

WELCOME TO THE NEW WORLD



The Statistics

There are over 1,500,000
individuals in the United States that
are living with autism.¹



(1) U.S. Center for Disease Control and Prevention ADDME Study 2007 and Autism Society of America 2007

Children Grow into Adults



Where Will They Live?



What Will They Do?



Promote Maximum Independence



Technology is the Key
START EARLY!!

Using Computer
Technology to Train
Skills



Computer-Based Intervention

CBI

for Individuals With Autism

Presented by:

Valerie Herskowitz, MA. CCC/SLP

www.dimensionstherapycenter.com



My Background

- Speech Pathologist for 30 years
- Owner: Dimensions Therapy Center
- Mother to Blake, 16 years, autistic
- Writer and Lecturer on the subject of CBI
- Host of Embracing the Journey on AutismOne Radio
- President of NARY
- VP of AFDDAA



How I Became Interested in Computer-Based Therapy

It started back in 1996 at the EPCOT Center

HOME OF TOMORROW



Today's Technology As Seen In 1996

- **Touchscreen Technology**
- Used to turn on appliances
- Adjust comfort levels of room temperature-even the bath water
- Ovens were pre-set to cook food
- Voice activation
- Robotics for housekeeping



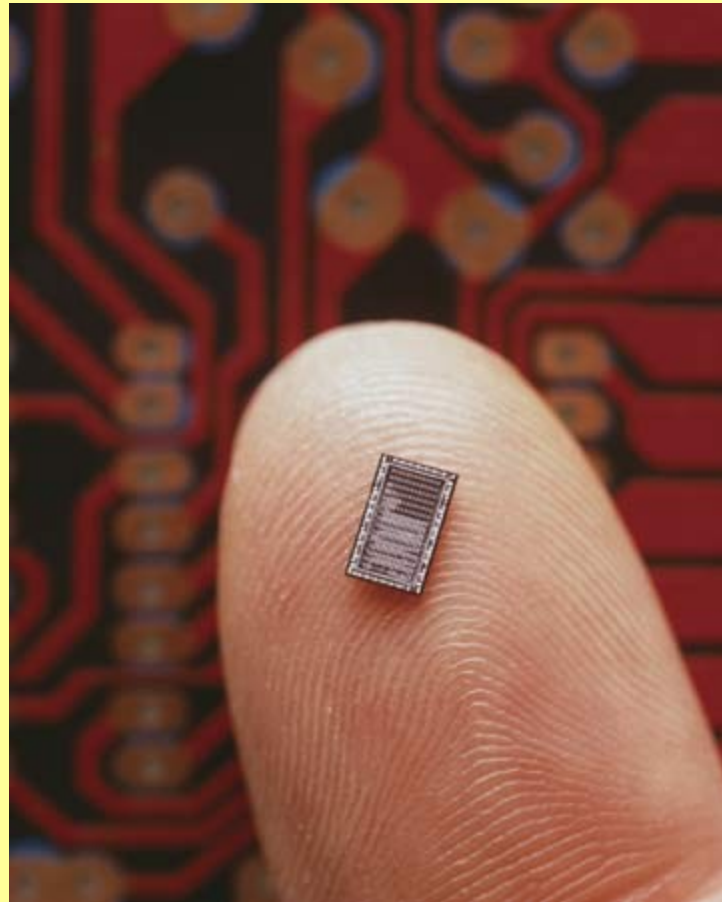
And the Light Bulb Went Off



Accessing the Technology of
tomorrow(which is now today) would lead
to maximizing independence for all
individuals who were on the autism
spectrum



Today's Technology That Can Promote Independence For Individuals with Autism:



Communication Devices



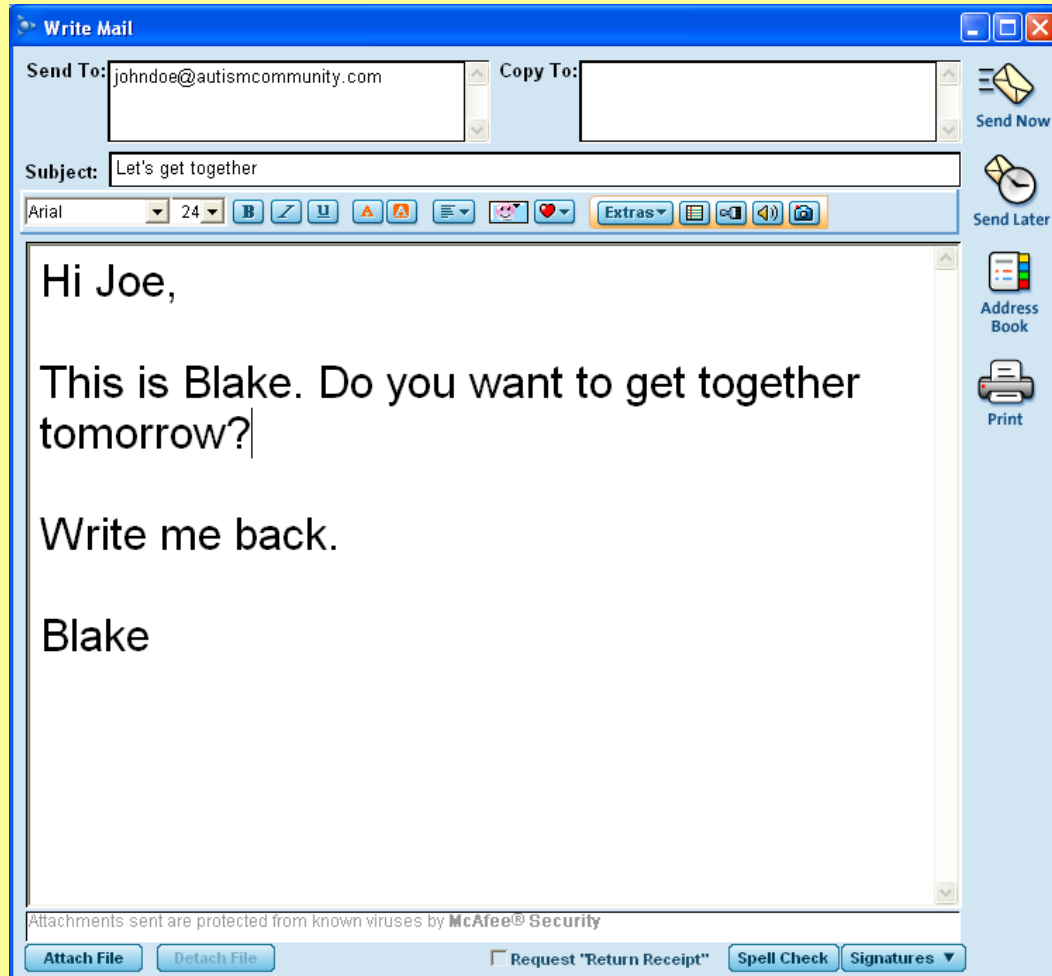
Organizers



IPOD Touch/IPHONE



E-MAIL/Webcam



TIVO



Tomorrow's Technology as Seen Today

- Mattresses that modify to your body shape and then has sensors to wake you up in the morning according to your pre-set time
- Your bathroom mirror lets you know of your morning appointments and the weather
(Called The Intelligent Mirror)
- The refrigerator lets you know what you are out of and then you can order it from the grocery using your touchpad

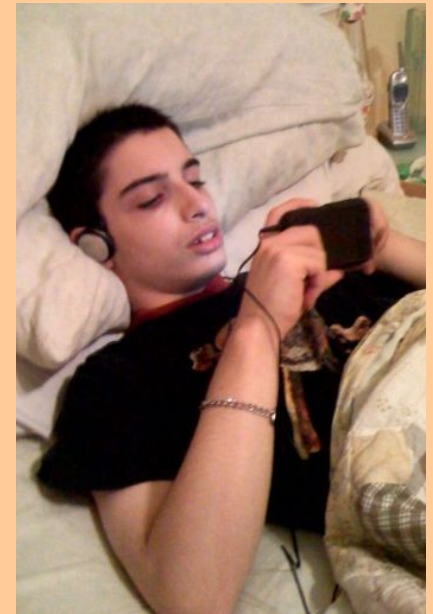


It Starts with CBI

It Starts Early!!



