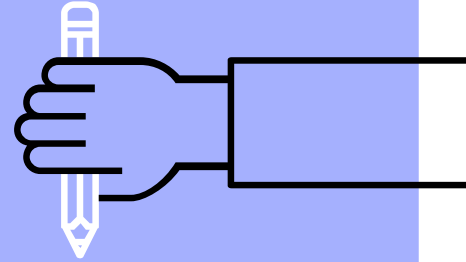
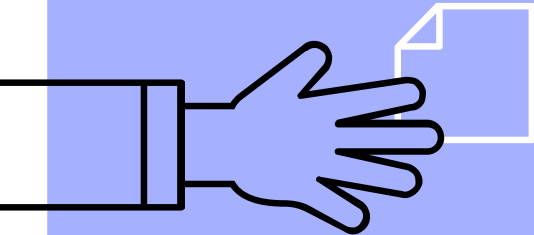




UNIVERSITY OF TORONTO
OISE | ONTARIO INSTITUTE
FOR STUDIES IN EDUCATION



AT Select: Finding the Right Assistive Technology for Your Student



Harrison McNaughtan, Damian Page,
Emily Staffiere, Francis Wall

Get the slides at:
www.AcademicInterventionLab.com

Academic Intervention Lab

OISE, University of Toronto



Damian Page
Masters, Year 1.



Emily Staffiere
Masters, Year 2.



Francis Wall
PhD, Year 1.

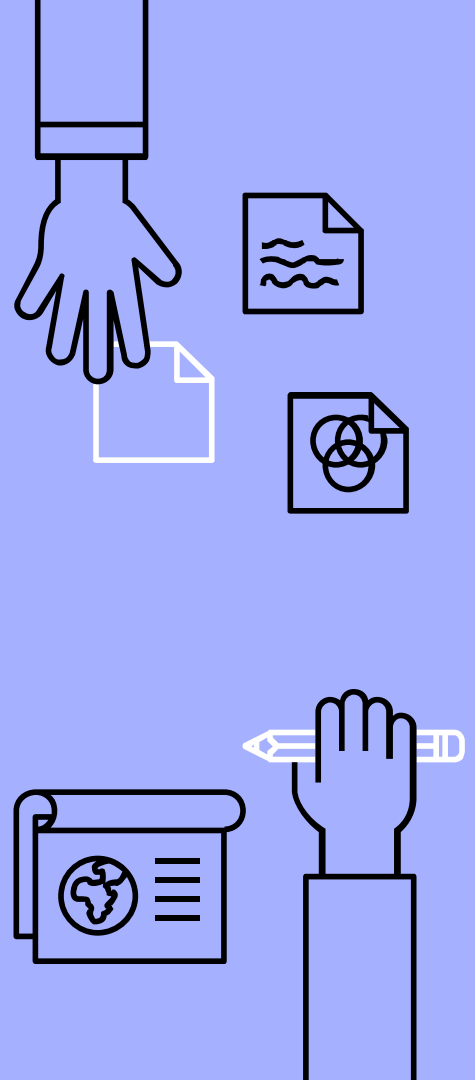


**Harrison
McNaughtan**
PhD, Year 1.

Today's Presenters

Presentation Outline

- What is Assistive Technology?
- The SETT Framework
- Case Study
- Q & A



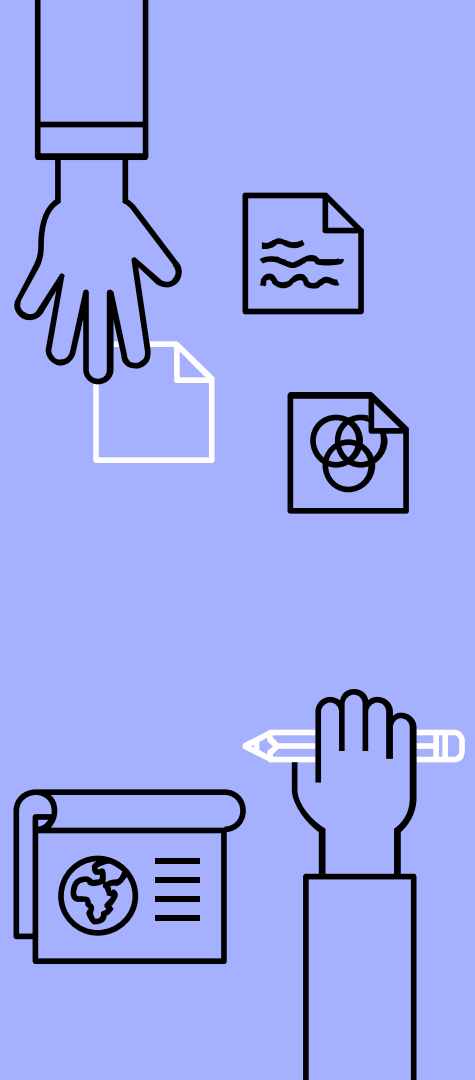
What is Assistive Technology?

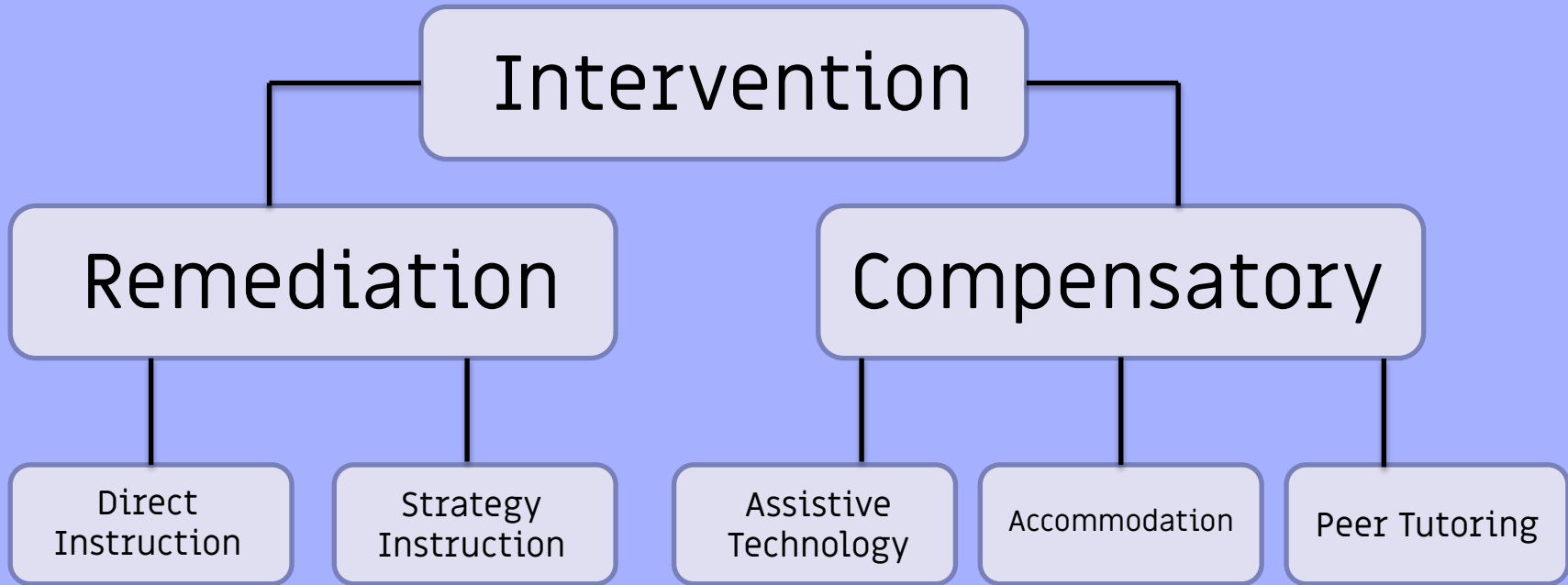
“Any technology (commercial, modified, or customized) that can assist, increase, maintain, or improve the functional capabilities of individuals with disabilities.”

(Day & Edwards, 1996; Wissick & Gardner, 2008)

What AT Isn't...

