Tips for a Successful Educational Environment for Students with Disabilities

Martha Rust & Liz Persaud, Tools for Life
with contributions from:
Carolyn Phillips, Tools for Life and
Maria Kelley, WATAP - Washington State AT Act Program
www.gatfl.org

GATE
December 2013

www.amacusg.org

Success in the School Environment

Promoting full inclusion in educational environments often includes knocking down simple physical barriers by building up everyone's skills and knowledge of the principles of ergonomics and understanding of assistive technology solutions.

This presentation will identify ergonomic challenges present in the classroom environment and will provide solutions that can assist with improving posture and enhance the student’s ability to focus on learning and promote inclusion.

We will also discuss apps and other assistive technology assist with learning and inclusion.

Agenda

- Welcome & Introductions – TFL @ AMAC/Georgia Tech
- Define & Explore Ergonomics
- Position for Learning: Classroom, Computers/Laptops, Mobile devices
- Other Considerations: Backpacks
- Tips & Resources: Stretch!
- Research Update: Student Led IEP's using iPads
- Helpful Apps for the Classroom

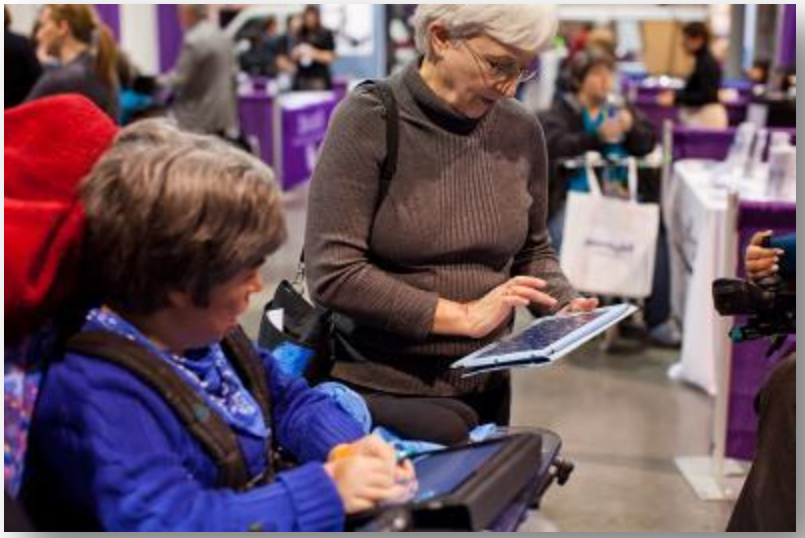
AMAC

AMAC Accessibility is a social change organization on a mission to create affordable services for governmental, private and non-profits organization working with individuals with disabilities. Services include e-text, braille, captioning, assistive technology, office management software and consulting.

For more information, please visit our website at www.amacusg.org

Tools for Life Mission

We’re here to help Georgians with disabilities gain access to and acquisition of assistive technology devices and assistive technology services so they can live, learn, work, and play independently in the communities of their choice.



Tools for Life @ Georgia Tech

Georgia's Federal AT Act Program

- TFL developed Georgia's Plan for AT
- We serve individuals of all ages & all disabilities in Georgia
  - Over 50,000+ thru various activities throughout the year
- TFL Network
  - Assistive Technology Resource Centers
  - Lending Libraries
  - Training and Demonstrations
  - AT Reuse
  - AT Funding Education/Assistance and Resources
- Online Resources
  - www.gatfl.org - 12,000 unique visitors a month

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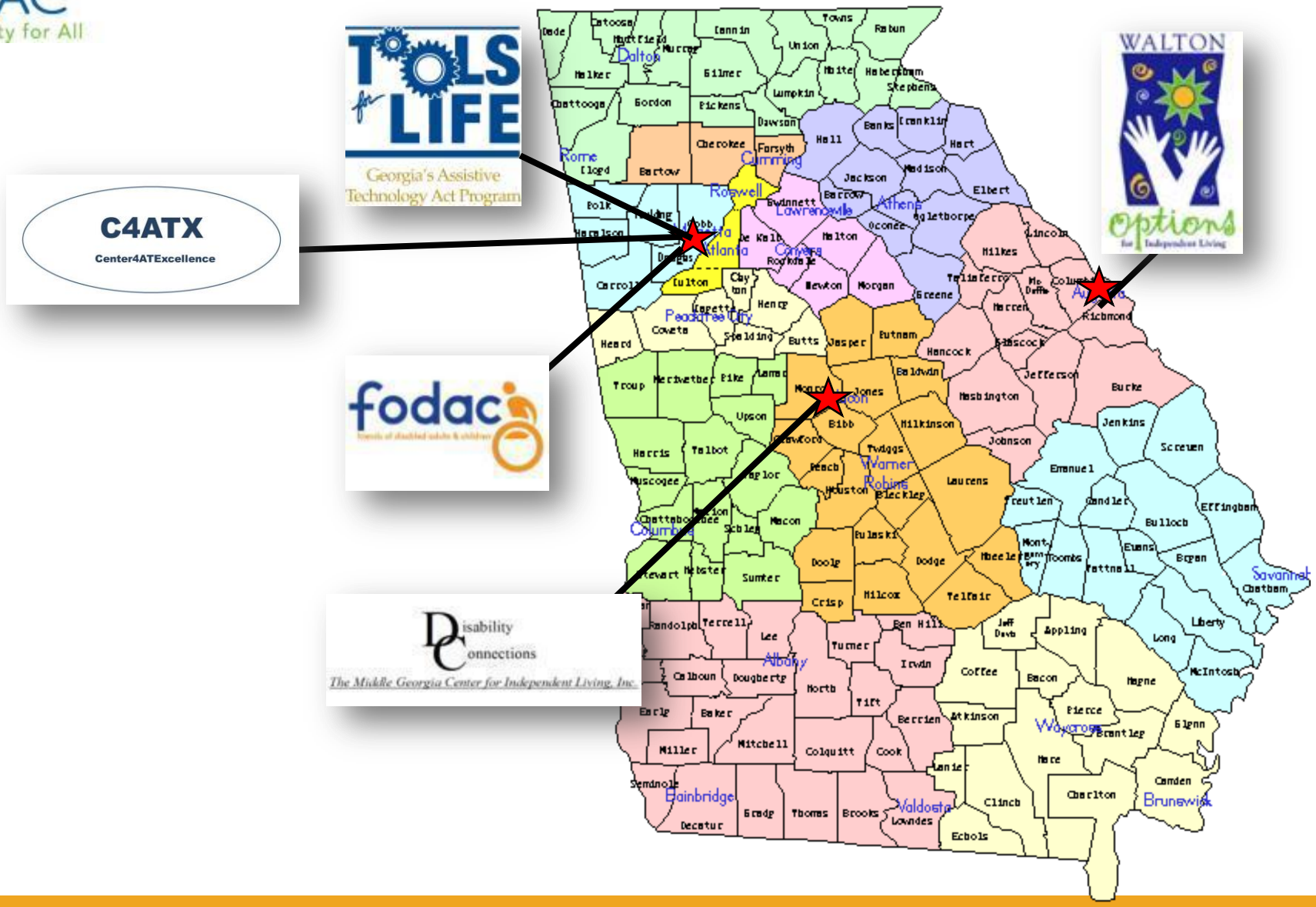
Tools for Life Network