Blake's Journey



Here's What I Have Learned:

Individuals with Autism Take to the
Computer Like Fish to Water



What Makes Computer-Based Instruction So Successful For Individuals With Special Needs

- Predictability
- Engaging Animation
- Vertical Plane Presentation
- Multi-modality



Working on the computer

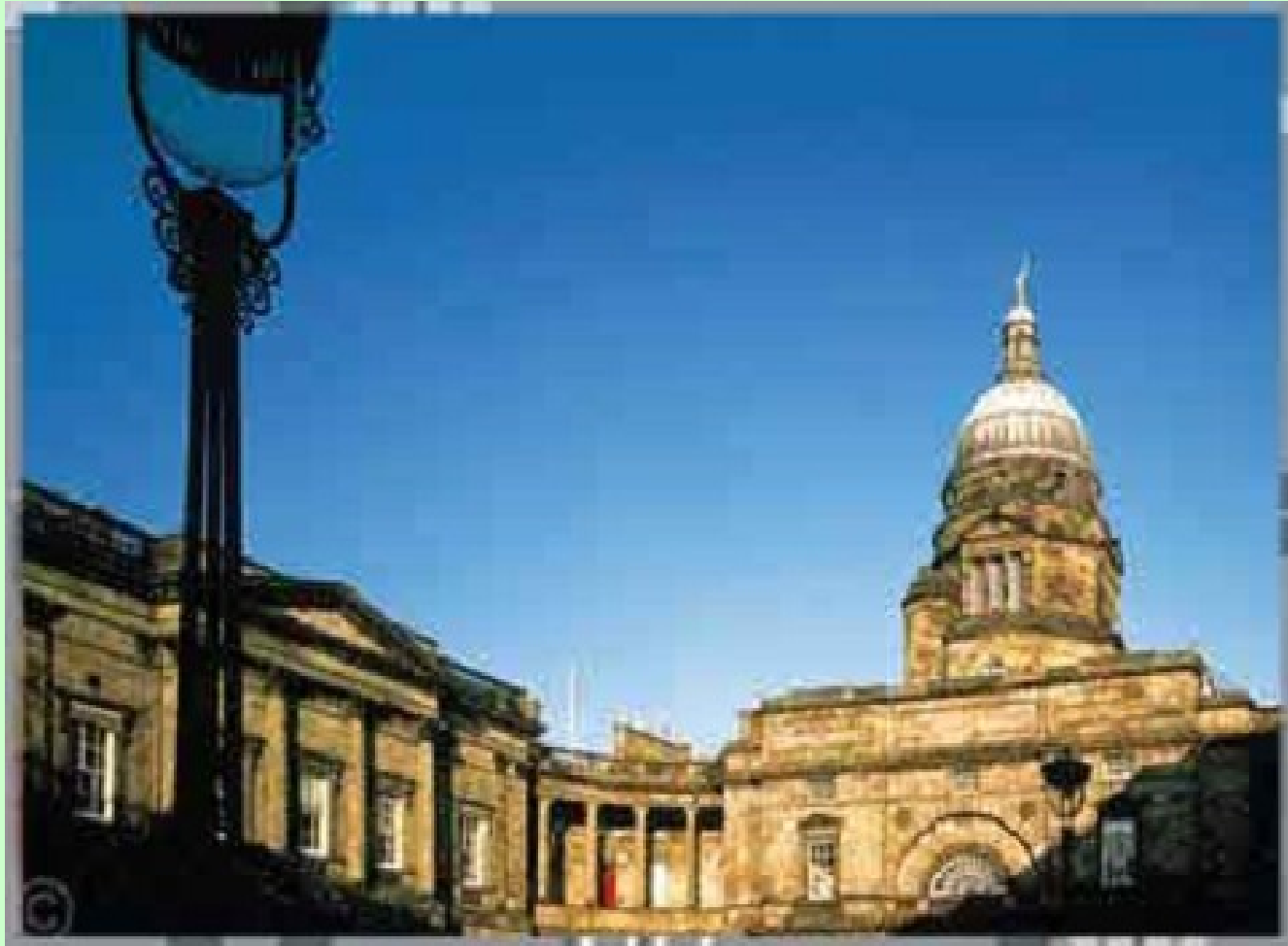


Individuals with Autism

“Many children and adults with Autism will frequently tolerate one-on-one instruction via a computer when they won't engage in a human tutorial dyad. Language skills of individuals with Autism have been noted to improve through computer-assisted instruction when all other traditional methodologies have failed.”



Research



Brief report: Vocabulary Acquisition for Children with Autism: Teacher or Computer Instruction.

Moore M, Calvert S

Department of Psychology, Georgetown University, Washington, DC 20057, USA.

This study examined the impact of computers on the vocabulary acquisition of young children with autism. Children's attention, motivation, and learning of words was compared in a behavioral program and an educational software program. The educational software program was designed to parallel the behavioral program, but it added perceptually salient qualities such as interesting sounds and object movement.

J Autism Dev Disorders 2000 Aug;30(4):359-62

Children with autism were more attentive, more motivated, and learned more vocabulary in the computer than in the behavioral program. Implications are considered for the development of computer software to teach vocabulary to children who have autism.



