TECHNOLOGY TOOLS TO SUPPORT EXECUTIVE FUNCTIONING

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Objectives for this session

- *Understand how technology may support students with their executive function skills*

- *View some of the technology tools available to help accommodate*

- *View online resources available*

Help Build Executive Function Skills

What's It Like?

- *Understood.org*

Through Your Child's Eyes

Grade 10 - Organization

What is Executive Functioning?

There is no consensus – here are a few:

Dawson and Guare – Executive skills allow us to organize our behavior over time and override immediate demands in favor of longer-term goals.

Naglieri and Goldstein – *the efficiency with which individuals go about acquiring knowledge as well as how well problems can be solved.*
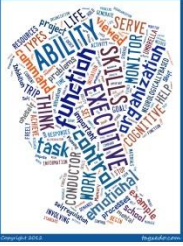
Stuss and Benson – *Executive functions is a generic term that refers to a variety of different capacities that enable purposeful, goal directed behavior, including behavior regulation, working memory, planning and organizational skills and self-monitoring*

What is Executive Functioning?

❑ *Obukowicz, Stindt, Rozanski, and Gierach categorize these skills into four categories:*

- ▪ *Self-Organization (self-management)*

- ▪ *Information Management*

- ▪ *Time Management*

- ▪ *Materials Management*

Assessing Students' Needs for Assistive Technology (2009) WATI

Portrait of a Graduate

Goal-Directed and Resilient Individual

Engages in healthy and positive practices and relationships to promote overall physical and mental well-being

Persists to accomplish difficult tasks and to overcome academic and personal barriers to meet goals

Uses time and financial resources wisely to set goals, complete tasks, and manage projects

Shows strong understanding and belief of self to engage in reflection for individual improvement and advocacy
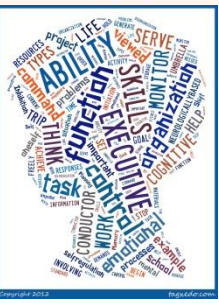
Organization Inventory

The Organization Problems Inventory is a tool that can assist in determining the type of organizational problems a student might have.

The inventory is part of Chapter 9 of the WATI Assessing Students' Needs for Assistive Technology (ASNAT) 5th Edition - by Chapter.

The website is: http://wati.org/?pageLoad=content/supports/free/index.php

Organization Problems Inventory

For each of the following statements, consider whether this is a problem you (or a student) exhibits. If it is, place a check mark in the white box to the right of the statement.

WATI Student Information Guide

Chapter 1 - Assistive Technology Assessment

WATI Student Information Guide
SECTION 8
Organization

1. Difficulties Student has with Organization (Check all that apply.)

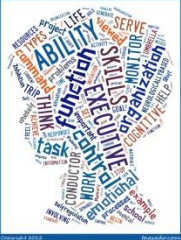| Self management	Materials Management
□ Unable to self regulate behavior and attention	□ Messy work and storage areas
□ Easily distracted	□ Lost papers and projects
	□ Can't find work tools such as book, scissors
Time management	or markers quickly
□ Arrives late	
□ Misses deadlines	**Information Management**
□ Poor transitions between activities	□ Breaking a large project into smaller steps
□ Struggles to settle down after transitions or	□ Organizing notes or review items
when it is work time	□ Completing multi-step tasks

2. Assistive Technology tried (Check all that apply.)

Self:	Materials:
□ Fidgets	□ Folders/ Containers/ Bins/ Boxes
□ Sitting on a therapy ball, bounce or sitz	□ Checklists
cushions	□ Coding
□ Pressure or weighted vest	□ Filing
□ Concentration CD's or Mp3's	□ Portable electronic Storage
Information:	□ Computer based electronic storage
□ Folders	**Time:**
□ Tabs/Post Its	□ Clock analog vs. digital
□ Highlighters	□ Adapted clocks and watches
□ Study guides	□ Talking readout
□ Hand Held Recorders	□ Large numbers
□ Digital Organizers	□ Visual cue
□ Search tools/engines	Timed reminder message
□ Bookmarking tools	Schedules
□ Graphic organizers	□ Picture
□ Manipulatives/ Instructional Tutorials	□ Worded
□ Animations	□ Calendar-based
	□ Digital scheduler
	□ Digital reminder

3. Summary of Student's Abilities and Concerns Related to Organization

_____
_____
_____
_____
_____
_____

Assessing Students' Needs for Assistive Technology (2009)   38

http://wati.org/content/supports/free/pdf/form/Sec8-Organization-Form.pdf

Goal-Directed Persistence

The ability to initiate tasks, plan and organize time and materials, solve problems, sustain effort, and follow through.

Show

Cognitive Flexibility/Shift

- *The ability to take perspectives, make connections, think flexibly and move freely from one situation to another.*

Self-Control

The ability to inhibit and regulate emotional and behavioral responses, and read and respond appropriately to social situations.

Show

Attention and Focus

The ability to filter out distractions and sustain concentration in order to think, listen, or watch with interest.

(c) 2010 Daniel J. Simons

Working Memory

The ability to mentally store, retrieve, and use information for a task.

Show

Metacognition

The ability to analyze, understand, and monitor one's learning and thinking.
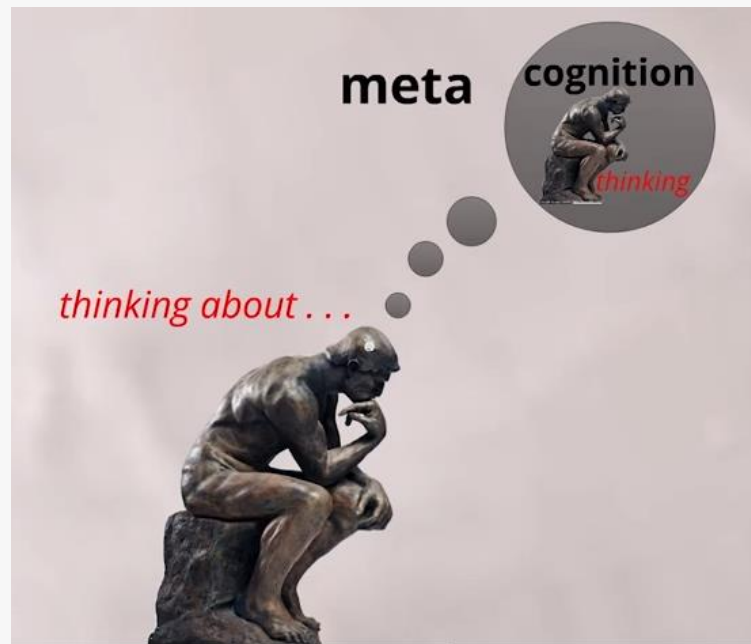
Low Tech Tools

