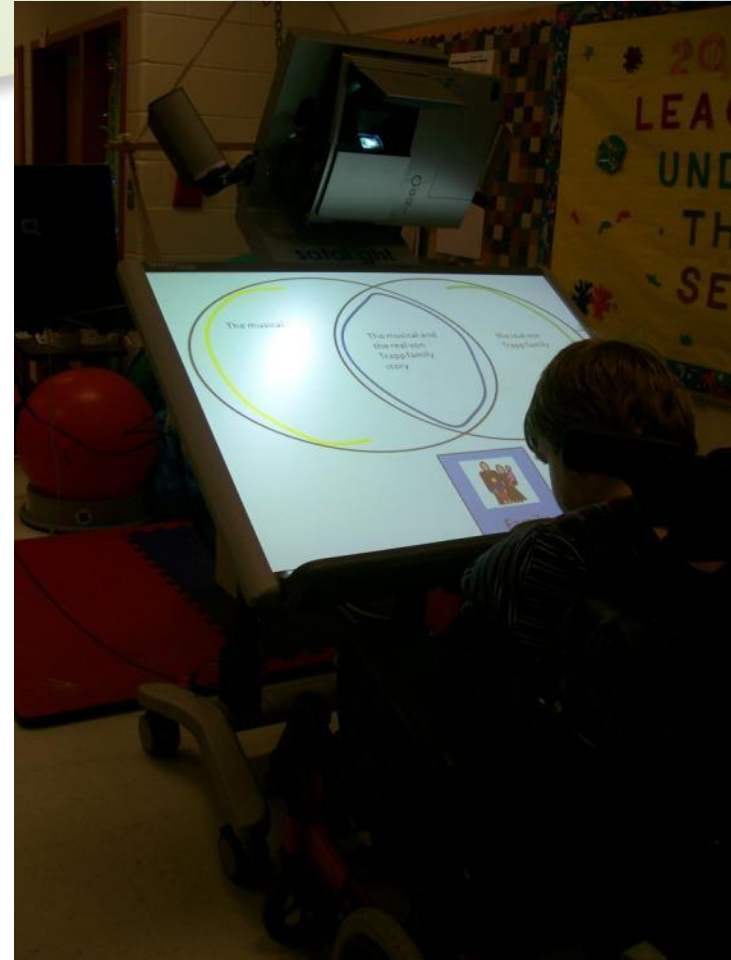
Clickit! By Spectronics



Classroom Suite

Sound of Music

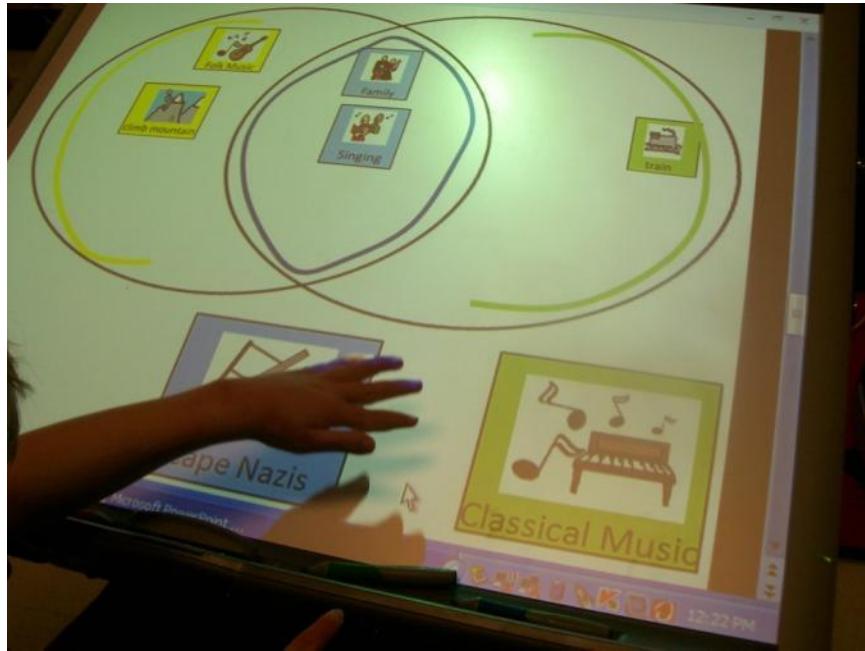
Writing: Venn Diagram Activity



Accessing the Smartboard from a seated position.

Sound of Music

Writing: Venn Diagram Activity



Sound of Music

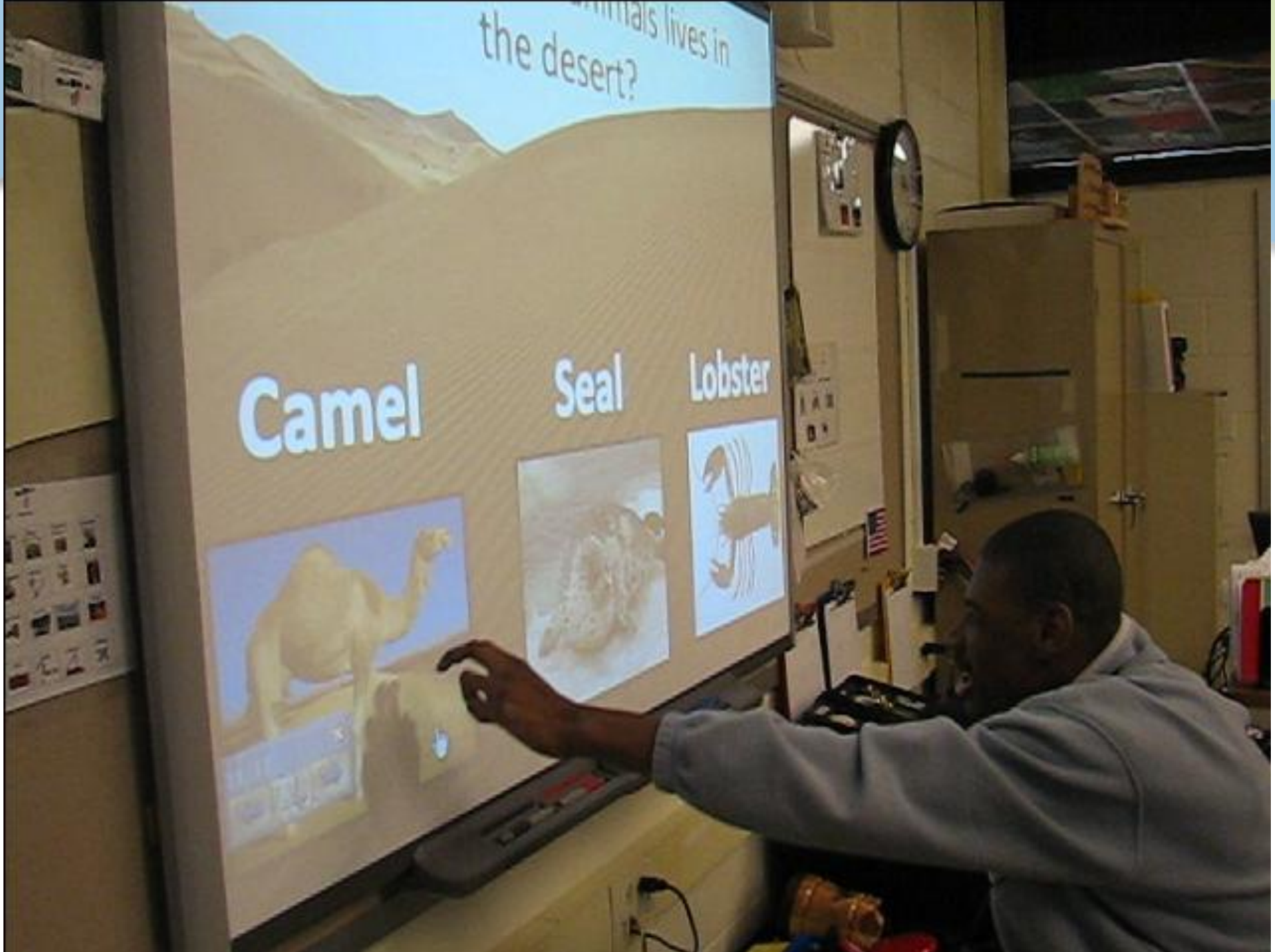
Writing: Movie Review



Suzanne uses her hand to make a choice.