What is Ergonomics

- Greek word: Laws of Work
- Science that studies work in various environments, and the tools used to perform tasks in those environments
- Goal: match the capabilities and “limitations” of the human body

Carolyn Phillips- TFL

Ergonomics in the Classroom
Areas to Evaluate

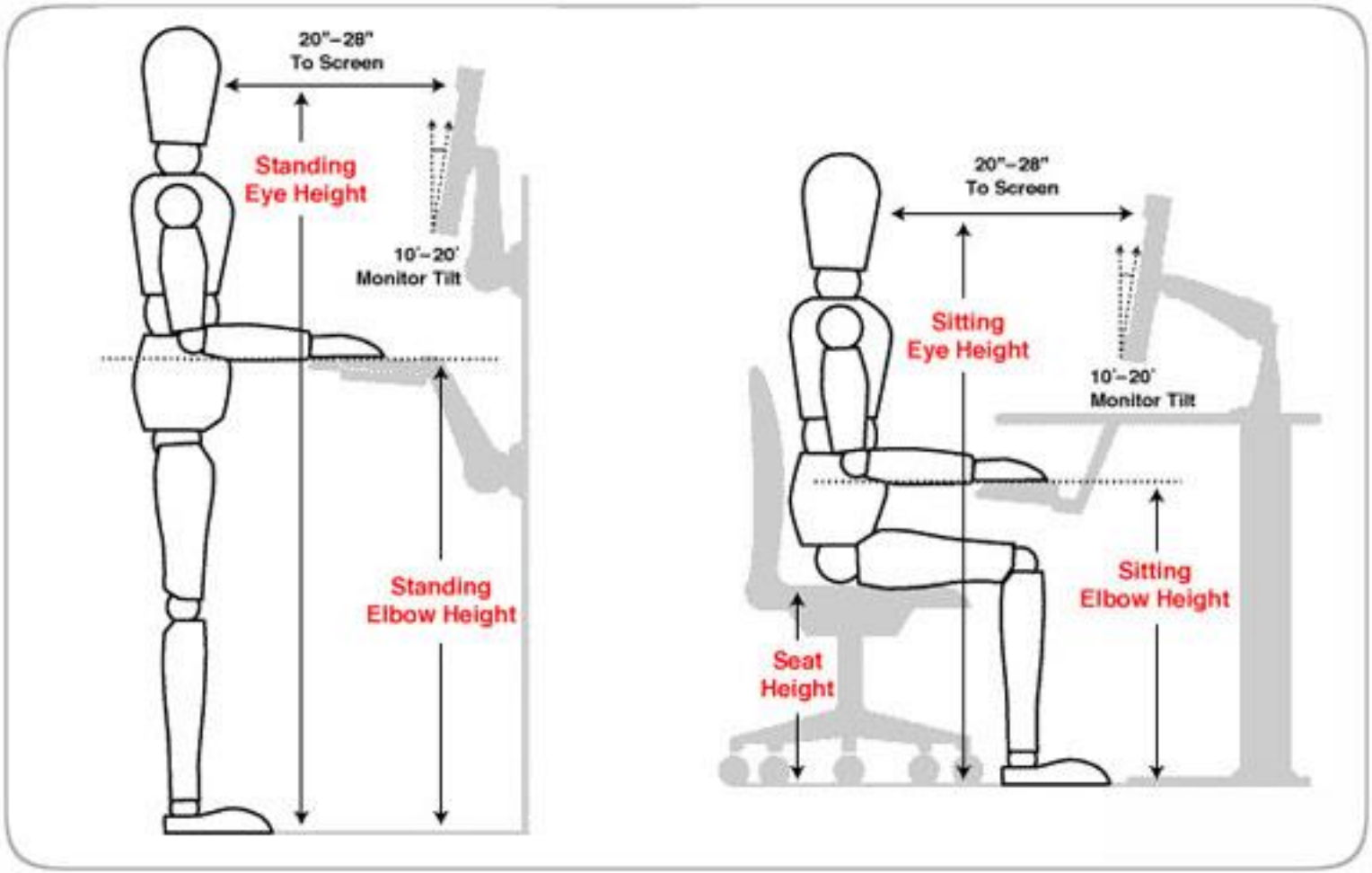
- Chair
- Monitor
- Desk
- Keyboard & mouse

Carolyn Phillips- TFL

Poor Sitting Posture

- Inhibits blood flow
- Creates muscle shortening
- Stresses back muscles and compresses spine
- Can inhibit learning
- Compresses diaphragm
  - Affects breathing
  - Voice quality