- ❑ *Color Coding*
- ❑ *Calendars*
- ❑ *Self-Monitoring Tape*
- ❑ *Visual Schedules*

Low Tech Tools

- *Portable supplies and multiple locations*

- *Launching Pad*

- *Accordion binder*

- *Weekly "clean sweep"*

This helps support
Goal-Directed Persistence:
Time Management
Materials Management

Low Tech Tools

□ *Prioritizing Strategies*

- *"Anxiety" categorization (What makes you most nervous? – do it first)*

- *Color coding from "hot/red" to "cool/blue"*

- *Arrow Tabs and Page Markers on pages in the book to denote most important information that must be learned*

This helps support
Goal-Directed Persistence:
  Information Management
  Time Management
  Materials Management

Low Tech Tools

❏ *Calendars*

Calendars that Work
http://www.calendarsthatwork.com/
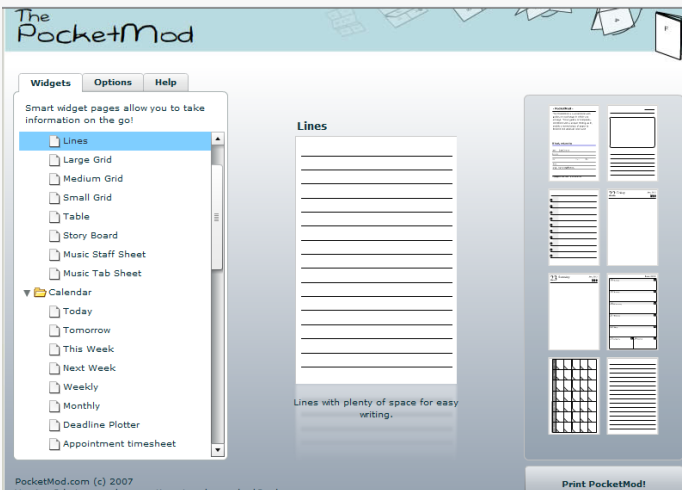
This helps support
Goal-Directed Persistence:
    Information Management
    Time Management
    Materials Management

Low Tech Tools

❑ *Wipe-off Schedule*

  ▪ *Create a schedule (daily, weekly)*

  ▪ *Put in a plastic frame*

  ▪ *Use an erasable marker to check off tasks as completed*

  ▪ *Update the date each week*

This helps support
Goal-Directed Persistence:
Time Management

Low Tech Tools

❑ *Self Monitoring Tape for Sustaining Attention*

- *Includes tones or beeps at irregular intervals*

- *Students record their attending behavior when they hear the tone.*

www.TeachingLD.org

Worksheet # 4
Self-Management Device

Student Name:	Week of:
Teacher Name:	Subject:

Directions:

Circle "Yes" if you are sustaining attention when you hear the tone.

Circle "No" if you are not sustaining attention when you hear the tone.

Mon	Sustaining Attention?	Tues	Sustaining Attention?	Wed	Sustaining Attention?
Tone 1	Yes No	Tone 1	Yes No	Tone 1	Yes No
Tone 2	Yes No	Tone 2	Yes No	Tone 2	Yes No
Tone 3	Yes No	Tone 3	Yes No	Tone 3	Yes No
Tone 4	Yes No	Tone 4	Yes No	Tone 4	Yes No
Tone 5	Yes No	Tone 5	Yes No	Tone 5	Yes No
Tone 6	Yes No	Tone 6	Yes No	Tone 6	Yes No
Tone 7	Yes No	Tone 7	Yes No	Tone 7	Yes No
#8	Yes No	#8	Yes No	#8	Yes No

Thur	Sustaining Attention?	Fri	Sustaining Attention?
Tone 1	Yes No	Tone 1	Yes No
Tone 2	Yes No	Tone 2	Yes No
Tone 3	Yes No	Tone 3	Yes No
Tone 4	Yes No	Tone 4	Yes No
Tone 5	Yes No	Tone 5	Yes No
Tone 6	Yes No	Tone 6	Yes No
Tone 7	Yes No	Tone 7	Yes No
#8	Yes No	#8	Yes No

Number of YES responses this week:

This helps support
Goal-Directed Persistence:
   Time Management
Self-Control
Attention and Focus

Low Tech Tools

❑ *Visual Schedules*

- *A visual way of letting students know what activities they will be doing today and in what order...*

- *Allows students to be more independent*

- *Sets up a natural hierarchy of activities which add motivation to work through non-preferred tasks to get to preferred tasks which reinforces completing ALL activities*

- *Controls inappropriate behaviors, too!*

This helps support
Goal-Directed Persistence:
  Time Management
Cognitive Flexibility/Shift
Working Memory

Low Tech Tools

❑ *Strategy Cards*

- *Students identify strategies to use in situations where their emotions may get out of control*

- *Students use a template to make cards showing the strategy in words and visuals*

- *May serve as a reminder to help students make better self-management decisions*

Breathe Deep | Take a Break

Count to 10 | Walk Away

This helps support:
Self-Control

Low Tech Tools

❑ *Vibrating Watch*

- *Watches are available that can be set to vibrate and show a reminder phrase at the programmed time. Students can program reminders to go off at the beginning or end of class such as "Turn in homework".*

This helps support
Goal-Directed Persistence:
Time Management

Tech Tools

- ❑ *MS Word & PowerPoint*
- ❑ *Graphic Organizers*
- ❑ *Notetaking*

Tech Tools for Reading

❑ *Tools for Academic Performance*

George Washington

George Washington (February 22, 1732 – December 14, 1799) was a central, critical figure in the founding of the United States, as well as the nation's first president (1789-1797), after leading the Continental Army to victory over the Kingdom of Great Britain in the American Revolutionary War (1775-1783).