Suzanne touched the symbol for singing with her forehead.



Penni Singleton, Cherokee County Schools

Using Smartboard for Assessments

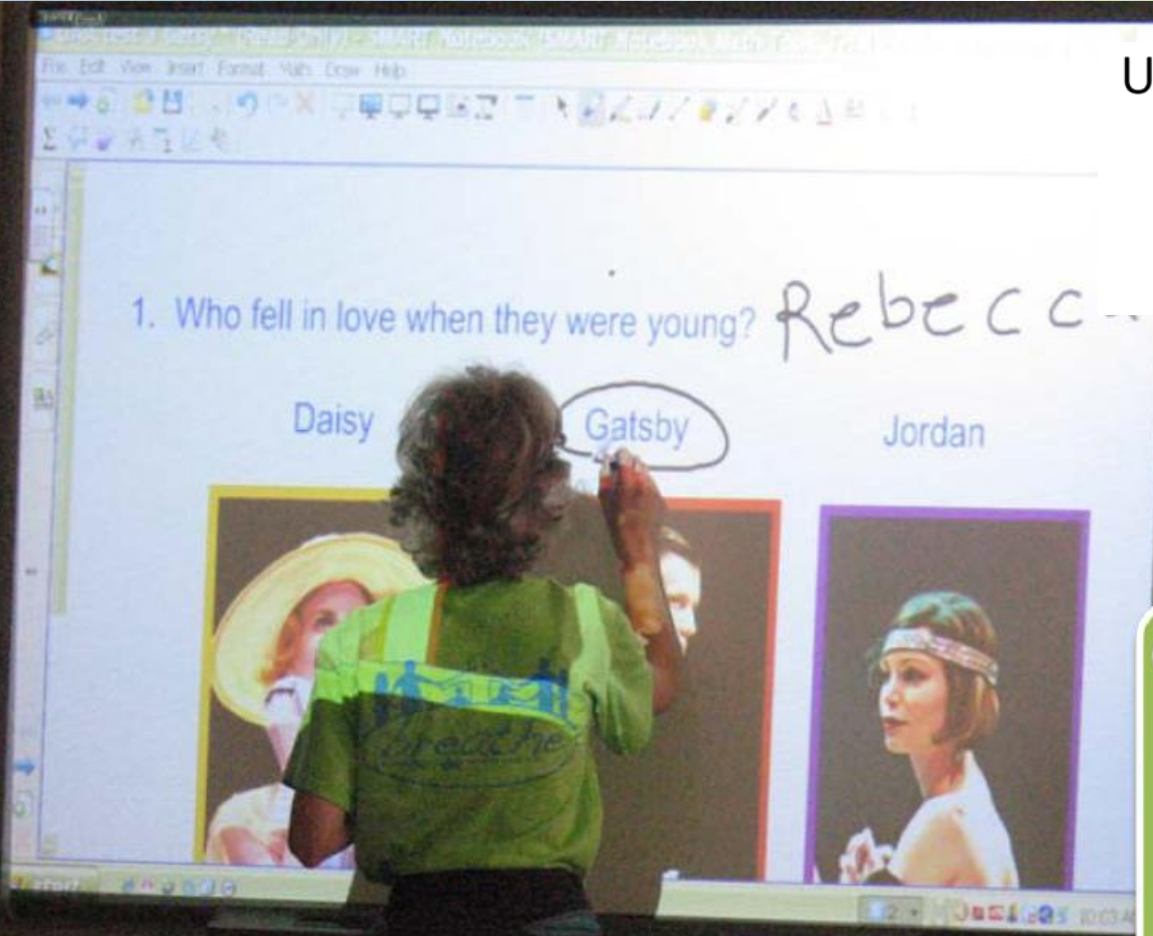
Cathy Wentworth, CCHS



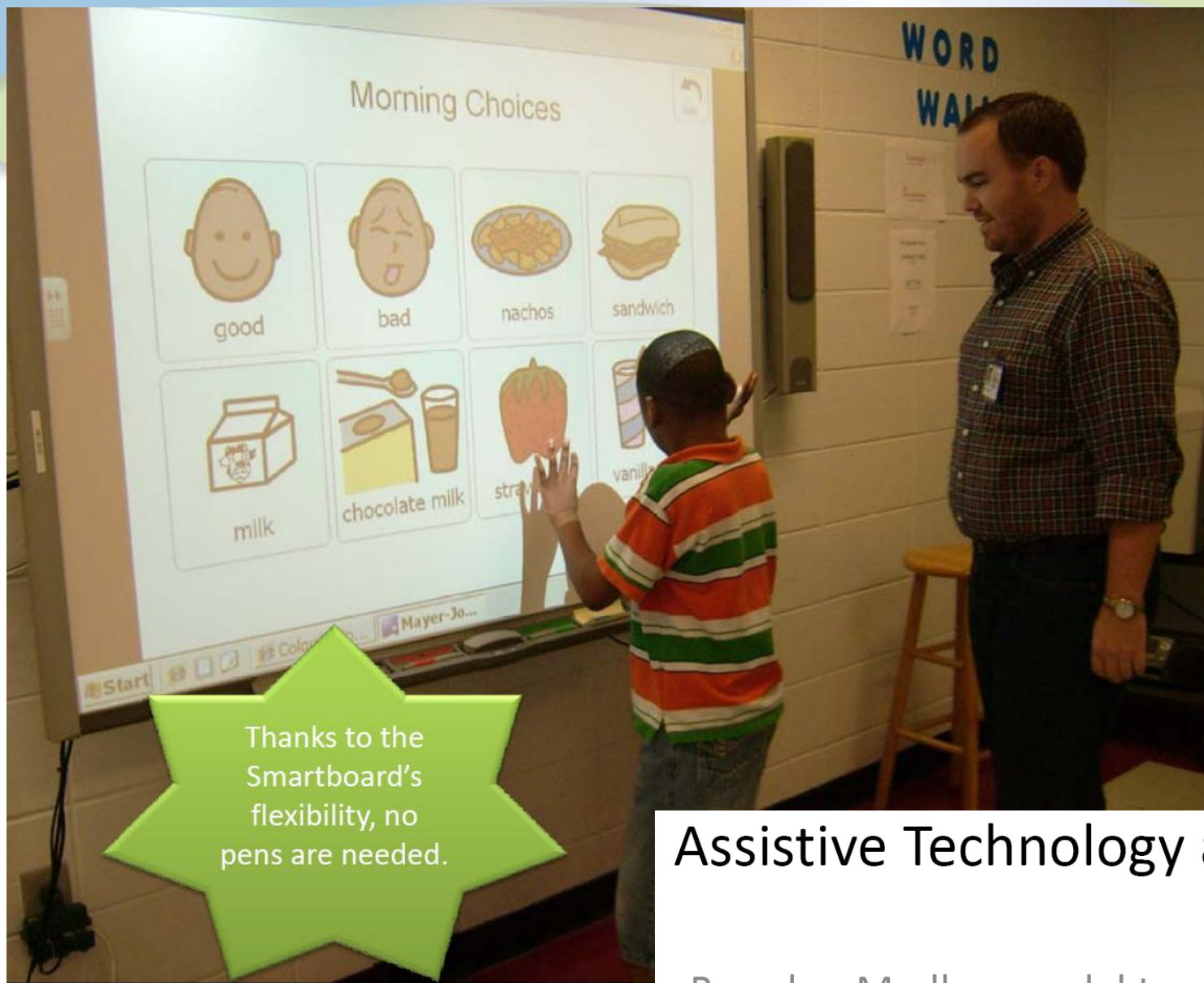
By putting story elements into a PowerPoint or Smartboard Lesson, students can work with the elements of a story.

Using Smartboard for Assessments

Cathy Wentworth, CCHS



By having the name of the student the teacher has instant evidence of the answers and will print out the work.