Educational Technology **vs.** Assistive Technology





Misconceptions

1: AT is a quick “fix” for academic weaknesses

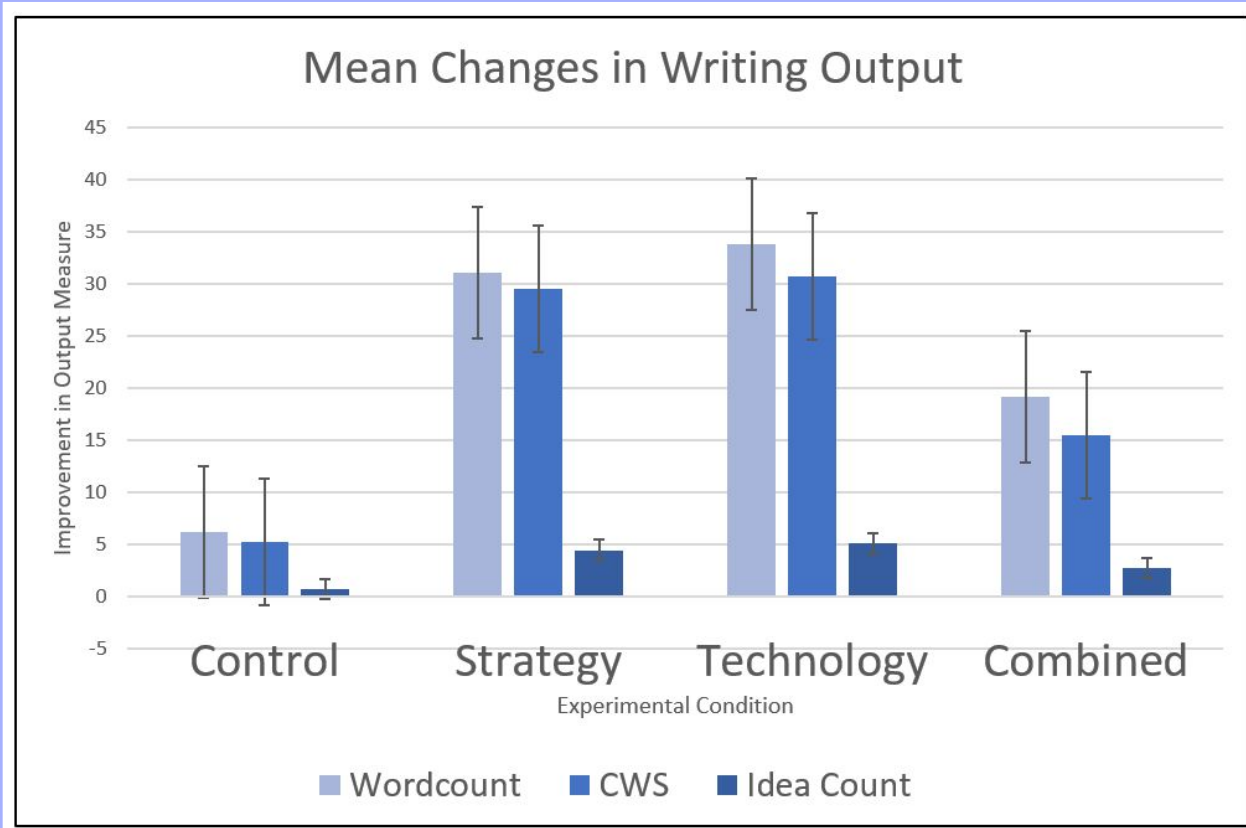
Misconceptions

2: AT provides an unfair advantage for students

Misconceptions

3: Training teachers and students in AT is too time consuming and difficult

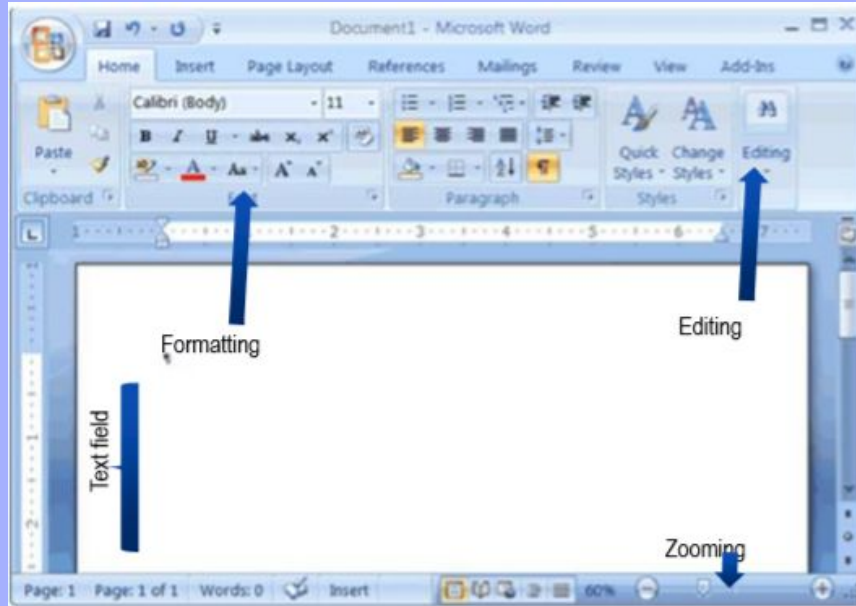
Misconceptions

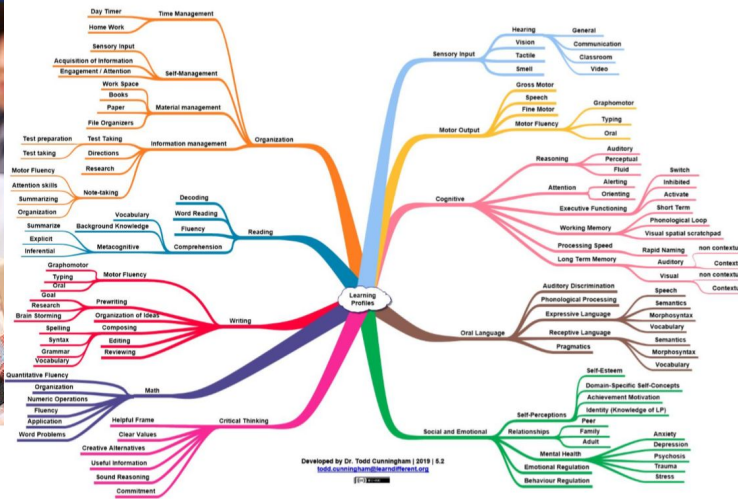


How do we select the right AT?



Tools, NOT Programs





ATselect.org

Guide individuals to the right Assistive Technology that could change their lives.

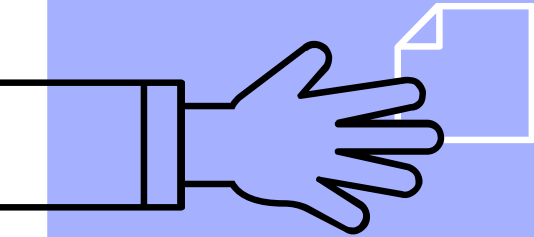
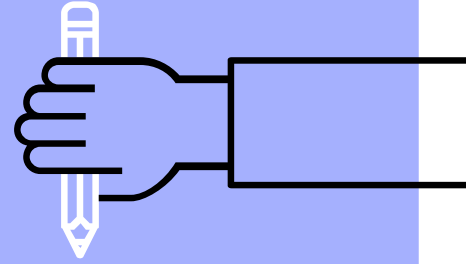
Assistive Technology (AT) is any technology that enables an individual with a disability to bypass their weaknesses and complete tasks and activities independently. With over 400 different ATs on the market, AT Select provides a guide along with a comprehensive review of AT to assist in the decision making process.

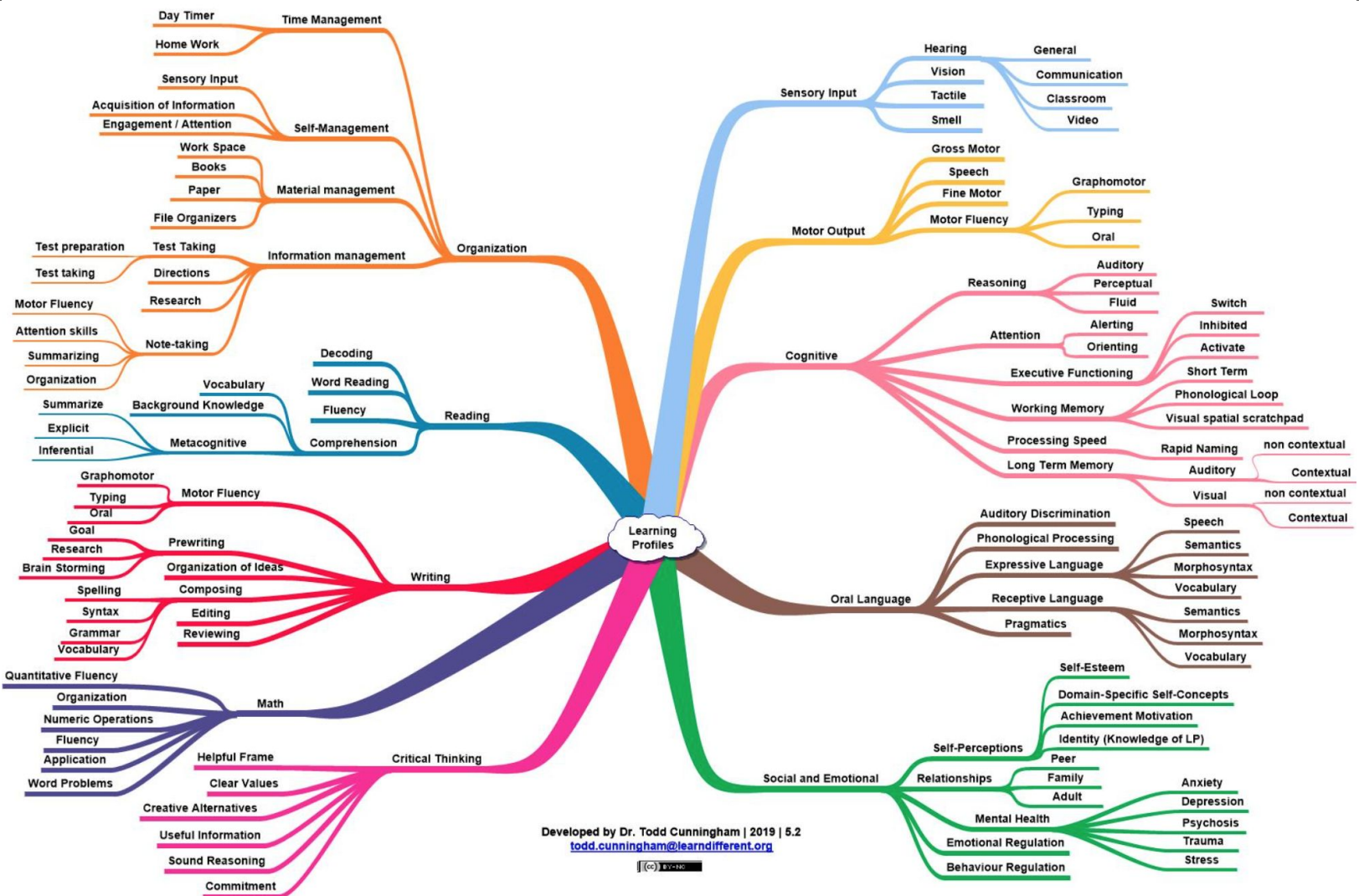
SETT Framework



(Zabala, 2000)

STUDENT





Developed by Dr. Todd Cunningham | 2019 | 5.2
todd.cunningham@learn4different.org



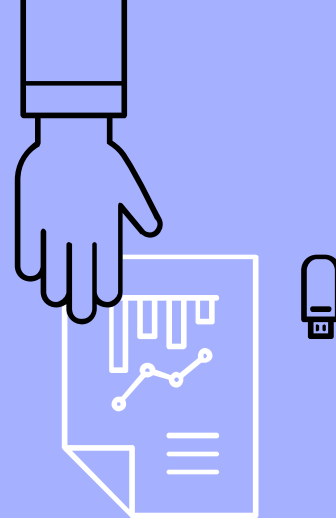
What is the specific deficit(s)?