Washington was seen as symbolizing the new nation and republicanism in practice. His devotion to civic virtue made him an exemplary figure among early American politicians. During Washington's funeral oration, Henry Lee said that of all Americans, he was "first in war, first in peace, and first in the hearts of his countrymen." Washington has been consistently ranked by scholars as one of the top three U.S. Presidents (with Abraham Lincoln and Franklin D. Roosevelt).

George Washington was born on February 22, 1732, the first son of Augustine Washington and his second wife, Mary Ball Washington, on the family's Pope's Creek Estate near present-day Colonial Beach in Westmoreland County, Virginia.

Use the text highlight tool to:

- *find main ideas, key details, new vocabulary*
- *interacting with text may help students focus*
- *emerging readers highlight words they don't understand and return to them later*

This helps support
Goal-Directed Persistence:
   Information Management
Attention Focus
Metacognition

Tech Tools for Reading

❑ *Tools for Academic Performance – Text Compactor*

Helps students to:
- *find main ideas*
- *interacting with text may help students focus*
- *allows students to pre or post read summary materials*

This helps support
Goal-Directed Persistence:
Information Management
Attention Focus
Metacognition

Tech Tools for Reading

❏ *Tools for Academic Performance - Rewordify*

[Video](#)

Helps students to:
- *interact with text which may help with focus*
- *simplify text to increase understanding*

This helps support
Goal-Directed Persistence:
   Information Management
Attention Focus
Metacognition

Taking Notes

Skills Needed for Note-Taking

- Sustained attention
- Ability to receive (written text or lecture) and process information (identifying main ideas and details) simultaneously
- Ability to comprehend the text
- Capacity to identify important information and determine what to write
- Organization and production of intelligible notes
- Handwriting (if using paper-and-pencil method) or computer skills

http://iris.peabody.vanderbilt.edu/module/ss2/perspectives-and-resources/what-study-skills-strategies-can-improve-students-academic-performance/page-5-note-taking/#content

Tech Tools for Taking Notes

❏ *Tools for Using MS Word*

Data Chart for Note Taking

Sandy M. Greek Olympics	When were the first Greek Olympics?	Where were the first Greek Olympics?	When and where were the first modern Olympics?
Source #1	the ancient Olympic Games began in 776 BC	the Games were held in Olympia every four years for almost 12 centuries	the first modern Olympics were held in Athens, Greece in 1896
Source #2	the first recorded Ancient Olympic Games were in 776 BC	the Olympic Games were held in a village called Olympia	the modern Olympic games began in 1896
Source #3	the earliest reliable date that recorded history gives for the first Olympics is 776 BC but historians presume the Games began well before then	the games were held at Olympia in midsummer of 774 BC	thirteen countries competed at the first modern Olympic games in Athens, Greece in 1896

Students can use a data chart organizer for taking notes and keeping track of sources.
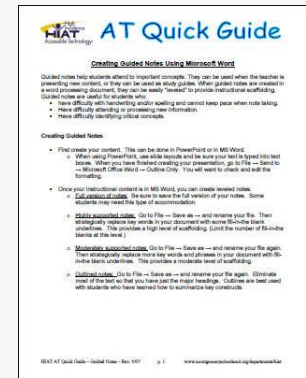
This helps support
Goal-Directed Persistence:
 Information Management
Attention and Focus
Working Memory
Metacognition

Tech Tools for Taking Notes

❑ Guided Notes

- ❑ *Facilitate note-taking for struggling students*

- ❑ *Skeleton outline containing main points with blank spaces for students to fill in*

- ❑ *May include key terms, phrases, and definitions*

- ❑ *Requires students to actively respond & improves their note taking*
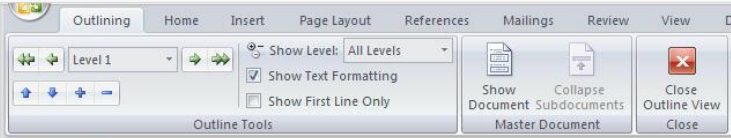
- ❑ *Choose a format to use consistently*

This helps support:

Goal-Directed Persistence:

    Information Management
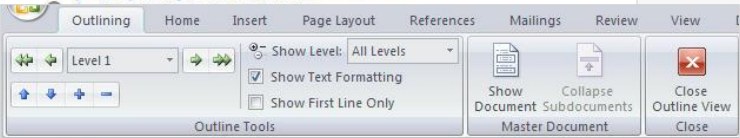
Attention and Focus

Working Memory

Tech Tools for Taking Notes

❑ *Guided Notes from Outlines*

This helps support:

Goal-Directed Persistence:

Information Management

Attention and Focus

Working Memory

Tech Tools for Taking Notes

❏ *Guided Notes – PowerPoint Notes View*

This helps support:

Goal-Directed Persistence:

  Information Management

Attention and Focus

Working Memory

Tech Tools for Taking Notes

❑ *Notetaking*

- *Digital Recorder*

- *Livescribe Pen - Records audio and notes synchronously*

- *AudioNote or SoundNote Apps*

- *OneNote*

Tech Tools for Taking Notes

❑ *Smartpen*

- *Students can take notes in class using the smartpen*

- *Option of audio recording*

- *Upload to computer*

- *Organize by subject*

- *Search by keyword*

This helps support:

Goal-Directed Persistence:

      Information Management

      Materials Management

Attention and Focus

Working Memory

Metacognition

Tech Tools for Writing

❑ *Using Graphic Organizers*

SmartArt in MS Word

This helps support:
Goal-Directed Persistence:
   Information Management
Attention and Focus
Working Memory
Metacognition

