Integrating assistive technology and accessibility in your programs

TECH OWL

TECHNOLOGY FOR OUR WHOLE LIVES

Institute on Disabilities at Temple University

Access check

Image descriptions
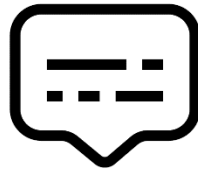
Captions

Be yourself

Other accommodations

Heads up

- There is a ton of information in these slides and it's still just the tip of the iceberg

- We may have to skip a few things depending on timing but we will send out the slides after

- We are happy to answer any questions or share more resources via email or social media

Presenters

Alanna Raffel, OTD, OTR/L
Occupational Therapist
AT Specialist
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Tom DiAgostino, MA, MBA
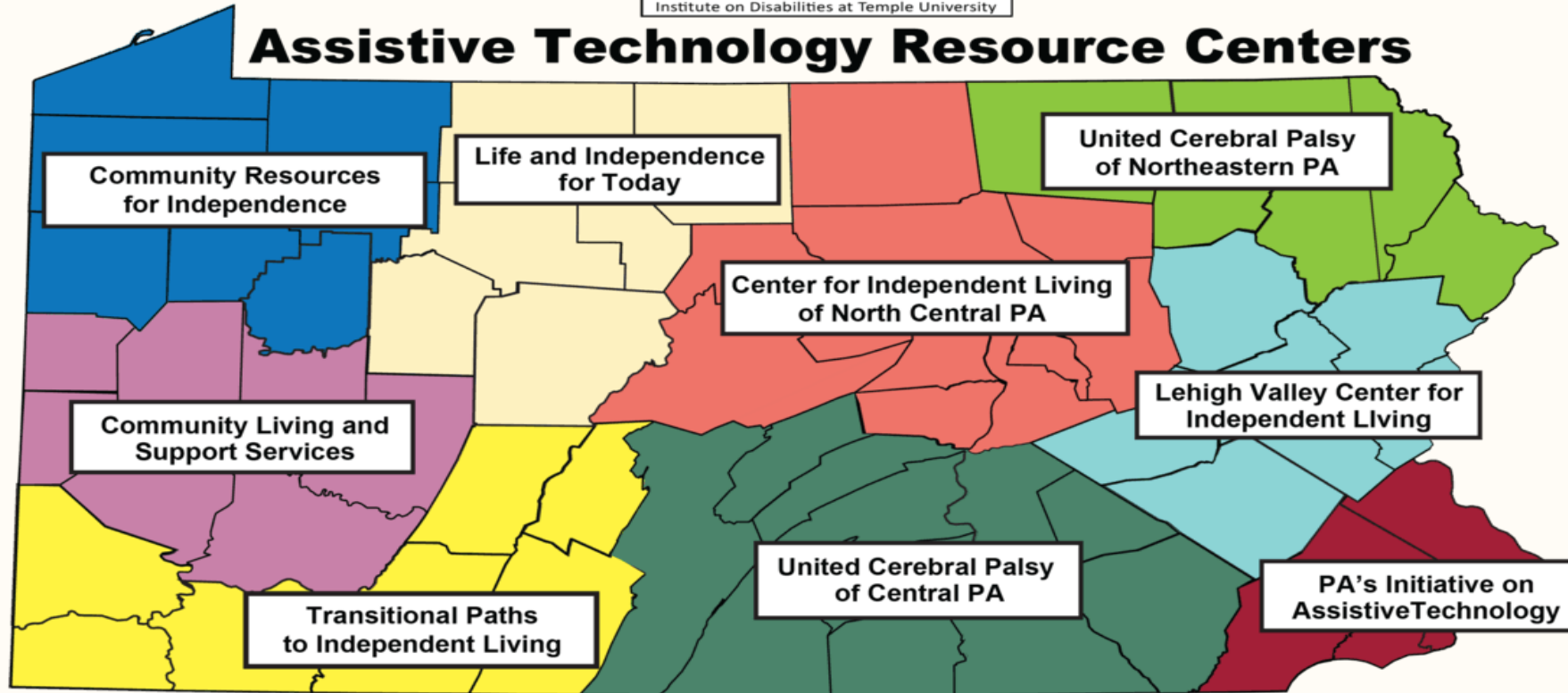Senior AT Program Coordinator
ThomasD@temple.edu

About us

- Technology for **O**ur **W**hole **L**ives

- We are the state assistive technology act program for the state of Pennsylvania.
  - Find your state program at AT3center.net/stateprogram

- Based at the Institute on Disabilities at Temple University.

More about TechOWL

- We are a federal and state funded non-profit organization.

- We view disability through social and holistic models.

- We believe in a user-centered experience.

- We educate, inform, and empower Pennsylvanians about assistive technology.

TechOWLpa.org

Assistive Technology Resource Centers

TECH OWL
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Community Resources for Independence

Life and Independence for Today

United Cerebral Palsy of Northeastern PA

Center for Independent Living of North Central PA

Lehigh Valley Center for Independent LIving

Community Living and Support Services

United Cerebral Palsy of Central PA

PA's Initiative on AssistiveTechnology

Transitional Paths to Independent Living

PA's Initiative on Assistive Technology, Institute on Disabilities at Temple University (Philadelphia)

- **Community Resources for Independence** (Erie)
- **Community Living and Support Services** (Pittsburgh)
- **Life and Independence for Today** (St. Marys)
- **United Cerebral Palsy of Central PA** (Camp Hill)
- **Lehigh Valley Center for Independent Living** (Allentown)
- **Center for Independent Living of North Central PA** (Williamsport)
- **United Cerebral Palsy of Northeastern PA** (Scranton)
- **Transitional Paths to Independent Living** (Washington)

as of 10/2018

Assistive Technology Lending Library

- Free for Pennsylvanians

- Loans are 5-9 weeks long (extensions available)

- Optional problem-solving and demonstration available

www.techowlpa.org/library/
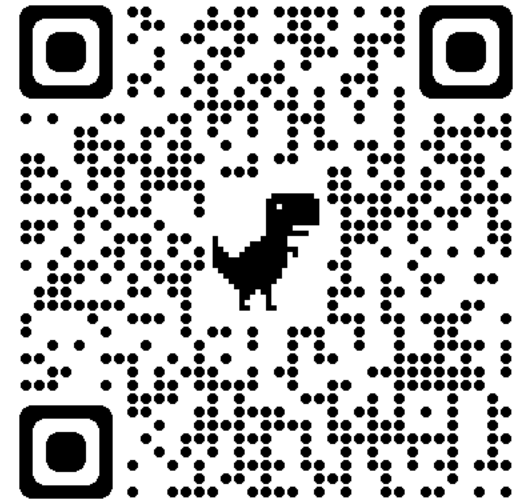
What is assistive technology?