Academic Skills

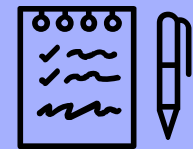
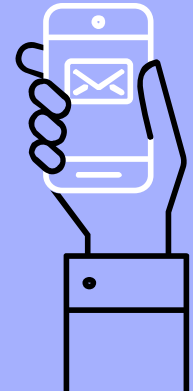
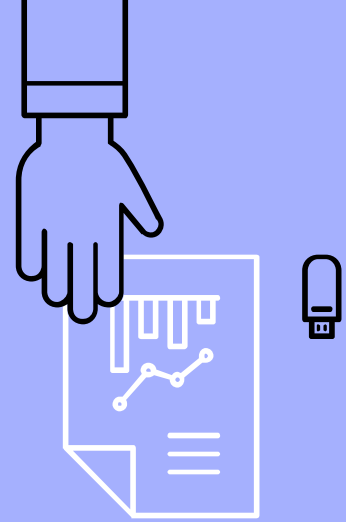
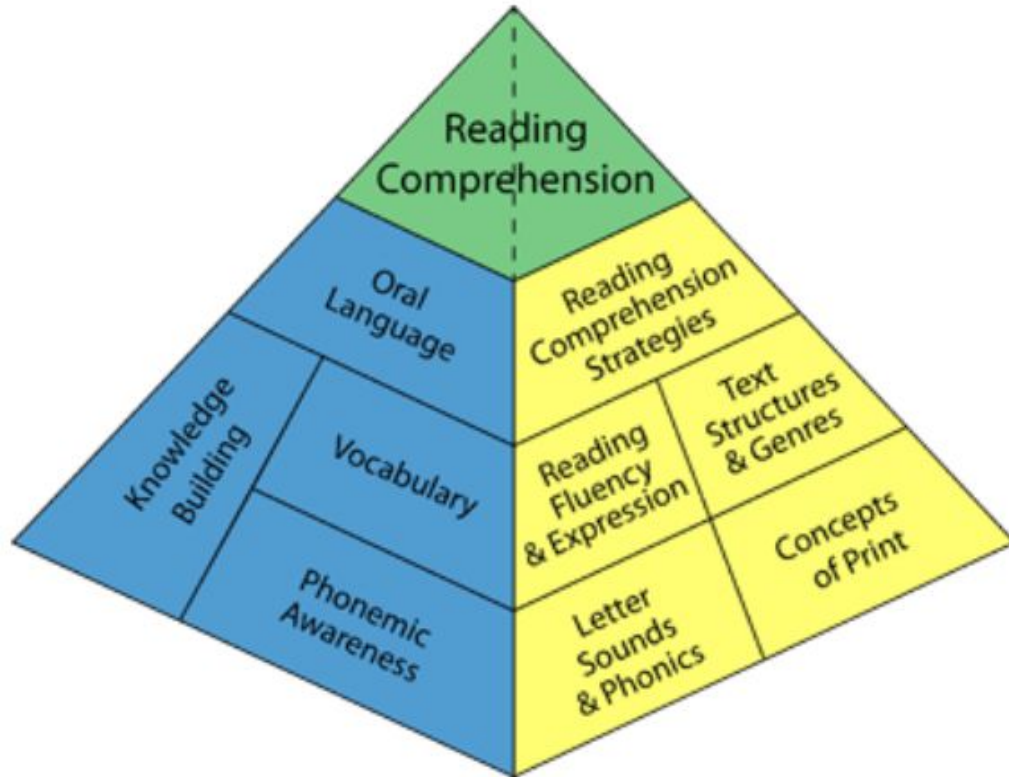
- ▷ Reading
- ▷ Writing
- ▷ Math
- ▷ Organization
- ▷ Language
- ▷ Attention
- ▷ Sensory
- ▷ Motor

Cognitive Processes

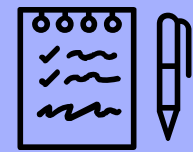
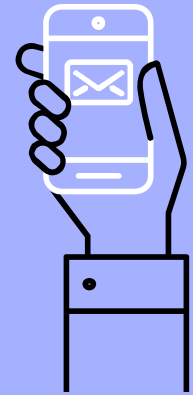
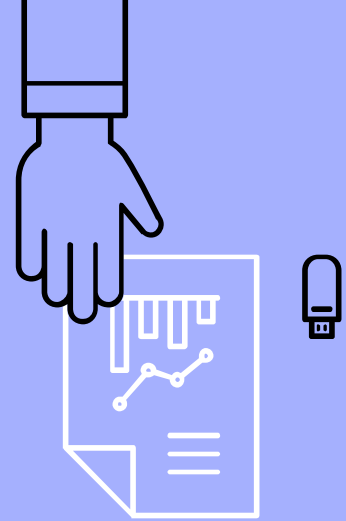
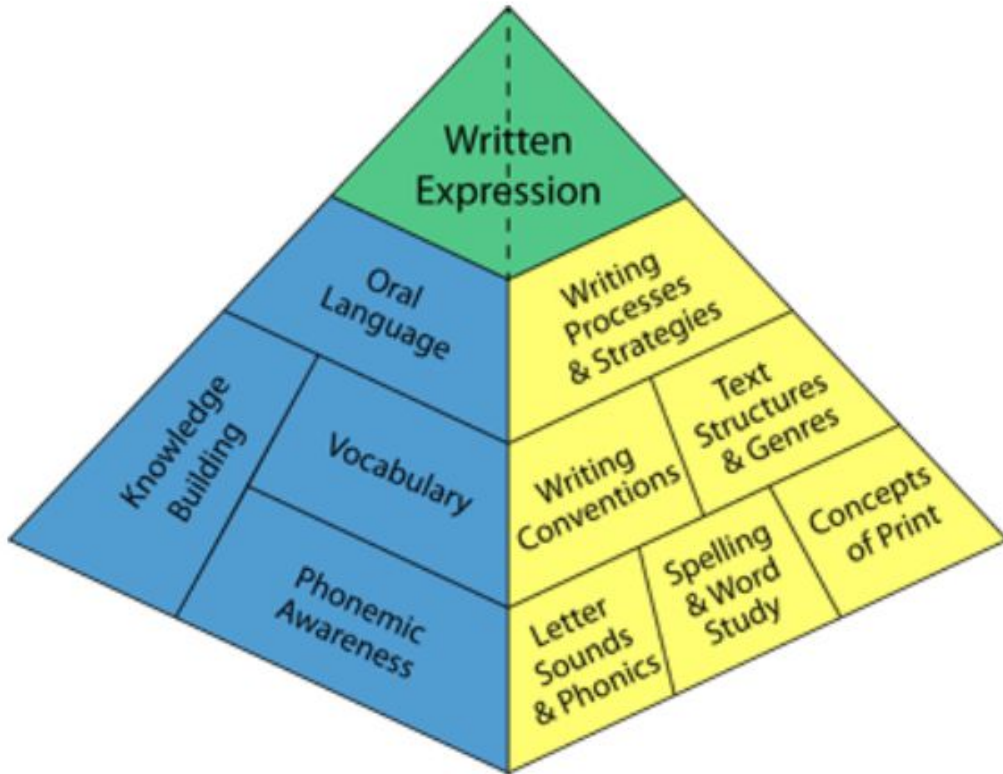
- ▷ Verbal Comprehension
- ▷ Visual Spatial
- ▷ Working Memory
- ▷ Processing Speed



'Reading Deficit'...Be specific!

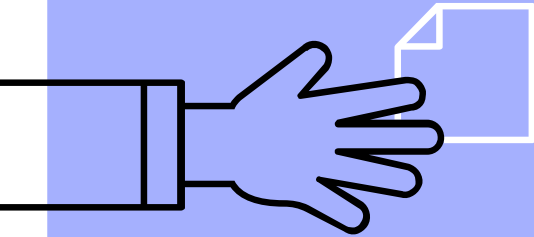
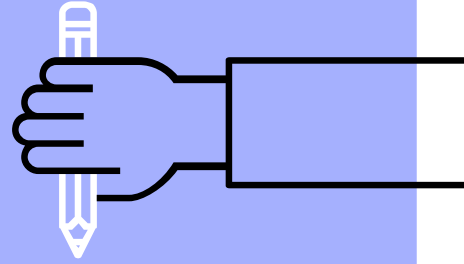


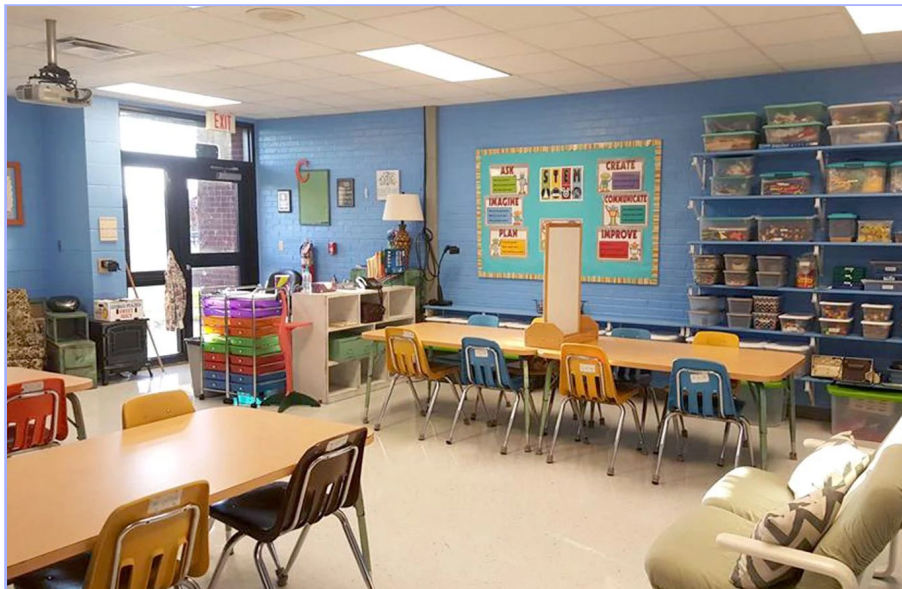
'Writing Deficit'...Be specific!





ENVIRONMENT





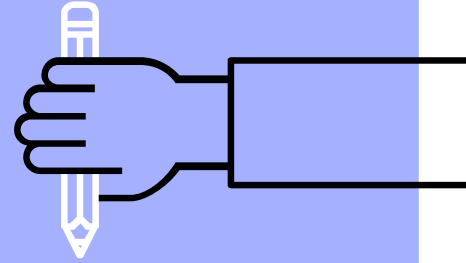
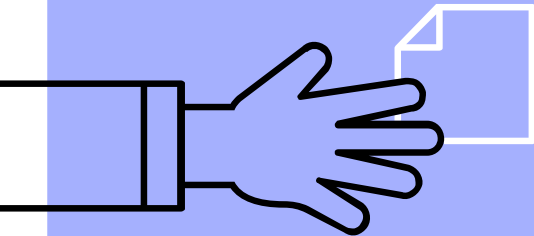
What must we consider?

Keep in mind..