Do Children with autism learn to read more readily by computer assisted instruction or traditional book methods? A pilot study.

Williams C, Wright B, Callaghan G, Coughlan B.

York NHS Trust, UK. christine.williams@exch.yhs-tr.northy.nhs.uk

The study evaluates the progress of eight children aged 3-5 years with autism attending a specialist teaching unit in their development of reading skills in two conditions: computer instructed learning and book based learning. The authors developed a direct observation schedule to monitor autistic behaviors using computerized techniques. The children were matched by age, severity of autistic symptomatology and number of spoken words. They were initially randomly allocated to the computer or book condition and crossed over at 10 weeks.

Autism. 2002 Mar;6(1):71-91.



All of the children spent more time on task in the computer condition than in the book condition. By the end of the study after computer assisted learning, five of the eight children could reliably identify at least three words. It was found that children with autism spent more time on reading material when they accessed it through a computer and were less resistant to its use.



Enhancing social problem solving in children with autism and normal children through computer-assisted instruction.

Bernard-Opitz V, Sriram N, Nakhoda-Sapuan S.

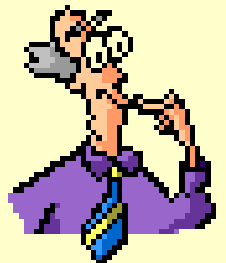
Department of Social Work and Psychology, National University of Singapore.

swkberna@nus.edu.sg

Children with autism have difficulty in solving social problems and in generating multiple solutions to problems. They are, however, relatively skilled in responding to visual cues such as pictures and animations. Eight distinct social problems were presented on a computer, along with a choice of possible solutions, and an option to produce alternative solutions. Eight preschool children with autism and eight matched normal children went through 10 training sessions interleaved with 6 probe sessions.

Children were asked to provide solutions to animated problem scenes in all the sessions. Unlike the probe sessions, in the training sessions problem solutions were first explained thoroughly by the trainer. Subsequently these explanations were illustrated using dynamic animations of the solutions. Although children with autism produced significantly fewer alternative solutions compared to their normal peers, a steady increase across probe sessions was observed for the autistic group. The frequency of new ideas was directly predicted by the diagnostic category of autism.

Results suggest young children with autism and their normal peers can be taught problem-solving strategies with the aid of computer interfaces.



Skill Areas for Computer Training

- Cause and Effect
 - Language
 - Speech
- Augmentative Communication
 - Reading/Spelling
 - Math
- Social Skill Development
- Attention and Processing
 - Work Skills
 - Lifeskills



Specialized Software

- Not the type you buy in computer stores-this type is called Off-the-Shelf. They are not specifically designed for the special needs population and can often be inappropriate.
- Specialized Software are programs that have been distinctly designed for the use of teaching the skills to a special needs population
- They are available only through certain vendors



The Seven Stages of Language Acquisition



1. From birth to adulthood
2. Depicts typical stages in language development
3. Can also be used to assess the linguistic functioning level of children and adults with language disabilities and Developmental Disabilities.



Stage 1-INTERPRETED COMMUNICATION

Language Acquisition Age (0 to +/- 4 Months)

Language Characteristics

- No intention to communicate
- Cries, coos, and expressions are interpreted by caregiver
- Begins to focus on caregiver's speech

Training Goals

- Improve visual and auditory attention
- Develop communicative turn-taking
- Establish intentional communication and cause/effect
- Provide linguistic stimulation



Stage 2-INTENTIONAL COMMUNICATION

Language Acquisition Age (4 to +/- 9 Months)

Language Characteristics

- Expresses intent primarily through eye gaze
- Comprehension of words as abstract concepts emerges
- Alternating gaze between an object and a caregiver is developing

Training Goals

- Improve ability to signal intentionally
- Increase attention to words
- Develop symbolic comprehension



Stage 3-Single Words

Language Acquisition Age (9 to +/-18 Months)

Language Characteristics

- Comprehends object names as symbols of basic categories
- Understands verbs
- Uses single words in combination with gestures and the environment to communicate

Training Goals

- Increase symbolic comprehension
- Develop core vocabulary
- Introduce word combinations



Stage 4-Word Combinations

Language Acquisition Age (18 to +/-24 Months)

Language Characteristics

- Comprehends a core vocabulary
- Two-word combinations emerge
- Word combinations describe here-and-now environmental events

Training Goals

- Develop simple sentence structures
- Foster language exploration and growth
- Continue vocabulary and category development



