



Assistive Technology to Support All Learners

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Assistive Technology

- AT can be many things! According to state and federal law, Assistive Technology is:

Any item, piece of equipment, or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve the functional capabilities of a child with a disability (IDEA, 2004).

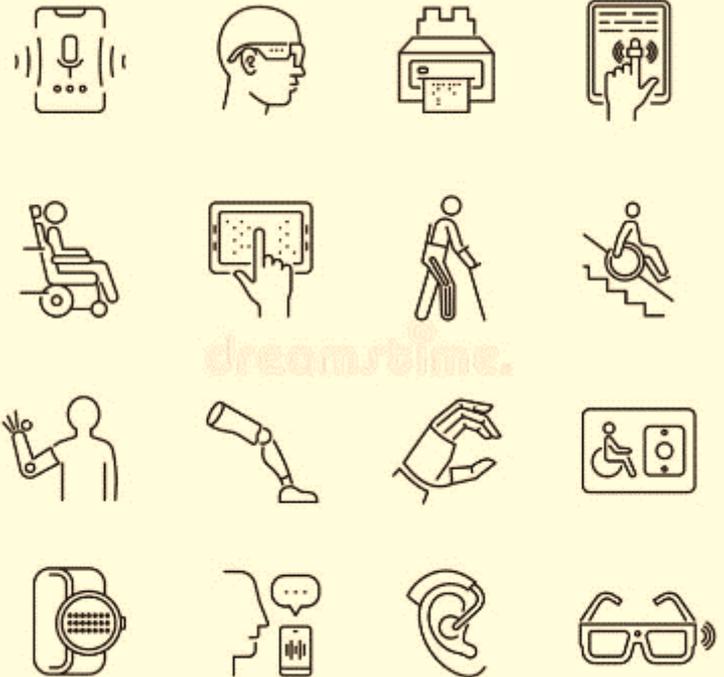
Covers a broad range of devices, software, apps, and strategies that vary from no tech to high tech.

Assistive Technology

- AT is used in school to remove barriers to students in accessing the curriculum.
- AT can be:
 - **No-tech AT:** Simple, non-electronic solutions (e.g., pencil grips, picture communication displays).
 - **Low-tech AT:** Simple electronic devices (e.g., portable word processor, talking calculator).

Assistive Technology

- **High-tech AT:**
More advanced, specialized devices (e.g., speech generating devices, braille note-taker or printer OR computerized devices equipped with specialized software/apps.



Technology Can Support All Learners

- In addition to supporting students with specific disabilities:
 - Text-to-speech software:
 - Allows students to identify errors made while writing.
 - Can help all students (e.g., EL students, young students) more easily access printed content more effectively.
 - Speech-to-text software:
 - Can also be used by all students to create text through dictation.