- ▷ Instructional and physical arrangements
- ▷ Materials and equipment
 - Currently available vs. need to get
 - e.g. computer, internet access, access to power
- ▷ Supports for both the student and the personnel working with the student
- ▷ Attitudes and expectations that could affect the student's performance



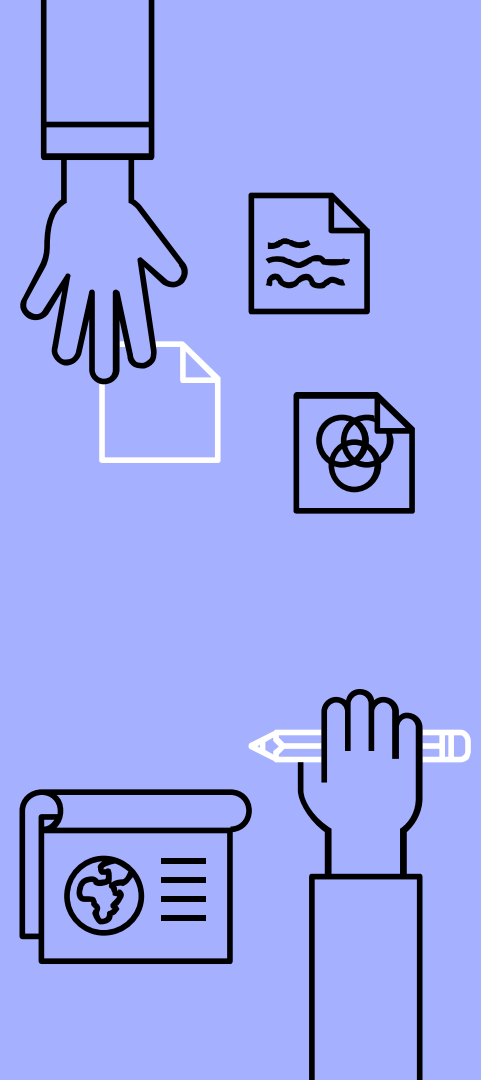
TASK



Task

What are we asking the student to do?

- ▶ Read & answering questions
- ▶ Journal writing
- ▶ Reports or Presentations
- ▶ Research
- ▶ Group work
- ▶ Spelling test
- ▶ Attend to lessons
- ▶ Note taking
- ▶ Multiple Choice Tests
- ▶ Math (including word problems)

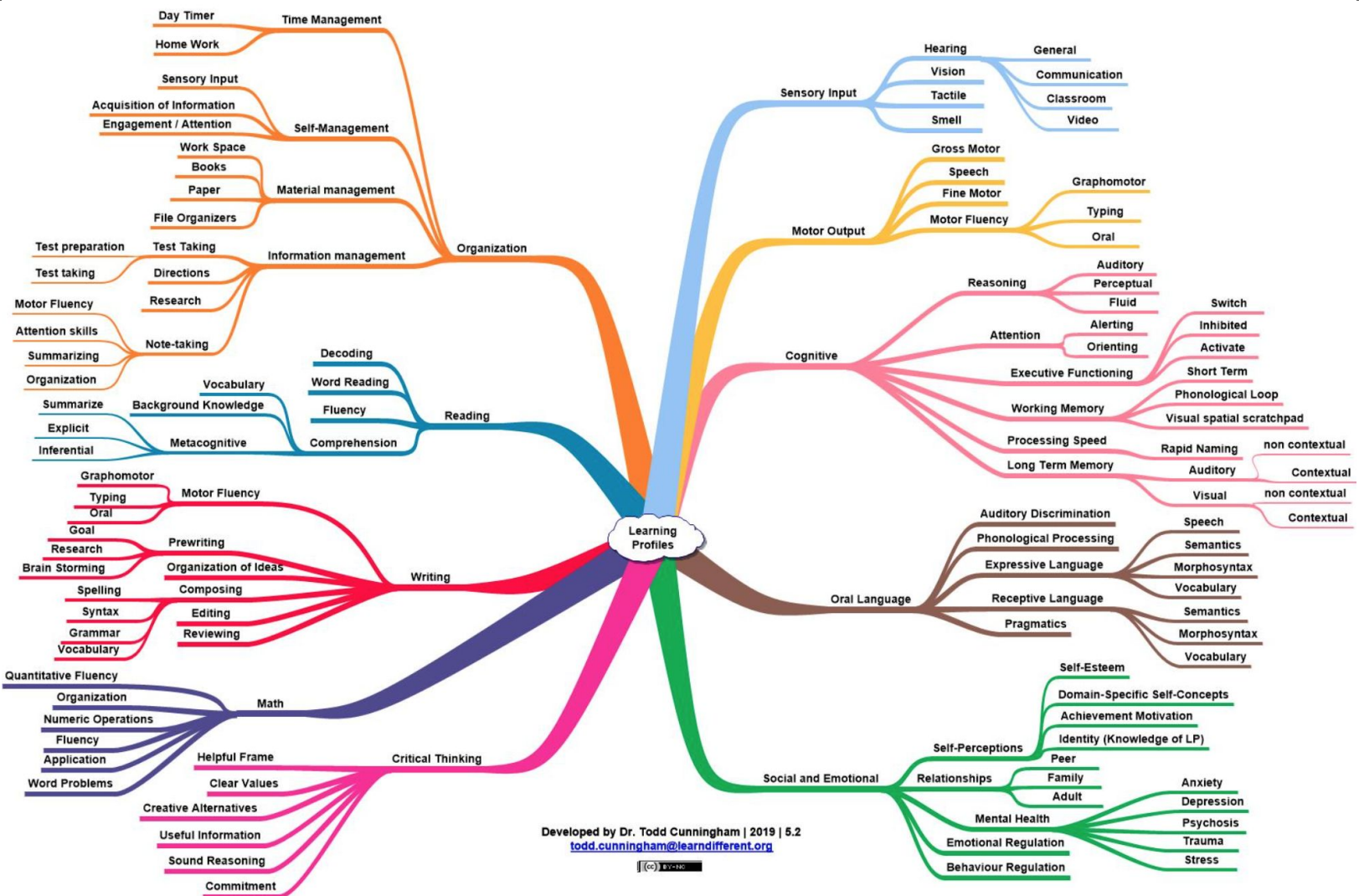


“

Question time!

How many skills does a student need to write a sentence?





Developed by Dr. Todd Cunningham | 2019 | 5.2
todd.cunningham@learn4different.org



Sentence Writing Skills

Writing

Editing
Grammar
Graphomotor
Organization of Ideas
Prewriting
Reviewing
Spelling
Syntax
Typing
Vocabulary

Reading

Background Knowledge
Inferential Comprehension
Vocabulary
Decoding
Reading Fluency
Word Reading
Explicit Comprehension
Summarize

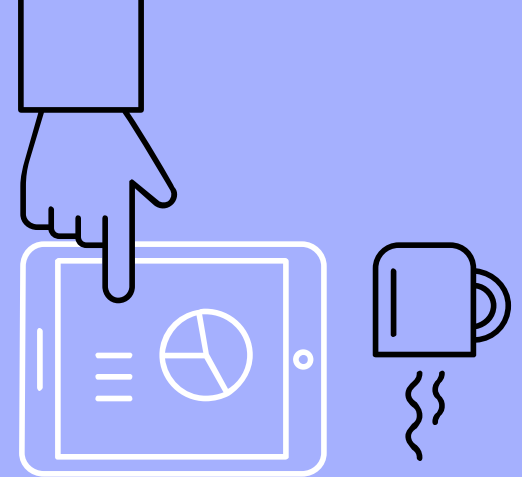
Sensory Input

Vision

Attention

Alerting
Orienting

21

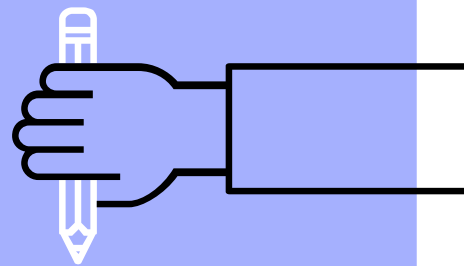
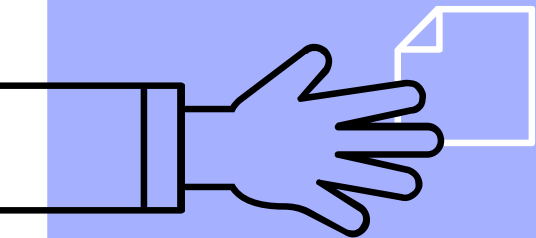


A large iceberg is shown floating in a clear blue ocean. The top part of the iceberg, which is visible above the water surface, is relatively small and pointed. The much larger, submerged part of the iceberg is visible below the surface, showing a complex, jagged structure. The sky is blue with scattered white clouds. Two white rounded rectangular boxes with blue borders are overlaid on the image. The top box contains the word 'Tasks' and the bottom box contains the words 'Academic Skills'.

Tasks

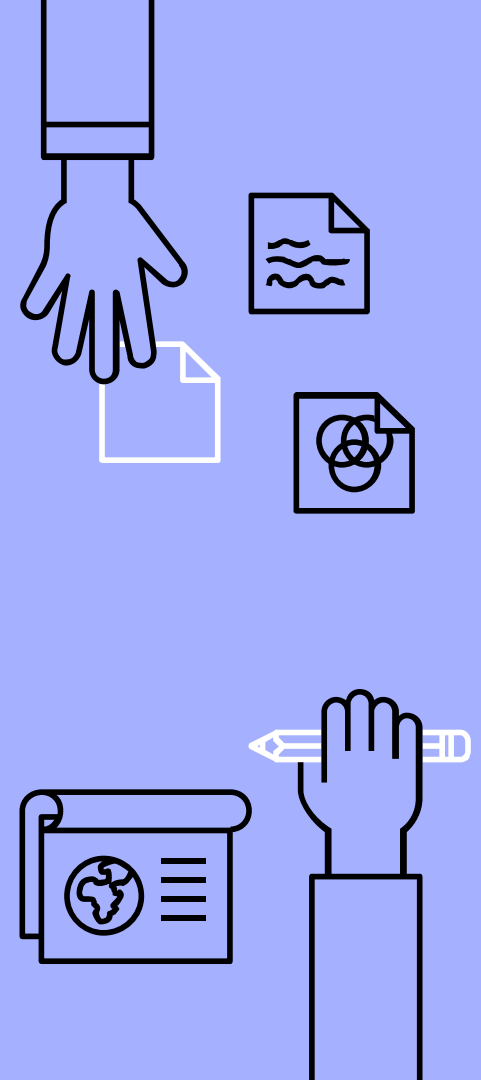
Academic Skills

TOOLS

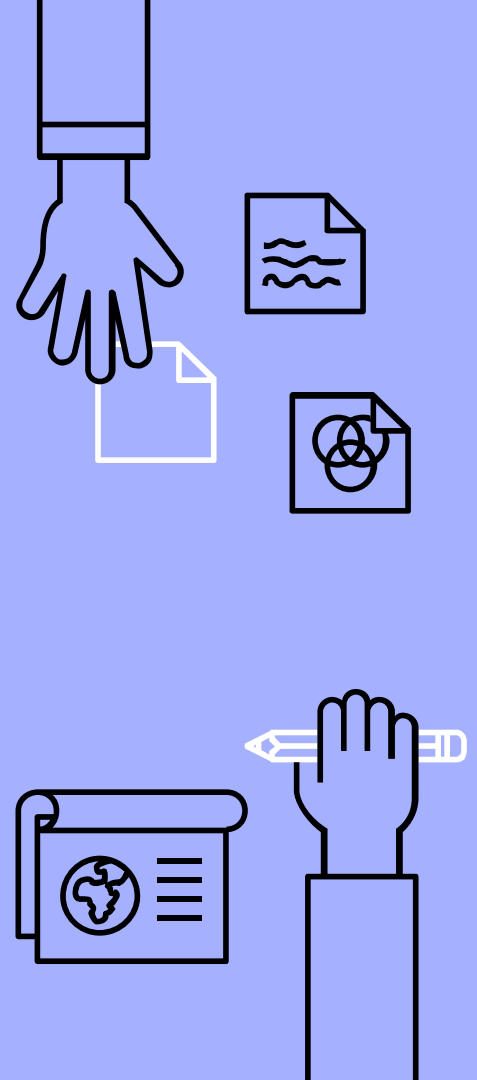


Example Tools

- ▶ **Problem**
- ▶ **Example Tool**
- ▶ **How to use & Considerations**
- ▶ **Evidence**