Any item, piece of equipment, or product system, whether acquired commercially, modified, or customized, that is used to increase, maintain, or improve the functional capacities of individuals with disabilities.

Basically: Tools that make life easier, safer, or more independent!
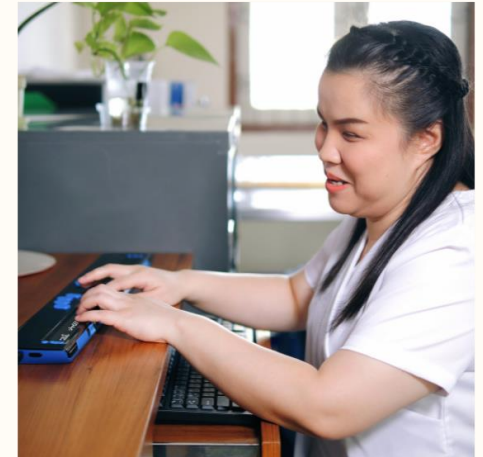
Considering assistive technology

- What do you want or need to do? *Think about functional need versus diagnosis.*

- What routines and activities are working? Which ones are not?

Is this assistive technology?

Is this assistive technology?

Is this assistive technology?

AT Continuum: Art Making

Accessibility

What is accessibility?

- Accessibility is the practice of making information, activities, and/or environments sensible, meaningful, and usable for as many people as possible

https://www.seewritehear.com/learn/what-is-accessibility/#:~:text=Accessibility%20is%20the%20practice%20of,%E2%80%9Caccessible%20entrance%E2%80%9D%20to%20buildings.

Why is accessibility important?

Legal

- Disability Rights Laws
  - ADA
  - Section 508
- Web Accessibility Standards
- Education Laws
  - IDEA
  - Section 504
- Equitable Access

Ethical

- Inclusivity and equity
- Diversity and respect
- Social responsibility
- Accessibility helps everyone

The "Curb Cut Effect"

- The curb cut effect is the phenomenon of disability-friendly features being used and appreciated by a larger group than the people they were designed for.

What are examples of accessible environments that you have seen before?

COGNITIVE   VISUAL   AUDITORY   MOTOR   SPEECH

TechOWLpa.org

Universal Design

7 Principles of Universal Design

Equitable use
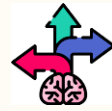
Flexibility in use

Simple and intuitive use

Perceptible information
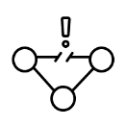
Tolerance for error

Low Physical Effort

Size and space for approach and use

Equitable use

- Classroom environments
  - Adjustable tables
  - Accessible buildings
  - Accessible bathrooms

Flexibility in use

- Course materials
  - Accessible PDFs
  - Audiobooks
  - Access to slides and speakers notes
  - Multiple methods of evaluation

Simple and intuitive use

- Course design is simple and consistent

- Classroom space is well labeled and organized

- Eliminate unnecessary complexity

Perceptible information

- Necessary information is communicated effectively, regardless of ambient conditions or the user's sensory abilities.

- Multiple methods to access course content
  - Syllabus
  - Descriptions
  - Access to materials
  - Online platform
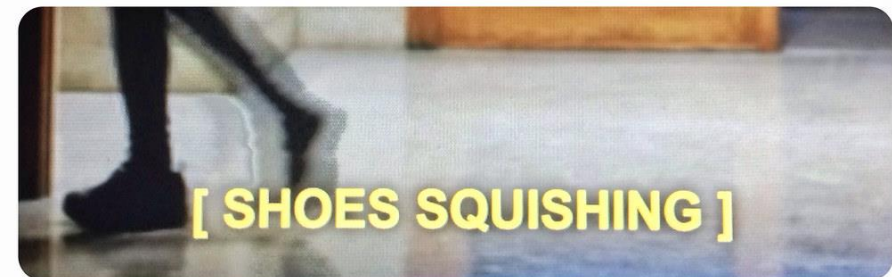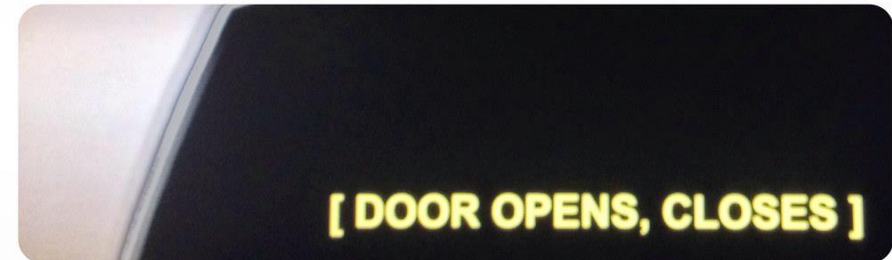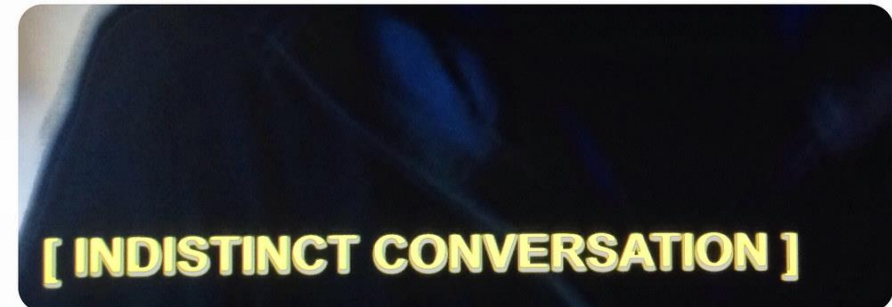
Tolerance for error

- Minimize potential errors

- Provide frequent feedback

- Anticipate learning pace and pre-requisite skills

- Be flexible when mistakes occur
  - Allow students multiple chances on quizzes

Low Physical effort

- Ensure buildings have accessible entrances

Size and space for approach and use

- Ensure facilities allow for approach, reach, manipulation, and use, regardless of the user's body size, posture, or mobility.

