

Assistive Technology

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The Case Against Assistive Technology



What do you think?

- When asked, how would you define Assistive Technology (AT)?
 - What do you first think of?
 - What AT did you use today?
-
- Respond at <https://pollev.com/debrabauder056>



We ALL Use AT!

- Visual Impairments
 - Glasses/Contacts
 - Screen enlargements
- Auditory Discrepancies
 - Volume Controls
 - Microphones and speakers
- Communication
 - Pens/Pencils
 - Email
 - Texts



Quick Definition (it's the law)

- Designed to compensate for **functional limitations**.
- **Enhance and increase** learning, independence, mobility, communication, environmental control and choice.
- AT Devices and AT Services

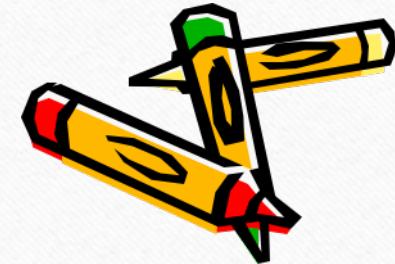


AT Service

- Evaluation in child's customary environment
- Purchasing, leasing, providing for acquisition of assistive technology devices
- Selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing assistive technology devices
- Coordinating and using therapist, interventions or services devices such as, those associated with existing education and rehabilitation plans and programs
- Training to technical assistance for child or family
- Training or technical assistance for professionals

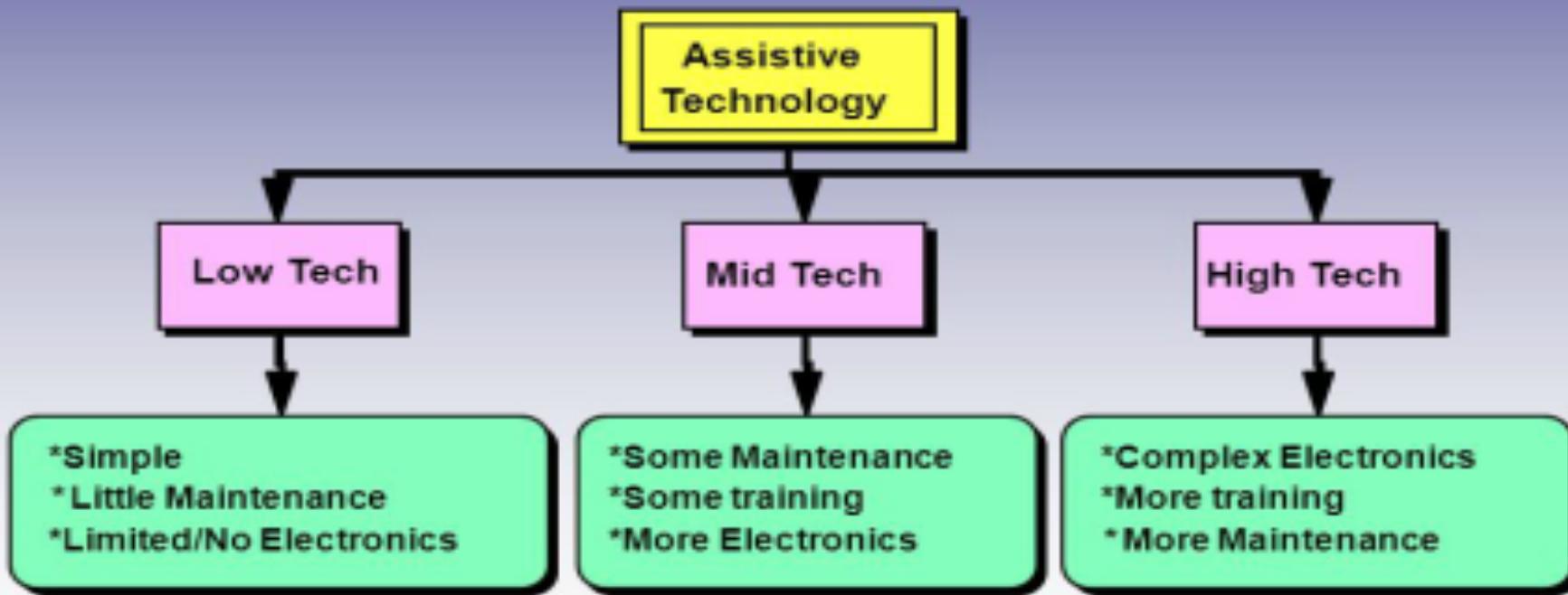


AT Fosters Inclusion



- **Inclusion:** The practice of educating all or most children in the same classroom, including children with physical, mental, and developmental disabilities. (Association for Supervision and Curriculum Development)
- AT helps students who have disabilities learn the material in a way that they can understand it
- AT helps eliminate barriers students may face that prevent them from being at the same level as their classmates

