A Deeper Dive: Assistive Technology for Access

Objectives

Participants will be able to:

- Define ways that Assistive Technology can be used in a school environment.
- List the benefits for students who use assistive technology in their classrooms.
- Gather resources ideas and information to share.

Lizzy In Her Classroom

Lizzy, is a student who uses AT daily to actively participate along with her peers in her social studies class. The teacher projects a question on the Smartboard. One member from each table writes the question down. Lizzy takes snapshot of the question and becomes secretary for her group using both her word prediction and speech to text applications. The group then sends their responses to be displayed on Smartboard.

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Why We Need Assistive Technology

- Assistive technology increases a student's opportunities for:
  - education
  - social interactions
  - potential meaningful employment

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Assistive Technology In Schools

- Assistive Technology used in school empowers *all* students and encourages academic success:
  - increases a *student's* self-reliance.
  - working independently.
  - keep up with their peers.

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Where Assistive Technology Comes In

- Assistive technology supports students by:
  - delivering information to students in a way that is more appropriate to their needs.
  - changing the way, not the content, a student can interact with the curriculum and their environment.

  The use of assistive technology should not <u>replace</u> instruction in the basic skills but should be used ***in addition*** to instruction.

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When Assistive Technology Is Absent

- A student in a classroom without Assistive Technology
  - may struggle to keep up with the rest of their class
  - may be dependent on others to help
  - may not be able to access the curriculum

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Technology Accessed By Using AT

- Technology is commonly used in the classroom by all students.
- Some students would otherwise not be able to access technology without the use of such devices as:
  - tablets, laptops,
  - adaptive keyboards
  - adaptive mouse
  - switches
  - voice recognition software

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Types Of AT Used To Access Curriculum

Low tech
- highlighter
- post it notes

Medium
- adaptive seating
- screen magnifier

High Tech
- tablets
- apps

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AT Helps <u>All</u> Students Access Curriculum
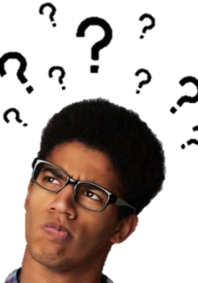
- Students tend to:
  - read longer
  - write longer
  - show a great improvement in spelling when they have access to AT
- Students without learning disabilities learn more effectively using such tools as text-to-speech and speech-to-text.

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Make the Decision

- May not work for everyone's needs
- Not one-size fits all
- Number of helpful tools to increase accessibility in the classroom
    - As we explore:
        - Consider the value
        - What features are helpful
        - Where can it improve
        - Creative ways to improve outside of reading comprehension

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English Language Arts (ELA)

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ELA And Assistive Technology

Reading *requires many* different processes:

- decoding words and knowing what the words mean

- understanding words in a sentence and making connections between them.

- comprehending what has been read

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Reading With AT

Devices such as [Google](#) Chromebooks come with:

- audiovisual assistance
- magnifiers
- high contrast modes
- built-in screen reader (ChromeVox), which read content verbally for users

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Reading With AT

Assistive technology tools that can help a student with reading:

- The use of pictures or symbols with text
- Audible books
- Talking electronic devices
- Software that can read the words

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What is News ELA?

- Students
  - Provides access to current events and reading articles
  - Choose a language level
  - Read aloud
  - Explore article sets

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What is News ELA?

- Teachers
  - Assign specific articles
  - Read and monitor post article writing prompts
  - Lock language levels for multiple classes

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Let's Look Under the Hood....

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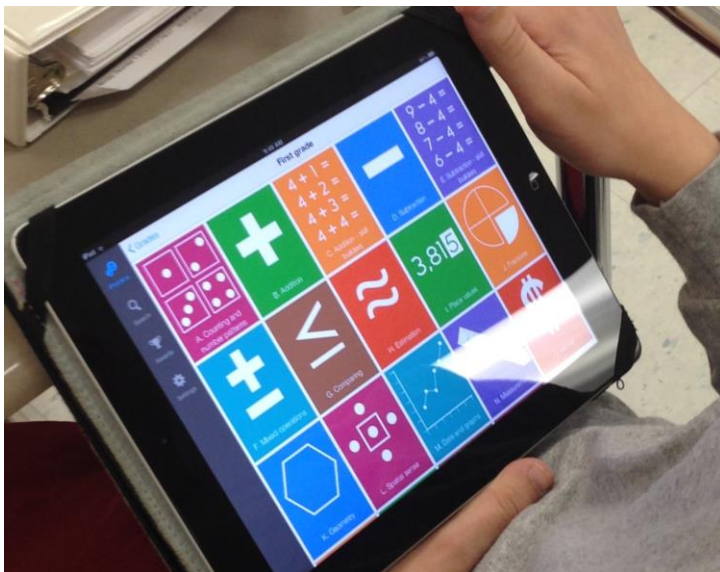
Math

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Math And Assistive Technology

- Building math skills has lifelong implications for students but prerequisite skills can easily be overlooked.
- Math requires reading and abstract thinking.
- Daily basic life tasks such as
    - saving money
    - creating a budget
    - measuring can be difficult for people without some basic math skills.