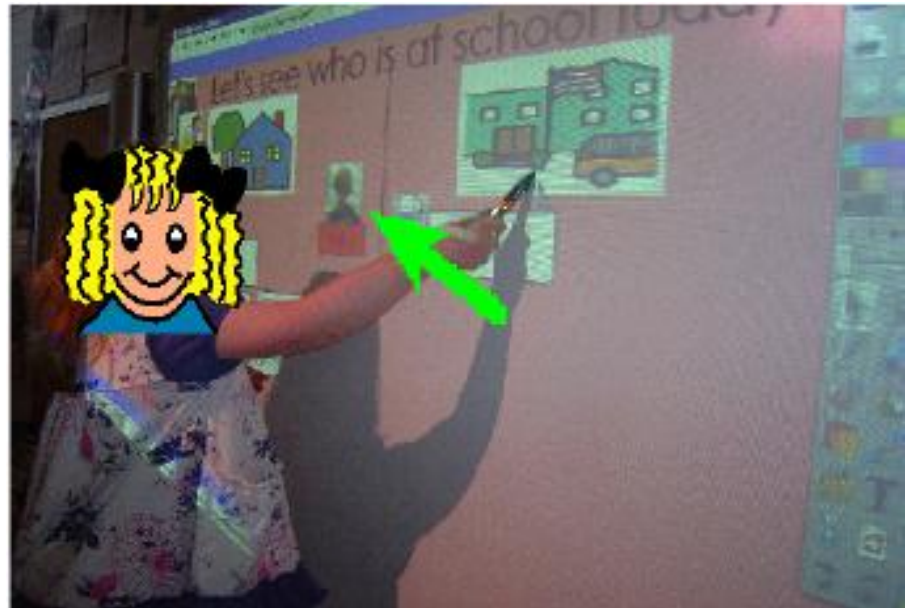


Thanks to the
Smartboard's
flexibility,
no pens are
needed.

Assistive Technology at Cox

Brandon Medley, model teacher for
Assistive Technology

Changing Prompt Levels



Inserting Video Clips



Writing by completing the sentence



Name: Joel Last Night At Home



For dinner, I ate _____



On TV, I watched _____



I played _____



I read _____

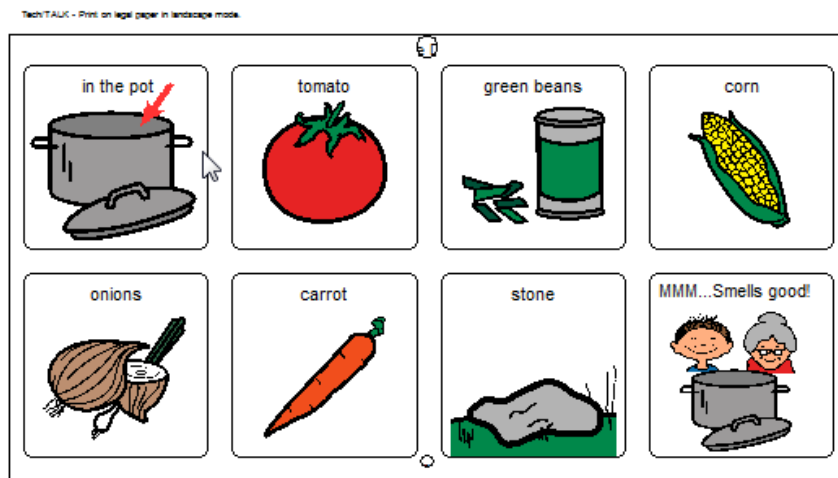


Guess what I did? _____

Components of an Adapted Literature Lesson

COMMUNICATION CONSIDERATIONS

- Pictures / Symbols / Tactile representations
- AAC Devices
 - ✓ Preprogram devices with story components
 - ✓ Create overlays for beginning, middle, end of story
 - ✓ Give opportunities for making comments
 - ✓ Model, model, model use of AAC
- Provide choices for comprehension and comments
- Eye gaze boards & Switch access for students with limited movement



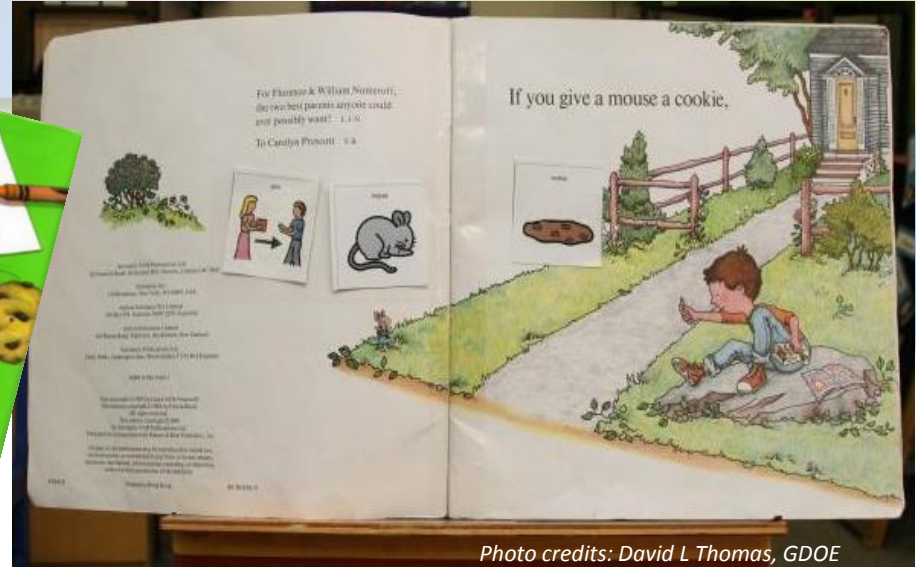
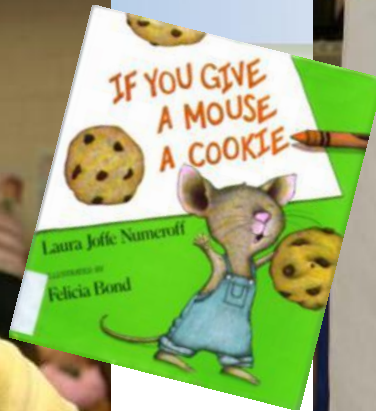


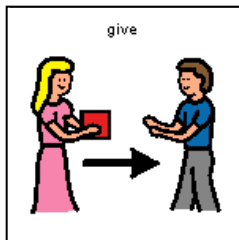
Photo credits: David L Thomas, GDOE

Head switch for computer access

Picture symbols velcroed in book

Scanned story with picture symbols added into PowerPoint adapted story

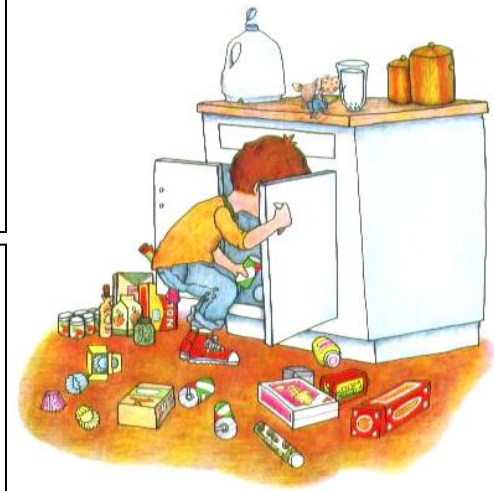
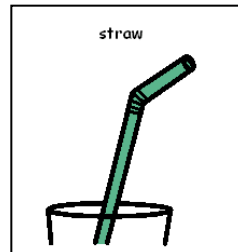
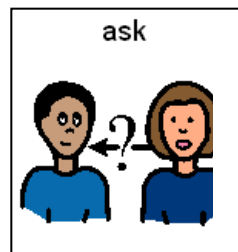
When you give him the milk



When you give him the milk,



he'll probably ask you for a straw.