Continuum from Low to High Tech

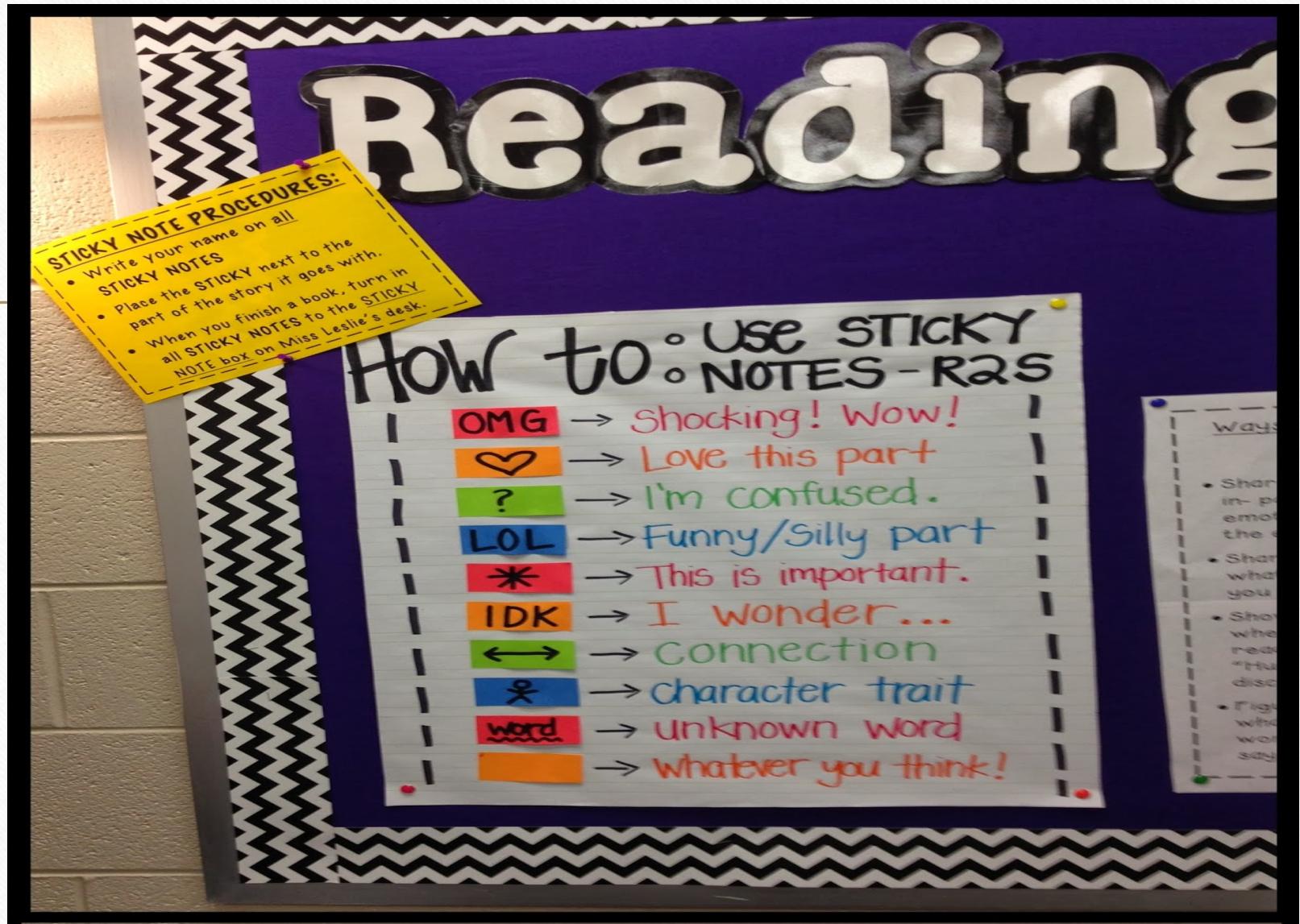


Low Tech Ideas and Options

- Liquid paper
- Pencil grips
- Raised-line paper
- Post-it notes
- **Highlighters**



Post It Note: Reading



Duct Tape Idea

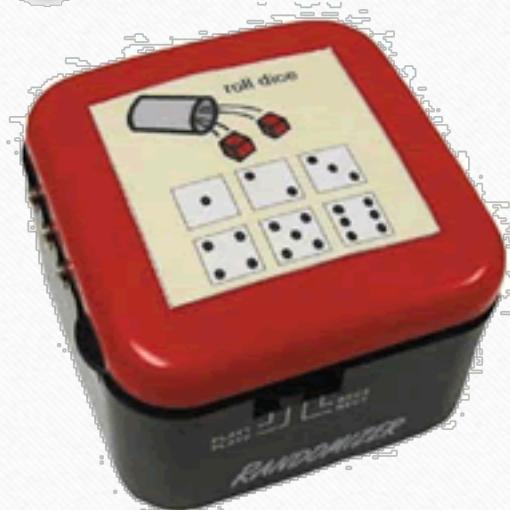
Build an iPad Stand

with cardboard and Duck Tape

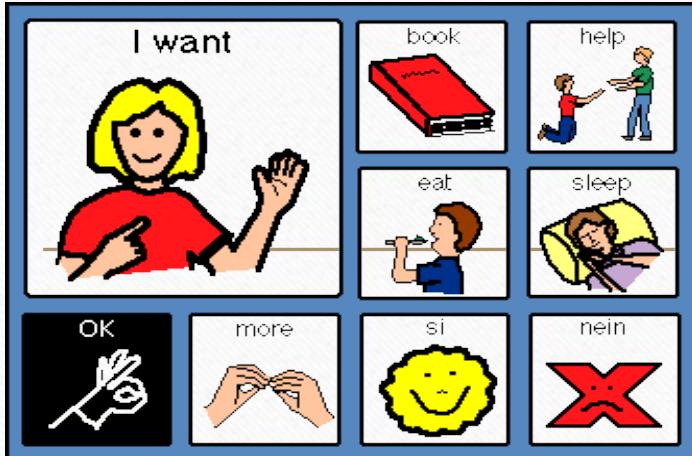


*Crafting
in the Rain*

Mid Tech Examples



High-Tech



- Computer software
- AAC devices
- Power wheelchairs
- CCTV displays



**CO:WRITER®
4000**





MYTHS

Surrounding AT

- AT is really only for students with **certain kinds of disabilities**
- AT Gives LD Students an **Unfair Advantage**
- Clunky and looks like technology (Socially Unacceptable)
- **Expensive**
- In Order To Reach Their Academic Potentials, LD Students Should Use AT for Everything

Some Realities

- AT can be repurposed
- We have many of these items already in the school!
- Simple may be better in ALL cases
- Inventory what you already have and use it!
- Be aware that there is not a “one-size-fits-all” device!
- A few of my favorite words:
 - Duct Tape
 - Velcro
 - DIY

Extended AT

- With assistive technology we often think about a task that a student has to do and a tool to help them **functionally** complete the task.
- We should also think about how to motivate students and reinforce positive outcomes.



Any
Questions
so Far??

Specific AT Solutions

- Starting with Low Tech –
and moving up the continuum.....



Repurpose to create authentic learning experiences

Don't throw away that old newspaper, advertisement, magazine, or junk mail! Use in the classroom to help provide students with real-world material to connect to their studies.

Use your recycled materials for:

- Writing prompts
- Math problems (grocery and department store ads work great!)
- Current event analysis/reports
- Sorting by parts of speech (students can search for nouns, verbs, etc.)



Manipulate with chips

Make reading activities and more out of paint chips.

Genius!

1. Color or word matching.
 2. Break down the different parts of a sentence.
 3. Sequencing. Briefly outline the components for any piece of writing.
 4. Vocabulary. Write the word, definition, sentence, etc.