Universal Design



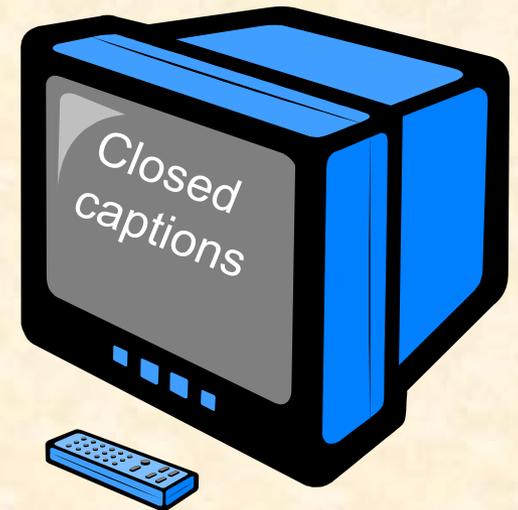
Automatic opening doors



Text messaging on cell phones

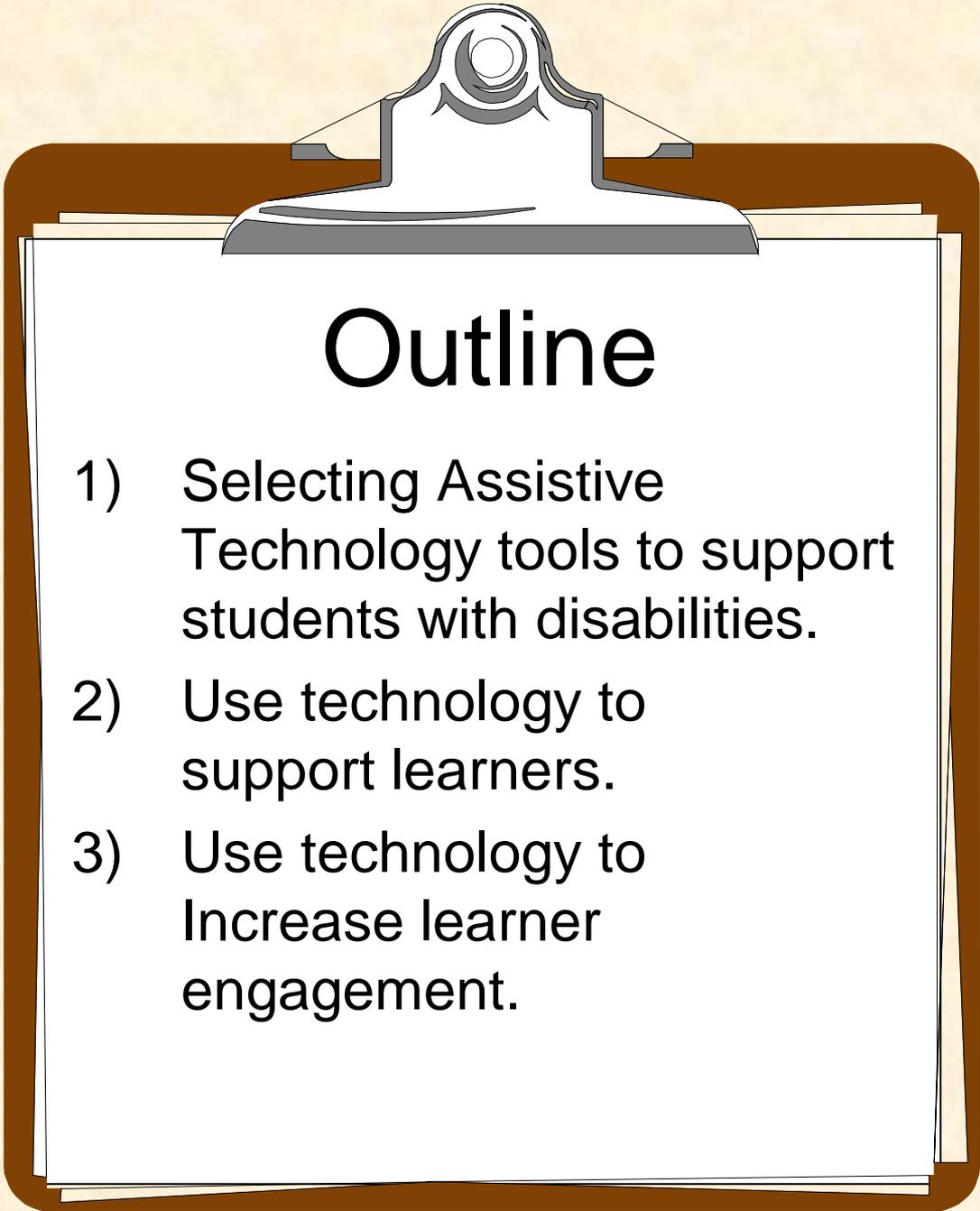


Curb cuts in sidewalks



My Thesis

- Universal Design in Learning (UDL) implies using a diverse set of technology tools, assignments, and assessments to support all learners.
- This researcher contends that **good teaching** should include technology and techniques that benefit all students, regardless of ability, disability, or differing ability.



Outline

- 1) Selecting Assistive Technology tools to support students with disabilities.
- 2) Use technology to support learners.
- 3) Use technology to Increase learner engagement.

Selecting Assistive Technology Tools to Support Students with Disabilities

Selecting Assistive Technology

1. For students with disabilities, consider the needs of the students first, THEN select appropriate AT tools.



Ensure you are not having the tail wag the proverbial dog.

2. Consider how using these technology tools and techniques can support all learners.

SETT Framework

- When selecting appropriate AT tools for students, there are many variables that must be considered. The SETT framework encourages teachers to examine ecological variables in a systematic way (Zabala, 2005).

SETT Framework

- **Student:** What are the student's cognitive strengths and weaknesses?
- **Environment:** What are the instructional and physical arrangements?
- **Tasks:** What activities are required to be an active learner in this environment?

THEN:

- **Tools:** Identify technology that can enable the student to actively engage in the tasks in the environment.

PaTTAN Short-term AT Loan

- What: Provides LEAs with devices to assess the assistive technology needs of students with disabilities.
- Who: PA educators who are employed or contracted by an intermediate unit, school district, charter school, approved private school, or state early intervention program.
- Details: May borrow AT kits for a six-week loan period. Shipped at no cost to borrower.

PaTTAN Short-term AT Loan

- AT kit categories include:
 - Augmentative and alternative communication.
 - Blindness/visual impairment.
 - Computer access.
 - Deaf/hard of hearing/deafblind.
 - Switch access/environmental access.
 - Technology for print/reading/writing support.

PaTTAN Short-term AT Loan



Search...



Multi-Tiered System of Support ▾

Graduation/Post Secondary Outcomes ▾

Disabilities ▾

Supports ▾

Legal ▾

Partners ▾

[Home](#) ▸ [Short Term Loan](#)



Short Term Loan



The Short Term Loan (STL) Program provides LEAs with devices to assess the assistive technology needs of students with disabilities. AT kit categories include: augmentative and alternative communication, blindness/visual impairment, computer access, deaf/hard of hearing/deafblind, switch access/environmental access, and technology for print/reading/writing support.

LEA Participation in the STL Program

Pennsylvania educators who are employed or contracted by an intermediate unit, school district, charter school,

Useful Links

[AT Kit Category Descriptions](#)

[STL Frequently Asked Questions](#)

[Returning STL Kits](#)

[Contact STL](#)

www.pattan.net/Short-Term-Loan/

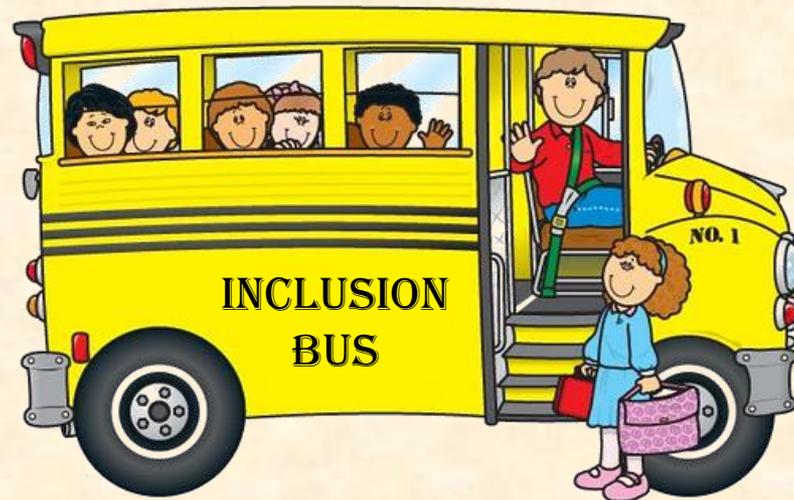
Universal Design in Learning

- The UDL Guidelines suggest that teachers provide multiple means of:
 - **Engagement:** Identify multiple options to gain and maintain student interest and focus.
 - **Representation:** Identify multiple ways to help learners perceive and make sense of the content.
 - **Action and expression:** Provide multiple options for learners to demonstrate learning.

udlguidelines.cast.org

Focus in This Presentation

- In this presentation, let's focus on the following:
 - Using technology to support all students.
 - Using technology (no, low, and high-tech) to increase learner engagement.