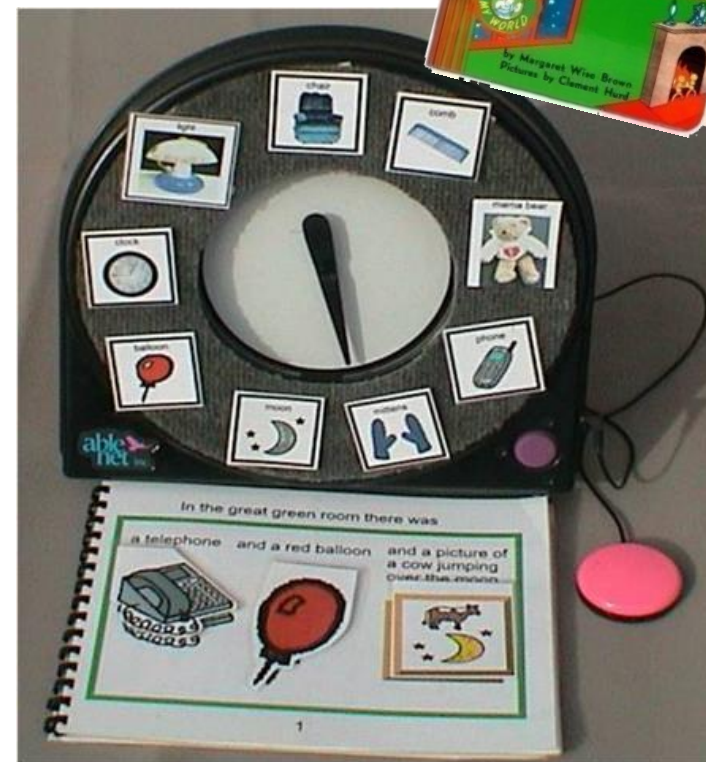
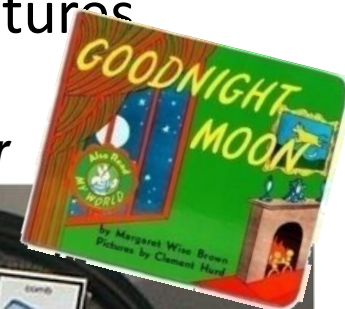
Components of an Adapted Literature Lesson



VOCABULARY

- Print and/or picture symbols
- Enlarged pictures
- Tactually enhanced pictures
- Objects

All-Turn-It Spinner



Adapted Story
CD



TechTalk8 AAC device with PowerPoint adapted story on computer



Head switch connected to Step by Step to say, "Turn the page", "Read some more please.", "I like this story!"



ELA -- LISTENING/SPEAKING/VIEWING

ELALSV1b. Asks relevant questions

ELALSV1f. Actively solicits another person's comments or opinions.

Personal Interview



By
Heather Tanner
MOID Teacher
Berkmar High School

What Steps Should We Follow When Interviewing Someone?

• Always have a clean face and appearance.



• Shake Hands.

• Speak loudly and clearly.



• Have good eye contact.

• Ask relevant questions.



Choose a question that goes with the picture:

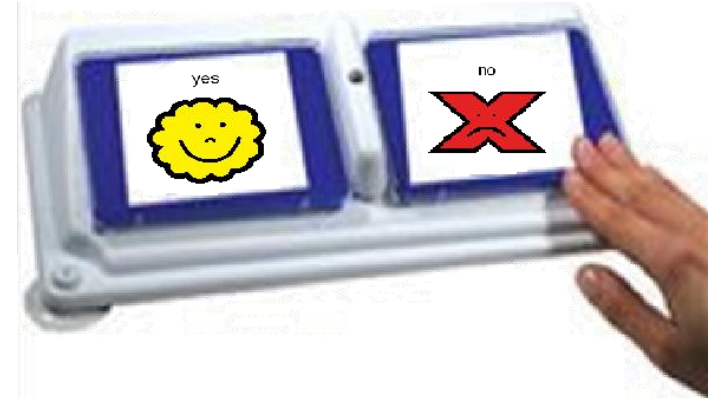
- What is your favorite sport?
- Do you have any pets? If so, what?
- What is your favorite food? What is your favorite restaurant?

Using voice or AAC devices (Step-by-Step)



Science through Literature and Inquiry

- What do we know?
- What happens if there are no more trees?
 - Will animals have a home?



- What did we learn



LIFE SCIENCE :

S4L1b – Demonstrate the flow of energy through a food web/food chain

Using PowerPoint computer activity, large activity board pictures and AAC device to interact with materials



SB4. Students will assess the dependence of all organisms on one another and the flow of energy and matter within their ecosystems.

a. Investigate the relationships among organisms, populations, communities, ecosystems, and biomes.

1

2

3

4

6

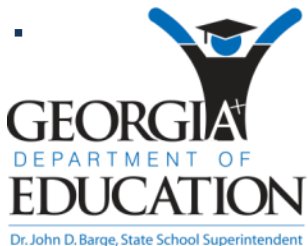
7

8

9

Using PowerPoint to teach the subject...

"Georgia Habitats" .ppt created by Brandi Nunn, Peach County Schools



SB4. Students will assess the dependence of all organisms on one another and the flow of energy and matter within their ecosystems.

a. Investigate the relationships among organisms, populations, communities, ecosystems, and biomes.



... then printing slides to use for assessment activities.

HISTORY

SSUSH11d. Describe the inventions of Thomas Edison, include the electric light bulb, motion pictures, and the phonograph and their impact on American life.



Using color-coded pictures
on color-coded graphic
organizer



Using color-coded pictures
with tactile objects on
enlarged velcro board
graphic organizer

Math—Geometry

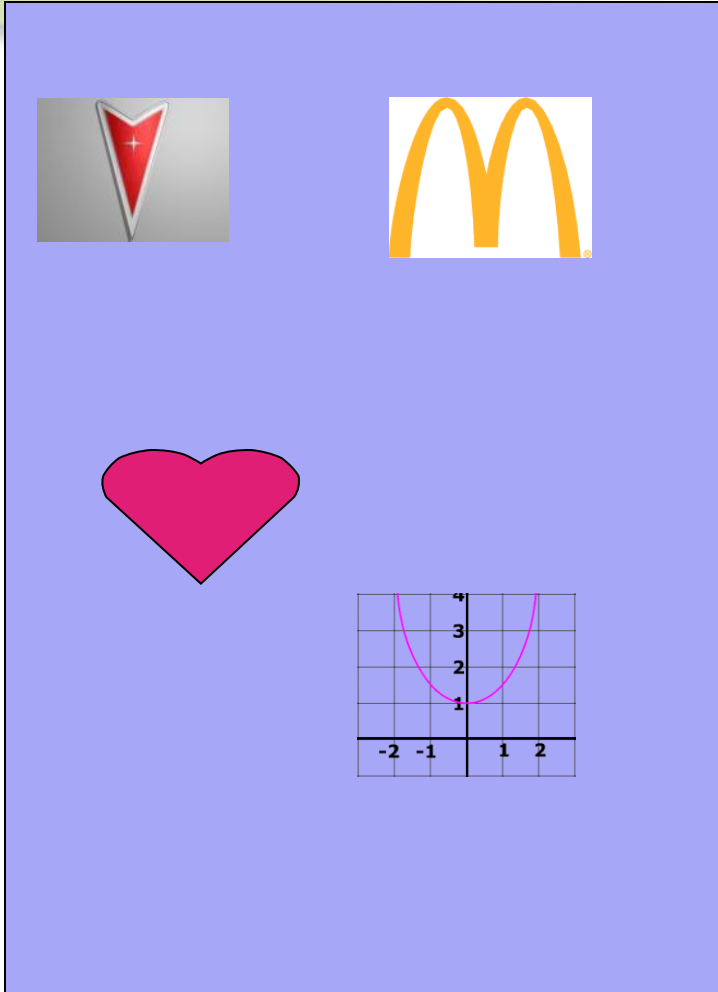
- Circles and Spheres
 - Volume of a sphere
 - Pouring switch to determine volume of orange



Geometry Work Page

Symmetrical

Symmetrical



Print and laminate for each student.

Created by Janice Pickett, Bibb County

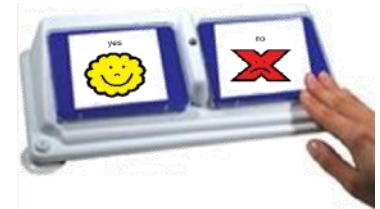
Economics

What do you want to buy?