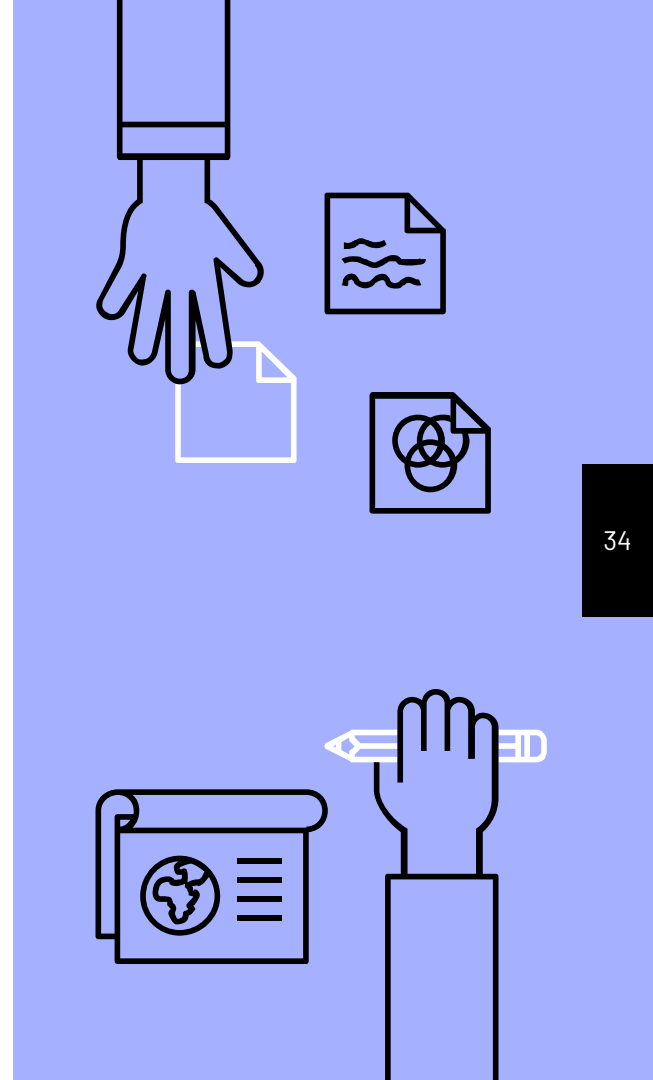


Geographic Reminder



Event Reminder

- ▶ **Who has ever forgotten something?**

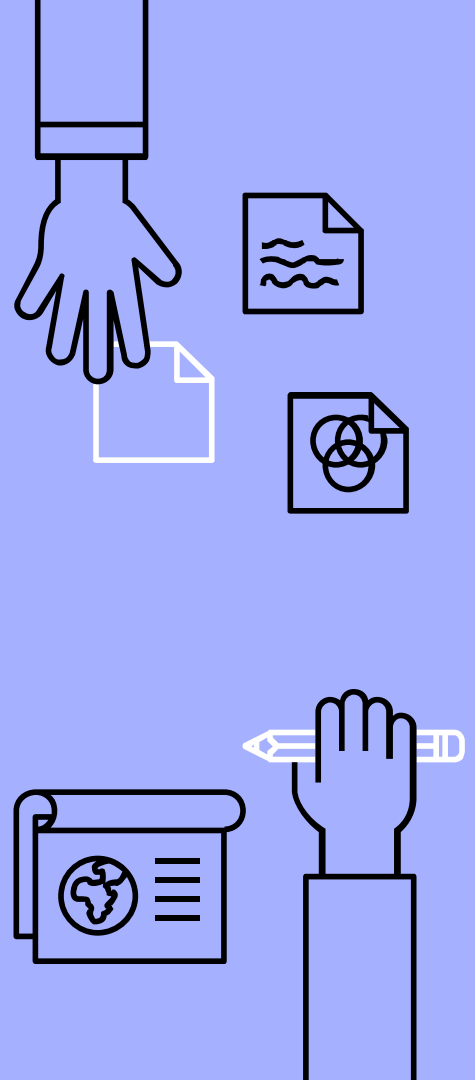


Attention: Event Reminder

Calendar interface showing a weekly view for March 2019. The current day is Monday, March 18th. The calendar displays several events:

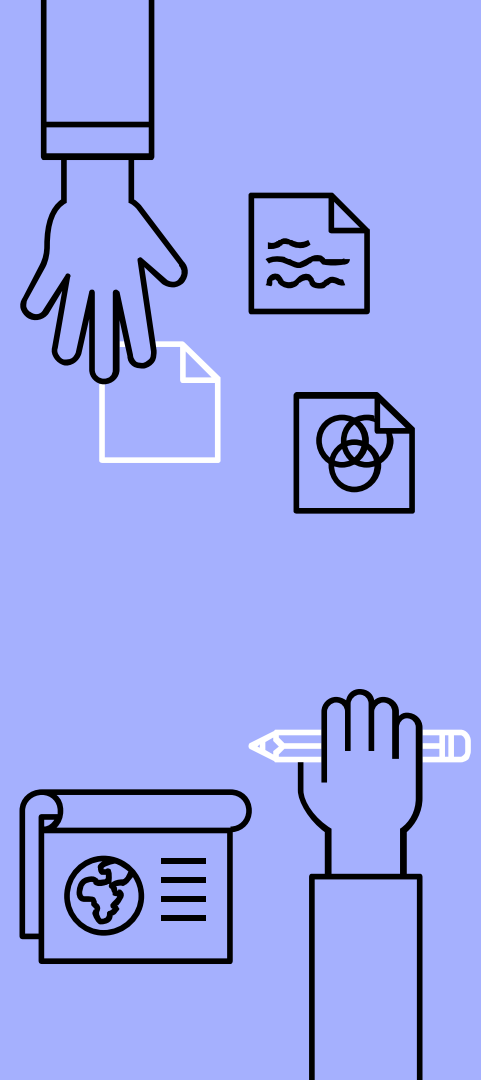
- St. Patrick's Day (March 17th)
- Happy birthday! (March 18th, 9 - 10am)
- Stay at Ember Hostel (March 20th, 8:35am - 9 - 10am)
- busy (March 18th, 10 - 11am)
- busy (March 19th, 10 - 11am)
- busy (March 20th, 10 - 11am)
- busy (March 22nd, 9 - 10am)
- busy (March 22nd, 10 - 11am)
- busy (March 19th, 1 - 2:30pm)
- busy (March 21st, 1 - 2:30pm)

The 'Display this only' menu is open, showing a grid of colored circles for selection. The Windows taskbar is visible at the bottom, showing the system clock as 2:33 PM on 3/18/2019.

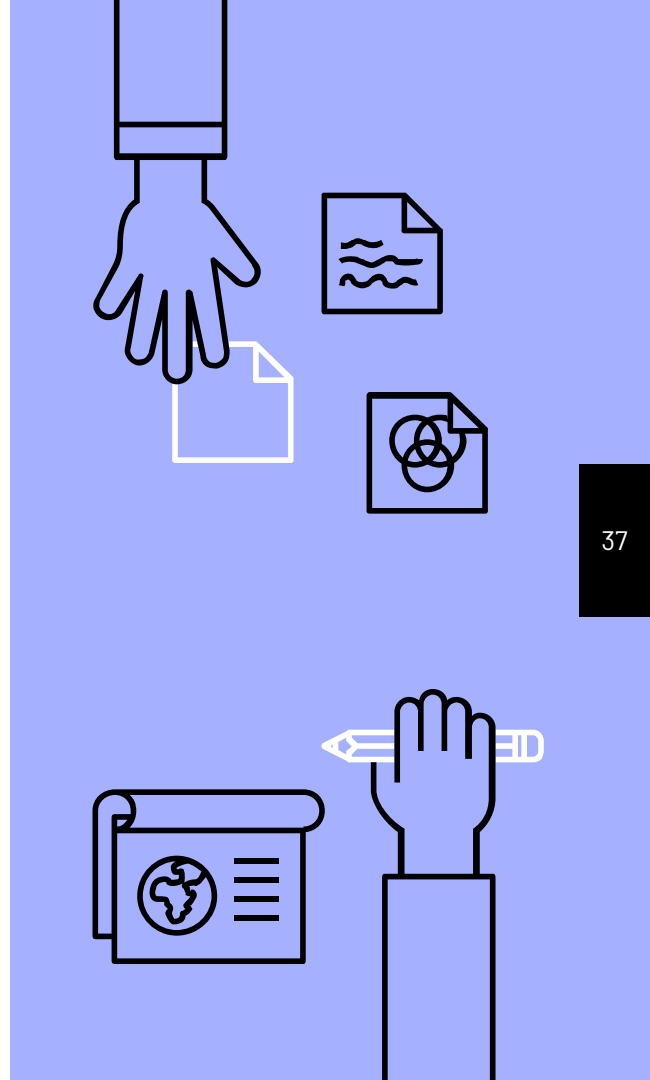
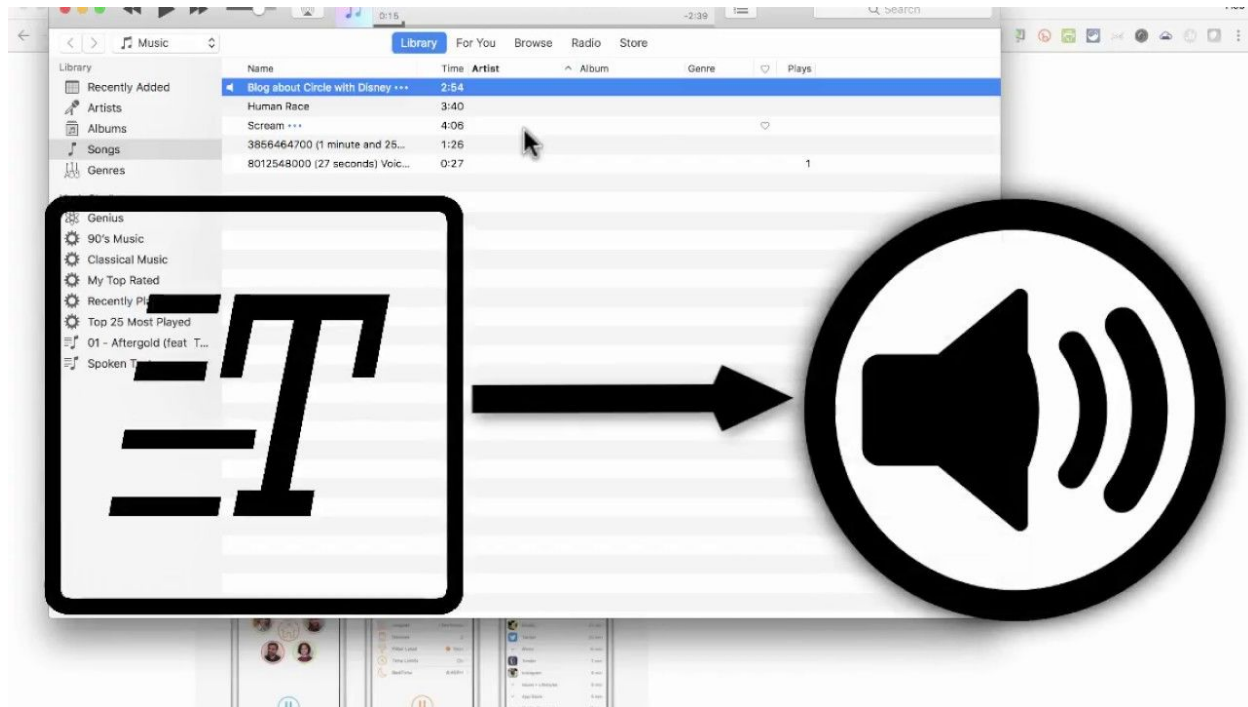