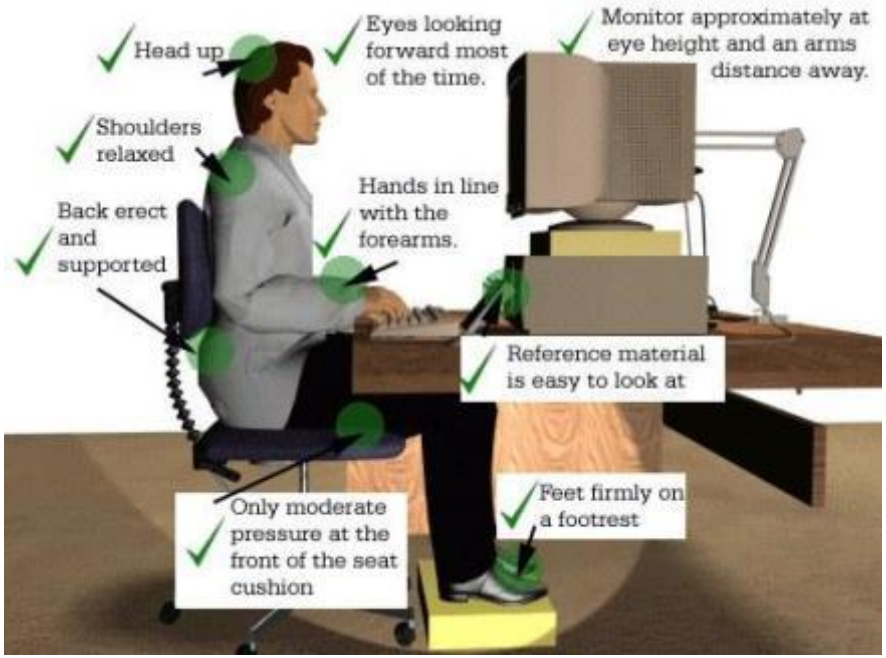
Ergonomics in the Classroom



Carolyn Phillips- TFL

Monitor

- Centered on desk
- The top of monitor should be at eye level allowing text on screen to be at or slightly below eye level
- Positioned arms lengths away unless visual acuity issues
- Use document holders
- Minimize glare



Maria Kelley- WATAP

Chairs

- Proper height for desk or height adjustable if possible
  - boost height in a non-adjustable chair
- Thighs should not be in contact with the front edge of the seat
  - 2” to 3” between front edge of chair and back of knees
  - Use firm pillows or cushions to reduce seat depth
- Adjust the chair so feet are flat on the floor and thighs parallel to the floor
  - use foot rest or seat cushions to achieve proper posture
- If child is wheelchair user feet should make good contact with footplates

Low cost solutions

- Portable back and seat cushions
- Small pillow or rolled up towel to support low back
- Booster seats, pillows or phonebooks, boxes

Carolyn Phillips-TFL
Pictured used with permission

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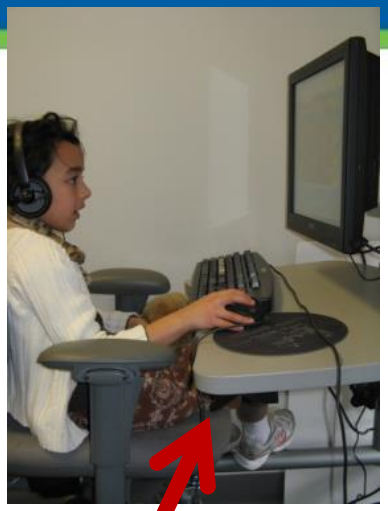
$125



Unsupported feet

$116

Low cost solution

Maria Kelley- WATAP

Position for Learning: Students with Attention Issues

Maria Kelley- WATAP

Movement Helps Learning!

- 2003 study in *American Journal of Occupational Therapy* concluded that students with ADHD using ball chairs were able to sit still, focus and write more words legibly

- 2007 Mayo Clinic study concluded that a chair-less classroom increased attention and improved learning

- 2008 University of Central Florida study
  - children need to move to focus during a complicated mental task
  - especially those with attention-deficit/hyperactivity disorder (ADHD)—fidgeted more when a task required them to store and process information rather than just hold it.

Dump the chair?

- Engages core muscles
- Less impulsivity
- Increase focus

Height	***Recommended ball size***
Under 4'8"	45 cm ball
4'8" to 5'3"	55 cm ball
5'4" to 5'10	65 cm ball
5'10 to 6'4	75cm ball

For kids 5 years and younger, always use a 45 cm ball.
(Exercise Balls for Dummies)

Maria Kelley- WATAP

Other options

Move Small Ergonomic Stool for Children

Seating Disc

Stay n place ball

Maria Kelley- WATAP

Fidget Footrests

- Standing desks can help students who find sitting still difficult
- Use of dynamic footrests can help release energy and improve focus

http://classroomseatingsolutions.com/products.html

Maria Kelley- WATAP

Tilt Desks

- Positioning the work closer the student can improve visual access
- Promote upright trunk posture
- Improve head posture

TherAdapt Extended Easels; $288

Desktopdesk.com; $375

Study Pal; $42

Maria Kelley- WATAP

Ergonomics in the Classroom

Writing Solutions:

- Stabilo - low weight and ergonomic shape, light pressure is required, encourage good posture, which can improve academic performance in children and students
- https://www.thewritingpenstore.com/c-307-easyergo-s-move-easy.aspx

- Free Ride- balanced with the neutral hand placement grips.
- https://www.thewritingpenstore.com/c-295-free-ride-ergonomic-pens.aspx

- The Penagain is shaped like a "Y" creating a cradle for the index finger to rest
- http://ergonomics.about.com/od/buyingguide/fr/frpenagain.htm

- Wide barrel pens can make it easier for some people to write due to their contoured shape. With a Fat Ergonomic Pen there's more surface area to grip which makes it easier to write.

Mounts

RAM

RAM

ErgoMart

(RJ Cooper Magic Arm)

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Gaming....The thumbs have it!