SS3E4	The student will describe the costs and benefits of personal spending and saving choices.
SS4E2	The student will identify the elements of a personal budget and explain why personal spending and saving decisions are important.
SS5E4	The student will identify the elements of a personal budget and explain why personal spending and saving decisions are important.
SS6E4	The Student will explain personal money management choices in terms of income, spending, credit, saving, and investing.
SS7E4	The student will explain personal money management choices in terms of income, spending, credit, saving, and investing.
SS8E5	The student will explain personal money management choices in terms of income, spending, credit, saving, and investing.

How much is it?



Personal Finance Economics

SSEPF1	The student will apply rational decision making to personal spending and saving choices.	a. Explain that people respond to positive and negative incentives in predictable ways.
		b. Use a rational decision making model to select one option over another.
		c. Create a savings or financial investment plan for a future goal.

GPS/Element: Math -- Probability

- Randomly select color-coded "Heads or Tails" using switch for Coin Toss Game w/spinner
- Place "coin face" chosen onto device for student to tell "Heads or Tails"
- Match color of coin face to bar chart
- Count each color using AAC device after coin toss



GPS/Element: Math -- Probability

- Student spins to make coin toss
- Student takes off "coin" from spinner and places it on color-coded bar chart
- Student takes off one color coin at a time and counts each color by placing it on top of the numbers of Tech Talk AAC device

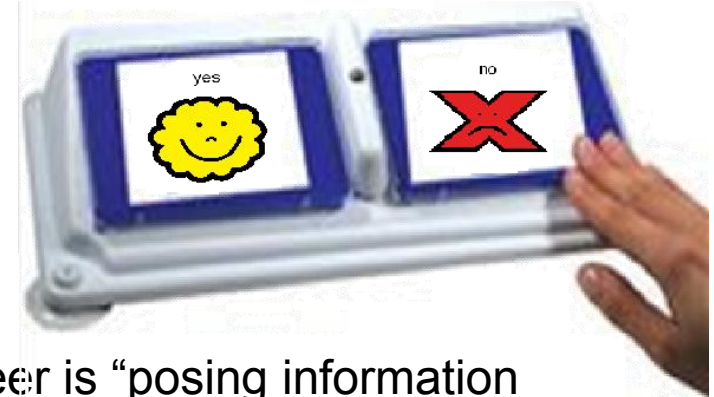


Activity Example

“What kind of cookie do you like?”



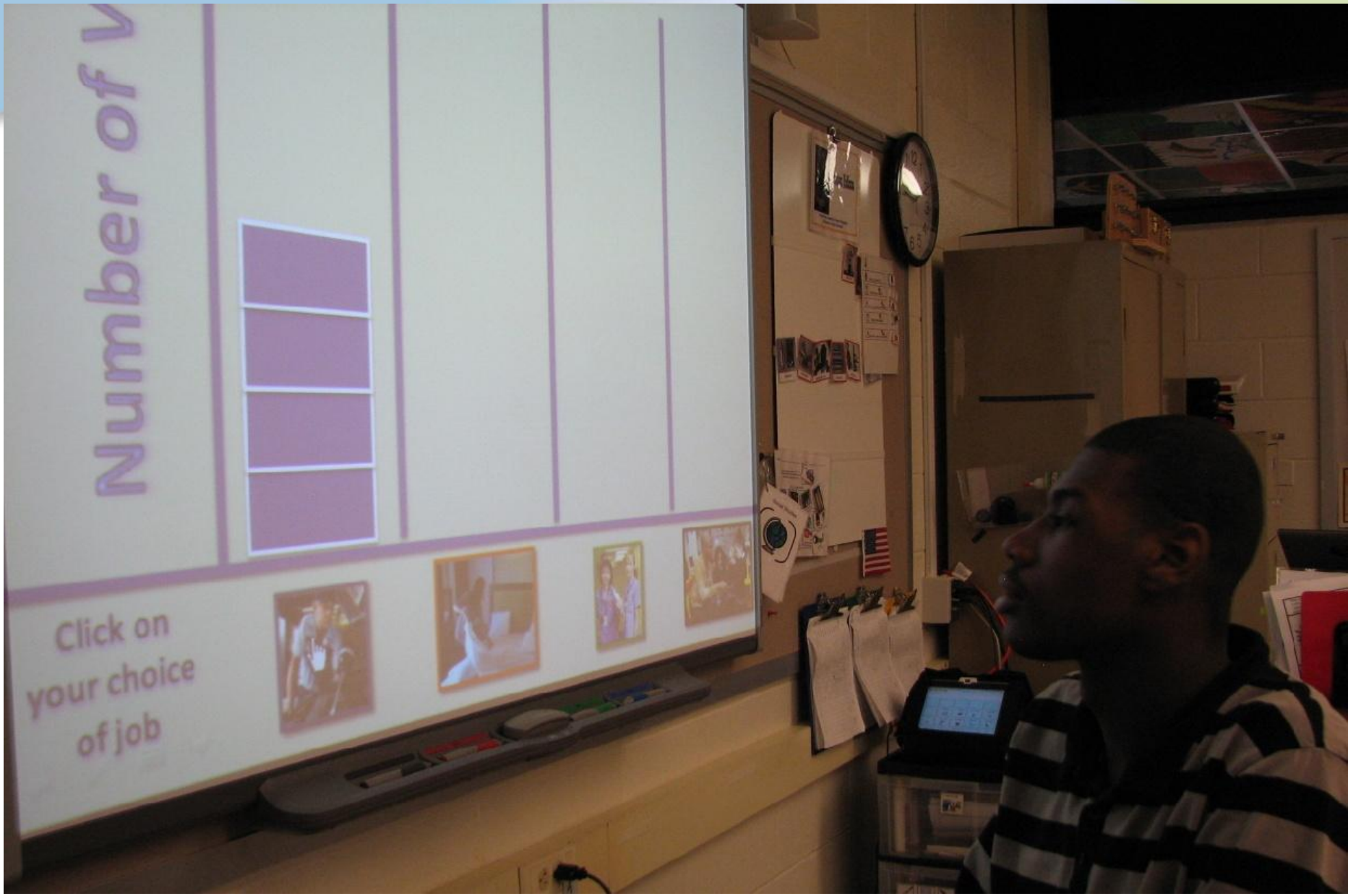
“What kind of cookie do you like?”



Communication skills: Asking a question to a peer is “posing information questions. Answering the question is “collecting data”
Placing the chosen cookie type on the clipboard is “Recording results”



Penni Singleton, Cherokee County Schools



Penni Singleton, Cherokee County Schools

Data Collection for Student Progress

- Standards Based IEP
 - Identifies Skills needed to access curriculum and respond in relevant situations
 - Data on skills in a variety of contexts
- Info for Assessment
 - Data on use of skills to access a standard, demonstrate concept/activity
 - Measures performance of skill and cognitive concepts in context of standard