Tech Tools for Writing

Kidspiration Templates
Use templates to help students structure their writing
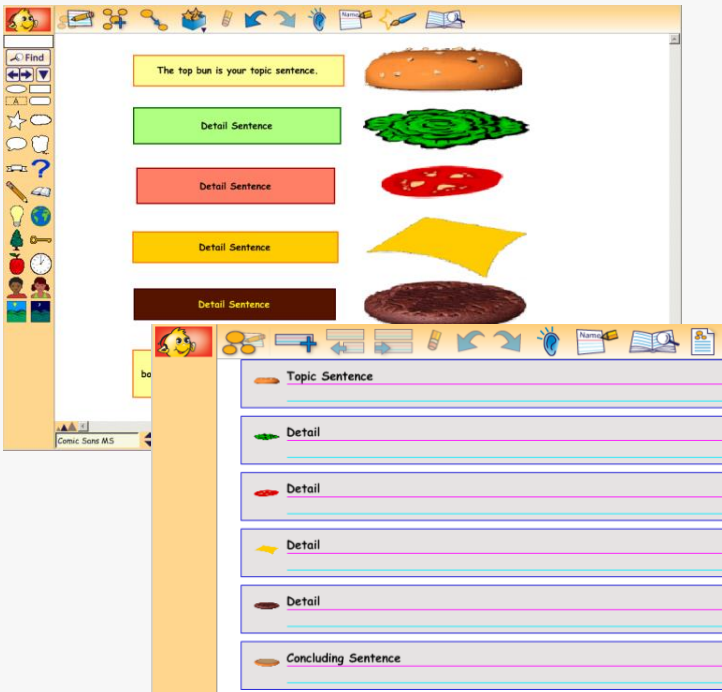
Hamburger Paragraph
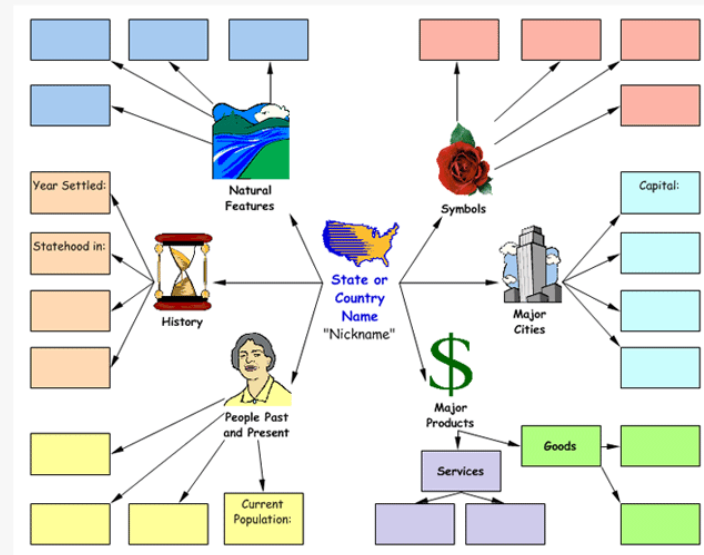
Research

This helps support:
Goal-Directed Persistence:
    Information Management
Attention and Focus
Working Memory
Metacognition

Tech Tools for Writing

Inspiration Research Organizer Template

This helps support:
Goal-Directed Persistence:
    Information Management
Attention and Focus
Working Memory
Metacognition

Tech Tools for Writing

❑ *Using Graphic Organizers*
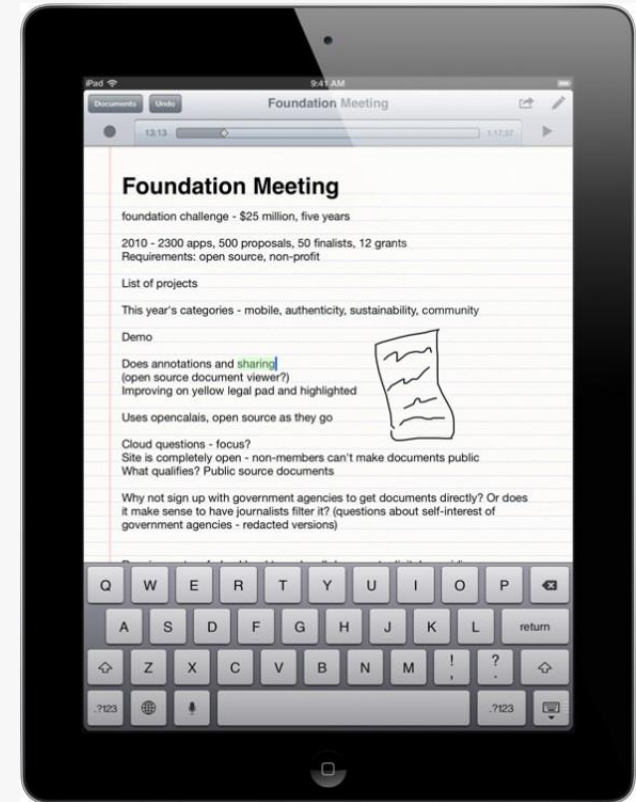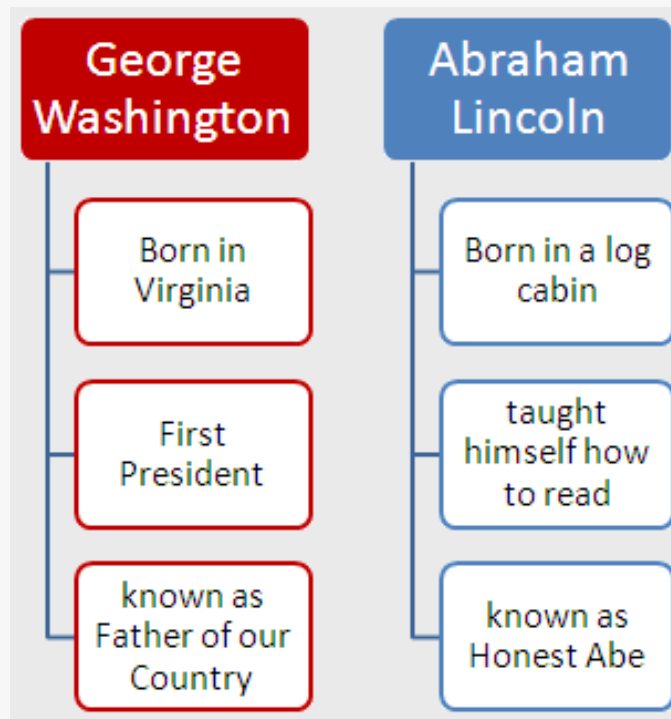
This helps support:

Goal-Directed Persistence:

    Information Management

Attention and Focus

Working Memory

Metacognition

Tech Tools for Managing Long Term Assignments

□ *Tools for Using MS Word*

☐ Select a book by July 2

☐ Read book by July 14

☐ Complete introduction

☐ Complete body of book report

☐ Complete conclusion of book report

☐ Final project due by July 25

*Use the forms feature of MS Word
to create a checklist*

This helps support:
Goal-Directed Persistence:
    Time Management
    Materials Management
    Initiate Tasks
Working Memory
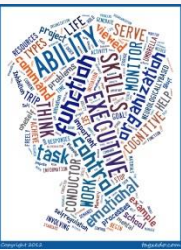
Tech Tools for Managing Materials

□ *Email*

- *When teachers request a hard copy of an assignment, have the child email the assignment to his teacher or his/her own account. Then, the student can print it out at school if it is misplaced.*

This helps support:
Goal-Directed Persistence:
Materials Management
Follow through

Tech Tools for Managing Time

❑ *Timers*

http://www.timeme.com/timer.htm

OFF

[More Online Timers | New! 90 Minute Timer]

http://timer.onlineclock.net/

10

▶▶ START   ◀◀ RESET

Start Time 00:00:10   Stop Time 00:00:00   Set   Show Settings

00:00:00

Start   Reset

☑ Show help   ☐ Remember timers (local machine)

Timer 1	00	00	00	Beep ▼ Test	Set
⊼ Name your Timer	⊼ Hr	⊼ Min	⊼ Sec	⊼ Alarm	⊼ Set Timer

http://www.timeanddate.com/timer/

This helps support:
Self Management
Time Management

Working Memory - Keyword

Over the last thirty years, more than forty research studies have documented the effectiveness of mnemonic strategy instruction. These strategies have been shown to be effective for elementary and secondary students with mild disabilities (e.g., LD, intellectual disability, emotional disturbance). *(Scruggs, Mastropieri, Berkeley, & Marshak, 2010)*

Image of a cow sitting on a pile of sand in a flat-bottomed boat with square ends

- "Scow," think of keyword "cow."
- Remember the picture of the cow sitting in the boat filled with sand.
- This will help you remember that "scow" means "a large flat-bottomed boat with broad square ends used chiefly for transporting sand, gravel, or refuse."

http://iris.peabody.vanderbilt.edu/module/ss2/perspectives-and-resources/what-study-skills-strategies-can-improve-students-academic-performance/page-4-mnemonics/#content

Working Memory - First Letter

Capitalization

Overall appearance

Punctuation

Spelling

Where Do I Get Images?
- Google Images
- ⚙ Advanced Google Search
- Tag Galaxy

http://iris.peabody.vanderbilt.edu/module/ss2/perspectives-and-resources/what-study-skills-strategies-can-improve-students-academic-performance/page-4-mnemonics/#content

Self-Regulation

- Self-monitoring
- Self-instruction
- Goal-setting
- Self-reinforcement

Mobile Tech Tools

❑ *Electronic Organizers*

❑ *Organizing Digital Files*

Mobile Tech Tools

❏ *Electronic Organizers*

Mobile Tech Tools

❑ *Using Photos*

Many mobile devices have the capability of taking pictures. For example, students could take a picture of the assignment that the teacher wrote on the board, or a picture of the way their desk should be organized.

This helps support:
Goal-Directed Persistence:
    Follow Through
Working Memory

Mobile Tech Tools

❏ *Organizing Digital Files*
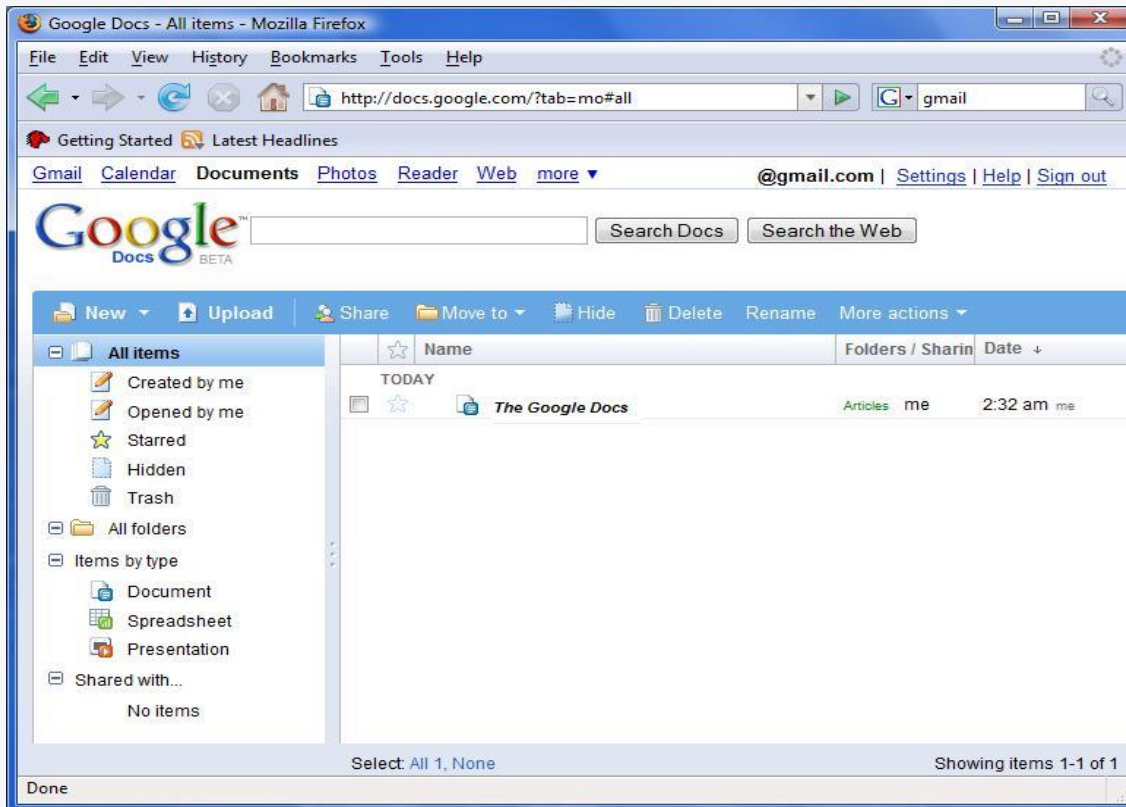
Google Docs