Mobile devices

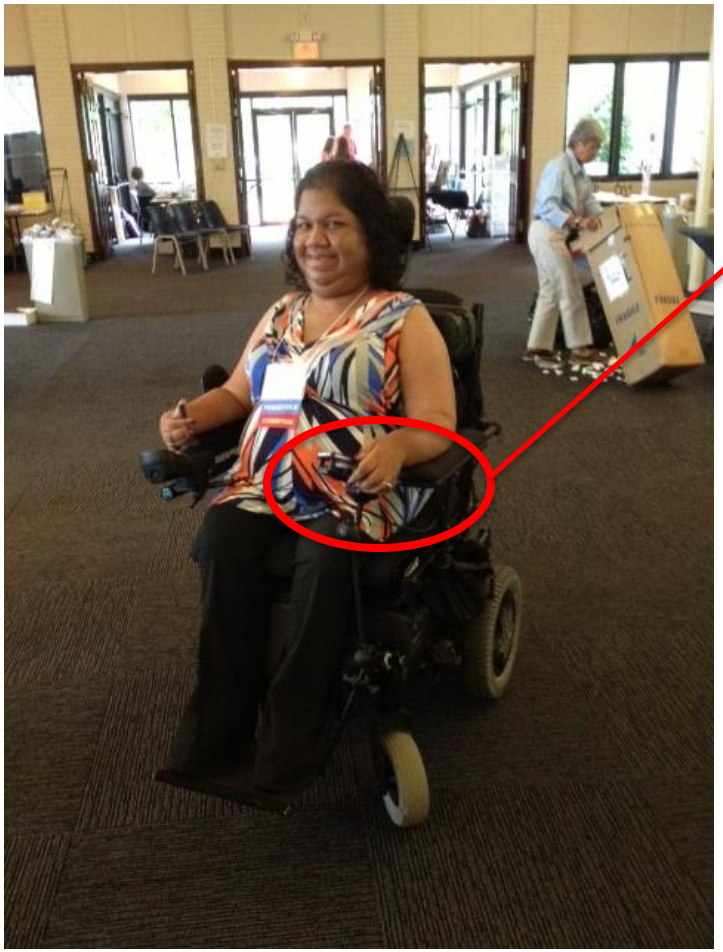
Can also contribute to poor posture and repetitive motion injuries

Neck strain, nerve compression

Mobile devices

- Should be accessible for type of selection process
  - Direct selection with hands
  - Stylus
  - switches
- Use mounts to improve upper extremity and visual access

Mobile devices



- Explore various mounting options to hold mobile devices
- Helps with posture
- Operate wheelchair or other mobility aid safely
- Builds confidence

Back Packs

(Google image)

Carolyn Phillips- TFL

Back Packs

Pack too big and majority of weight on tailbone

stress on shoulder & neck; asymmetrical posture

Backpack Maximum Weight Chart (for Children)

According to The American Physical Therapy Association, American Academy of Orthopedic Surgeons, and the American Chiropractic Association

Weight of Child (in pounds)	Maximum Backpack Weight
60	5
60-75	10
75-100	15
100-125	18
125-150	20
150-200	25

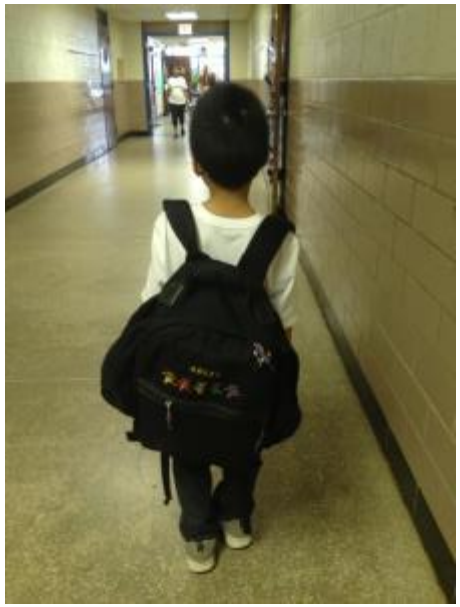
No one should carry more than 25 lbs. in a backpack.

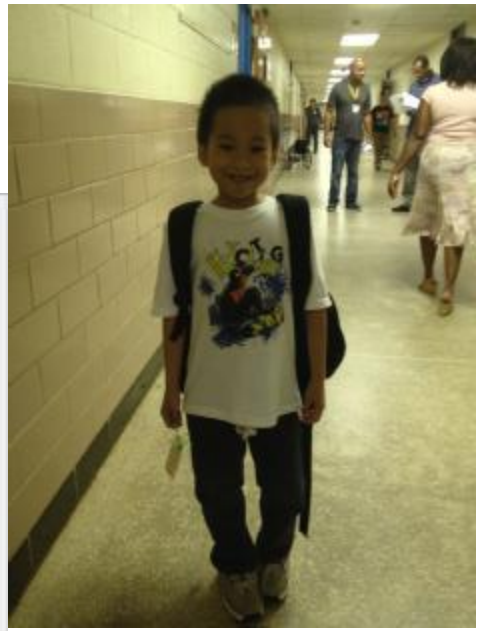
Back Packs

1. **Two Straps**
   - Make sure the bag has two straps. Single strapped bags, like satchels and duffel bags, should be avoided. A single strap places the entire load on one side of the body.
2. **Size**
3. **Wide, Padded Straps**
   - Wide straps distribute the load over more area of the shoulder. Padding spreads the load as well as alleviates any pressure points.
4. **Padded Back**
   - The back should be padded as well.
5. **Lightweight**
   - The bag should be light. The lighter the better.
6. **Waist Strap**
   - It dramatically helps direct the load away from the shoulders and onto the much stronger waist and hip muscle groups. chance of back pain.
7. **Compartments**
   - Having a bag with several compartments helps in two ways.
8. **Chest Strap**
   - A strap across the chest from shoulder strap to shoulder strap is a small, but worthwhile improvement. It also fights the urge to slouch.

Back Packs

- Size of the backpack should fit the child
- Both straps should be used
- Bottom of the pack should not sag and rest on the buttocks
- Don’t overload
- Consider using rolling backpacks





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Resources

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Stretch!