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Math And Assistive Technology

- AT can support students who might have difficulties:
  - visualizing/verbalizing math problems
  - calculating
  - estimation
  - problem solving
  - organization
- AT allows teachers to provide instruction in a variety of ways.

Manipulatives (Low Tech AT)

- help students understand abstract concepts and fractions in math.

- blocks, rods, sticks, dominos, and/or bean bags are some examples of manipulatives
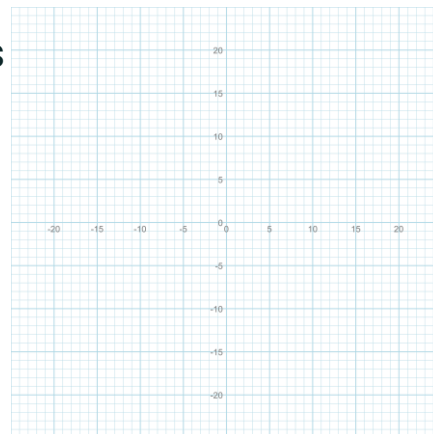
More Examples Of Basic AT

- Graph paper has a grid that makes it easier to line up numbers and symbols in math problems.
- Highlighters can keep a student focused on task or highlight actions within a math word problem.
  - John has 3 times as many apples as Sally. In total there are 15 apples. How many apples does Sally have?
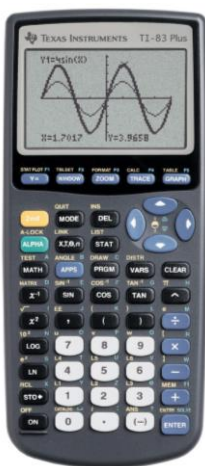
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Calculators

- A graphing calculator
  - Can verify graph shapes and help solve algebraic equations.
- A talking calculator
- Calculators with larger numbers or colored numbers
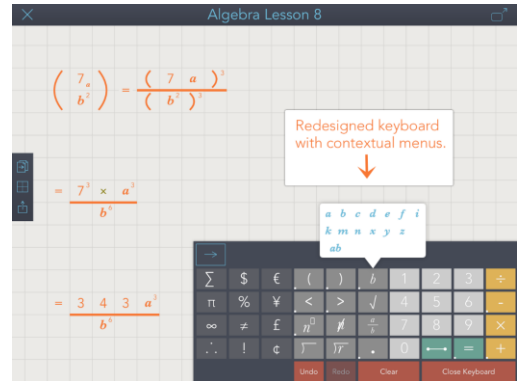- A regular calculator!

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Modmath

Designed for:
- Addition and Subtraction
- Fractions
- Algebraic equations (variables)
- Helps keep numbers in columns
- Stops the struggle of writing down math problems.
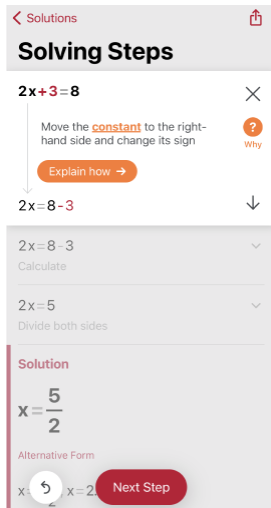- Turns the touch screen into graph paper.

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Photomath

- An app to learn elementary, high school and college math.
- Gives step by step explanations for every math problem.
- Allows you to practice math problems at your own pace.
- Checks homework
- Can study for upcoming quizzes and tests.

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Photomath Can Be Used For....

Geometry	**Algebra 1**	**Algebra 2**

Calculus	**Statistics**

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Mathtype

Helpful in creating math equations especially with symbols.