This helps support:
Goal-Directed Persistence:
Materials Management

Internet Resources

- ❑ *Online Checklist Creator*

- ❑ *Flash Cards*

- ❑ *Rubrics*

- ❑ *Study Guides and Strategies*

Checklists

Middle school students with ADHD who often were not prepared for class (i.e., being punctual, being ready for class [seated, eyes on teacher], and having supplies [paper, notebook, pen or pencil]) were taught how to self-monitor their actions by using a checklist and to self-evaluate how well they followed the behaviors on that checklist. On average these students were prepared for class less than 50% of the time prior to the intervention in comparison to an average of 100% after it.
(Gureasko-Moore, DuPaul, & White, 2007)

Internet Resources

❑ *Online Checklist Creator*

- *Choose the grade level for the type of project you want your students to do.*

- *You can choose from writing, presentation, multimedia, or science projects.*

- *You can make a checklist with the touch of a button!*

PBL Project Based Learning

Checklists to support Project Based Learning and evaluation

http://pblchecklist.4teachers.org/checklist.shtml

This helps support:
Goal-Directed Persistence:
     Time Management
     Materials Management
     Initiate Tasks
Working Memory

Internet Resources

❑ *Flash Cards*

- *http://www.quizlet.com*

- *http://www.studystack.com*

- *http://www.funnelbrain.com*

- *http://www.studyblue.com*

- *http://www.proprofs.com*

- *http://www.aplusmath.com*

- *http://www.spellingcity.com*

This helps support:
Working Memory
Attention and Focus
Metacognition

Internet Resources

❑ *Rubrics*

CATEGORY	4	3	2	1
Organization	Information is very organized with well-constructed paragraphs and subheadings.	Information is organized with well-constructed paragraphs.	Information is organized, but paragraphs are not well-constructed.	The information appears to be disorganized. 8)
Amount of Information	All topics are addressed and all questions answered with at least 2 sentences about each.	All topics are addressed and most questions answered with at least 2 sentences about each.	All topics are addressed, and most questions answered with 1 sentence about each.	One or more topics were not addressed.
Sources	All sources (information and graphics) are accurately documented in the desired format.	All sources (information and graphics) are accurately documented, but a few are not in the desired format.	All sources (information and graphics) are accurately documented, but many are not in the desired format.	Some sources are not accurately documented.

http://rubistar.4teachers.org/

Helps students know what is expected ahead of time so they can plan accordingly.

This helps support:
Attention and Focus
Metacognition

Internet Resources

❑ *Rubrics*

Rubrics for Assessment

A collection of rubrics for assessing portfolios, cooperative learning, research process/ report, PowerPoint, podcast, oral presentation, web page, blog, wiki, and other web 2.0 projects.
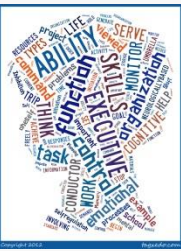*http://www.uwstout.edu/soe/profdev/rubrics.cfm?THEBIGDEAL BOOK=634611295785560000*

Online Teacher Resource
http://www.teach-nology.com/web_tools/rubrics/

teAchnology

This helps support:
Attention and Focus
Metacognition

Internet Resources

❑ *Study Guides and Strategies*

Folders

🔻 Learning/studying
🔻 Time/project management
🔻 Reading/research
🔻 Writing
🔻 Memorizing/testing

🔻 Teaching/curriculum
🔻 Workplace
🔻 Math/bibliographies
🔻 Exercises/games
🔻 Author pages

Afrikaans	እማርኛ
العربية	অসমীয়া
বাংলা	ᰣᰤᰮ
中 文	Česky
Dansk	Deutsch
English	Español
Ewe	Français
Ελληνικά	עברית
हिंदी	Hrvatski
Indonesia	Italiano
日本語	Kabiye
Kiswahili	한국말
Luganda	Magyar
Malay	Melado
فارسى	Polski
Português	Русский
Romana	Српски
Svenska	‎نۇبالۇ‎
Türkçe	Tiếng Việt

http://www.studygs.net

This helps support:
Metacognition

Internet Resources

❑ *Assistive Technology to Support Executive Functions*

KoolTools4Students
http://kooltools4students.weebly.com/at-and-executive-functioning.html

How to Help a Child with Weak Working Memory
http://www.ncld.org/types-learning-disabilities/executive-function-disorders/how-to-help-child-with-weak-working-memory

Executive Function Skills and Assistive Technology
http://www.onlinedigeditions.com/article/Executive_Function_Skills_and_Assistive_Technology/1538179/179980/article.html