What accessibility challenges have you encountered? How have you solved them?

Assistive technology and built-in accessibility

Mobility

Mobility tools

- Tap Strap Keyboard
- Keyboard with keyguard
- Guided Hands
- Gyroscopic head mouse
- TiPY one handed keyboard
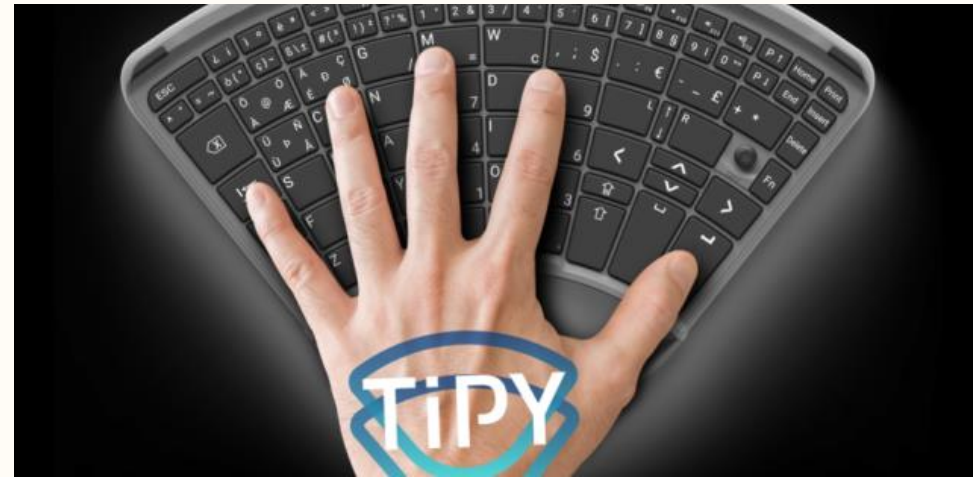
Voice Control (iPad and iPhone)

- Examples
  - "Open Control Center"
  - "Go home"
  - "Tap *item name*"
  - "Open *app name*"
  - "Take screenshot"
  - "Turn up volume"
  - Customize commands

"show names"

"show grid"

Dictation

- Tap the microphone and dictate text

- Dictate punctuation ("exclamation point") and emojis ("heart emoji")
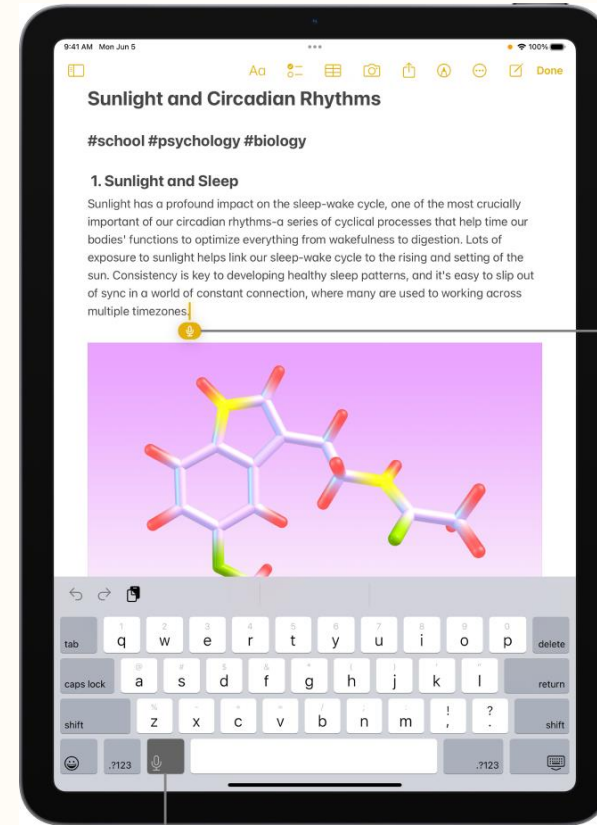
Start to speak when this symbol appears.

Tap to turn Dictation on and off.

External keyboard

- May make typing easier than on screen keyboard for some people

Touch accommodations (iPad and iPhone)

- Might benefit someone with tremors or difficulty with dexterity
  - Respond to touches of a certain duration
  - Prevent unintended swipe gesture
  - Treat multiple touches as a single touch
  - Respond to the first or last place you touch

Sticky Keys (Mac and PC)

- Press a set of modifier keys one at a time in sequence, instead of all at once.

- For example, enter the key combination Option-Command-F5 by pressing each key in sequence.
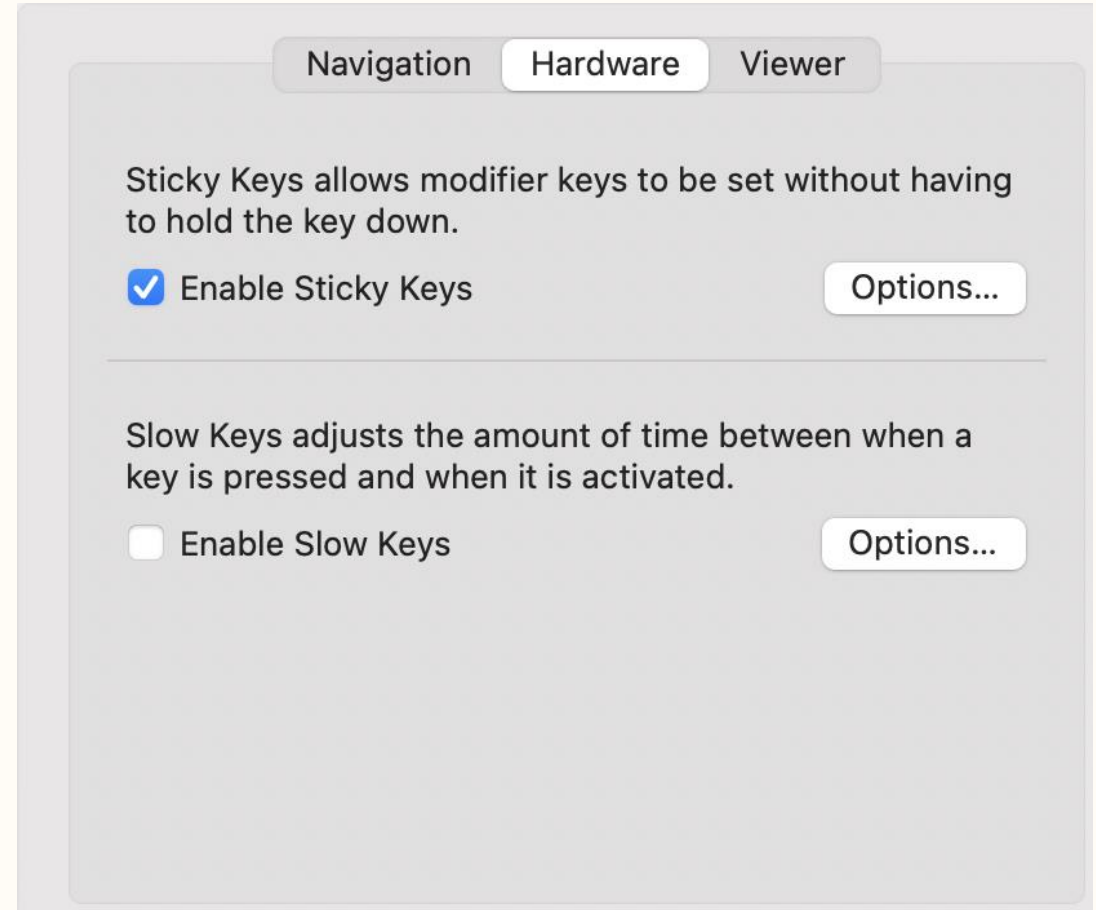
Slow Keys (Mac and PC)