Stage 5-EARLY SYNTAX

Language Acquisition Age (24 to +/- 36 Months)

Language Characteristics

- Uses short, simple sentences
- Utterances lack grammatical refinement and complexity
- Comprehension goes beyond the here-and-now

Training Goals

- Improve knowledge of grammar
- Expand sentence structures
- Enhance and expand vocabulary concepts

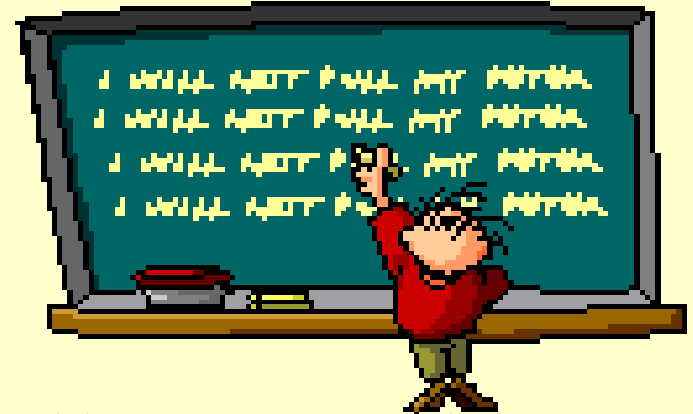


Stage 6-Syntax Mastery

Language Acquisition Age (3 to +/-5 Years)

Language Characteristics

- Uses simple and complex sentences
- Masters most grammatical forms
- Limited comprehension of abstract relationships among words



Training Goals

- Increase knowledge and use of advanced syntax structures
- Increase semantic knowledge
- Improve auditory processing
- Foster critical thinking



Stage 7-Complete Generative Grammar

Language Characteristics

- Shows complete mastery of all grammatical forms
- Establishes ability to analyze and talk about language
- Develops reading/writing skills

Training Goals

- Develop secondary language skills of reading/writing
- Provide advanced semantic training
- Enhance abstract concepts



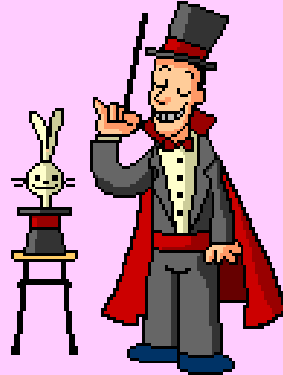
CAUSE

AND

Effect



Cause and Effect Skills:



- The concept of non-existence-Making things appear and disappear
- Recognizing that an action causes a reaction
- The emergence of intentionality is the first critical step in communication development



Receptive Vocabulary

(Understanding Language)

I understand

Capisco

Ich verstehe

Entiendo

Je comprends

Eu compreendo



Expressive Language (Verbal Speech)