Use Technology to Support Students

Technology Tools and Techniques
to Support All Students

Help Students Manage Time

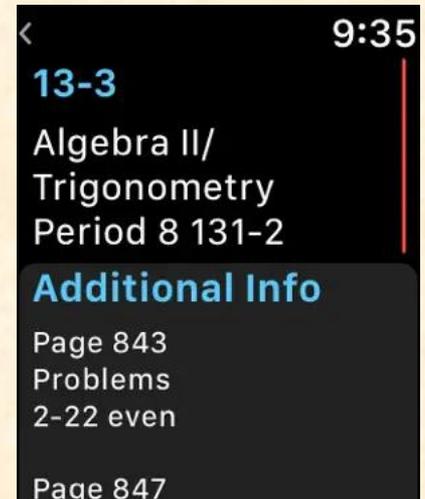
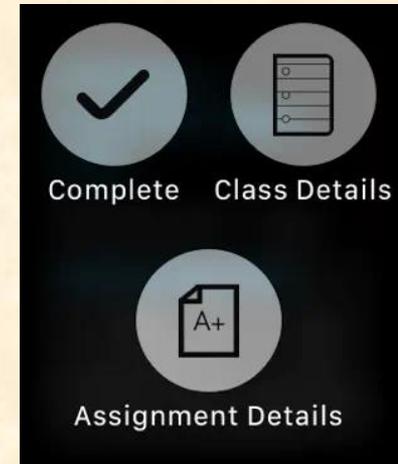
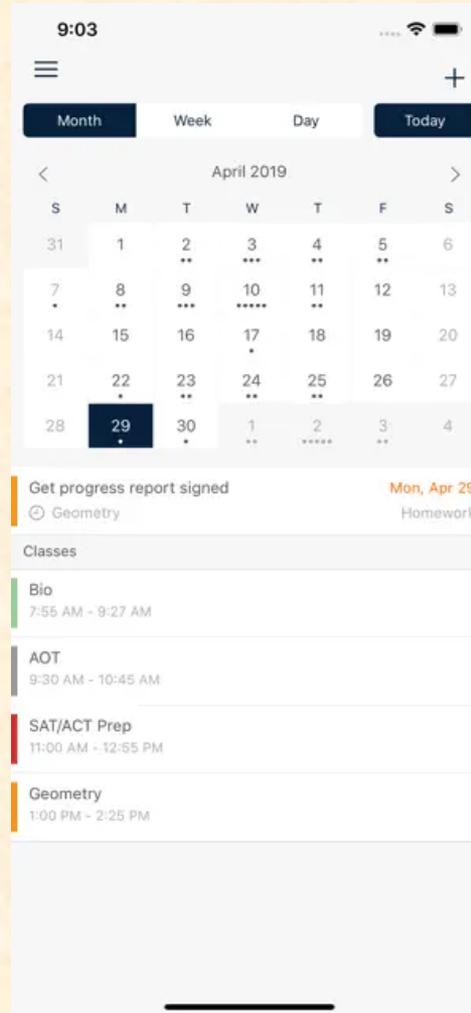
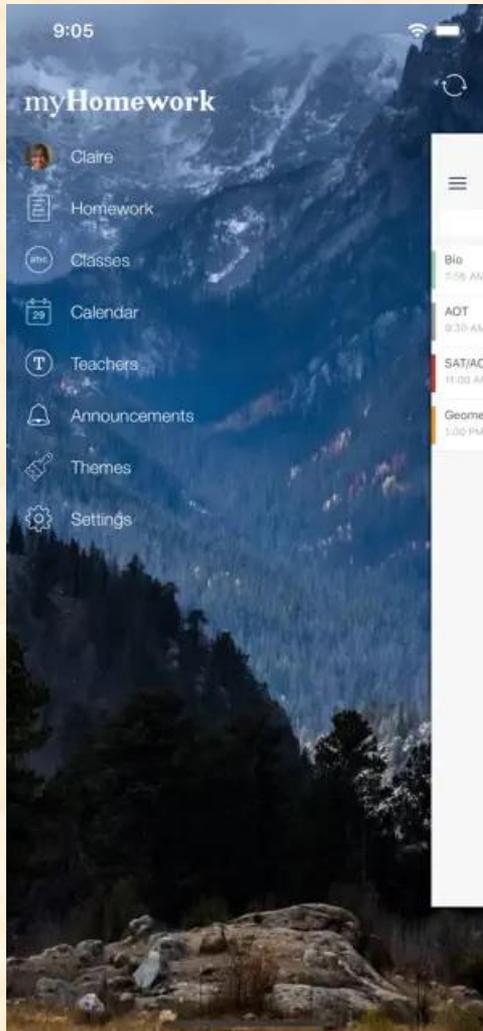
- Suggest use of an **online calendar** (e.g., Google Calendar) for more mature learners.
- Suggest use of a **homework/student planner** (e.g., MyHomework app).
- Suggest use of a **timer** for better time management by controlling time on tasks (search for “timer” on Google).

Manage Time: Google Calendar



- Select a general calendar tool and show students how to plan and manage their tasks.

Manage Time: MyHomework App



Manage Time: Timers

Classic Classroom Timers:

Our Classic Classroom Timers have an animated design showing the time lapsed and time remaining.



Egg Timer



Clock Countdown



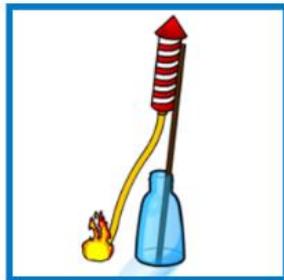
Candle Timer



Bar Timer



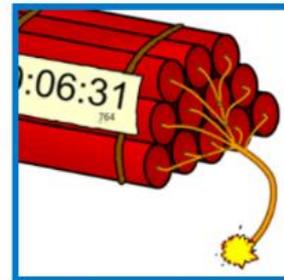
Cracking Fun Timers:



Rocket Timer



Bomb Countdown



Dynamite Timer



C4 Timer

online-stopwatch.com/classroom-timers

Manage Time: Timers

Sports Themed Timers:



Running Timer



Swimming Timer



BMX Timer



Canoe Timer



Pogo Stick Race Timer



Womens Running Timer



Fancy Dress Race!

Sports Day Themed Timers:



Sack Race!



Space Hopper Race Timer

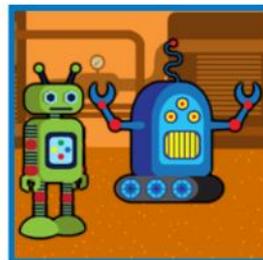


Egg and Spoon Race!

Space and Sci-Fi Timers:



Spaceship Timer



Robot Race Timer



Jetpack Race Timer



Monster Race!



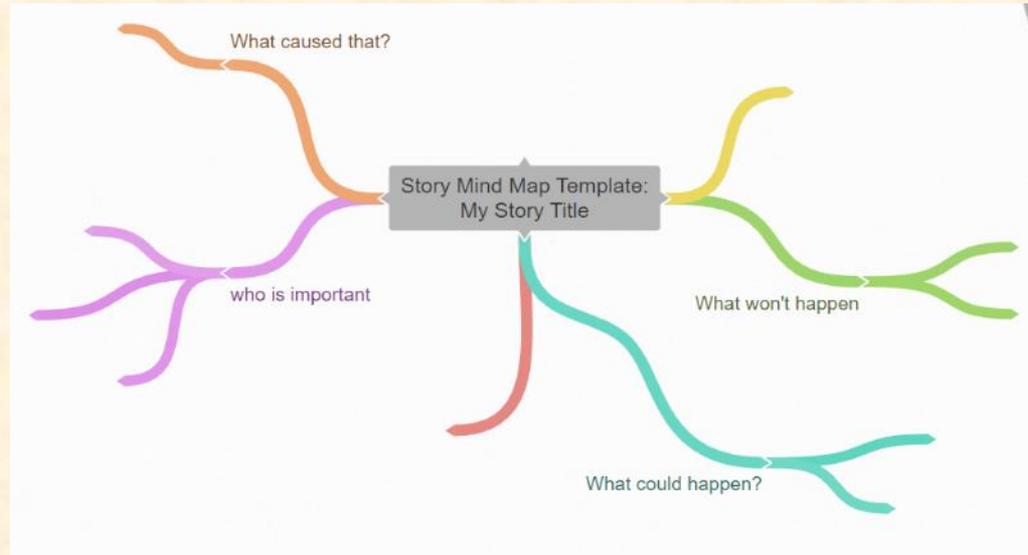
Emoji Race!