Reading: Text To Speech

<http://data.qz.com/2016/dyslexia/>

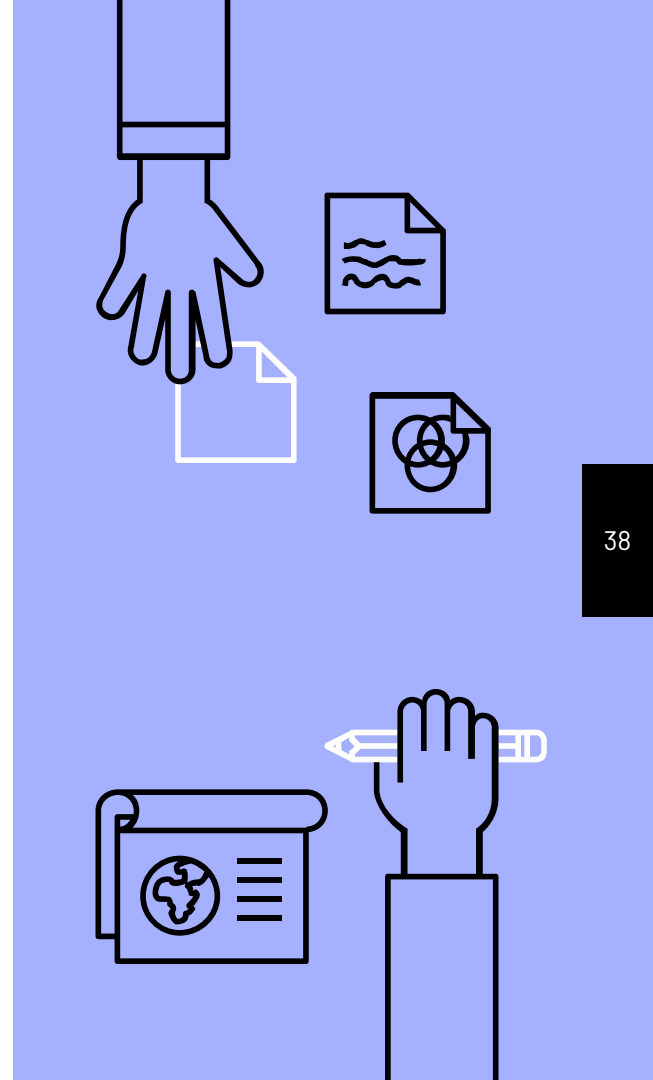


Reading: Text To Speech



Text To Speech

- ▶ **Fantastic tool for bypassing decoding, fluency, or limited reading ability**
- ▶ **Does NOT help comprehension!**



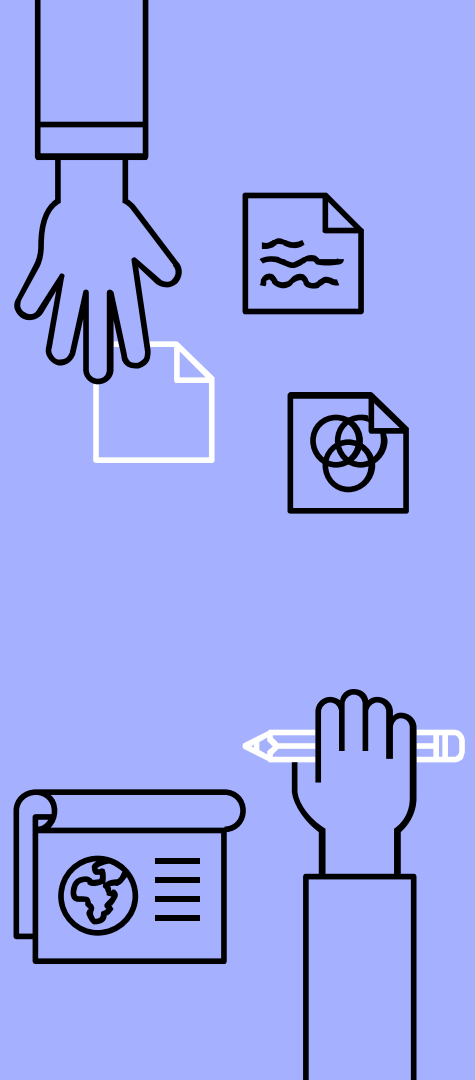
Math

$$x + 71 = 31$$

$$x = -31 - +71$$

$$x = 77 - 31$$

$$x = +40$$



Math

- ▶ **Computation**

But also...

- ▶ **Graphomotor**

Math

$y = 2x + 3$

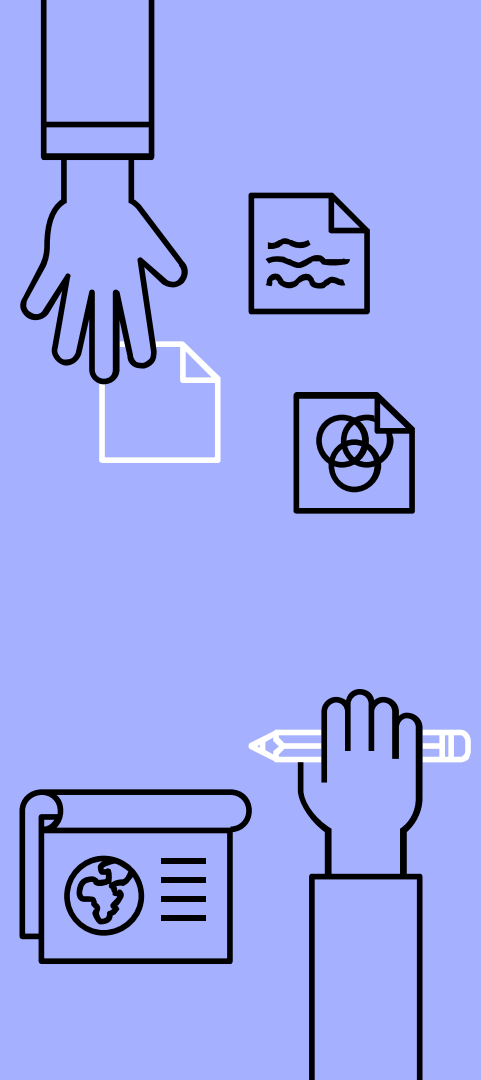
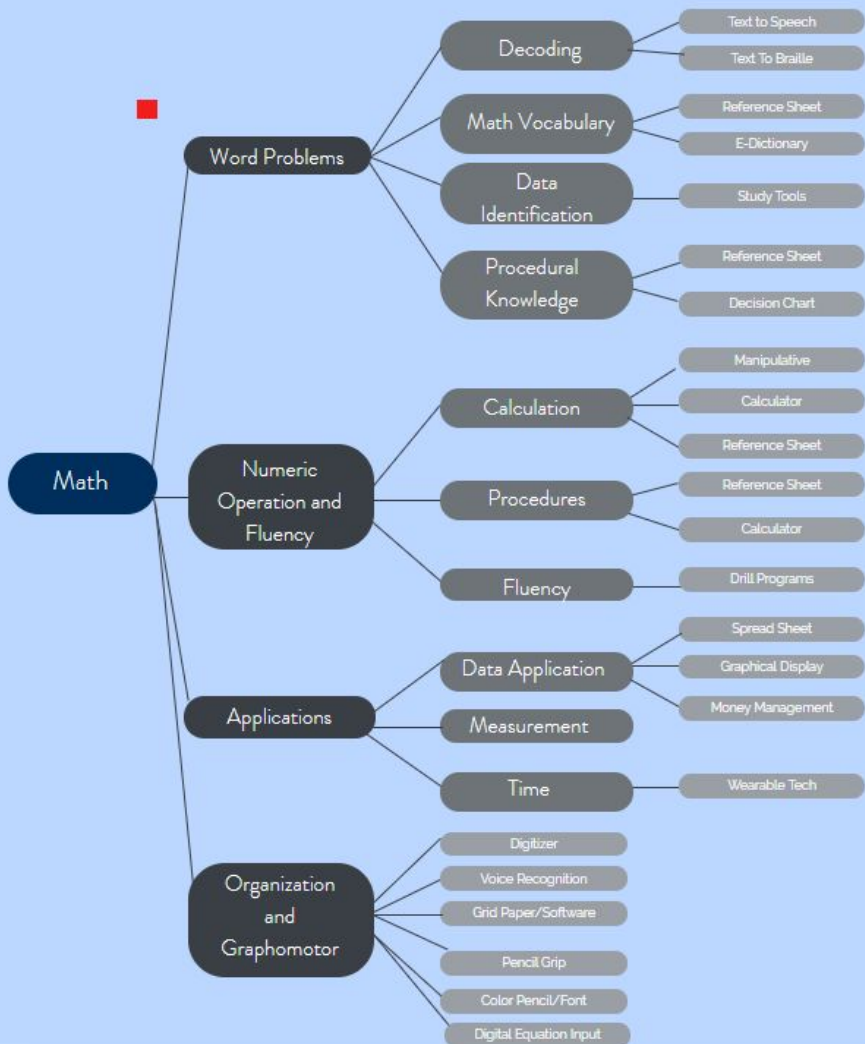
Convert