***Guidance from healthcare professional is recommended

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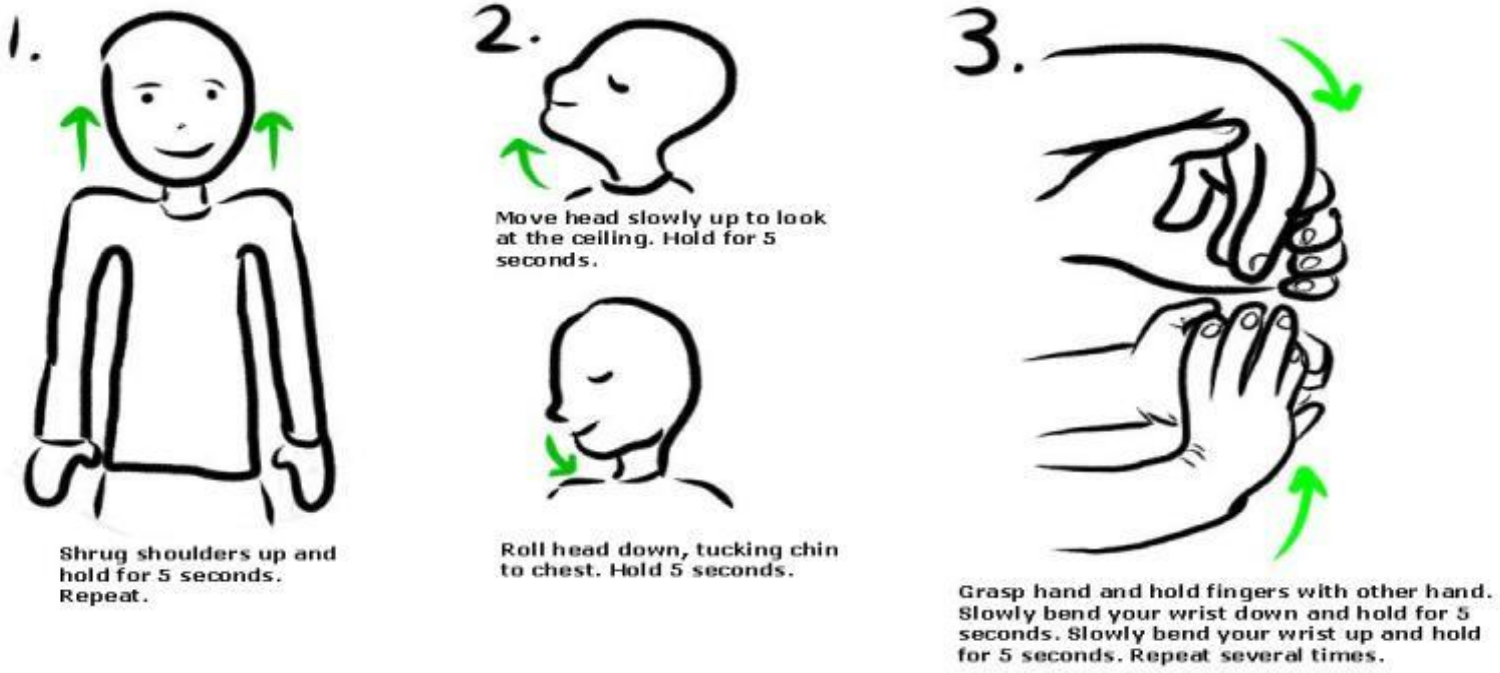
Stretch!

Desk Stretches



***Guidance from healthcare professional is recommended

Preparation for the Future

- Compliance & Progress
  - Proper positioning will become habit and will provide comfort that will help to shape compliance over the years.
- Save Energy
  - Muscles have to work extra hard just to hold you up if you have poor posture, leaving you without energy. Work smarter, not harder!
- Ready for the Workplace
  - Let your environment work for you!

Liz Persaud - TFL

Research Update

Student Led IEP's using iPads

- **Linda Curry,** Director Middle Georgia GLRS
- **Laura Meldrum,** Teacher/Transition Specialist, Crawford County Schools
- **David Shepard, Lead** Teacher-CTAE, Crawford County Schools
- **Ben Satterfield, Ed.D. ,** Research Consultant with Center for AT Excellence / GA Tools for Life

Research on Student Led IEPs

Students who participate in their IEP meeting:

- Have been shown to be more likely to reach goals
  - (Agran & Hughes, 2008; Arndt, Konrad, & Test, 2006; Martin, Van Dycke, Christensen, Greene, Gardner, & Lovett, 2006;)
- Tend to demonstrate enhanced communication and self-advocacy skills
  - (Mason, McGahee-Kovac, Johnson, & Stillerman, 2002).

Research on Student Led IEPs

Students who participate in their IEP meeting:

- Improved academic performance
  - (Schunk, 1985).
- Have elevated rates of completion of high school
  - (Benz, Lindstrom, & Yovanoff, 2000).
- Positive outcomes upon employment and quality of life as students become adults
  - (Furney & Salembier, 2000; Halpern, Yovanoff, Doren, & Benz, 1995; Wehmeyer, Agran, & Hughes, 2000).

Student Led IEP's

- A collaboration between Middle GA Georgia Learning Resources Systems and CREATE/GA Tools for Life.
- MG-GLRS was involved in a state DOE grant program aimed at self-determination and advocacy
  - ASPIRE
- Linda Curry, Director, had idea of giving kids iPads
  - Crawford Co.

Student Lead IEP Research

- In Georgia
- All sophomore
  - 12 started the program
  - 11 finished
- ASPIRE Training
- ½ with iPads
- ½ without iPads

ASPIRE:

Active Student Participation Inspires Real Engagement

- ASPIRE is a curriculum that seeks to foster active student participation in their IEP meeting, by providing the student with skills to direct and lead their meeting (Lynch, Crain & Moore,2012).
- ASPIRE was adapted from the “I’m Determined Project” of the Commonwealth of Virginia Department of Education Training and Technical Assistance Centers. This approach was embraced and piloted by the Georgia Department of Education (GADOE).
- GADOE had selected 14 districts for a broader implementation of the principles of ASPIRE under the Partnership for Success program.

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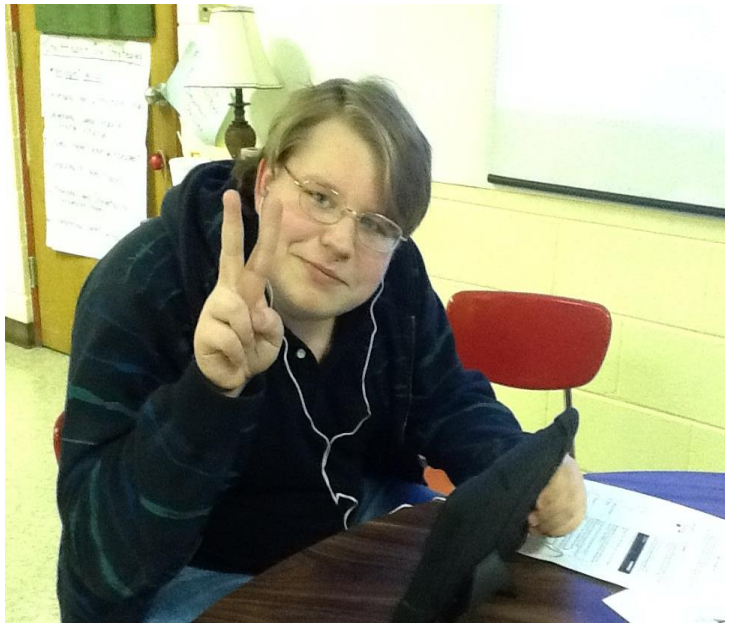
Conclusions

- The presence of the iPad platform likely made a difference in two respects:
  - Setting the students apart as special in a positive way and providing them a sense of responsibility and purpose in this project.
  - Laying a foundation on which confidence was built as they developed a presentation that contained their ideas on this platform.