Help Students Comprehend Content

- Help students comprehend content.
 - Graphic organizers.
 - Note-taking templates.
 - Word and PowerPoint built-in capabilities.
 - Video interaction tool.
 - Differentiate reading levels.



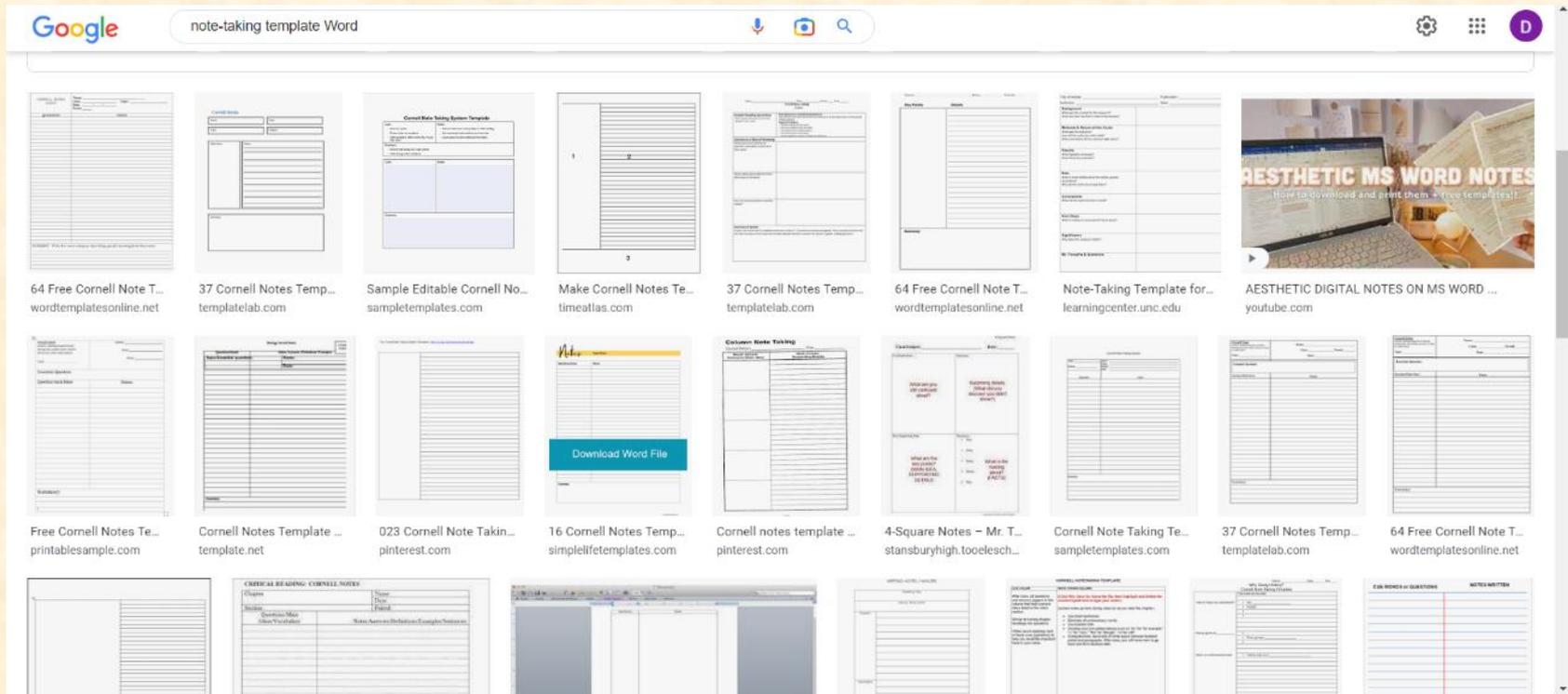
Graphic Organizers



Coggle Web-based tool allows creating and sharing mindmaps and flowcharts with no download. Supports brainstorming, planning, or note-taking.

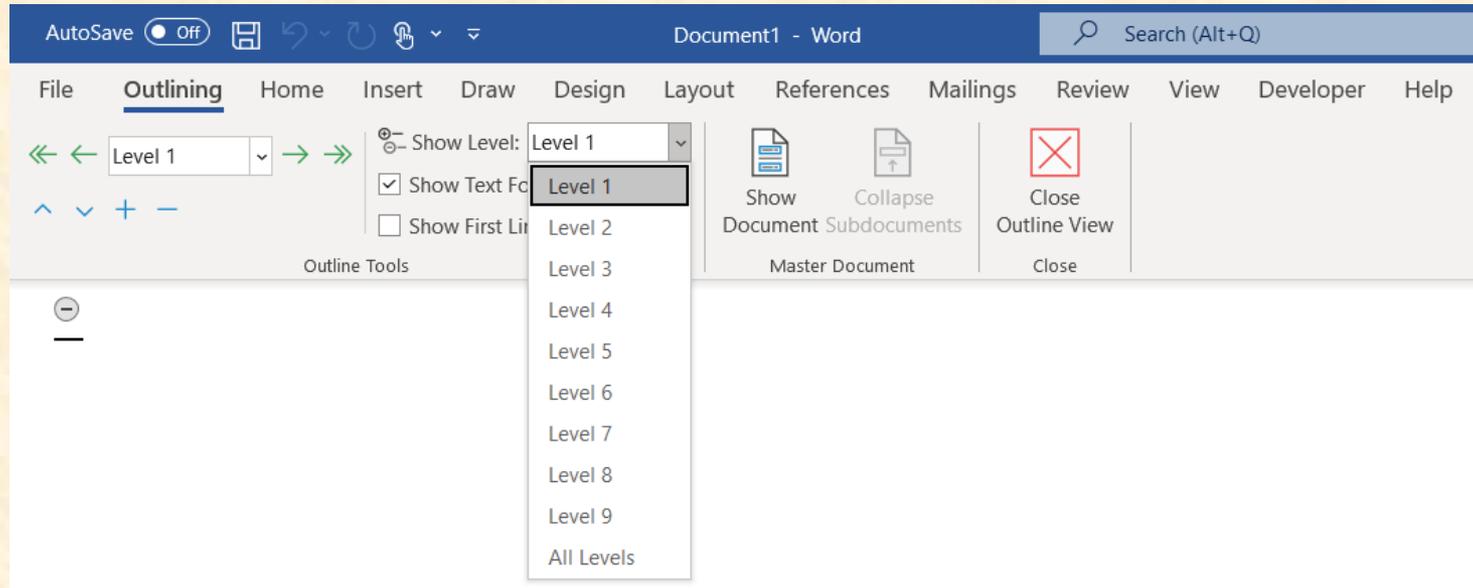
[Coggle.it](https://coggle.it)