- Adjusts the delay between when you press a key and when it's activated.

- Prevents keystrokes from registering until a key has been held down for a certain time.

- Useful for people with motor impairments that make it difficult to target keys accurately or that cause unpredictable motion.
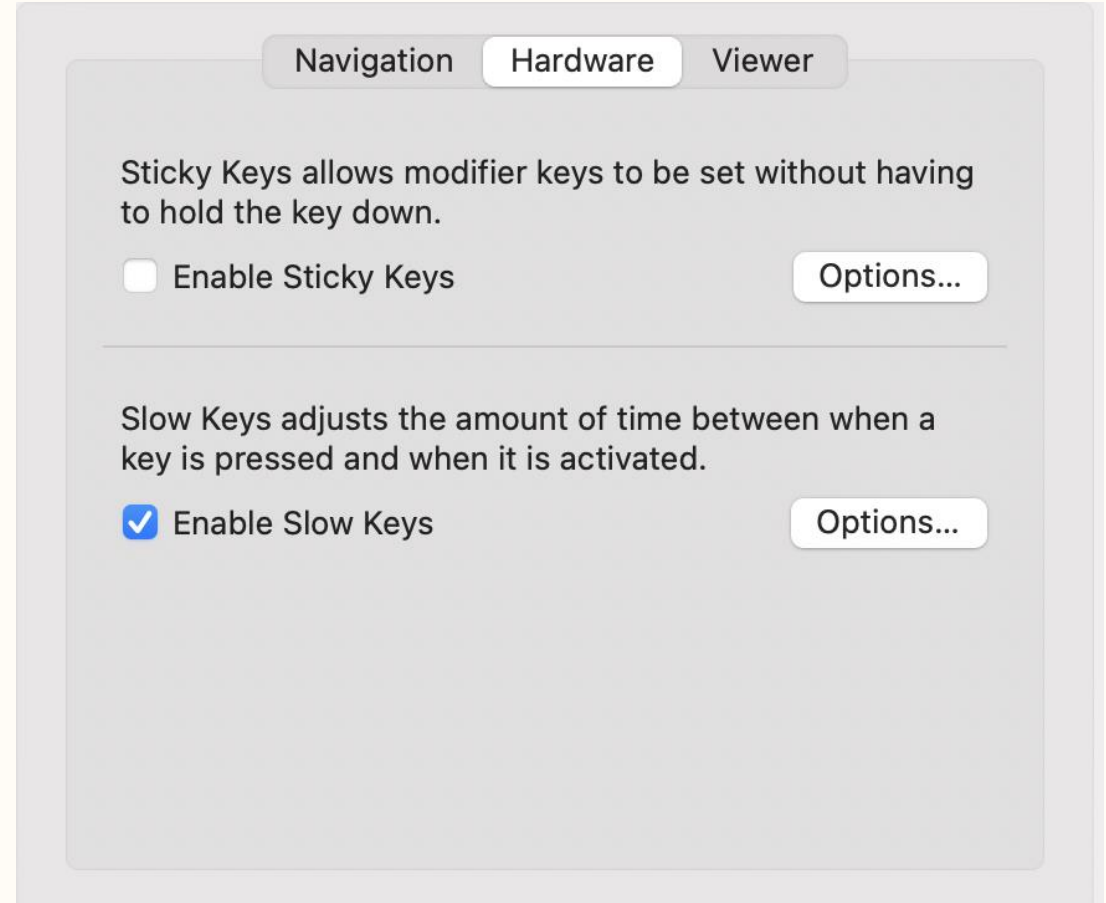
Hearing

Hearing tools

- Pocket Talker
- BeHear personal amplifier
- Contego listening system
- Bone conduction headphones

Live captions (iPad and iPhone)