Page fluffers

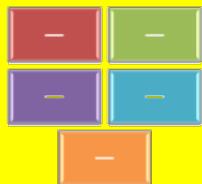


- Adapt books by placing each page in a sheet protector.
- Add stability by placing cardboard in between each story page.
- Place pages in a notebook.
- "Page fluffers" made from foam materials, chip bag clips, clothespins, etc. can be used to add spaces between each page for easy page turning.

Change the way the text looks



- Magnifying text
- Increase font size and font choices
- **Bold**, underline and **text color**
- Increasing line, word, or character s p a c i n g
- Adjusting margins
- Changing font/ background color
- SmartArt Graphics
- Picture support
- **Highlighting**

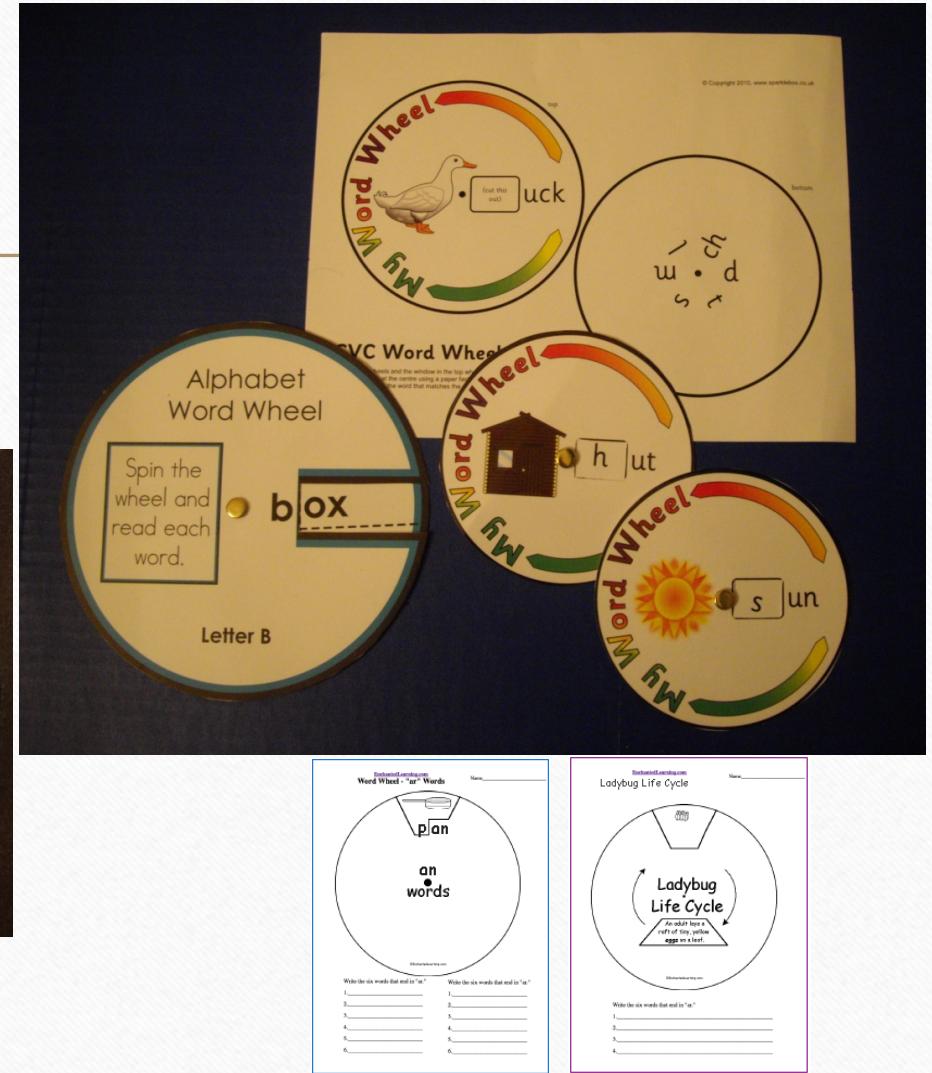
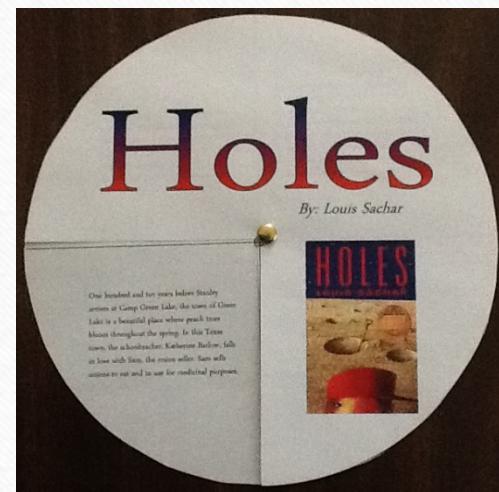
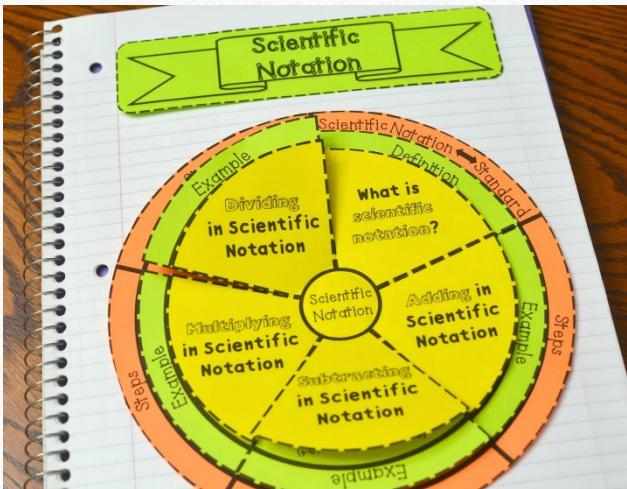


Just listen to me...



Show them on a wheel

Create in PowerPoint or download print-outs to teach concepts or organize information in a manipulative format.



AUDIO - PODCASTS! AUDIO BOOKS!