Conclusions

- The ASPIRE training provided students in both groups with the background understanding for participation in their meeting.
- Each student demonstrated that they understood the key questions to address in their meeting.

Ben Satterfield- CREATE

Conclusions

- The technical assistance sessions in preparation for their meeting provided students with the opportunity and support to craft their personal responses to the key questions. This step forced them to address these questions.

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Conclusions

- The centrality of the student's own ideas at the meeting, presented in multimedia form, together with the acceptance from staff and parents, provided a further encouragement to students to be assertive and provide leadership at their meeting.

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TFL AppFinder

Search by:

- ✓ **App Name**
- ✓ **Categories**
  - Book
  - Education
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  - Hearing
  - Cognition, Learning, Developmental
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  - Personal Care and Safety
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  - Communication
  - Therapeutic Aids
  - Vision

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Welcome | AT Services | Try AT | Get AT | AT Guides | Research

Welcome to Tools for Life

Tools for Life, Georgia's Assistive Technology Act Program, is dedicated to increasing access to and acquisition of assistive technology (AT) devices and services for Georgians of all ages and disabilities so they can live, learn, work and play independently and with greater freedom in communities of their choice.

Tools for Life and the TFL Network work collaboratively together to accomplish our mission through:

- AT Demonstration
- AT Evaluations and Assessments
- AT Funding Options & Education
- Access to the TFL AT Lending Libraries
- AT & Durable Medical Equipment Reuse
- AT Training (Individual)
- AT Training (Groups)

2013 IDEAS CONFERENCE

2013 Institute Designed for Educating All Students Conference
June 3 - 6, 2013
Epworth by the Sea, St Simons Island

- Submit a Proposal
- Conference Website
- Exhibitor Details

WEBINARS

APR 18 — Free for All! Resources for Teachers and Students

APR 24 — Assistive Technology and Adapted Recreation: A Perfect Match

Current Webinar Schedule
Webinar Archives

APP FINDER

...Living, Learning, Working, and Playing.

AT ONLINE EXCHANGE

gTRADE gTRADE, Georgia's Online Equipment Exchange, encourages members to offer AT and DME for sale or donation to others who may benefit from using technology unneeded by others.

Firefox | Zimbra: Inbox | Tools for Life

www.gatfl.gatech.edu/favorite-search.php

GT Mail | Tools for Life | TFL Wiki | AMAC | Facebook | Adobe Connect Centr... | Playbook | TFL Database | Gmail | GT Sites | Eventbrite | Websites | Quickbase | Bookmarks

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AppFinder

About | Our Other Favorite Apps Databases | Helpful Links

Welcome to the Tools for Life Database - Our Favorite Apps for Living, Learning, Working and Playing!

Search By:

Name:

OR

Category:
Please select...

Price:
Free | Up to $4.99 | Up to $9.99 | All

Device Type:
All | Android | iOS | Microsoft

Search

Add an App | Rate an App | Comments and Suggestions

Version: 1.0

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My Favorite Apps

You searched for: Learning, Cognition, and Developmental

Logo	Name	Category	Device Type
	tango Video Calls Tango brings you free, high-quality mobile voice and video calls over 3G and Wi-Fi! Millions of people around the world are using Tango in an exciting new way. It	Learning, Cognition, and Developmental	iOS
No Ratings			
app icon	i-promt Professional Tele-prompting software for your iPhone or iPod Touch.	Learning, Cognition, and Developmental	iOS
No Ratings			
	Dragon Dragon Dictation is an easy-to-use voice recognition application powered by Dragon	Learning, Cognition, and Developmental	iOS
5 stars by 1 users			
	iBooks iBooks includes the iBookstore, where you can download the latest best-selling books or your favorite classics	Learning, Cognition, and Developmental	iOS
No Ratings			
	Say Text SayText reads out loud the text in the image. It is intended for the visually impaired users. SayText is a free spin off product from the DocScanner team.	Learning, Cognition, and Developmental	iOS

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Best Apps for Teaching & Learning 2013

The apps recognized as Best Apps for Teaching & Learning are of exceptional value to inquiry-based teaching and learning as embodied in the AASL's *Standards for the 21st-Century Learner*. The apps foster the qualities of innovation, creativity, active participation, and collaboration and are user friendly to encourage a community of learners to explore and discover.

- Books
- Science, Technology, Engineering, and Math (STEM)
- Organization & Management
- Social Sciences
- Content Creation

Books

Bats! Furry Fliers of the Night (available for iPad)

Bats! Furry Fliers of the Night layers clear text with interesting diagrams, beautiful photographs, and interactive features that enhance young readers' understanding of the subject. The design elements are top-notch, providing just the right amount of zing to keep kids engaged without distracting them from the essence of the material. A well-executed informative nonfiction app that anyone implementing the AASL learning standards and Common Core State Standards will find beneficial. This is what a book app should be, it takes you beyond the book with innovative technology related to the topic.

Tip: Springboard an inquiry unit using Bats! Furry Fliers of the Night as a motivation and tie in with a trip to the zoo.

Apple Volume Purchasing Program

- Allows educational institutions to purchase iOS apps and books in volume and distribute them to students and teachers
- Apps at discounted rate if 20 or more copies are purchased
- http://www.apple.com/education/ipad/volume-purchase-program/
- Enrollment is simple

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SOME OF OUR FAVORITE APPS FOR THE CLASSROOM!

What are Your Favorite Apps?