Data Collection

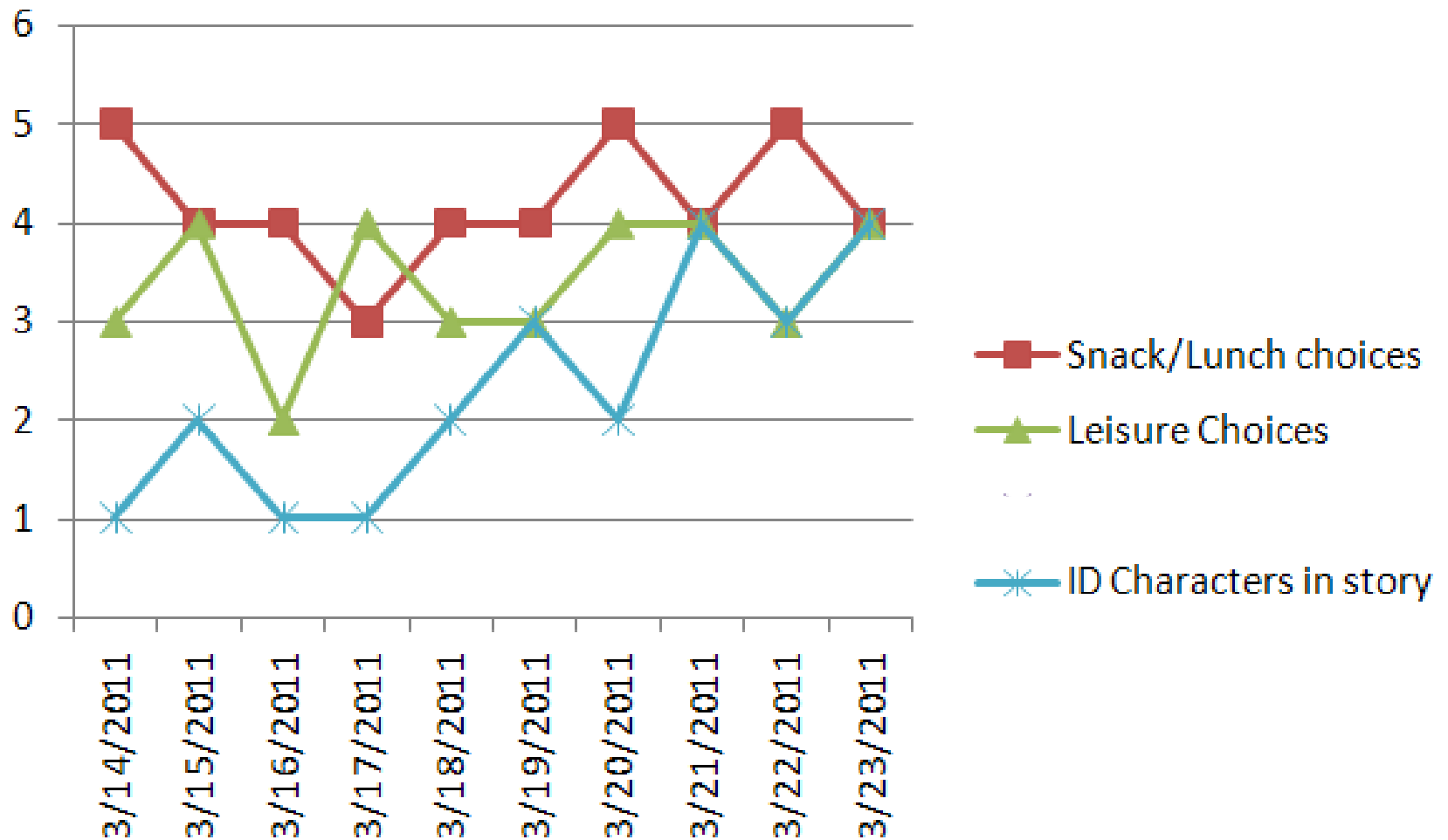
- Joe will answer questions given a two panel AAC device.....
 - Communication
 - Choice Making
 - Questions relating to content of standards

Goal: Joe will communicate with others using augmentative communication

Objective: Joe will answer questions from a choice of two answers during daily activities and lessons by touching a two panel voice production AAC device with two 10 symbols attached.

Date Activity	3/14/2011	3/15/2011	3/16/2011	3/17/2011	3/18/2011	3/19/2011	3/20/2011	3/21/2011	3/22/2011	3/23/2011
Snack/Lunch Activities	5	4	4	3	4	4	5	4	5	4
Leisure Activities	3	4	2	4	3	3	4	4	3	4
ID Characters in story	1	2	1	1	2	3	2	4	3	4

Graph: Answer questions from choice of two responses



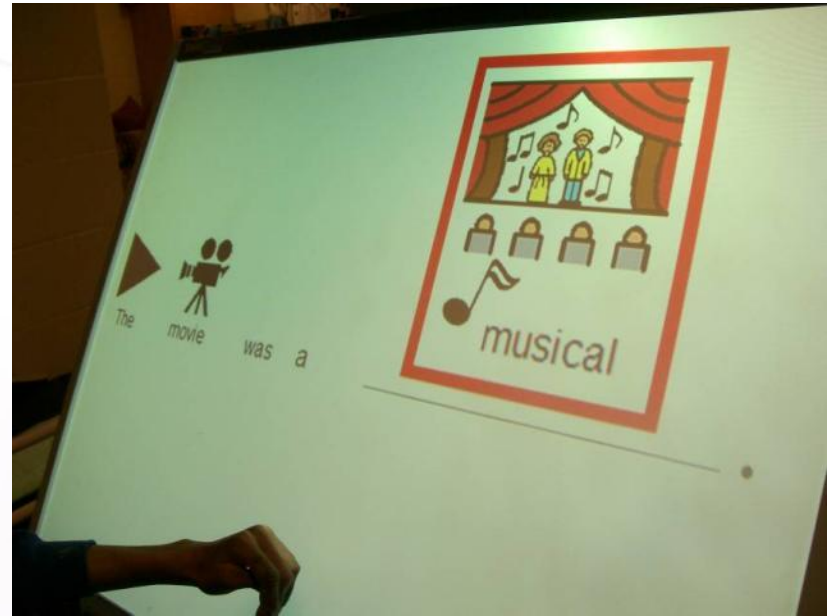
Interactive White Boards



Penni Singleton, Cherokee County Schools

Sound of Music

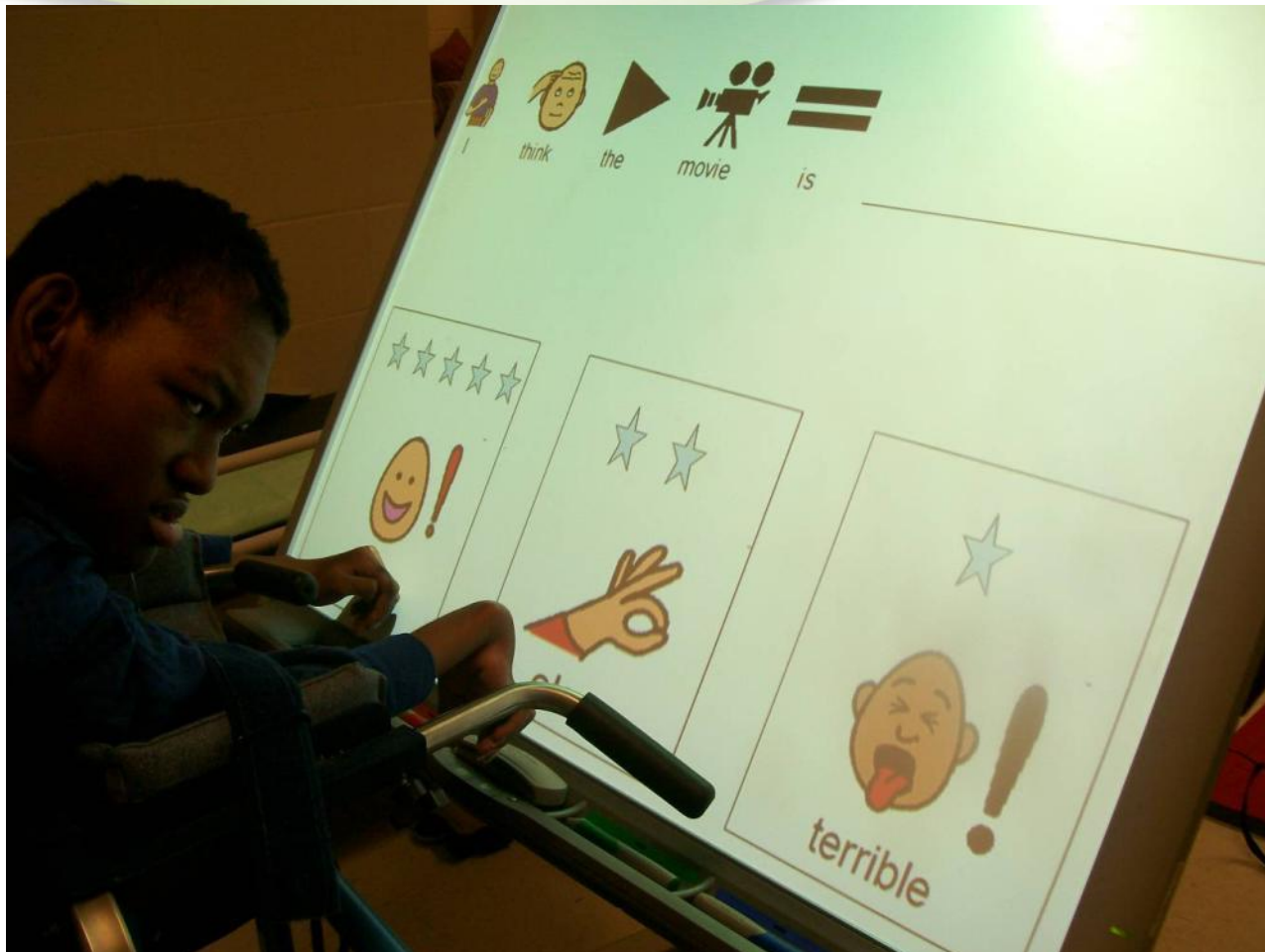
Writing: Movie Review



Steven used his whole hand to touch his choices for filling- in-the-blanks of sentences.