- Spoken dialogue is turned into text and displayed in real time on your iPad screen
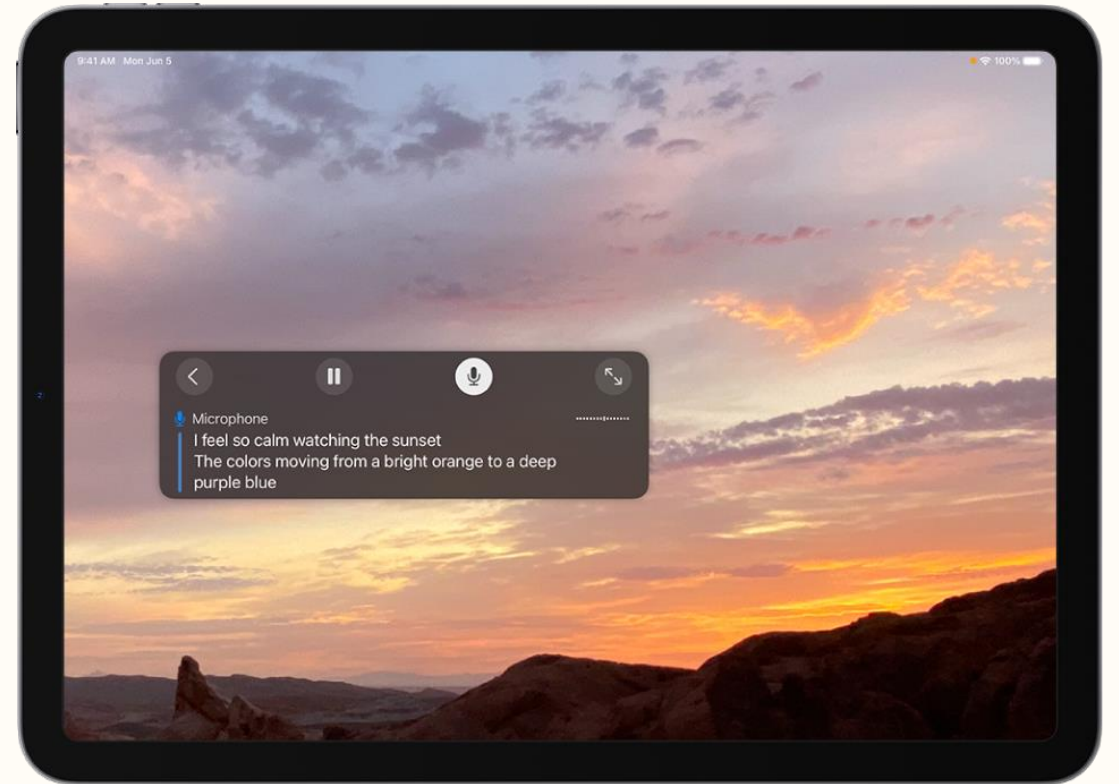
Live Listen (iPad and iPhone)

- Stream sound from the microphone on iPad to AirPods by placing your device in front of the person that you want to hear
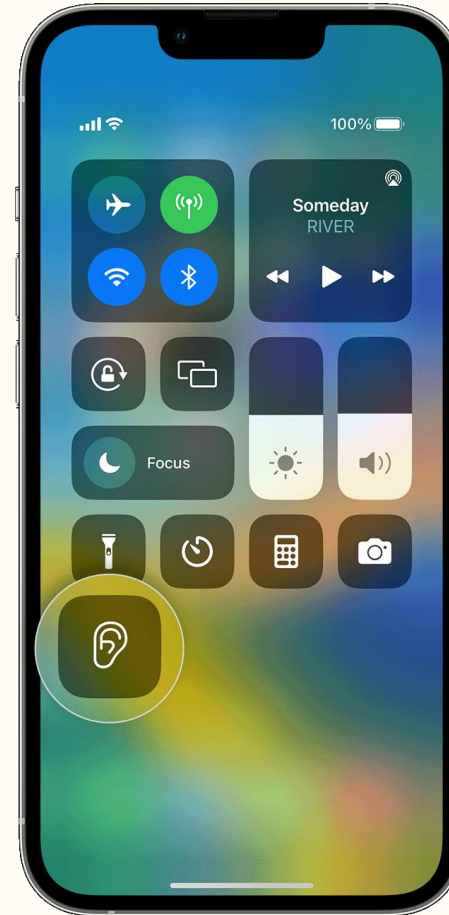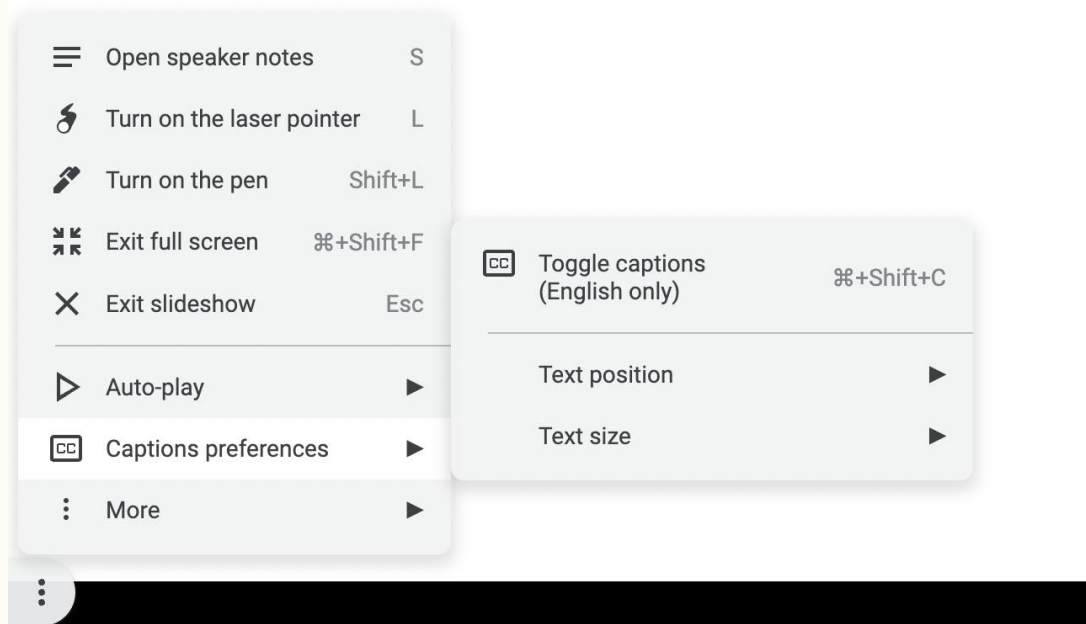
Captions on PowerPoint