Math LaTeX MathML

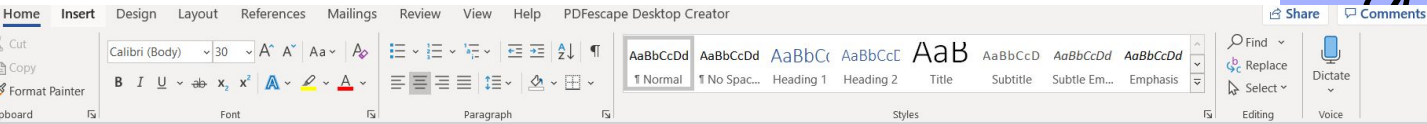
$y = 2x + 3$

MyScript

$y = 2x + 3$



Writing: Idea Generation



FRANCIS'S DOCTORAL THESIS |

**Hey Francis, How's
the thesis writing
going?
-Dr.Cunningham**

Writing: Idea Generation

The screenshot shows a Google search interface. The search bar contains 'acid rain'. A dropdown menu is open, listing various terms. The term 'nitric acid' is highlighted in blue. An orange callout box with a red border contains the text 'Get a definition for a selected topic word'. An arrow points from this box to the 'nitric acid' entry in the dropdown. The search results page for 'nitric acid' is visible, showing a dictionary definition and a Wikipedia link.

acid rain

75
calcium
clean
coal
compounds
concentration
concentrations
contribute
damage
decline
deposited
deposition
emissions
fish
forest
forests
fossil fuels
fuel
gases
lake
lakes
magnesium
metals
neutral
nitric acid
nitrogen
nitrogen oxides
North America

Get a definition for a selected topic word

Google

Secure | <https://www.google.com/search?safe=on&q=define%20nitric%20acid>

About 590,000 results (0.76 seconds)

Dictionary

Enter a word, e.g. 'pie'

ni·tric ac·id

noun CHEMISTRY

a colorless or pale yellow liquid acid that is corrosive and poisonous and has strong oxidizing properties, made in the laboratory by distilling nitrates with sulfuric acid.

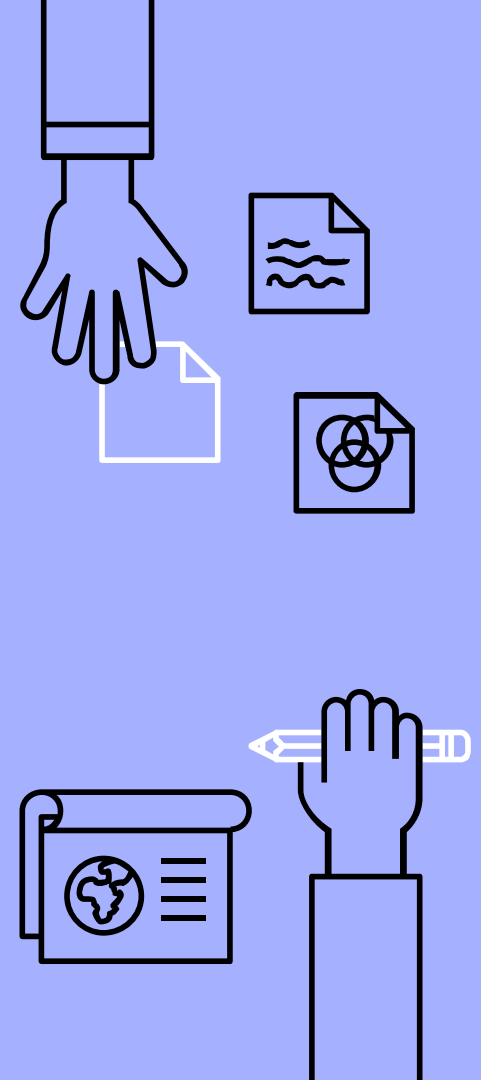
Translations, word origin and more definitions

Nitric acid - Wikipedia
https://en.wikipedia.org/wiki/Nitric_acid

Nitric acid (HNO₃), also known as aqua fortis (Latin for "strong water") and spirit of niter, is a highly corrosive mineral acid. The pure compound is colorless, but older samples tend to acquire a yellow cast due to decomposition into oxides of nitrogen and water.

Red fuming nitric acid - White fuming nitric acid - Peroxynitric acid

ThoughtQ



Over the past week, you logged

30h 37m

↓ 13 fewer hours than the previous week

Your productivity pulse

71

↓ 6.6% decrease from the previous week



Most productive day

87% Thursday, Jan. 17

Most productive time

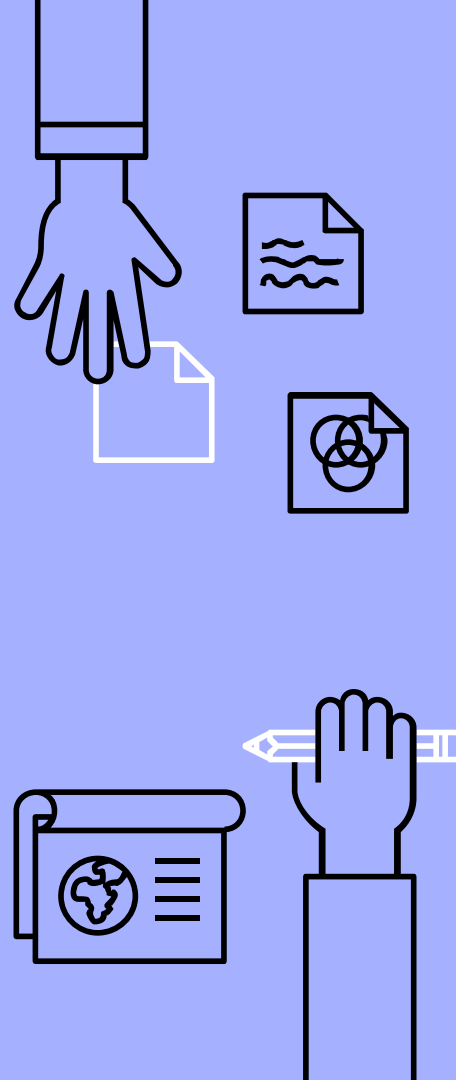
71% Afternoon

Most of your time went towards:

- 33%** Reference
- 20%** Business
- 13%** Uncategorized
- 13%** Comm/Schedule
- 7%** Entertainment

Top applications and websites:

- 6h 14m** shoutmeloud.com
- 2h 52m** Gmail
- 1h 44m** evernote
- 1h 31m** popcorntime
- 1h 11m** google.com



26h 20m of Entertainment this week - RescueTime Weekly Summary

Over the past week, you logged

50h 37m

Down arrow blue 22 fewer hours than the previous week

Your productivity pulse

39

Down arrow blue 20.4% decrease from the previous week



Very distracting time

Very productive time

Most of your time went towards:

52% Entertainment

14% Design/Comp.

13% Comm/Schedule

7% Reference

5% Utilities

Top applications and websites:

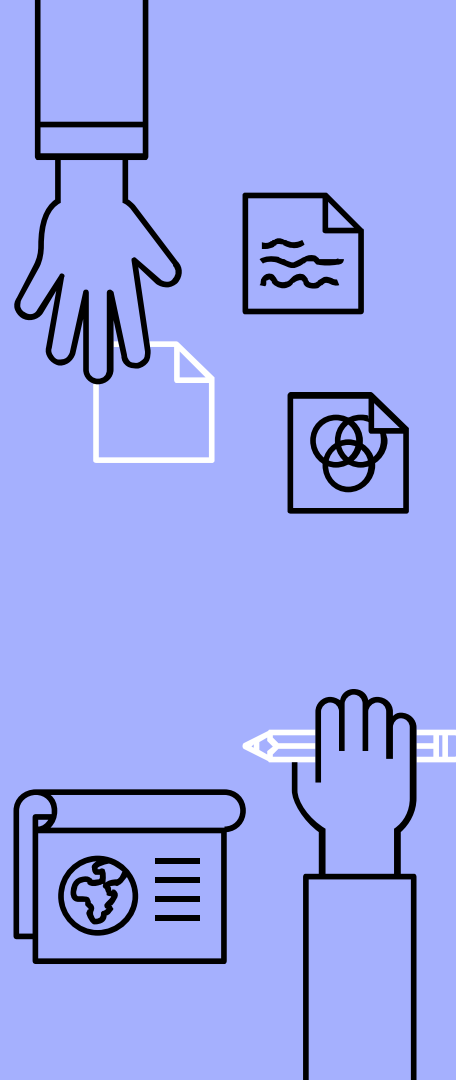
20h 36m youtube.com

6h 13m MS Word

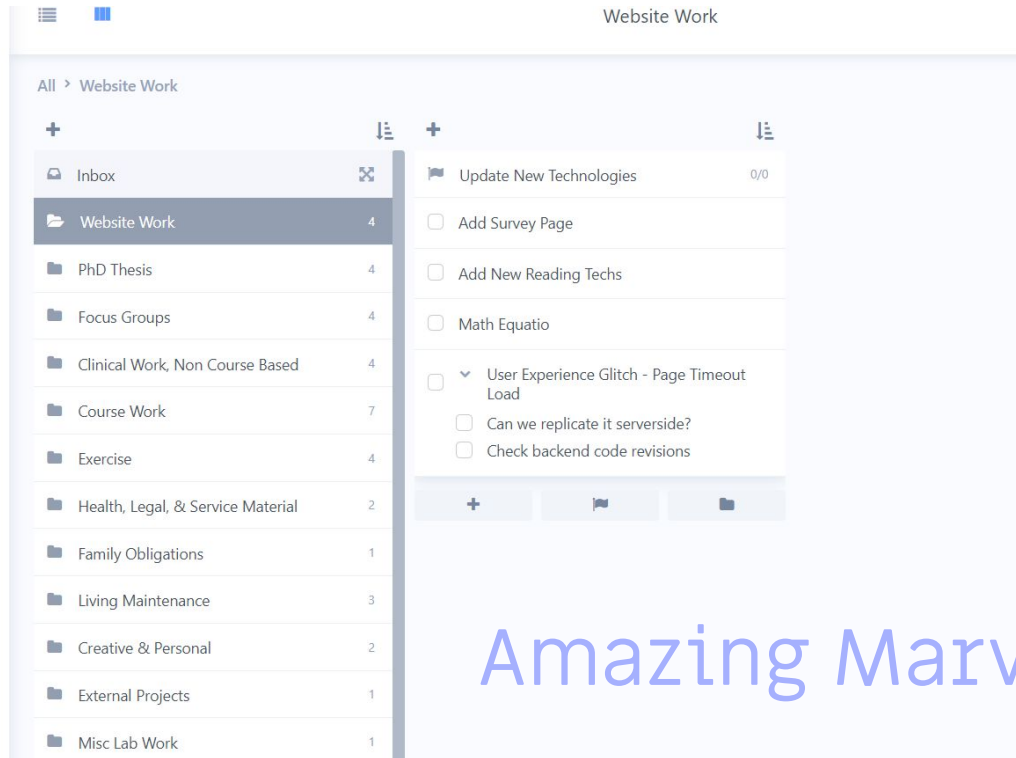
2h 22m outlook.office.com

2h 5m dota2

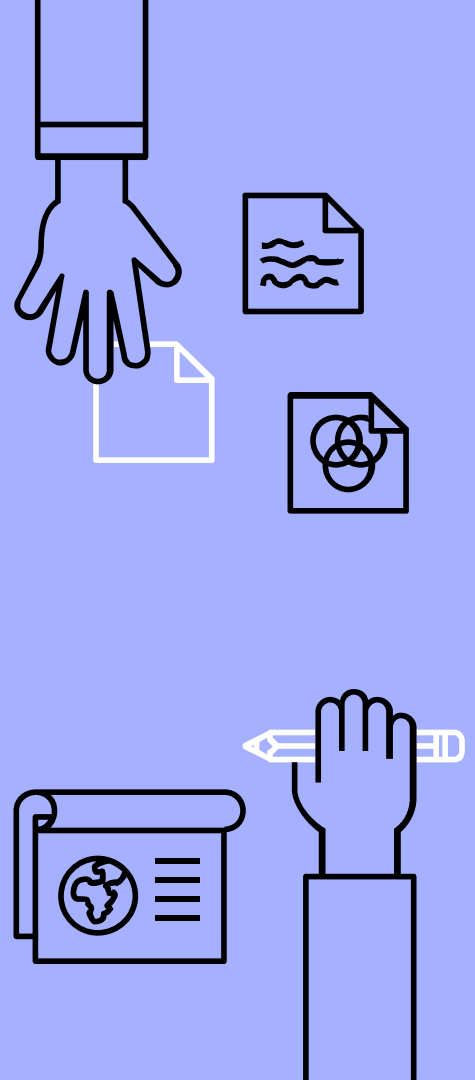
2h 3m Microsoft Teams



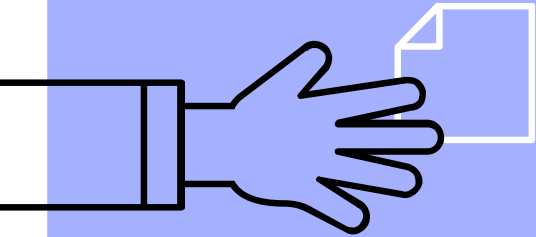
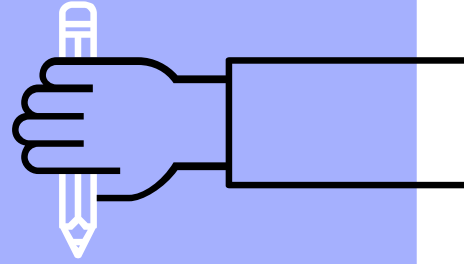
Organization: Productivity Monitor



Amazing Marvin

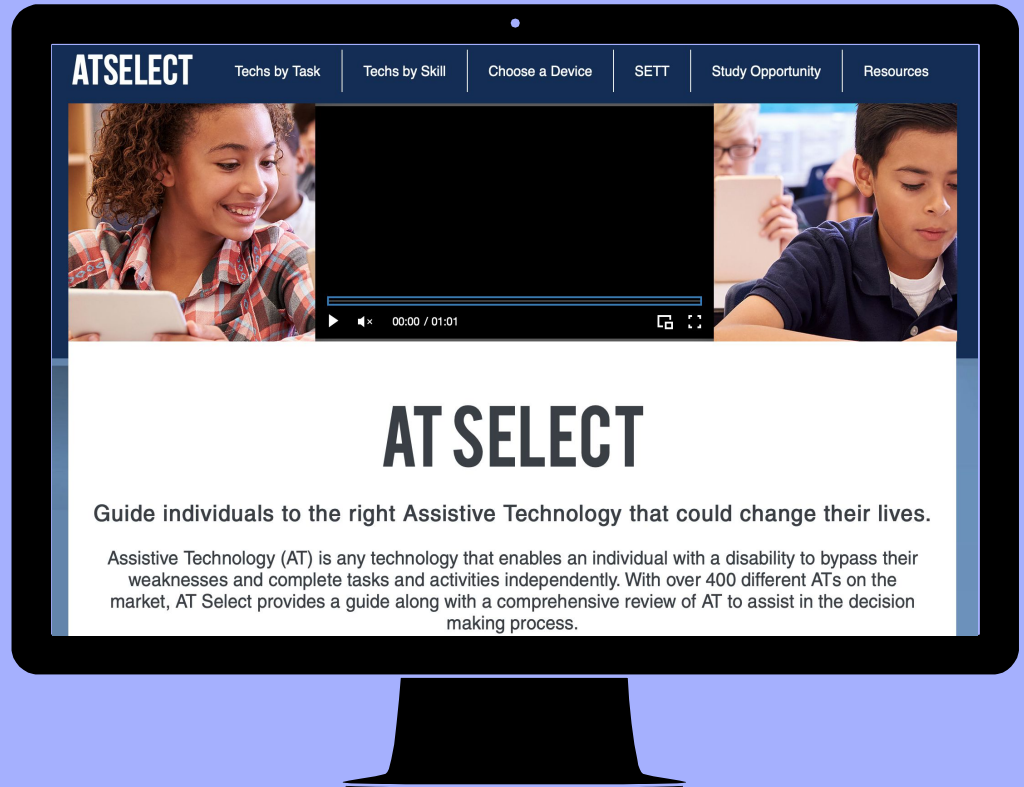


Case Study



ATSelect.org

Lets try it out!





93 AT TOOLS



364 PRODUCTS



377 EMPIRICAL ARTICLES
REVIEWED

Guide individuals to the right Assistive Technology that could change their lives.

Assistive Technology (AT) is any technology that enables an individual with a disability to bypass their weaknesses and complete tasks and activities independently. With over 400 different ATs on the market, AT Select provides a guide along with a comprehensive review of AT to assist in the decision making process.



For the classroom teacher who notices a student is unable to complete a task and guides them through identifying appropriate AT to support the student

Techs By Task

Click here to find the right AT for a specific task, like getting that essay done, solving a math word problem, or remembering where your keys are.

Techs By Skill

Click here if you are already aware of the individuals' specific skill deficits and are looking for ATs to support those skills. Typically, this section is used following the completion of a psychoeducation assessment.

Use when you know the student's skill,s strength and challenges and can go directly into to finding AT to support the area of needs

ASSISTIVE TECHNOLOGY TOOL SELECTION PROTOCOL

Student:	<input type="text"/>	School:	<input type="text"/>
Age:	<input type="text"/>	Grade:	<input type="text"/>
Date:	<input type="text"/>	AT Plan Review Date:	<input type="text"/>

StudentStrengths: Weaknesses: **Environment**What device is the student using?





Where does the student work?

 Classroom
 Library
 Home
 Other

Are there any special concerns?

 Internet Access
 Access to Power
 Non-Digital Formats
 Access to Device
 Noise
 Physical Accessibility
 Other
TaskIdentify one specific task the student is having difficulties with. **Tech**

Based on the above task, use the table below to determine what Assistive Technology Tool is suitable for the student.

 Academic Skill Domain	 Academic Skills	 Assistive Technology Tool	 Specific AT Product
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Case Study #1

Mike is a male student in your grade 4 class. He lives in an urban center in Canada. Mike generally enjoys school and is performing at grade level in most subjects. He loves to read and has an active imagination. He expresses interest in writing his own stories but struggles to get his ideas onto paper as he struggles forming letters with a pencil and paper. Mike has struggled with handwriting since kindergarten. Mike can become very defeated and disengaged during his written language work periods. He is rarely able to complete writing tasks within the allotted time. While Mike's parents are aware of his struggles, they explain that they can't afford "fancy gadgets" to support him.

You would like Mike to write a short story in his journal based on a picture prompt. You show the class a photograph and ask the students to write a story about what is happening in this picture. This assignment is designed as a creative writing task used to assess a student's ability to generate ideas and communicate a story clearly, including a beginning, middle and end. Mike asks you if he can just tell his story to you instead of writing it down, but you have other students to attend to. What technologies could you use to assist Mike with his journal writing?



Case Study #2

Cindy is a female student in your grade 6 class. She lives in an suburban area in Ontario. Cindy generally enjoys school. Up until grade 3 Cindy was meeting expectations for almost all of her classes. Once she began grade 4 her marks started to slip. For the past three years Cindy has been struggling to complete her desk work independently, however she does actively participate in class discussions. Within the past 6 months, Cindy has been constantly asking for help with her desk work, refusing to attempt it independently. When you have the time to sit down with her and talk through the work, she is able to work through the content. You notice that her reading is fairly slow and laboursome. You also find yourself needing to define some of the words in the class reading, especially in science and social studies.

Cindy's parents book a meeting with you to discuss her recent performance at school. They are quite upset that their daughter is struggling so much, especially because they know she is such a bright and dedicated student. They have already bought her a laptop and iPad to support her studies. They are desperate for any help you can provide.

You want Cindy to write a short response to today's Social Studies reading, what techs could help support Cindy.



Thank you for your time!

Harrison McNaughtan, MA.
h.mcnaughtan@mail.utoronto.ca

Damian Page, BA.
damian.page@mail.utoronto.ca

Emily Staffiere, BSc.
emily.staffiere@mail.utoronto.ca

Francis Wall, MA.
francis.wall@mail.utoronto.ca

Todd Cunningham, PhD. C.Psych
todd.cunningham@utoronto.ca



@atselect_oise



@atselect_oise



**Academic
Intervention Lab**



**www.Academic
InterventionLab.com**

Feedback

Please take 3 minutes to offer me some feedback on this lecture!

<https://tinyurl.com/sxcy940>



Damian Page
Masters, Year 1.



Emily Staffiere
Masters, Year 2.



Francis Wall
PhD, Year 1.



Harrison McNaughtan
PhD, Year 1.