Sound of Music

Writing: Movie Review



LaWanda Dalton, Hart County Schools

Sound of Music

Writing: Movie Review



Austin enjoys writing. He can access the portable Smartboard from a prone position.

Sound of Music

Writing: Movie Review



Suzanne uses her hand to make a choice.



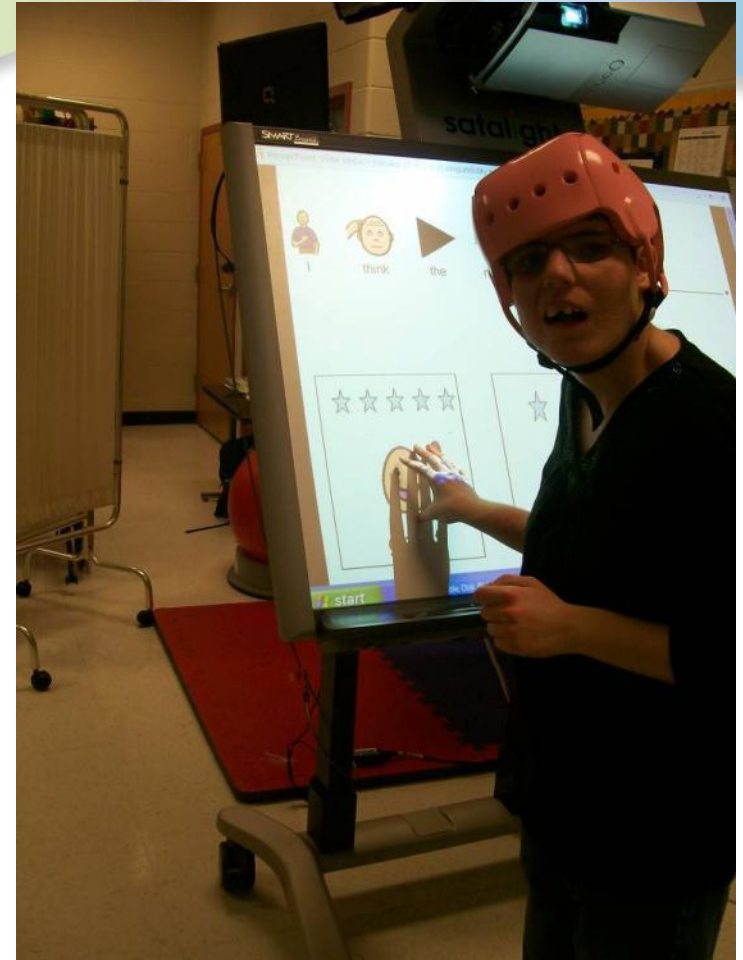
Suzanne touched the symbol for singing with her forehead.

Sound of Music

Writing: Movie Review



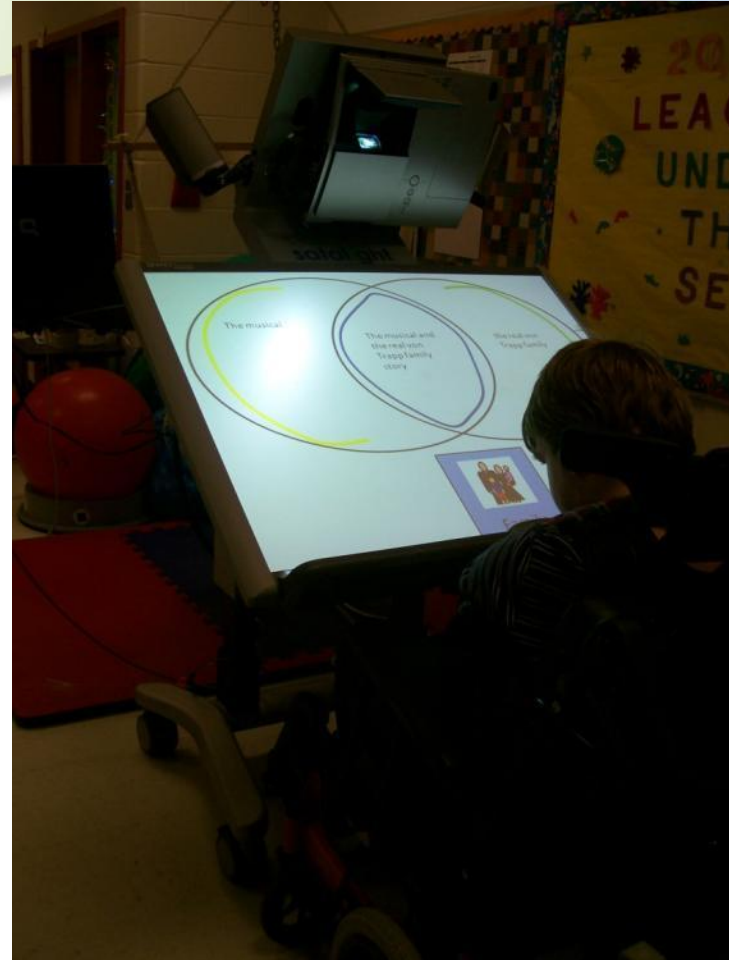
Suzanne's favorite song was "Climb Every Mountain."



She gave the movie 5 stars.

Sound of Music

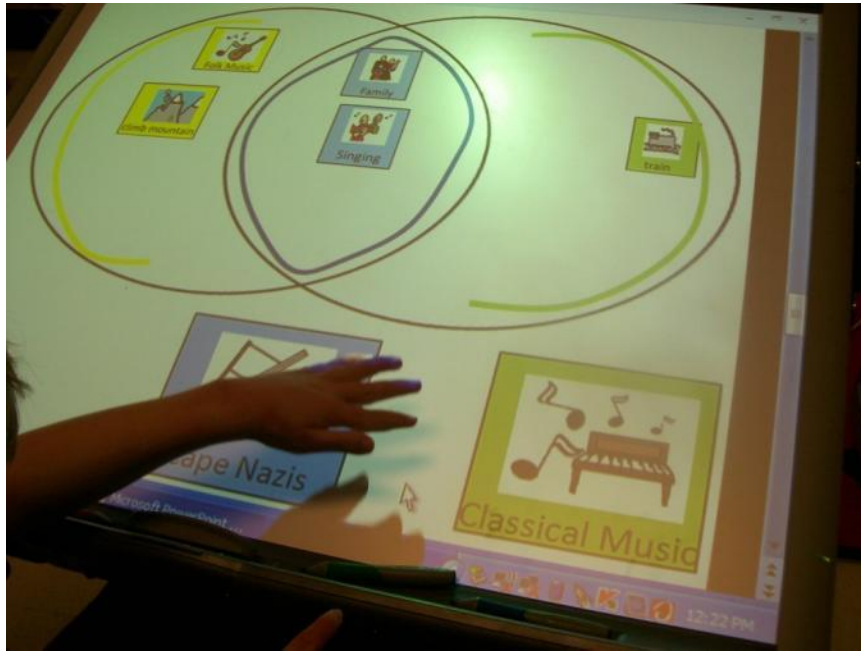
Writing: Venn Diagram Activity



Accessing the Smartboard from a seated position.