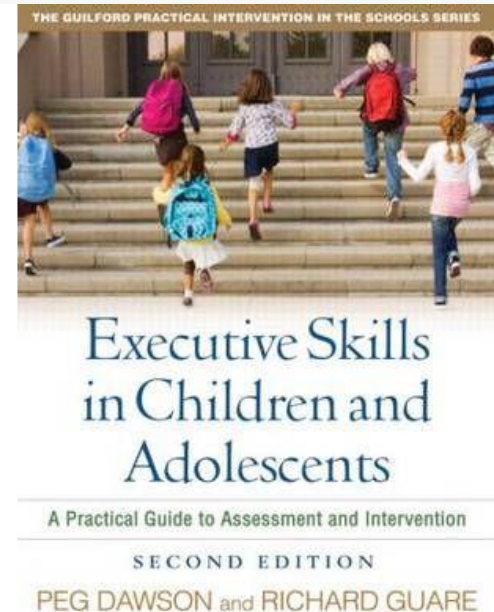# Other Resources

❑ *Reference Materials*

Other Resources

□ *Executive Skills in Children and Adolescents*

Practical Intervention in Schools by Peg Dawson EdD and Richard Guare Phd

This book provides step-by-step guidelines and many practical tools to promote executive skill development by implementing environmental modifications, individualized instruction, coaching, and whole class interventions.
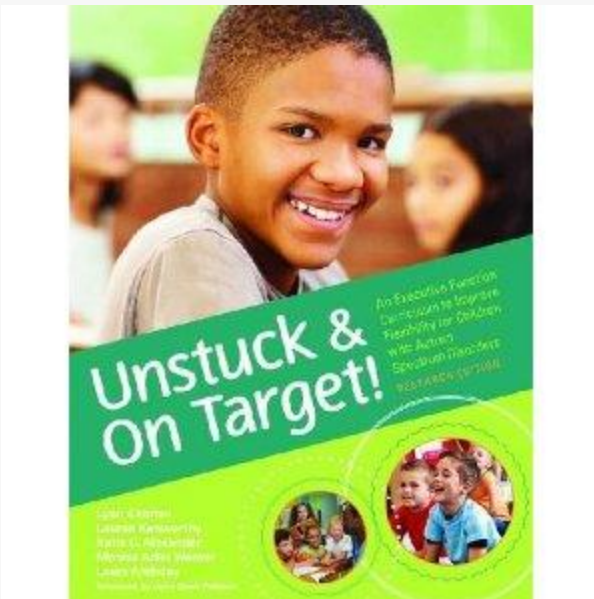
THE GUILFORD PRACTICAL INTERVENTION IN THE SCHOOLS SERIES

Executive Skills in Children and Adolescents

A Practical Guide to Assessment and Intervention

SECOND EDITION

PEG DAWSON and RICHARD GUARE
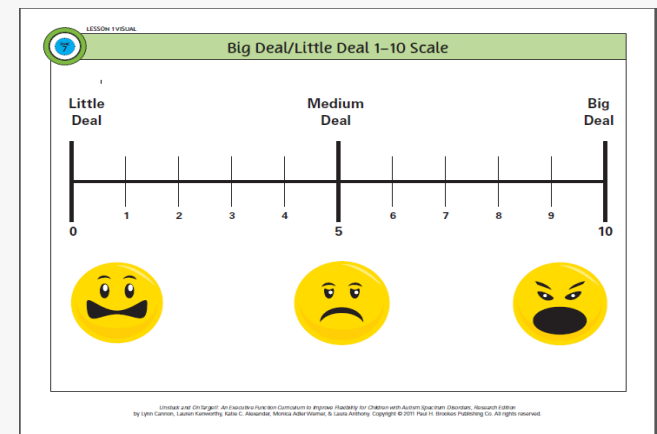
Other Resources

□ *Unstuck & On Target!*

An Executive Function Curriculum to Improve Flexibility for Children with Autism Spectrum Disorders by Lynn Cannon, Lauren Kenworthy, Katie Alexander, Monica Adler Werner, Laura Gutermuth Anthony, and John Elder Robinson.

A CD with activities is also provided

LESSON 1 VISUAL

Big Deal/Little Deal 1–10 Scale

Little Deal — Medium Deal — Big Deal

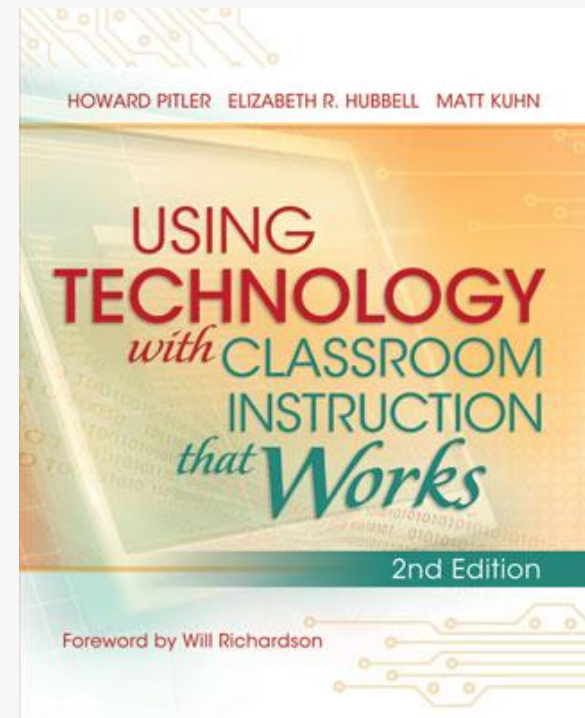0   1   2   3   4   5   6   7   8   9   10

Other Resources

❑ *Using Technology with Classroom Instruction that Works, 2nd Edition*

by Howard Pitler, Elizabeth Hubbell, Matt Kuhn

This book is about using technology as one of several tools for providing good instruction.
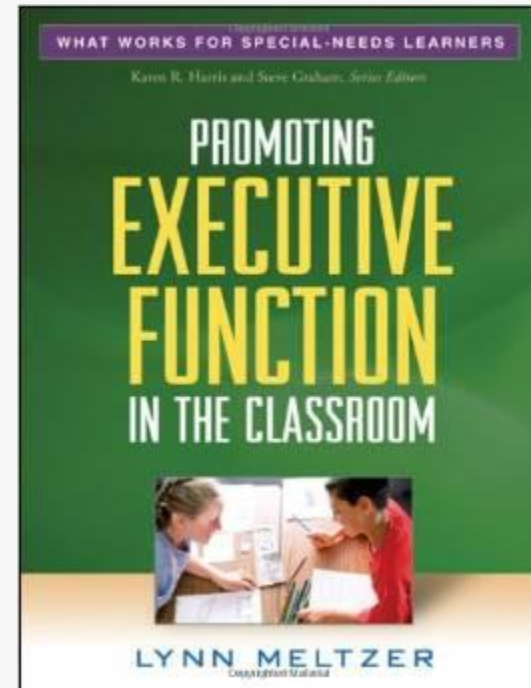
Other Resources