- In "slide show" tab, toggle on subtitles and click subtitle settings to change language and position.
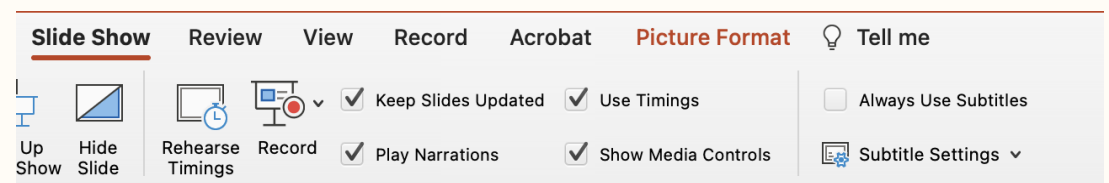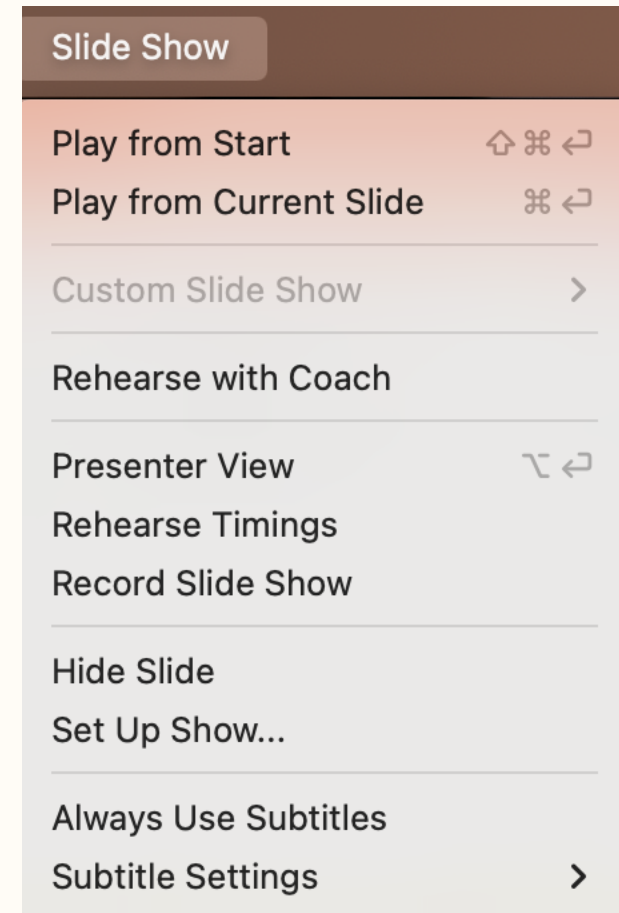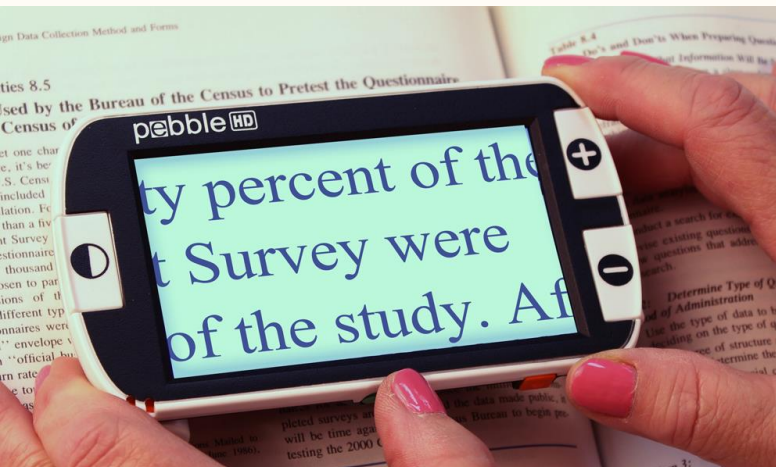
Captions on Google Slides

- In presentation mode, click the three dots at the bottom left of the screen.
- Toggle on captions and change text size and position as needed.
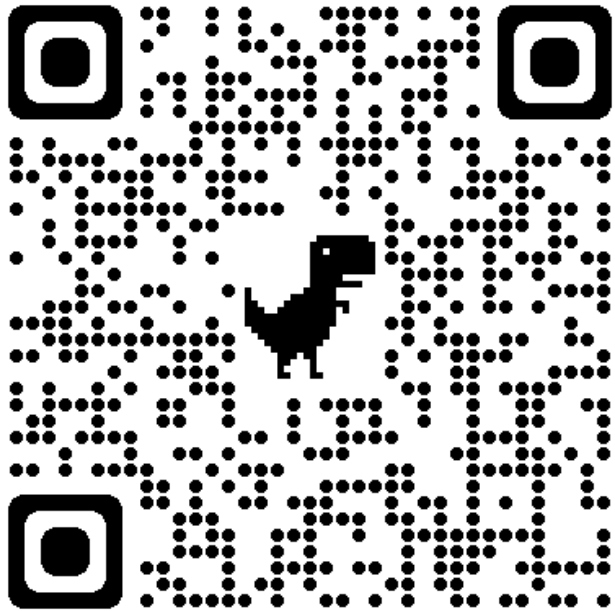
Vision
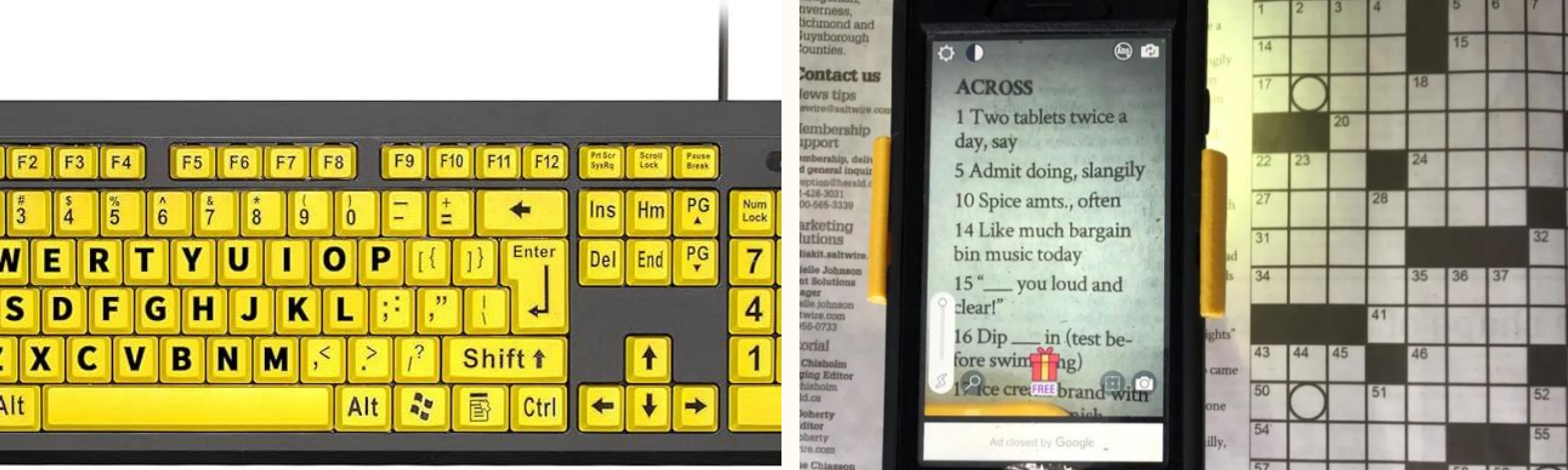
Vision tools