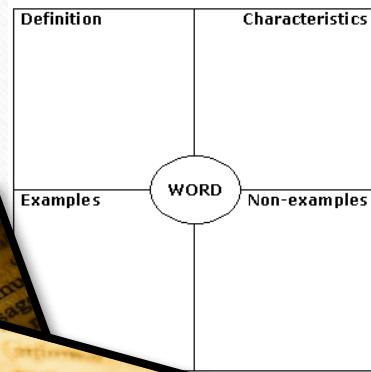
Resources:
mmap.com/podcasts

LibriVox
free public domain audiobooks

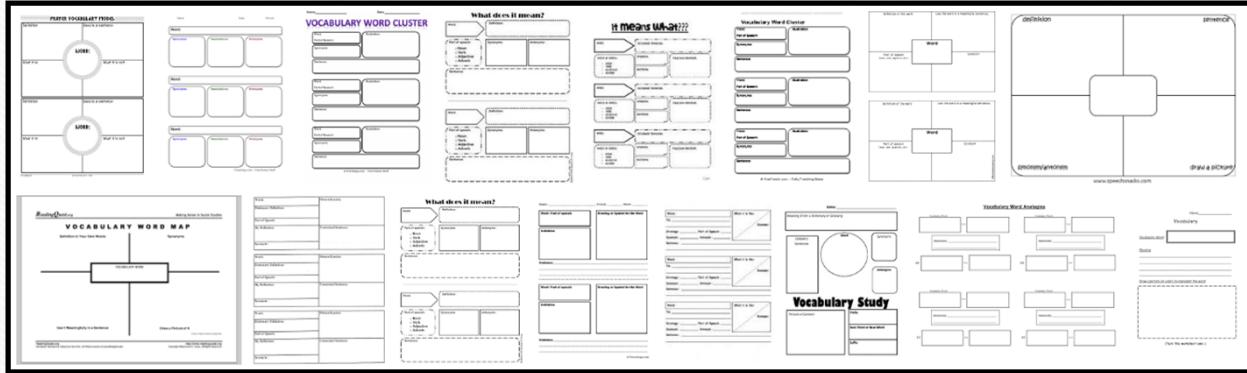


audible

Frayer Model



Bulk up vocabulary



VISUALTHESAURUS™

VocabGrabber™

bumble

Definition

Verbs:

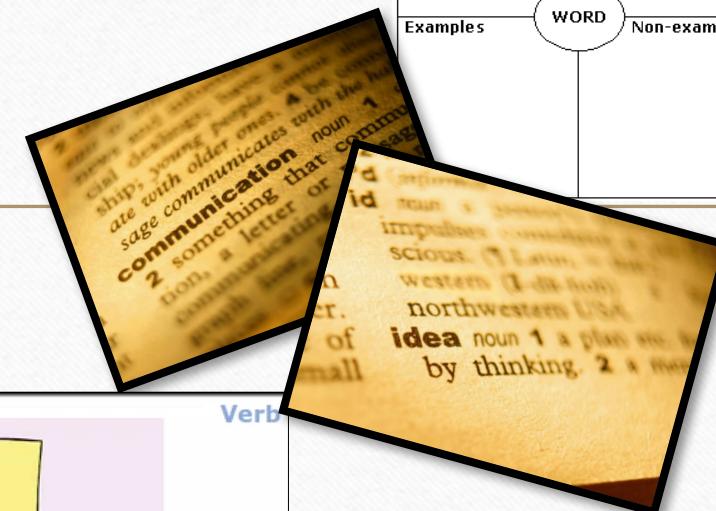
- make a mess of, destroy or ruin
- walk unsteadily
- speak haltingly

Examples from Text (29)

VocabAhead

Augment

0:00 / 0:28



readwritethink

 StoryToolz

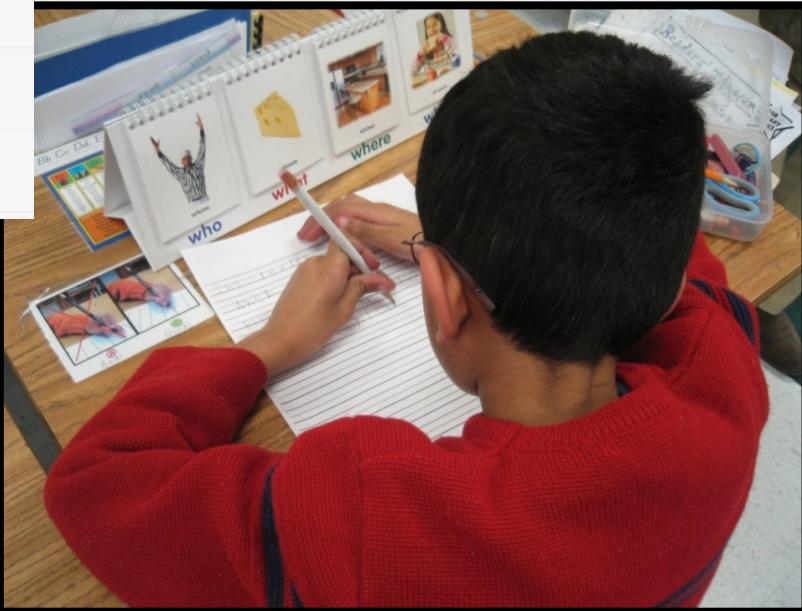
 Dashboard

 Generators

 Word Count Meters

 Readability

 Cliché Buster



Make your own sentence flips, story starters, and vocabulary balls to engage students with easily found materials.



- An engaging way for student to complete assignments in a multitude of ways. (Free)
- <https://drive.google.com/file/d/130URtGx-4TkKXFBWoaPrrCgRHzhCIBv5/view>

Cognitive Recalining/Autosummarization

Text Compactor
Free Online Automatic Text Summarization Tool

Follow these simple steps to create a summary of your text.

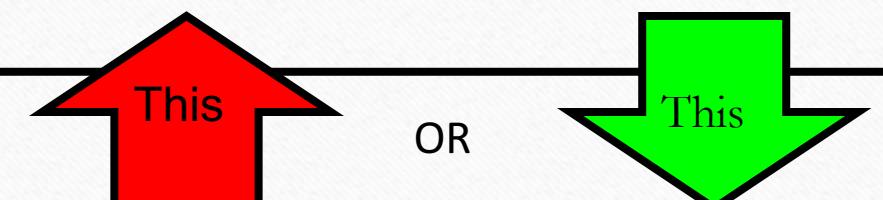
Step 1
Type or paste your text into the box.