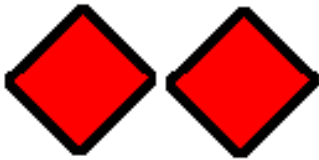


Learning to Communicate with the President



Concepts

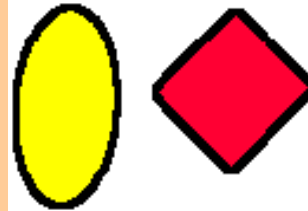
same



first



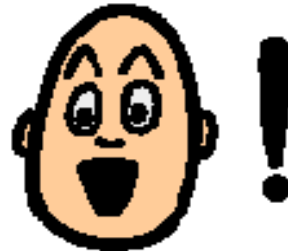
different



some



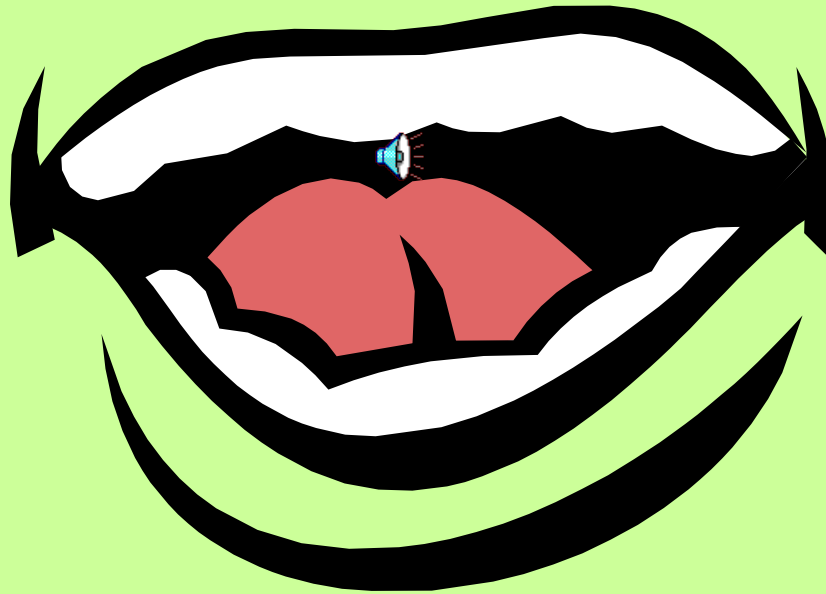
surprised



happy



Speech



- Articulation
- Phonological Processing
- Phoneme Awareness



Reading

Teaching Our Children to Understand Printed Material



- Phonics
- Phoneme Awareness
- Sight Word Training
- Comprehension
- Spelling

Blake is learning to read and spell on the computer



Turn the shocking truth **INSIDE!**
Is your neighbor a cannibal? 
Jeffrey Dahmer

WEEKLY WORLD NEWS
\$1.69 U.S. / \$1.99 CANADA

EXPOSED:
Romantic nights in NY love nest! **BILL**

CATCHES HILLARY WITH SPACE ALIEN!

 **PHOTOS INSIDE!**

'I thought she was gay' says stunned ex-Prez 

HELP US FIND BAT BOY!
Half-human creature is still on the run

IND
WILD
COLOR CLASSICS

OUR WORST STUFF IN SICKENING COLOR



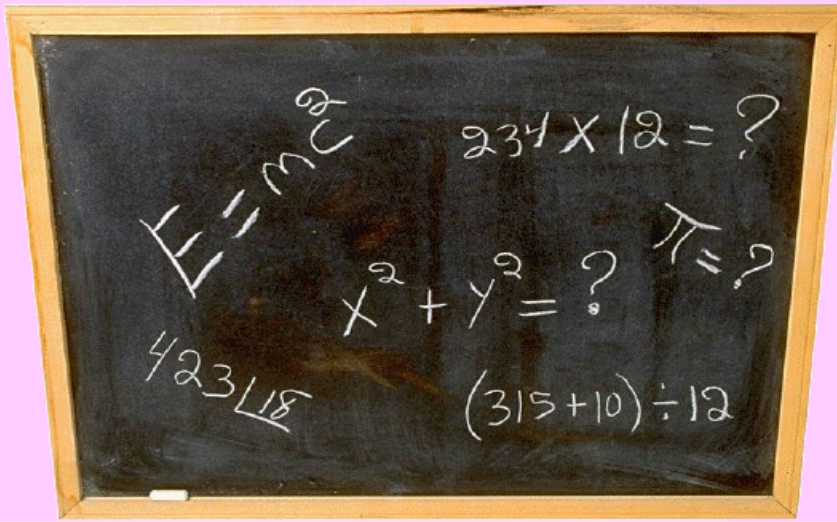
INSIDE — OUR SPOOF OF 2001: A SPACE ODYSSEY

www.fox.com



Math Math

- Arithmetic skills
- Money
- Time Concepts
- Provide visual approach to learning



Social Skill Development



- Improve interactions
- Teach steps for social situations
- Demonstrate appropriate body language
 - Telephoning skills
 - Emotions
- Correct voice usage

Work Skills



Lifeskills

Personal Success

By Attainment Company



Reinforce Hygiene,
Dressing, and
Personal Care Skills



Software Websites

- laureatelearning.com
- socialskillbuilder.com
- learningfundamental.com
- attainmentcompany.com
- silverliningmultimedia.com
- speechroom.com
- animatedspeech.com
- thinkingpublications.com



Computer-Based Intervention Home Program Training Available

- Individualized to the Unique Needs of Your Child or Student
- Evaluation Can be Accomplished in our Offices or via Phone Consultations
- Uses “Prescription Software”™ Methodology
- Uses available software as well as our Individualized Software Programs



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Davie, Florida 33330
- Call: 954-236-9415
- E-Mail: info@dimensionsspeech.com
- Website contains software reviews:
www.dimensionstherapycenter.com



My Dream is Becoming a Reality

- Association of Developmentally Delayed Adolescents and Adults
- Virtual Community-Global Support Village
- Real Community
- Technological state-of-the-art homes
- Job training leading to all residents having employment
- Social community for residents and families