TOOLS for LIFE
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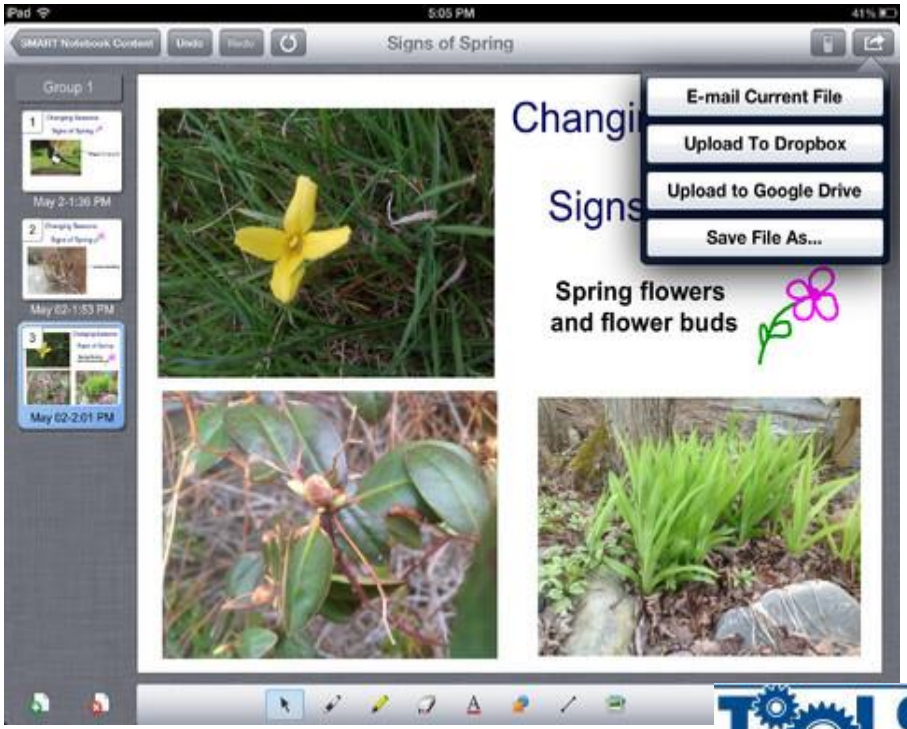
SmartNotebook for iPad

- Works with SmartNotebook 11 software for Smartboards
- Dropbox and Google file Integration
- Asynchronous collaboration
- Insert photos and sounds
- $6.99



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Bridgit

- Use with SMART Board interactive whiteboard
- Display to view content that is being presented and highlight or annotate over that content.
- Create or join a meeting on iPad
- Free

Splashtop Whitboard

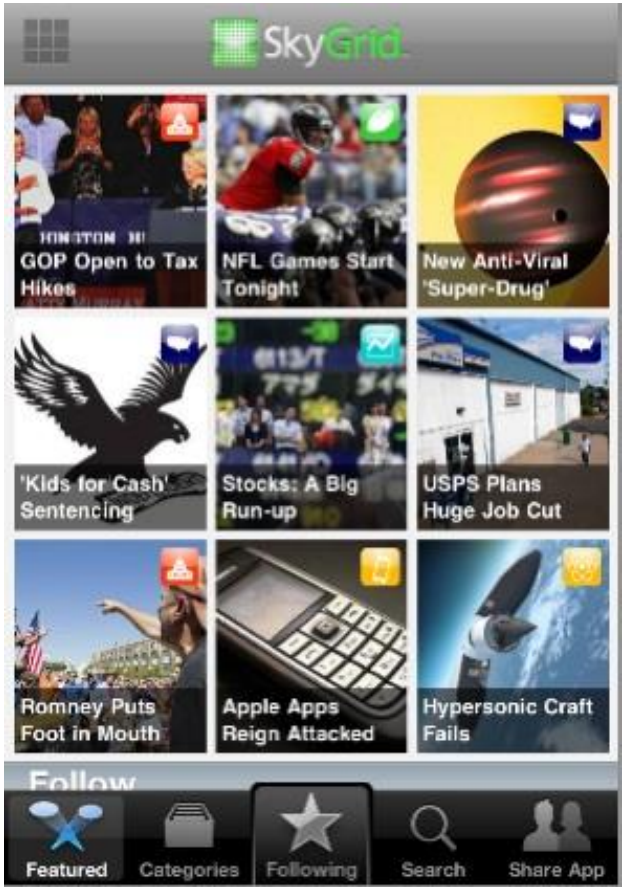
- Allows teachers and students to turn their iPad into an interactive white board
- Allows movement around the classroom
- Spotlight and Screen Shade tools for focus
- $19.99

iMovie

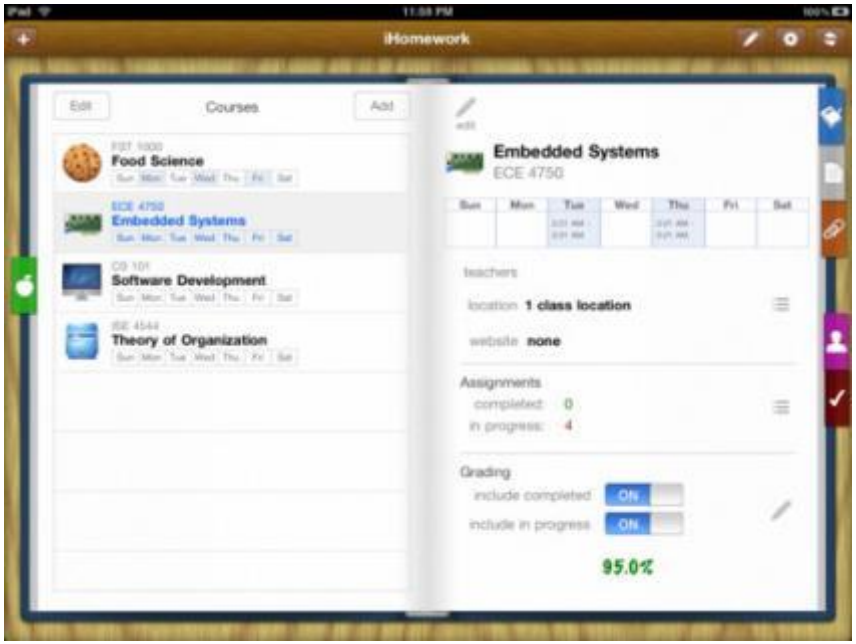
- Tell a story in movie form
- Import pictures
- Add music and sound effects
- Has themes to choose from
- Airplay to stream
- $4.99

SkyGrid

- Personalize news events by categories
- Simple interface
- Free
- www.skygrid.com