Step 2
Drag the slider, or enter a number in the box, to set the percentage of text to keep in the summary.
 50 %

Step 3
Read your summarized text. If you would like a different summary, repeat Step 2. When you are happy with the summary, copy and paste the text into a word processor, or [text to speech program](#), or [language translation tool](#)

© 2010-2012 [Knowledge by Design, Inc.](#)

Beginning with the Turney paper, many researchers have approached key phrase extraction as a supervised machine learning problem. Given a document, we construct an example for each unigram, bigram, and trigram found in the text (though other text units are also possible, as discussed below). We then compute various features describing each example (e.g., does the phrase begin with an upper-case letter?). We assume there are known key phrases available for a set of training documents. Using the known key phrases, we can assign positive or negative labels to the examples. Then we learn a classifier that can discriminate between positive and negative examples as a function of the features. Some classifiers make a binary classification for a test example, while others assign a probability of being a key phrase. For instance, in the above text, we might learn a rule that says phrases with initial capital letters are likely to be key phrases. After training a learner, we can select key phrases for test documents in the following manner. We apply the same example-generation strategy to the test documents, then run each example through the learner. We can determine the key phrases by looking at binary classification decisions or probabilities returned from our learned model. If probabilities are given, a threshold is used to select the key phrases. Key phrase extractors are generally evaluated using precision and recall. Precision measures how many of the proposed key phrases are actually correct. Recall measures how many of the true key phrases your system proposed. The two measures can be combined in an F-score, which is the harmonic mean of the two ($F = 2PR/(P + R)$). Matches between the proposed key phrases and the known key phrases can be checked after stemming or applying some other text normalization.



Automatic summarization is the creation of a shortened version of a text by a software.

Reduce text and simplify



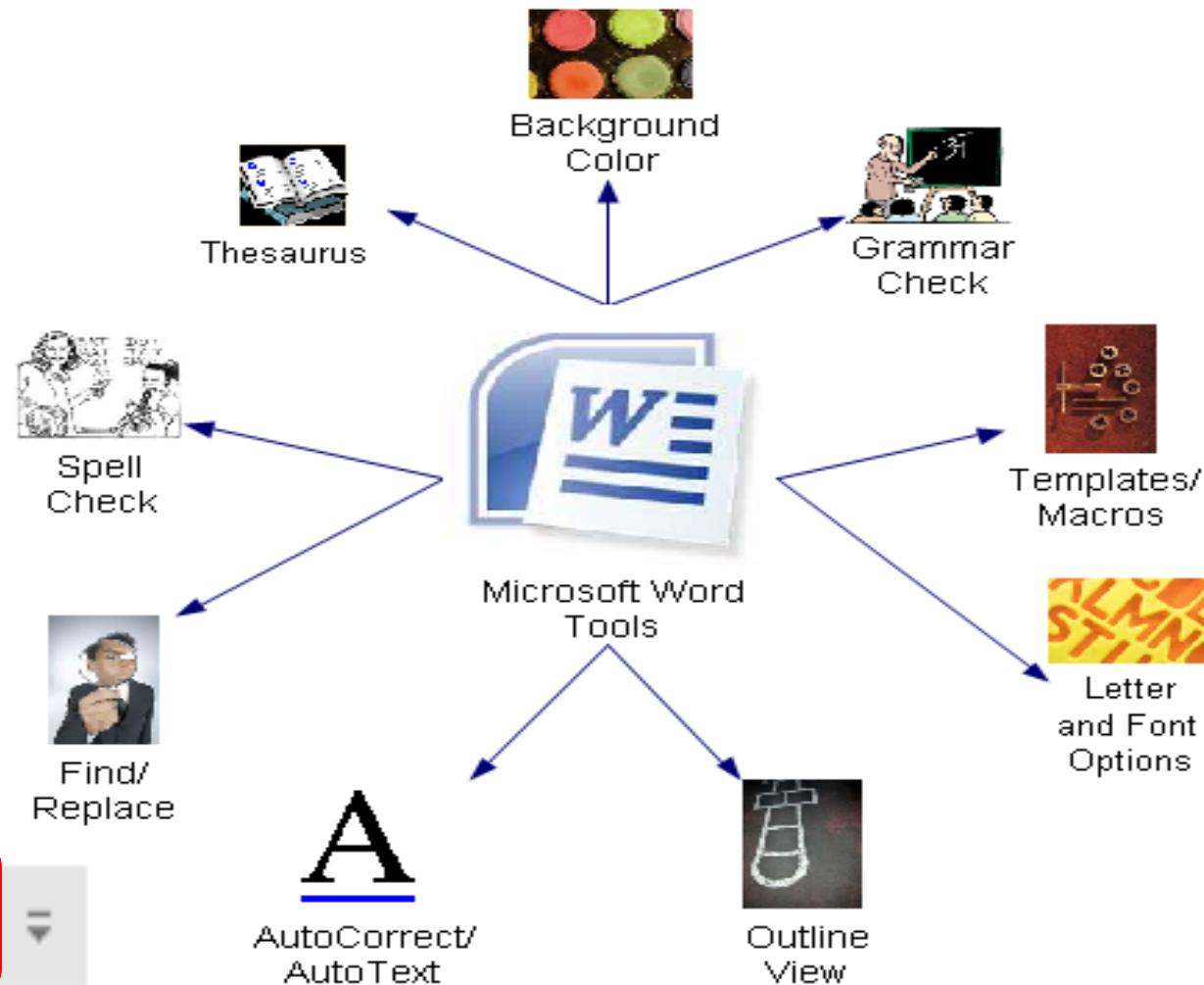
Copy and paste text into Rewordify to be translated into a simplified version. Changed words are highlighted. Click on the highlighted words to see and hear the original words. Worksheets and quizzes to help the user learn the original words can also be printed from the site.

Enter English text or a web page to simplify:

Sometimes students discover text when doing research that contains vocabulary terms that are not already in their lexicon. In order to assist in the understanding of these terms, they might need a tool beyond what context can provide alone. Use this website to simplify complex terms.

Sometimes students discover text when doing research that contains vocabulary terms that are not already in their word list/vocabulary. In order to help in the understanding of these terms, they might need a tool beyond what big picture can provide alone. Use this website to simplify complex terms.