Note-taking Templates



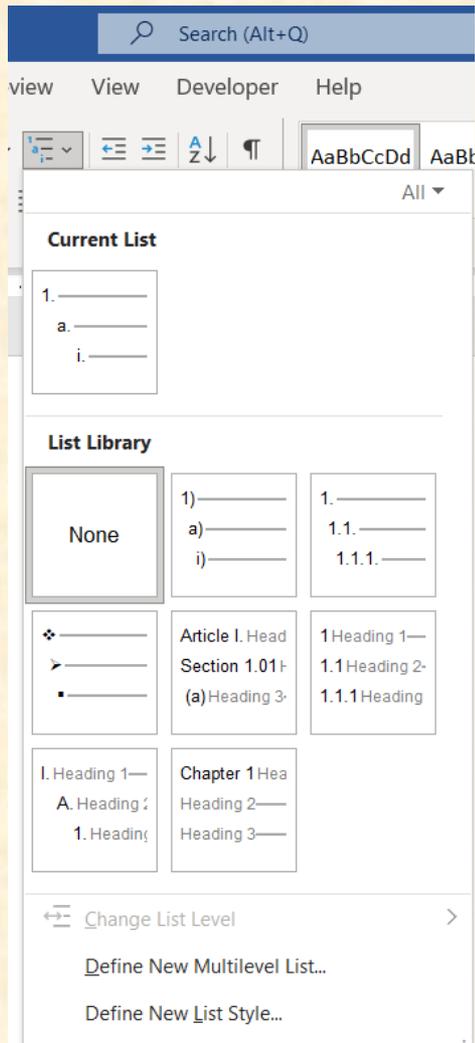
A Google search for Word note-taking templates yielded many great options and systems to provide options for assistance with taking notes.

Word Outline View and Tools



Allows collapsing a document to show various levels of an outline in the same document as text.

Word Multi-level List Tools

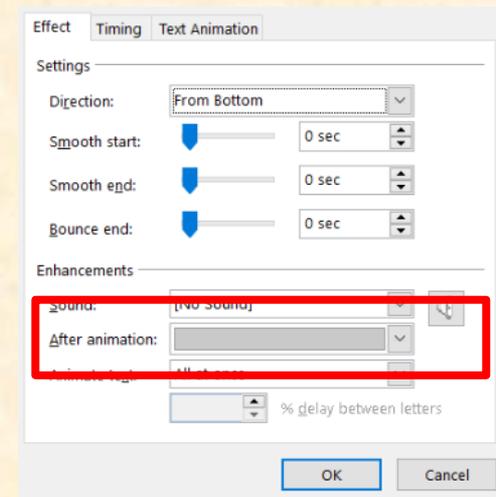


Allows creation of multiple levels of bullets to support creating outlines and organizing understanding of content.

PP Bullet Technique

- After the second bullet animates, the first bullet will change to a lighter color.
- This allows all learners to better focus on current information being presented.
- Now focus is even easier for students.

Select effect options – after animation – [select a color] to “gray out” the bullet.



Video Interaction Tool

- When using video, utilize a video interaction tool to support focus and highlighting of primary points from a video.
- Allows a teacher to:
 - Select a video (YouTube, Khan Academy, your own).
 - Crop the video (only use portion desired).
 - Record your voice over a video.
 - Embed quiz questions.
 - View results.



Video Interaction Tool

The screenshot displays the 'Mitosis' lesson interface. On the left, a video player shows a title card: 'CELL Cycle Part II: MITOSIS'. The video player includes a progress bar at 00:08 of 07:56 and playback controls. Below the video player are buttons for 'Crop Video', 'Finish Build', and 'Add Question'. On the right, a panel titled 'Not sure what to do now? Checkout this tutorial.' contains a menu of question types: Multiple choice, Free response, Reflective pause, Check all apply, Skip Segment, Website, Fill in blank, Polling, and Cancel. A 'Place Question At 00:08' indicator is visible at the bottom of the menu. The top right of the interface has 'PRINT WORKSHEET' and 'SAVE AND CONTINUE' options.

Crop a video.

Add a question.

Choose from various question types.

Differentiate Reading Levels

- Utilize articles to appeal to different interests or reading levels at a site such as Smithsonian's Tween Tribune.
- Divided into 4 grade bands.
- Students can select from different Lexile levels for each article.



Differentiate Reading Levels

The screenshot shows the TweenTribune website interface. At the top, there is a navigation bar with the logo, a search bar, and buttons for 'Teacher Sign Up' and 'Sign In'. Below the navigation bar, there are category links for 'GRADE K-4', 'GRADE 5-6', 'GRADE 7-8', 'GRADE 9-12', 'SPANISH', 'TECH', and 'TEACHER'. The main content area features three articles, each with a different Lexile level highlighted for each grade level. A red box highlights the Lexile levels for the first article, and a yellow callout box points to it with the text 'Notice the different Lexile levels for each article.' To the right of the articles, there is an 'ADVERTISEMENT' section and a 'TOPICS' section with various topic links.

TweenTribune Smithsonian

search

GRADE K-4 **GRADE 5-6** GRADE 7-8 GRADE 9-12 SPANISH TECH TEACHER

Girl Scouting was once segregated
February 28, 2022 **730L 890L 1050L 1280L**
77 comments | Log in to post a comment | Take the quiz

Before blues singers came songsters
February 24, 2022 **780L 910L 1050L 1310L**
28 comments | Log in to post a comment | Take the quiz

How George Washington did his hair
February 22, 2022 **640L 800L 1000L 1170L**

ADVERTISEMENT

Notice the different Lexile levels for each article.

TOPICS

ANIMALS VIDEO EDUCATION ART
ENTERTAINMENT CULTURE
FOOD & HEALTH INSPIRATION

Use Technology to Increase Engagement

Technology Tools and Techniques
to Support All Students

Increasing Engagement

- PaTTan and CAST (UDL), in addition to many other researcher teams, suggest that “students learn more when they are actively engaged in instructional tasks.”
- Utilize technology tools and platforms to more actively engage students with content, providing multiple means of action and expression.
- Allow choice of ways for students to respond to suit the strengths of each learner.