❑ *Promoting Executive Function in the Classroom*

by Lynn Meltzer

This book helps teachers incorporate executive function processes into the classroom curriculum.
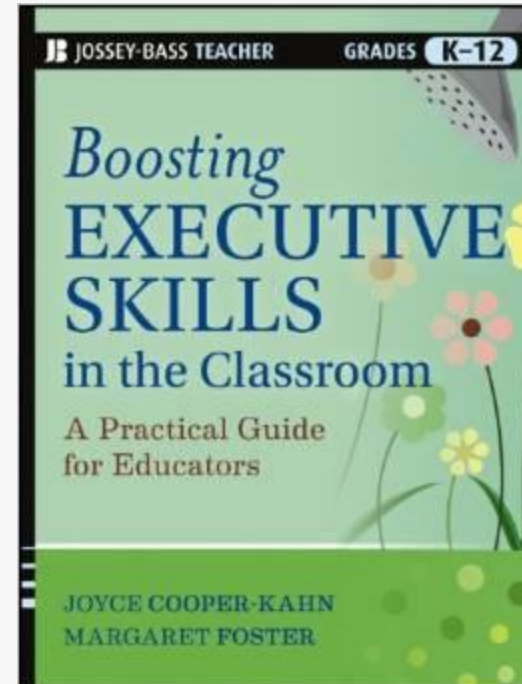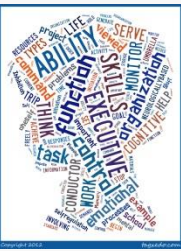
Other Resources

☐ *Boosting Executive Skills in the Classroom: A Practical Guide for Educators*

By Joyce Cooper-Kahn

Margaret Foster

This book offers strategies to help students with executive function challenges.
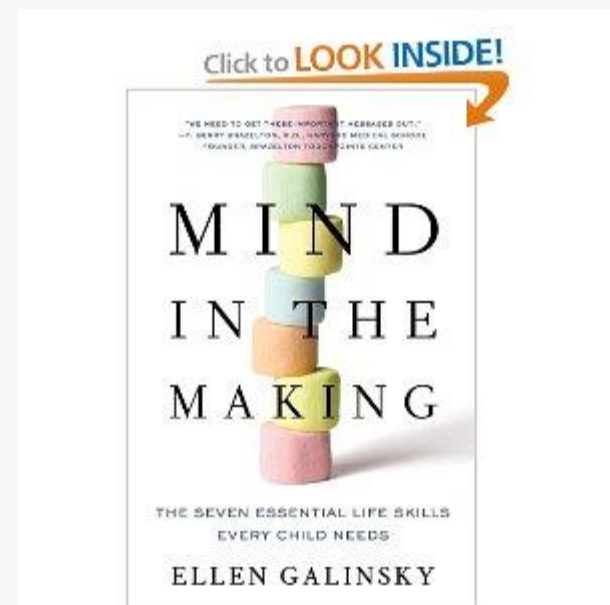
Other Resources

❏ *Mind in the Making: The Seven Essential Life Skills Every Child Needs*

by Ellen Galinsky

This book is about life skills such as:

- *Focus and self-control*

- *Perspective taking*

- *Communicating*

- *Making connections*

- *Critical thinking*

- *Taking on challenges*

- *Self-directed engaged learning*

Other Resources

Boosting Executive Function Supplemental Content

Home

Boosting Executive Skills in the Classroom: A Practical Guide for Educators
Joyce Cooper-Kahn & Margaret Foster ISBN: 978-1-1181-4109-0
Paperback
192 pages
January 2013

- Student Planner
- Graphic Organizer
- Self Evaluation Chart
- Dream Questionnaire
- Planning Guide
- Targeting Table

www.josseybass.com/go/executivefunction

❏ *The Power of Habit: Why we do what we do in life and business*

by Charles Duhigg

This book explains why habits exist and how they can be changed.
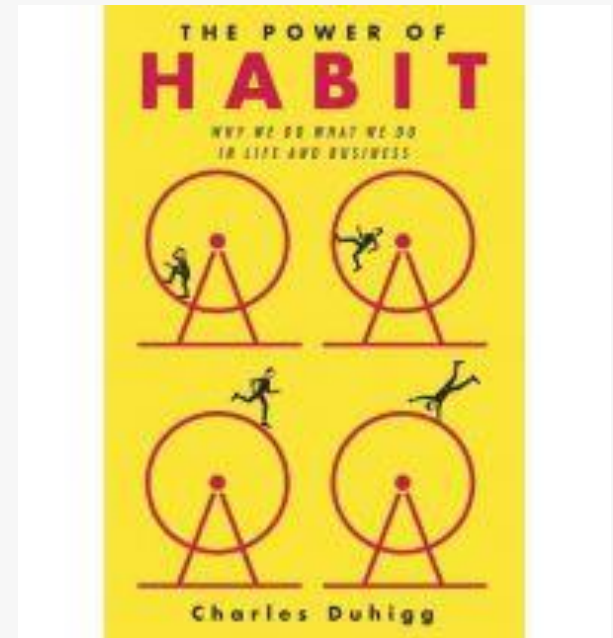
Other Resources

❑ *Assessing Students' Needs for Assistive Technology (Chapter 9 – Assistive Technology for Organization) - WATI*

http://www.wati.org/?pageLoad=content/supports/free/index.php

Other Resources

IRIS Module

The IRIS Center for Training Enhancements. (2013). *Study Skills Strategies (Part 2): Strategies that Improve Students' Academic Performance*. Retrieved on [November, 9, 2014r] from http://iris.peabody.vanderbilt.edu/module/ss2/

Other Resources

❑ *Google site with documents from this presentation*

https://sites.google.com/site/execfuntion/

Your Ideas?