Use software tools to rescale cognitively



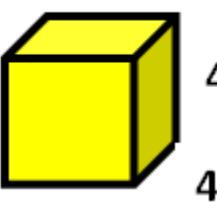
Use One Note to record a voice

Instructional Applications

- Allows students who may have difficulty writing to verbally record answers into a One Note document.
- Allows teachers to record verbal prompts into a One Note document for students who may need auditory directions.
 - Worksheets
 - Tests
 - Instructional aides
 - Pre-writing activities
 - Describing a scene

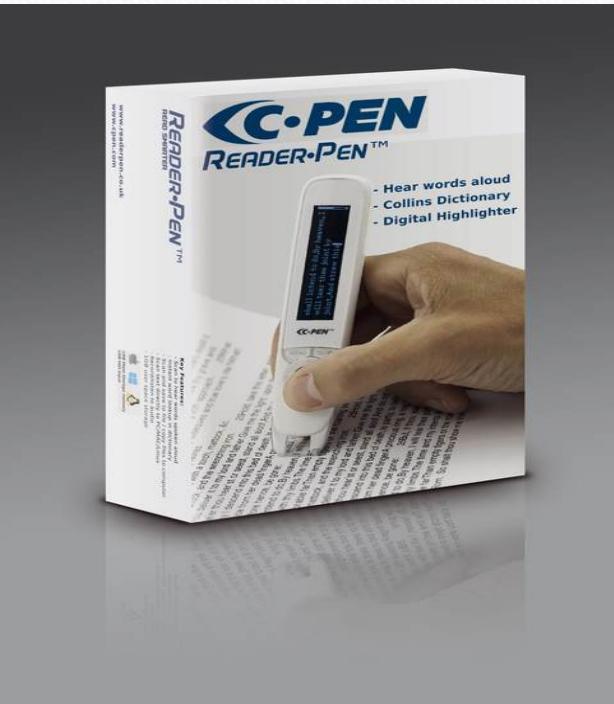
What is the surface area of the yellow cube? 

Record your answer: 



Text To Speech

Claro ScanPen



Build a book with online: BookBuilder.org

The screenshot shows the homepage of the CAST UDL Book Builder. At the top, there's a dark purple header bar with the text "Welcome, Judith Schoonover" and navigation links for "Home", "My Account", "FAQs", and "Logout". On the left, a sidebar has links for "Home", "Learn about Universal Design for Learning (UDL)", "Model Books", "Create and Edit My Books", "Shared Books", "Public Library Books", and "Tips and Resources". A "GIVE US FEEDBACK!" button is also present. The main content area has a title "Create, Save, Edit & Share My Books" and a sub-instruction "Here you can create, save, and edit your books. Terry's Tips help you write text, choose images, add audio clips and glossary terms, and develop supports for coaches. You can read your completed books online, download them, print them, share them with others and/or publish them to the public library." It features a "Start a New Book" button, a "Filter By:" section with dropdown menus for "Search Terms", "Grade Level(s)", "Content Area", "Genre", "Book Language", and "Tags" (with a "My Favorites" link), and buttons for "Show All My Books" and "Search".

Create customized digital books using Universal Design for Learning. Each author is guided through the process, and provided with online tips, resources, and links to meet the needs of diverse learners.

Commercial AT Solutions



NEWSLEA



- Online Resources

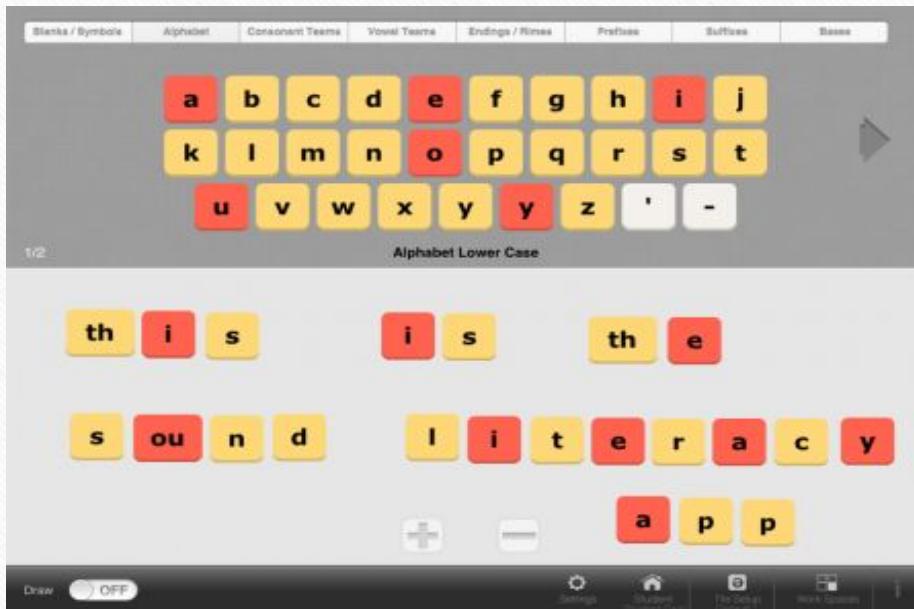
Free for qualified users
Digitized voice of literature
based books
Browser based on laptop

Fee based

Human voice reading
of textbooks and
literature
Uses their own tools

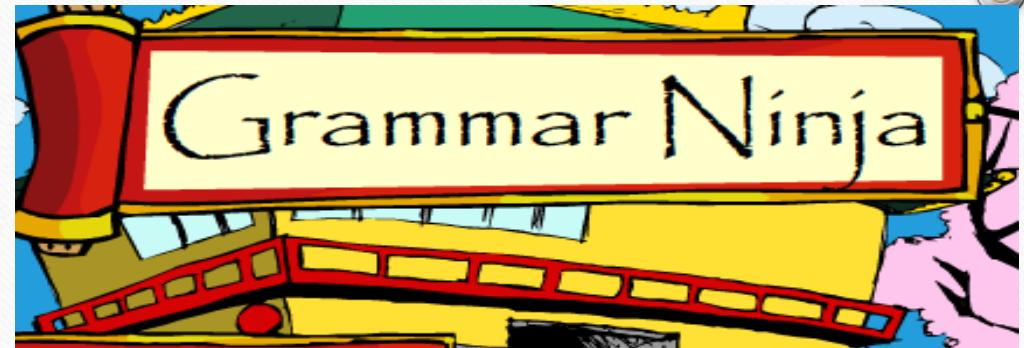
Reading: Decoding

Sound Literacy



lexia®





Grammar Practice



Grammar Wonderland
Primary and Elementary



Reading Accommodations



Writing Engagement



A screenshot of the "write about" mobile application. The interface is designed with a yellow and white sunburst background. At the top, there is a blue callout box containing the text "Simple navigation & accessibility". Below this, there are six circular icons arranged in a hexagonal pattern: "Search" (magnifying glass), "Categories" (book with a hand cursor), "Random" (two cards with exclamation and question marks), "My Write Abouts" (two overlapping documents), "Create a Prompt" (camera), and "Quick Write" (pencil). At the bottom, a banner with the text "Write About This" is flanked by two stylized flower icons. In the bottom left corner, there is a "Parents & Teachers" section with a gear and user icon. The overall design is colorful and child-friendly.



storybird

The "storybird" logo consists of the brand name in a black, lowercase, sans-serif font next to a small, stylized blue bird icon with a crown-like crest on its head.