Sound of Music

Writing: Venn Diagram Activity



Sound of Music

Writing: Venn Diagram Activity



Our paragraph!

The "Sound of Music" is a famous Broadway musical and movie.

In real-life and in the movie, the von Trapp's were a singing family who left Austria to escape the Nazi army.

In real-life the von Trapp family sang classical music.

The SMARTboard also features several icons: a picture of a woman in a white dress with arms outstretched (labeled 'The Sound of Music'), two small icons for 'Singing' and 'Family', an icon for 'Escape Nazis' showing a group of people running, and an icon for 'Classical Music' showing a piano and musical notes.

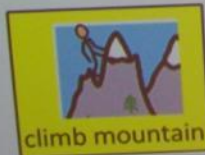
Our paragraph!



In the movie, the von Trapp family sang folk songs.



In real-life, the von Trapp's left Austria by train.



In the movie, the von Trapp's climbed over a mountain to leave Austria.

Sound of Music

“Enjoying the Music”

Launcher 6?”

- Launcher 6 is a free online choice making program
- created by Jim Luther.
 - <http://sites.google.com/site/jamjolu/Home/downloads>
- 6 box scanning program
- Accessed via direct selection, visual or auditory scanning, or using switches or other input device.
- Switch can access recorded clips, videos, or other programs

Sound of Music

“Enjoying the Music”



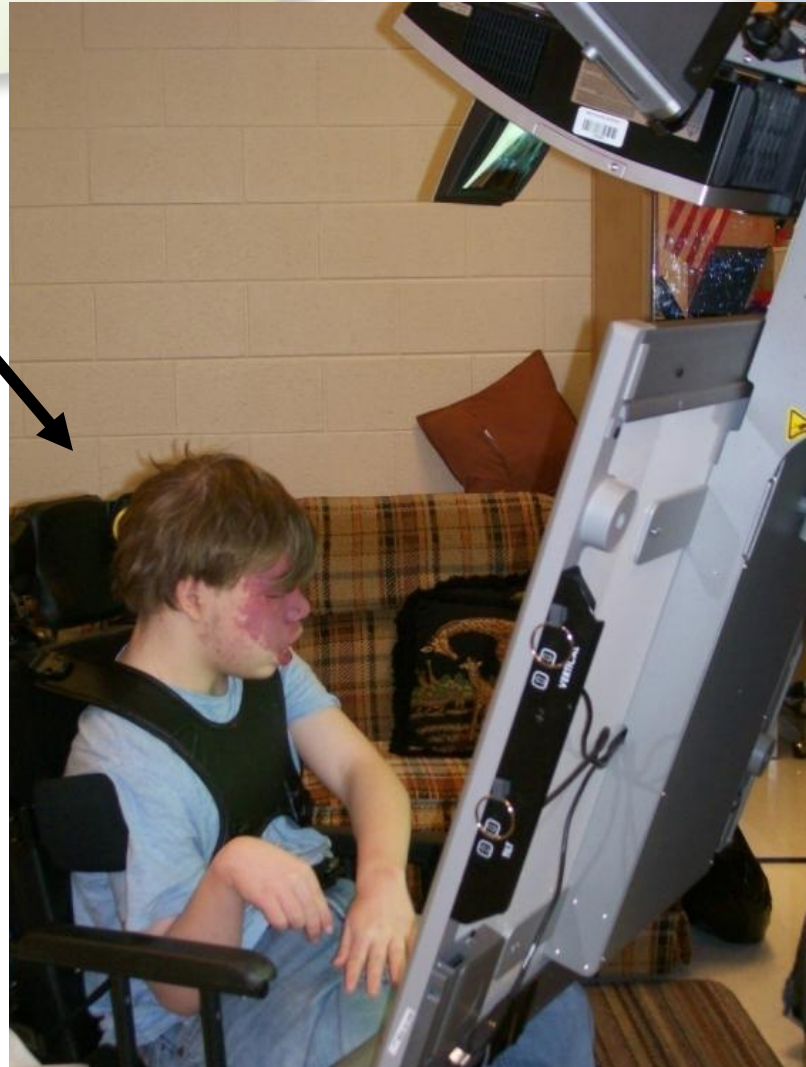
Austin is using the Launcher 6 program at the Smartboard. Each box represents a song from the movie. When a box is activated, a song embedded as a windows media player song plays. For this activity, Launcher 6 was set to true scan mode. The “red box” is the on-screen scanning prompt. Austin is using his head switch to select a song.

Sound of Music

“Enjoying the Music”

Austin’s head switch is embedded in his wheelchair headrest.

Austin’s head switch is attached to a TASH switch click. The TASH switch click USB is a computer switch interface that allows a single switch to mimic a left mouse click.



Sound of Music

“Enjoying the Music”



Making a choice using
his whole hand

Sound of Music

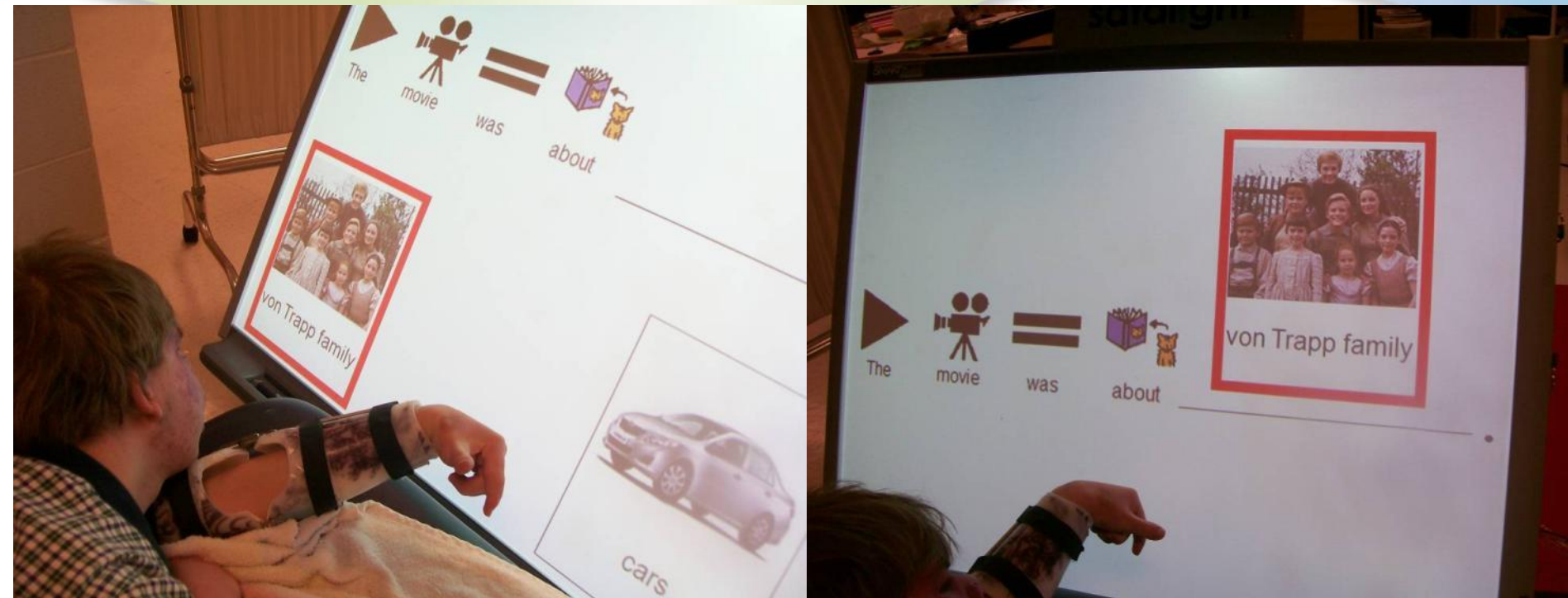
Writing: Movie Review



Steven can access the portable Smartboard while standing in the gait trainer.

Sound of Music

Writing: Movie Review



During this activity, Austin used eye gaze and the action of touching pictures with his left hand to indicate his choices.