- High contrast keyboard
- Video magnifier
- OrCam MyEye
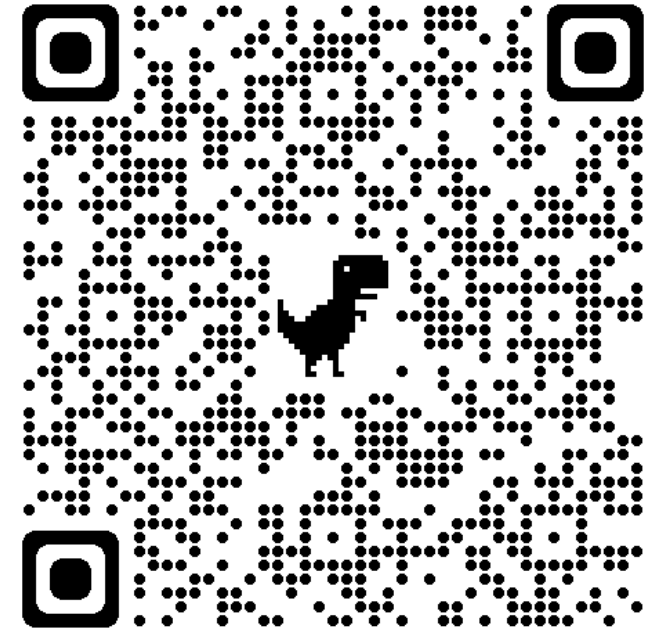- 3D printed magnification stand
- Braille labeler
- Envision glasses
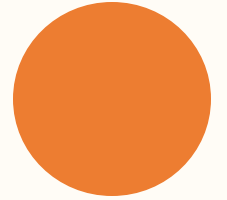
Microsoft Seeing AI

Try Seeing AI

Seeing AI for iPhone

Envision AI for Android

Aira.io

- Free 5-minute calls
- Helps with navigation to classroom
- Contracted and trained professionals
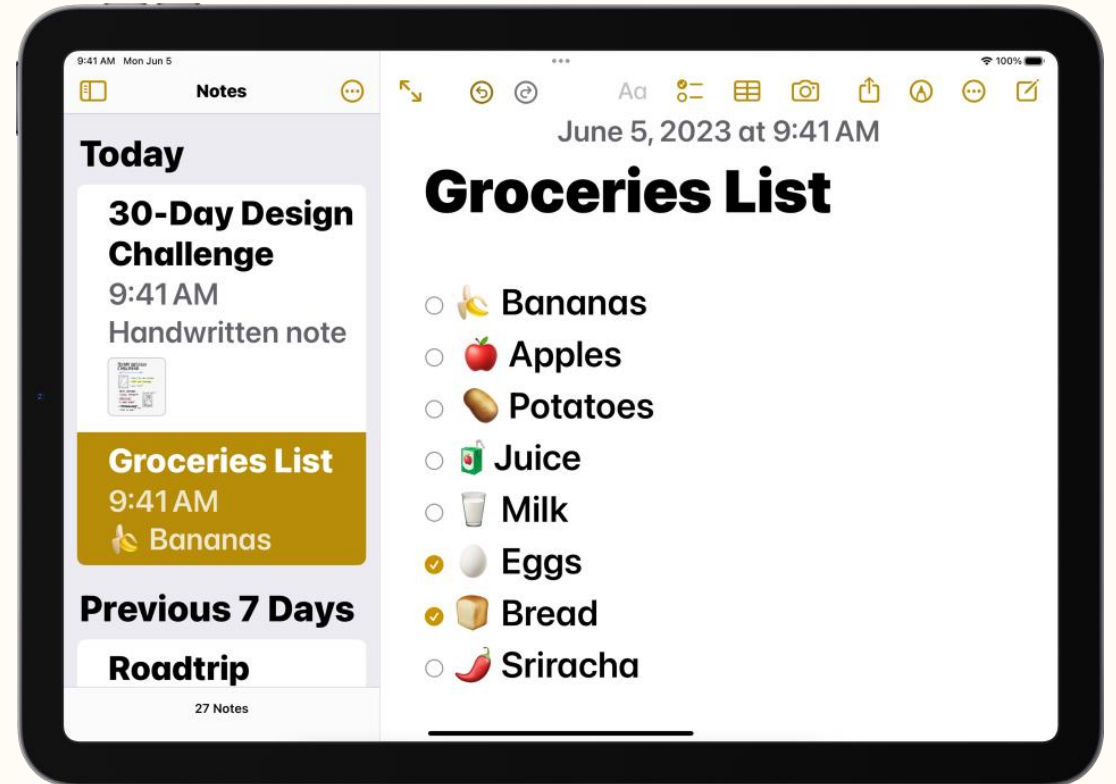- Secure and safe

Change colors (iPad and iPhone)

- Invert colors

- Filter colors to adjust hues
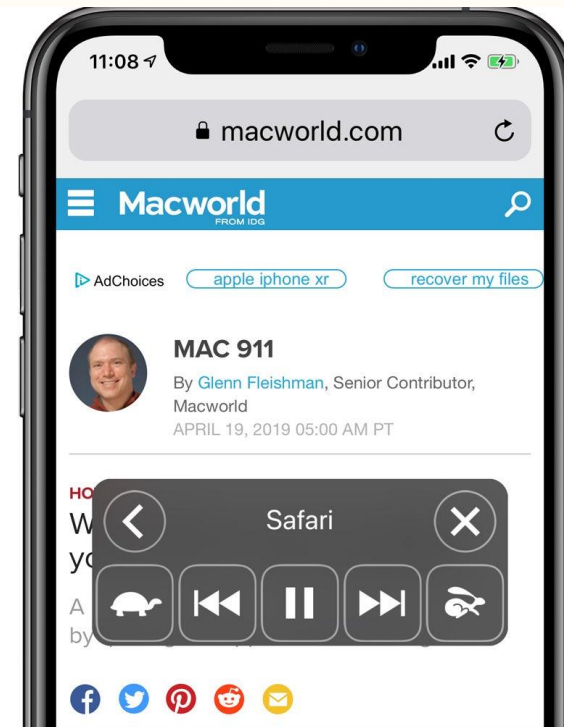
- Make transparent items solid