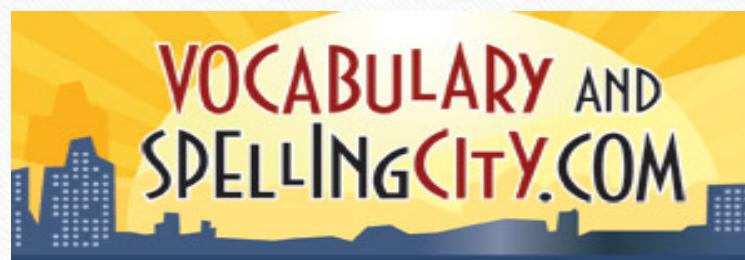
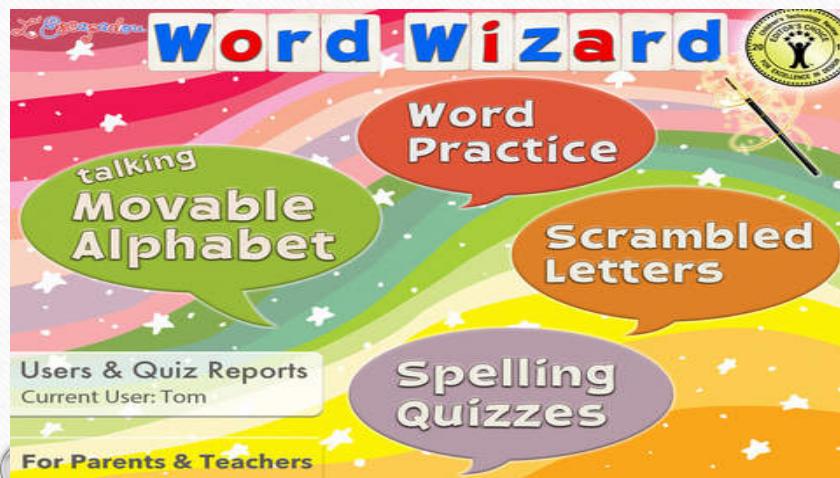
A screenshot of the Writable K12 platform. At the top, it shows the status "ATAT" with a signal strength icon, the time "2:10 PM", and battery level "90%". The main area displays a user profile for "CARLA C" with "Goal 4 of 4", "5 Submissions | 2 Reviews", and a green progress bar. Below this, there is a "CURRENT GOAL: Argumentative Essay" section with instructions and a "CLASS MESSAGE" encouraging good transitions. On the left, "Writer Stats" show a 100% completion rate with a "Completed" badge. On the right, "Editor Stats" show a 66% completion rate with a "Completed" badge. A "PEER UPVOTED YOUR COMMENT" message is also present. At the bottom, there are tabs for "My Writing Work", "My Editing Work", and "My Checklist Results", along with performance metrics for "WRITER" and "EDITOR".

Writable K12

<https://www.getwritable.com>



Spelling



Simplex Spelling Advanced

Co:Writer

In addition to the pyramids, people are also fascinated by the sphinx.

1: second
2: **sphinx**
3: sphinxes
4: still

The "Easy Create" Topic Dictionary button

The eWordBank

The Word Window

The screenshot shows the Co:Writer application window. On the left, there is a document containing a photograph of the Great Sphinx of Giza and some text. On the right, a sidebar titled "eWordBank" is open, showing a list of words related to ancient Egypt. The word "sphinx" is highlighted in the list, and a callout box with the number "2" indicates it is the second suggestion in the list. A line points from the text "The 'Easy Create' Topic Dictionary button" to the "CREATE" button in the sidebar header. Another line points from "The eWordBank" to the sidebar title. A third line points from "The Word Window" to the list of words in the sidebar.

Topic	Description
Ancient Egypt 1	Explains
Egypt	
Hieroglyphics	
Egyptian	
King Tutankhamen	
King Tut	
Sphinx	
Tomb	
Tutankhamen	
Desert	
God	
Godess	
Mummy	
Pharaoh	
Pyramids	
Museum	
Nile	
Nile River	
Cleopatra	



*mind*meister

Mind Mapping

Inspiration®
Maps™



The Popplet homepage features a central box titled "What is Popplet?" with a subtext "Popplet is a place for your ideas." Below this is a thumbnail of a mind map. To the right are four boxes: "Super Simple.", "Super Smart.", "Super Fun.", and "People love Popplet.". At the bottom are links for "Share Popplets and Collaborate in Realtime." and "Popplet for iOS...". The top right has "log in" and "sign up for free!" buttons.



Digital Storytelling

Adobe Spark
Video





BOOK CREATOR

iOS and now a Chrome extension

Teachers and students can create and share content in multiple means including text, video, voice, sounds, images, and drawings.

Readworks.org

ReadWorks.org

Find Content

Donate

About

Teaching Tips

Help / Feedback

Educator Log In

Keyword Search



All Topics

Social Studies

Science

Literary

Skills & Strategies

Special Collections

SUBTOPICS

- All
- U.S. History
- World History
- Civics & Government
- Geography & Societies
- Sports, Health & Safety
- School & Family Life
- Arts & Culture

GRADE

- K
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8

Reading Passages

[Clear all filters](#)

2,594 Items



Thanksgiving: Fact or Fiction

U.S. History

7th-8th

1460L

1,215 Words

Informational

[+ My List](#)



Native American Conflicts

U.S. History, Geography & Societies

9th-10th

1340L

554 Words

Informational

1 Q set

[+ My List](#)

Insert Learning

Activate Prior Knowledge
with Connections!