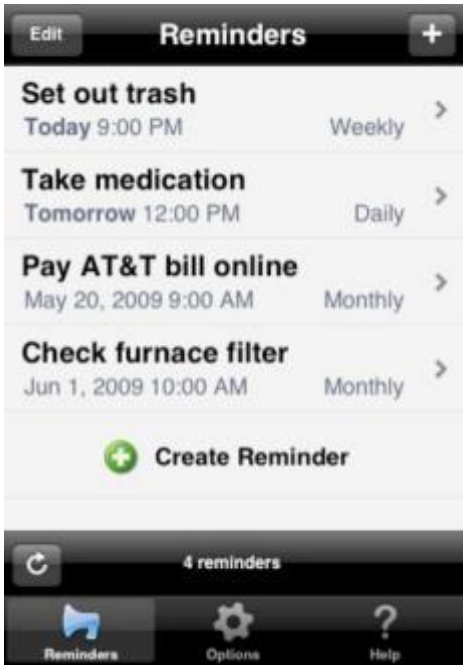
iHomework

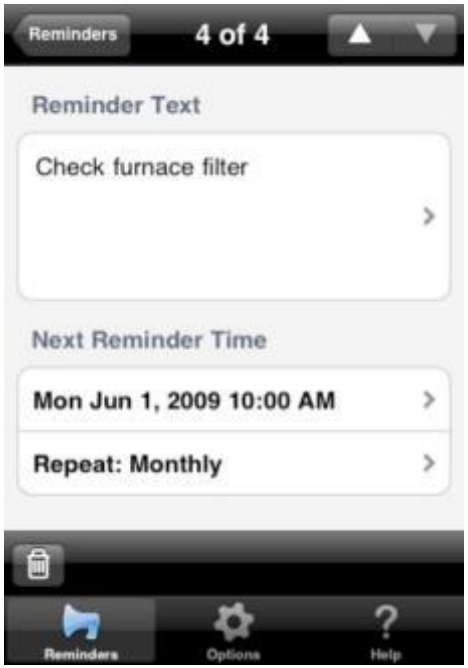


- Keep up-to-date with your school work, grades, to-do's, teacher's information
- School organizer that can be with you anywhere you go, whether that be on your iPhone/iPod touch, iPad, or Mac
- $1.99

TextMinder

- Create SMS text reminders
- Specify exact date and time; choose a repeat schedule for each reminder
- Multiple reminders can remain in popup notification summary, even when followed by other messages (push notifications only show your most recent alert)
- Unread reminders show as a number badge on your standard SMS/Messages app, and remain until removed to ensure they are noticed
- $1.99





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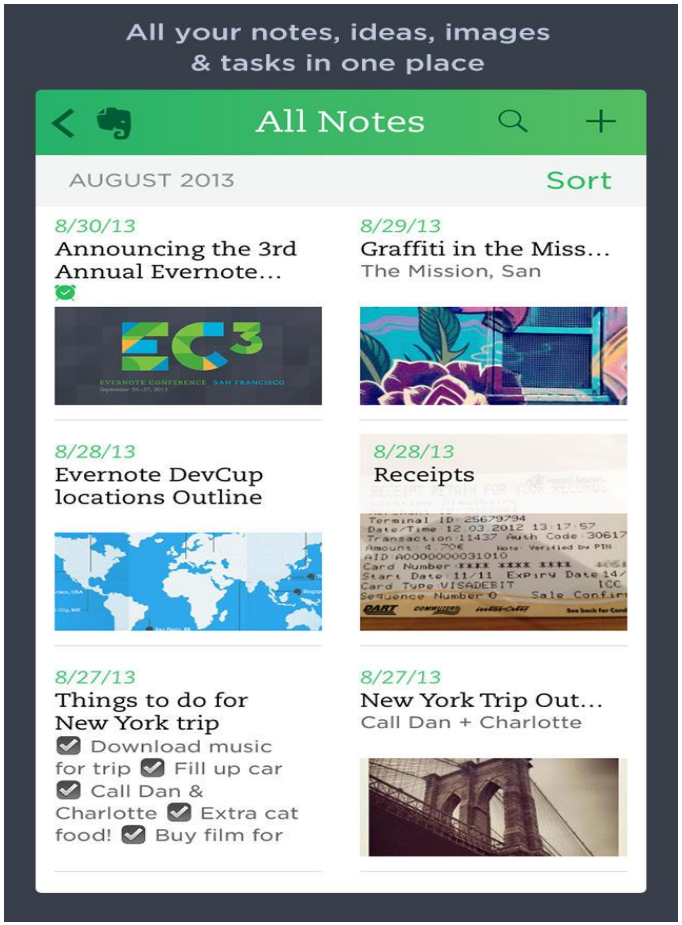
Evernote



- Works across platforms
- Organize notes
- Create folders
- Import pictures
- Record Voice and Audio Notes
- Save Tweets
- Free

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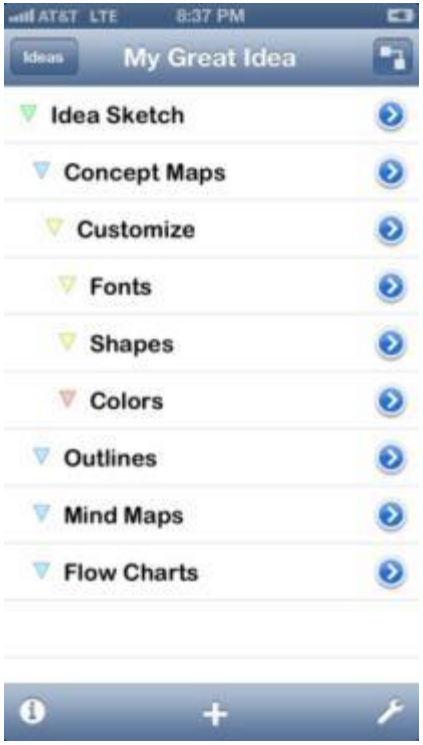
Idea Sketch

- Mind and concept mapping
- Create flow charts
- Brainstorm ideas
- Convert flowchart to text outline and vice versa
- Free



Mathmateer

- 56 different math missions.
- Each mission has touchable objects floating in space
- Missions range in difficulty from even/odd numbers all the way to square roots
- Free or .99

AMAC
Accessibility for All

Our Question to You:
What have You Learned today?

TOOLS for LIFE
Georgia's Assistive Technology Act Program

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