No-tech

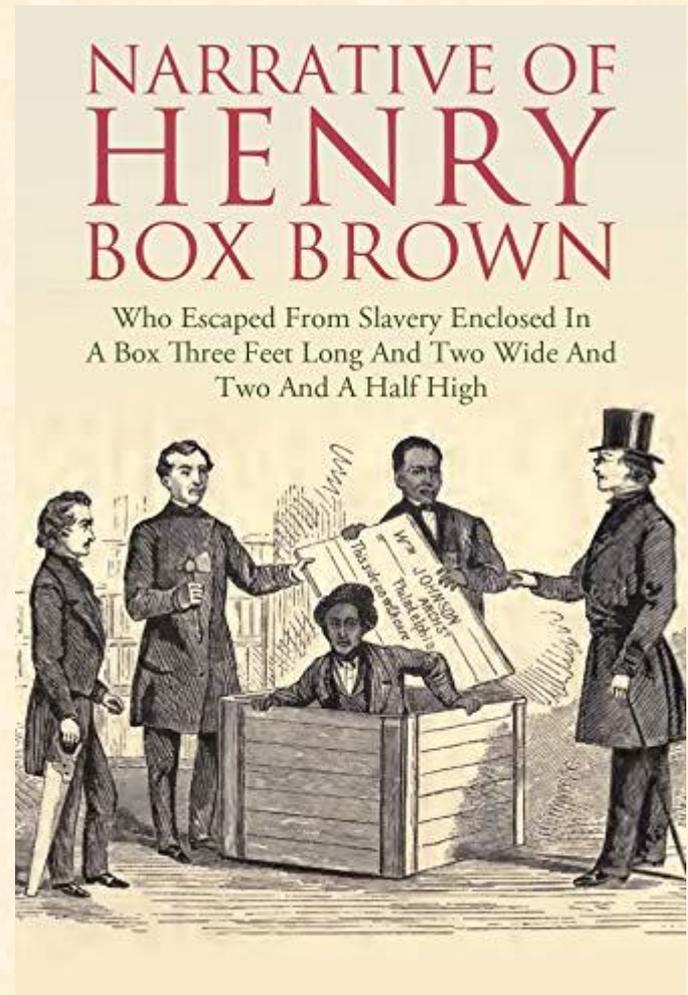
Kinesthetic “Hook” Activity

- Incorporate movement into a lesson:
 - ✓ Throw something, roll something, or catch something.
 - ✓ Turn the entire room into a giant opinion meter, having the students move to one side or the other based on a statement.
 - ✓ Have the students get up and act something out.
 - ✓ Create a simulation in which the students reenact part of the lesson.

No-tech

Kinesthetic Hook: Example

- Dave Burgess (Teach Like a Pirate) presented a lecture about the resistance to slavery and the unique ways slaves sought freedom.
- Told story of Henry “Box” Brown, a slave from Virginia, who mailed himself to Philadelphia, to freedom.



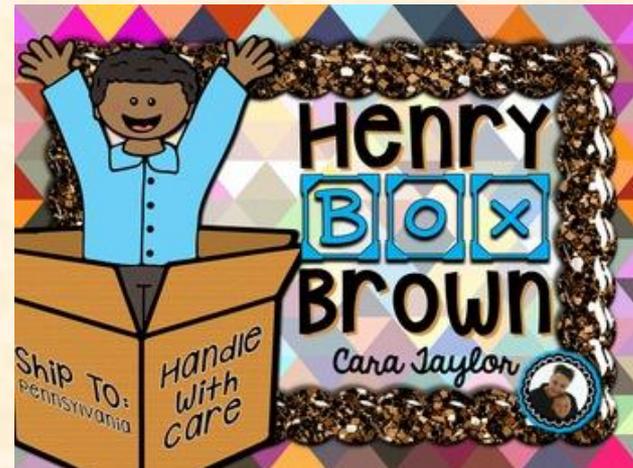
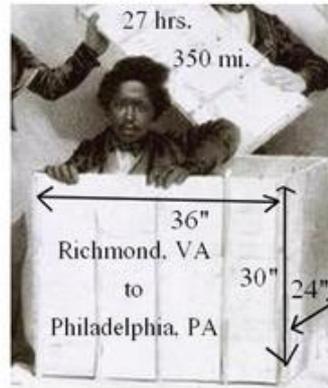
No-tech

Kinesthetic Hook: Example

- Burgess challenged students to fit into a box that was smaller than Henry's box.
- Added fun and interest, and caused students to picture themselves in this historic person's place.

Henry "Box" Brown Box Dimensions

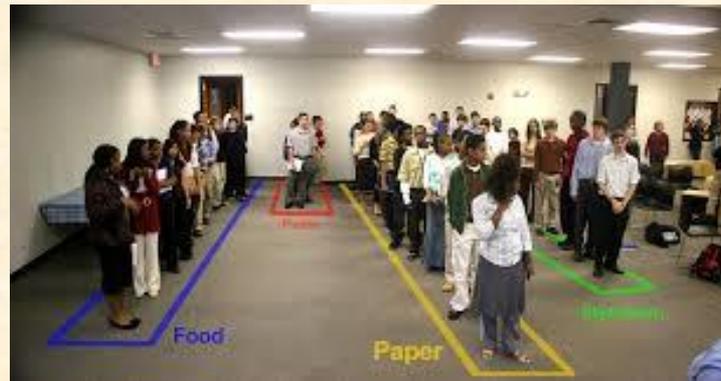
- The box was 80 inches tall, 24 inches wide and 36 inches long.
- Be sure to measure carefully as you design and build your box!



No-tech

People Prop Hook

- Create a human graph, chart, or map.
- Assign students to be a specific step in a process/event and have them order themselves sequentially.
- Use students as props and have the class function as prop movers.



No-tech

ThinkDots/Cubing

- **Thinkdots/Cubing:** Offer 6 activities that students must complete. Students roll a six-sided die to determine the random order in which activities are completed.
- Each activity can be structured around a learning profile so that learners explore concepts from different perspectives.
- Not all students receive the same cubed activities.