Chrome Extension
Developed by a HS & MS
Teacher
Syncs with Google Classroom
Sticky Notes feature includes
video



Insert
Learning



Google Apps and Extensions

- You need to have a google account.
- Once you are logged-in, you will be available from any location (school, home, work, public library, etc). You only need to download them once, and then are available upon sign in. Chrome apps & extensions work on any Mac or PC laptop/desktop, Chromebook, The Surface Pro, and Windows tablets. Please note: **These educational apps and extensions from the Chrome Web Store do NOT work on the iPad.**

- **Extensity** - puts all your extensions in a list and lets you turn them on and off - looks like a yin yang sign - good for AT professionals and students who have many apps and extensions downloaded for use.
- **Select and Speak**- text to speech (no word highlighting)
- **SpeakIt!** -  text to speech (no word highlighting)
- **Grammarly**:  Spell check and grammar check writing when communicating online. The free Spell Checker & Grammar Checker by Grammarly helps you write clearly and confidently on Gmail, Facebook, Twitter, Online applications for work or college, online forms, etc.

Bookshare Web Reader:

For Students with print disabilities, access to an extensive collection of digital books that can be read with text to speech directly in browser.

Awesome Screenshot:

Capture image from screen; annotate; save to Drive or Documents, Print

SnagIt by TechSmith:

Capture and annotate screenshots, record short screencasts for providing feedback with audio.

Microsoft Lens

Windows app (also available on Android) which takes a photo of text and reads it aloud for the user.

Notability –

A Powerful and simple note-taking app. \$9.99

Notability on the App Store X +

Apple Inc. (US) | https://itunes.apple.com/us/app/notability/id360...

App Store Preview

This app is only available on the App Store for iOS devices.



Notability 4+

Easy note-taking & annotation

Ginger Labs

#7 in Productivity

★★★★★ 1.3K Ratings

\$9.99 • Offers In-App Purchases

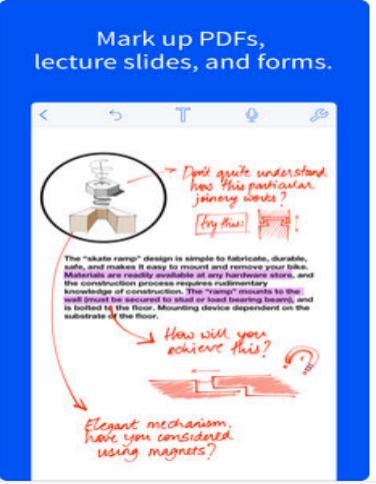
Screenshots [iPhone](#) [iPad](#)



Create memorable notes.

Bike Storage
Having arrived at a daily 5-6 bikes, we have undertaken an exploration of storage options that are aesthetically pleasing, cheap and convenient. Here are our findings.

29 in
40 in

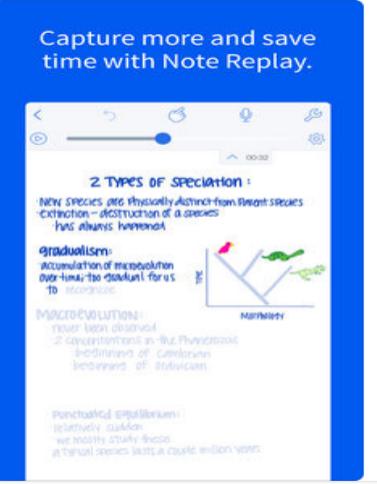


Mark up PDFs, lecture slides, and forms.

The "skate ramp" design is simple to fabricate, durable, safe, and makes it easy to mount and remove your bike. Materials are readily available at any hardware store, and the construction process requires minimal knowledge of construction. The "ramp" mounts to the top of the rear wheel, which is bolted to the frame, and is bolted to the floor. Mounting device dependent on the substrate of the floor.

How will you achieve this?

Elegant mechanism, have you considered using magnets?



Capture more and save time with Note Replay.

2 TYPES OF SPECIATION:
New species are physically distinct from parent species.
extinction - destruction of a species has always happened.

gradualism:
accumulation of microevolution over time - the resultant forces us to recognize.

MACROEVOLUTION:
never been observed
2 occurrences in the Phanerozoic
beginnings of Cambrian
budding off of individuals.

Punctuated equilibrium:
relatively sudden
we mostly study these
in fossil species lasts a couple million years.



Sync your notes with iCloud.

shot of the day:
Shot of the day:
We tested the camera rig after its over board. It had a beating heart and was still alive.

North Shore
MacBook Air

Description

Welcome to Notability: powerful, yet wonderfully simple note-taking and PDF annotation.

Fluency Tutor: (A) Assign reading passages based on lexile level. Students can listen aloud and then read while being recorded. Teachers can listen to the recorded reading/ passage and score the reading. Share the scored reading with team members (Scoring is part of a premium subscription, the remaining features are free).

Clicker Docs: type with word prediction and word banks, text to speech and accessibility features available.

Clicker Sentences: Writing/ typing with word banks and picture support. Text to speech and other accessibility features.

Sight Words: Practice Sight Words via digital/ audio flashcards.

Typing Club: Master touch Typing, Improve Speed and accuracy, free typing program.

iOS (Apple) Apps

Voice Dream Reader



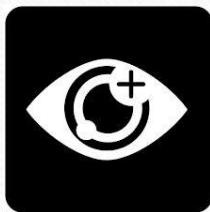
Text to Speech/ Audio with highlighting for Bookshare Books, docs pdf's from Google Drive or Dropbox, and the ability to edit docs. Get definitions, create highlights and sticky notes, and more.

Claro PDF



Annotate PDF's with text to speech, highlighting, photo to OCR accessible doc. type, handwrite

Better Vision



Magnifier for iPad, CCTV options

Keedogo Plus and
Keeble adaptive keyboard apps



Adaptive/ alternative on screen keyboards with color coding,
word prediction, switch access and more.



Sound Literacy



Uses the Orton Gillingham or Wilson reading Instruction in a mobile app

Pictello



Create Social Stories or Stories with photos and audio

Audiobooks



Listen to 5,533 classic audiobooks totally FREE on your iPhone or iPad.

HideOut



Hideout teaches children how to read through a series of fun activities that emphasize letter-sound association and word repetition

There are many more....

- Need to look at what the learner needs and feature match the AT
- Many AT solutions are now common on Iphone, Ipad, Tablets, Smartphones
- Study skills, notetaking devices, vision, hearing, mobility, academic areas (math, science) are areas of AT not addressed in this presentation.
- Hope this helps identify some solutions for working with students with learning disabilities.

-
- Contact Information:
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