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Schoolkit Math
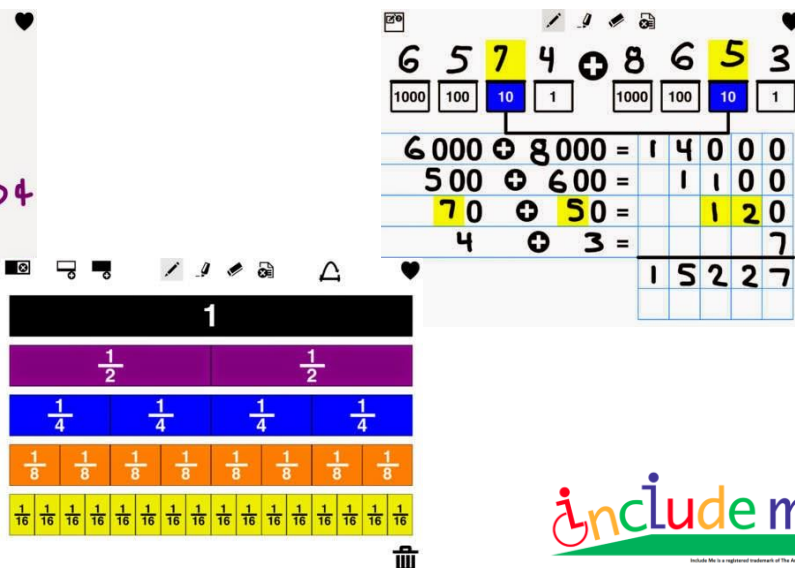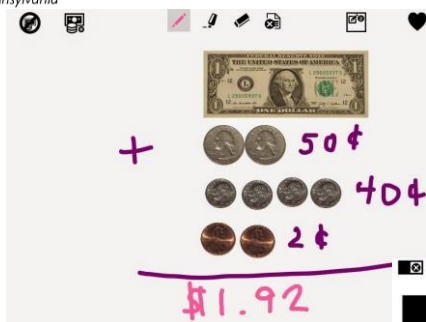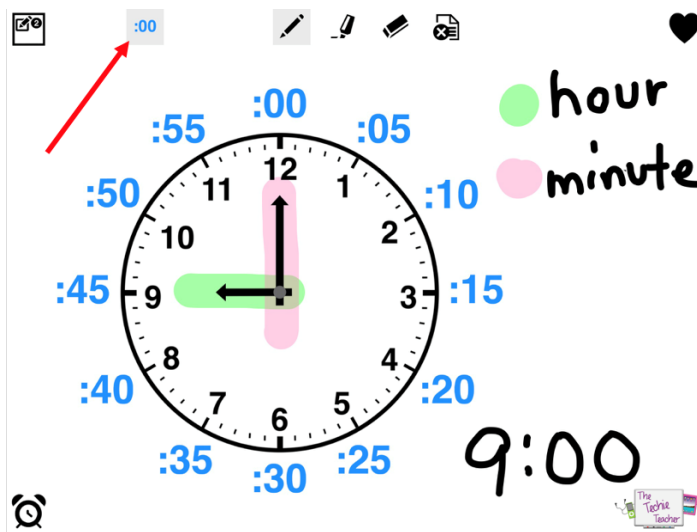
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Using AT in Math

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Resources

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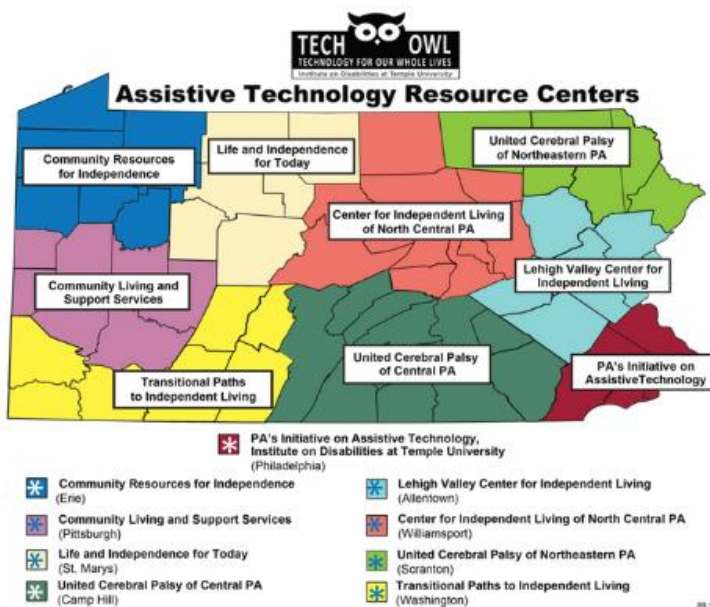
Assistive Technology Resource Centers

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Resources

- What is TechOWL?
  - Lending program
  - One on one demonstrations on devices
  - Funding devices
  - Communication services and personalized services for deaf/blind learners.
  - Lists of apps for assistance in these categories

techOWL
TECHNOLOGY | our whole lives
Institute on Disabilities at Temple University

include me

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Resources

- What is PATF?
  - Pennsylvania Assistive Technology Foundation
  - PA's designated Alternative Financing Program (AFP)
  - Information and assistance about
    - Assistive Technology
    - Funding resources
    - Vendors

include me

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Questions?

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Contact Us

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