No-tech ThinkDots/Cubing

ThinkDOTS: Vocabulary Review

<p><u>Connect it</u> </p> <p>An automobile manufacturer wants to use this word as the name for its newest car. They have asked you to design the car– if this word were a car, what would it look like? Draw a picture.</p>	<p><u>Define it</u> </p> <p>What is this word’s definition?</p>
<p><u>Use it</u> </p> <p>Create a concrete poem using this word as the poem’s subject.</p>	<p><u>Collage it</u> </p> <p>Create a collage of words and images which represents this word. Do not put the word or the definition on the front of the collage; write them on the back.</p>
<p><u>Evaluate it</u></p> <p>In your opinion, is this word a “good” word or a “bad” word? In other words, is this word useful? Does it do a job that no other word can do?</p> 	<p> <u>Personify it</u></p> <p>Give this word a personality– what do you think this word would be like if it were a person? Find another word from our list that you think would either be this word’s perfect match or worst enemy, and explain your rationale.</p>

Possible Cube Activities

- Describe it.
- Compare it.
- Associate it.
- Analyze it.
- Apply it.
- Connect it.
- Illustrate it.
- Change it.
- Solve it.
- Question it.
- Rearrange it.
- Satirize it.
- Evaluate it.
- Relate it to something.
- Contrast it.
- Investigate it.
- Significance of it?
- Cause/effects of it?
- Cartoon it.
- Tell the parts of it.
- Argue for/against it.

No-tech

Choice Board

- **Choice board:** Graphic organizer that allows students to choose different ways to learn about a particular concept. Set up in a grid with 9 squares.
- Teacher can require students to complete items in a specific way (e.g., choosing three choices in a row), or let students choose at random.

No-tech Choice Board

<p>Verbal/Linguistic (Word Smart)</p> <p>Choose an Artist. Write a presentation on the life of this artist. Option: Present your presentation to the class.</p>	<p>Logical/Mathematical (Math Smart)</p> <p>Research the Op Art Period. Create an Optical Illusion on paper or using Adobe Photoshop. Option: Create a String Art Project</p>	<p>Intrapersonal (Self Smart)</p> <p>Choose your favorite artist or art period. Write a self reflection paper supporting why the artist or art period is your favorite. Option: Compare and Contrast two of your favorite artist or art periods.</p>
<p>Interpersonal (People Smart)</p> <p>With one partner, choose an artist or art period that you both like. Create a collaborate work of art in the style of artist or art period you both choose. Option: Present your collaborative work of art to the class.</p>	<p>Activinspire Presentation (Computer Smart)</p> <p>Create an art history flipchart using ActivInspire. Choose an artist, your favorite work of art they created, and write two paragraphs describing the art and artist. Option: Present your Flipchart to the class.</p>	<p>Musical/Rhythmic (Music Smart)</p> <p>Write a song, chant or rap about an artist or art period. Option: Present the song, chat or rap to the class.</p>
<p>Visual/Spatial (Art & Space Smart)</p> <p>Recreate a piece of art in the style of an artist or art period. Option: Present your art to the class and explain how your art represents the artist or art period.</p>	<p>Bodily/Kinesthetic (Body Smart)</p> <p>Research an artist or art period. In partners or small groups, write a play about the artist or art period. Option: Record your play before or after school or present live to the class.</p>	<p>Naturalist (Nature Smart)</p> <p>Choose an artist whose art represents your favorite part of nature. Create a piece of art in the style of this artist. Option: Present your art to the class and describe why you choose this artist.</p>

(Reinken,
2012)

Low-tech

Google Jamboard

- Jamboard is a free Google app that provides a simple shared white board.
- Students can navigate to different cards.
- Allows working with text boxes, sticky notes, images, and a pen.
- Excellent simple tool for quick collaboration.

Low-tech Google Jamboard

FYE 101: Service at MU

1/5

Set background Clear frame

MISERICORDIA UNIVERSITY

In High School: Did you participate in service in high school? What are some experiences you participated in?

In HS I was involved in CATs club, SADD club, cross country, track and field, marching band, and I also helped out at my church's parish.

I volunteered at my moms work at a nursing home

In high school I was in a peer helping group for the incoming freshman. I also volunteered for CERT.

in high school I helped give out presents to the homeless (it's called OLHOC Giving Tree). I was also involved in a few clubs and joined many sports.

In high school I was apart of athletes helping athletes which allowed us to work with kids with special needs. I was also in a service club and we made blankets for homeless and made Christmas cards for the elderly.

I participated in best buddies for 4 years in highschool. I got on the board at my highschool and even had the opportunity to have a peer buddy my junior and senior year which was the best experience of my life.

In HS, I played field hockey, joined LEO Club, peer tutored, and became VP of Honors Society. For LEO Club, we went on a NYC Trip.

In High school I helped disabled kids skate on ice.

In high school I did a lot with the learning support community and volunteered at a Down syndrome facility

In HS I participated in Interact Club which was doing food drives and help wrap Christmas presents for kids.

In high school I was one of many volunteers at a school softball camp for younger kids.

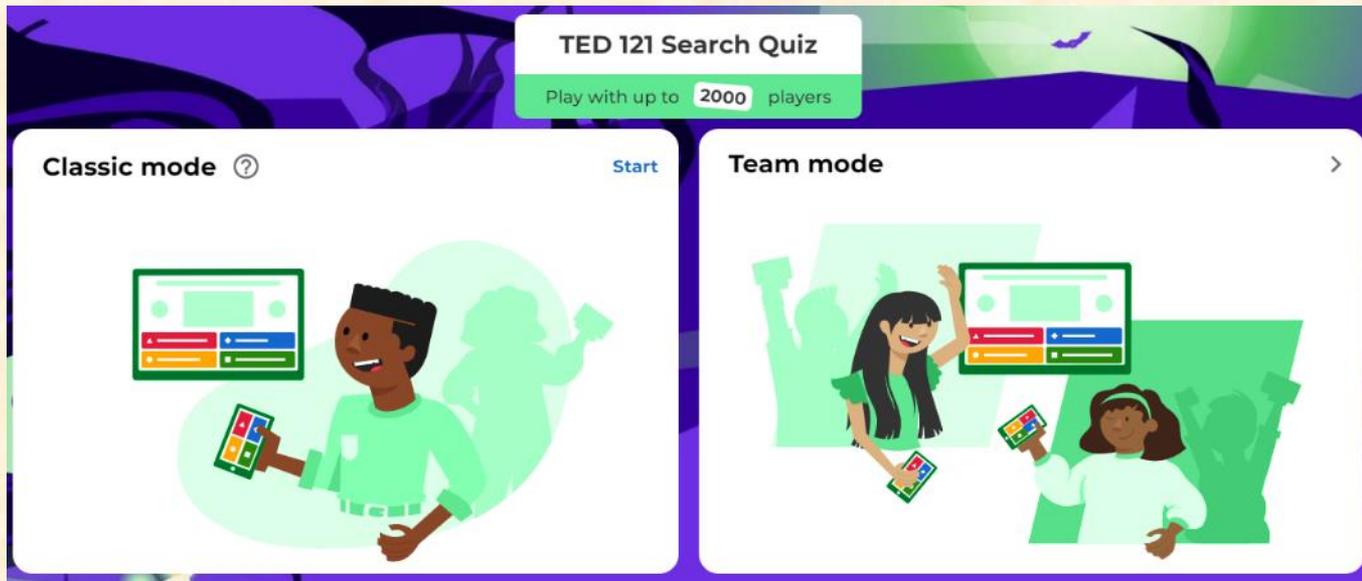
In high school I helped livestream some of our athletics on YouTube.