Smart invert

Read text more easily (iPad and iPhone)

- Zoom
- Legibility
  - Change weight, size, and darkness of text
- Magnifier
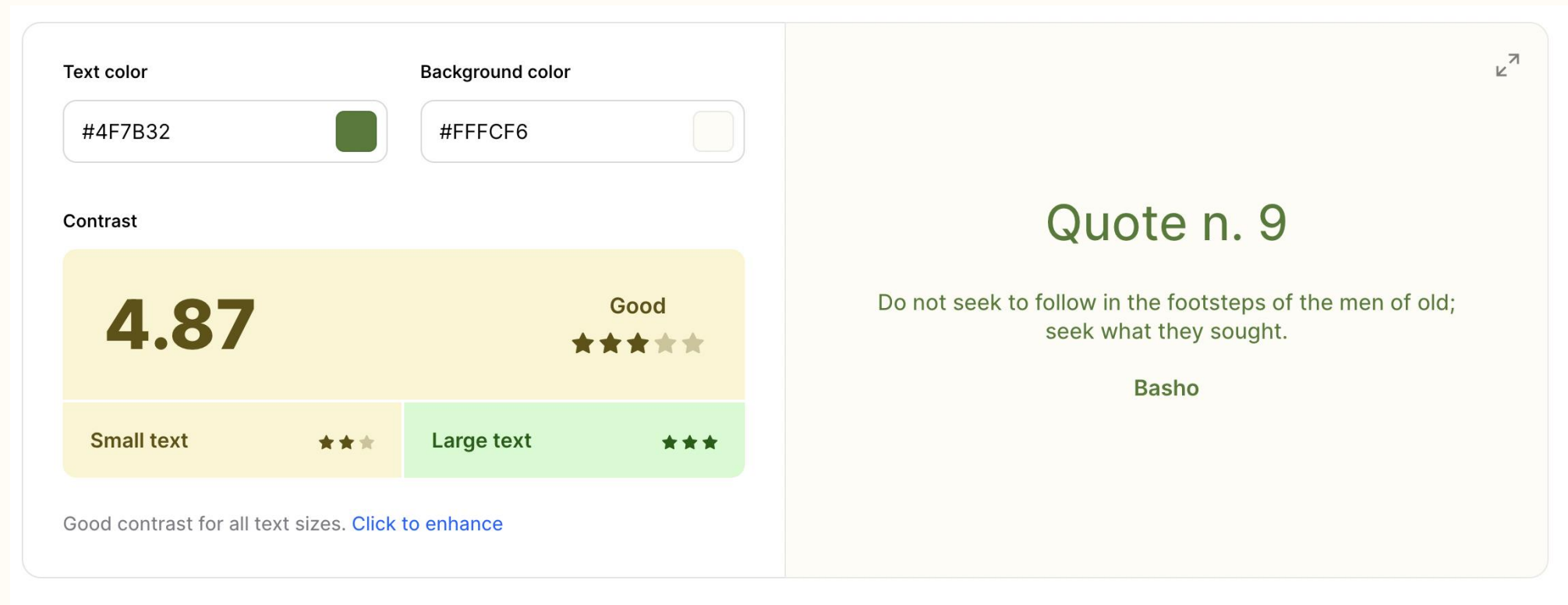 - Use iPad as a magnification device

Hear what's onscreen (iPad and iPhone)

- [Spoken content](#)
  - Speak selection: select what you want spoken
  - Speak screen: have iPad read everything onscreen
  - Typing feedback: Have iPad speak each character, entire words, autocorrections, autocapitalizations, and typing predictions.

Consider color contrast

- https://webaim.org/resources/contrastchecker/

Cognition

Use plain language

- https://hemingwayapp.com/

TechOWL has many programs that can help you get assistive technology. Please check out our services to learn more.

Hemingway *Editor*

Readability

Grade 7
Good

Reading time: **00:00:04**
Letters: **94**
Characters: **114**
Words: **19**
Sentences: **2**
Paragraphs: **1**
Show Less ▲

0 adverbs. Well done.

0 uses of passive voice. Nice work.

0 phrases have simpler alternatives.

0 of 2 sentences are hard to read.

0 of 2 sentences are very hard to read.

Assistive Access (iPad)

- Choose and customize apps and layout on the home screen

Other TechOWL programs

Free special phone program

- Serves residents who have:
  - Disability (hearing, vision, cognitive, or physical) which makes it difficult to use a typical phone, AND
  - Income below 200% of the federal poverty level (eg $27,180 for a single person)
- Applicant is responsible for phone service
- Apply online at https://techowlpa.org/tddp/ or ask for an application to be mailed to you

https://techowlpa.org/tddp/

Connect with Tech program

- Free Tablet, headphones, and stylus pen
- You may qualify if you experience any of the following:
  - Have limited income
  - Have a disability
  - Speak a primary language other than English
  - Unable to leave your home easily
  - Don't have housing
  - Are LGBTQIA+
  - Experience racial or ethnic inequities
  - Are Hispanic or Latinx
  - Live in a place with limited health care
  - Are impacted by medical discrimination

Application QR Code

Tablet

Headphones

Stylus pen

https://techowlpa.org/connect-with-tech/

Follow along and learn more

Impact of awareness:

- More people pursuing tools
  - Increased availability & affordability
  - Less stigma = greater chance of adaptation & ongoing use of AT

@TechOWLPA

Assistive Technology Discord server

Join here:
Bit.ly/AssistiveTechDiscord

CreATe Together

- Fabrication & 3D printing
- Maker Catalog: request free 3D printed items

Contact Information

- Monday - Friday 8:30 am - 4:30 pm
  - Phone - 800.204.7428
  - Email - TechOWL@temple.edu
  - Chat with the icon on the bottom right corner of your screen
  - English, Spanish

Questions and survey

Bit.ly/TechOWLsurvey

Presentation: AT Essentials
Presenter: Alanna & Tom