In high school we had to do 20 hours of service each year so for 2 years I volunteered at my church cleaning things and the last two years I volunteered at a summer baseball camp

In High School I did some volunteer work. I volunteered at homeless shelters and passed out clothes, food, and basic hygiene products.

High-tech Group Kahoot!

- Kahoot! allows teachers to have a class play in “team mode” vs. “classic mode.”



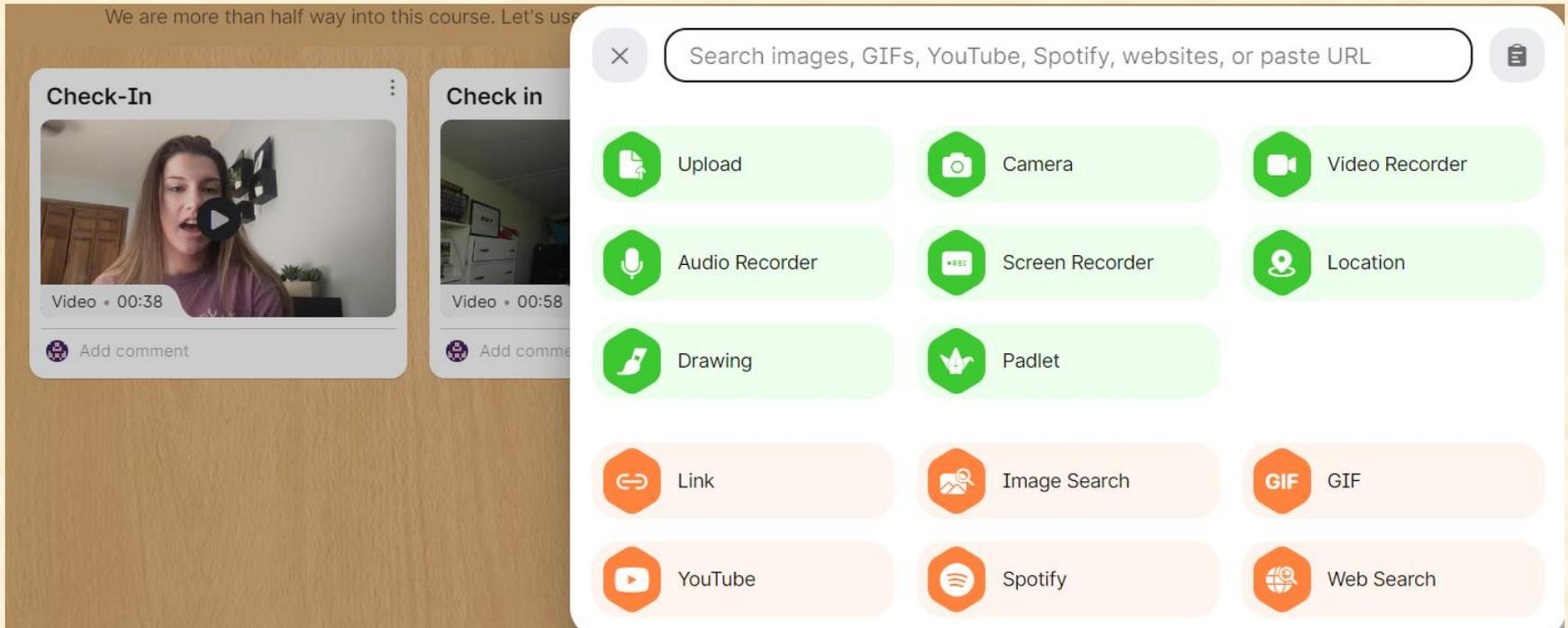
High-tech Group Kahoot!

- Kahoot! Group mode:
 - Allows think/talk time for groups to discuss questions before responding.
 - To increase the level of competition in gamification, you can have class play against “ghost players” from another class.



High-tech Padlet

- Padlet provides a shared space (either free-form or blog style) where students can collaborate and post information.
- Supports many data types.



High-tech Padlet

Polygons in our World
Find a polygon out in the world. Take a picture and post it to our wall. Don't forget to identify your polygon by name. :)

Ms. Miller
The floor at a metro station in Washington DC
regular hexagons


Paula F.
The red stop sign with white letters on it standing outside on the street.
A hexagon


Shanda p6
I found a necklace and took a picture. It has 10 sides.
A decagon


John p7
A pad of sticky notes.
A square


Erica p1
A pattern block in math class.
A trapezoid


Ms. Miller
The floor of a sided treading Mount Vernon George Wash
a hexakaideca


Joseph p1
A \$5.00 bill.
A rectangle


Joseph p1
A math poster.
A rectangle

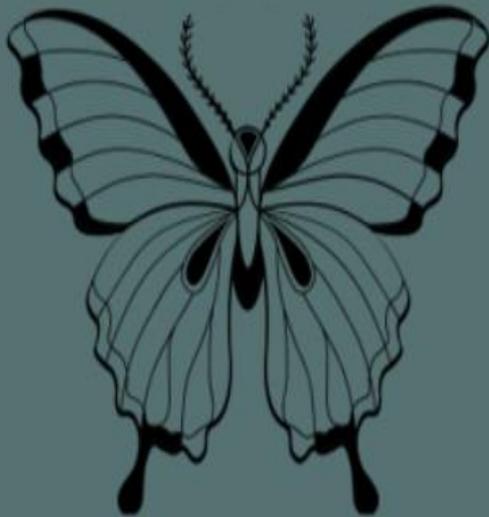

Cosett
A rectangular piece of paper.


Join in the Conversation

- Do any of the presented tools/techniques resonate with you?
- What additional thoughts can you to the conversation?
- What practical tips might you take into your classroom?



TEACHER EDUCATION ASSEMBLY
2022



BREAKING THROUGH

To

Transform

Nikka Patel

PAC-TE and the presenter(s)
of this session desire your
feedback.

On the Whova event main
menu, go to the agenda. Tap
on a session to view
the session detail page, and
then tap on the “Rate”
button.