

Imitation Game



Working Memory

Example:

Recalling what you have just read and how it applies to what you are currently reading or being asked to do.

The ability to store and manage information in one's mind for a short period of time.



Example:

Recalling the sequence in which a project, task or activity needs to be completed.

The manipulation of information that short-term memory stores. (Morin, 2016).



Example:

Remembering a phone number when trying to dial it.

The ability to keep one piece of information in mind while working on or with something else (Smyth/Myles, 2016).



In fact, most of the "work" in the memory system occurs in "working" memory where information is managed, manipulated and transformed (Can Learn, 2013).

Struggles with Working Memory

- Recalling sounds letters make when decoding a word (Smyth/Myles, 2016).
- Recalling the meaning behind (the comprehension) of what you are reading when you are primarily focused on decoding or reading the words (learning to read vs reading to learn)
- Slow retrieval of information (Can Learn, 2016).
- Hold few pieces of information in their mind at a given moment in time:
 - "They hear what you said, or see what is presented, but as more information overwhelms their memory system they lose previous information needed to successfully complete the task. Once information is lost it is not likely to be retrieved. It is easy to see how the student can become frustrated and consequently stop paying attention." (Can Learn, 2016).
- Poor attention to detail: missing or skipping portions of what is expected
- In ability to follow instructions; especially when multiple instructions are given

Struggles with Working Memory

- Filing information, filing information in an effective manner for efficient retrieval
- Integrating various sets of information:
 - Sounds (direct and indirect), voices (direct and indirect), sights, touch or other sensory
- Coordinating and integrating old and new information
- Math:
 - Mental math
 - Estimation
 - Remembering numbers is borrowing and carrying
- Take a longer time when writing, especially original compositions:
 - Remembering what they want to write, the formatting, the expectation, the details, paying attention to grammar and spelling as well as context
 - Some can even lose track of their thoughts mid-sentence
- Taking and keeping up with notes in class





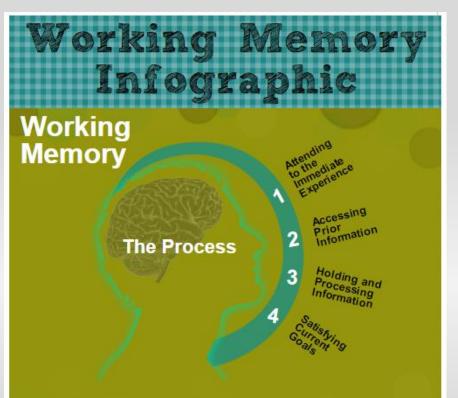
5th grade, reported behaviors with writing and reading tasks

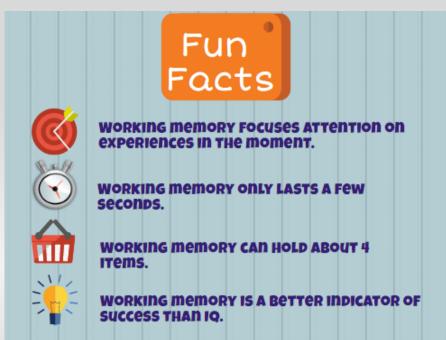
Wechsler Abbreviated Scale of Intelligence- Second Edition (WASI-II)

WASI-II	
COMPOSITE	SCORE
Verbal Comprehension Index (VCI)	99
Perceptual Reasoning Index (PRI)	84
Full Scale IQ (FSIQ)	90

SCORE
7.
/4
59







(Warren, 2016) http://learningspecialistmaterials.blogspot.com/2015/03/working-memory-definition-facts.html

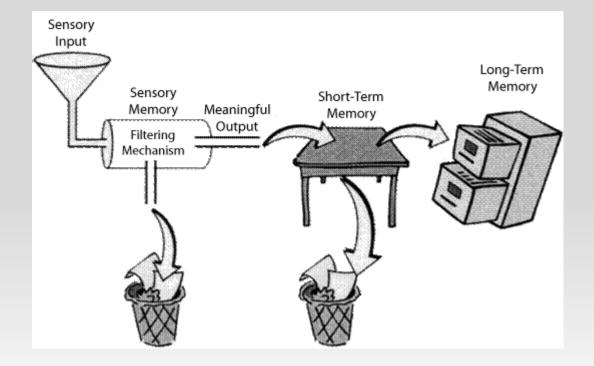


Figure 1 is a representation of the memory system: Information moves from Sensory Input through Sensory Memory and Short-Term Memory and eventually into Long-Term Memory (Richards, 2003, p. 17).

What is it like to struggle with working memory?

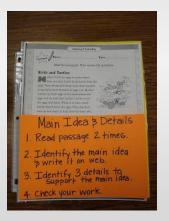
<u>Test</u>

Verbal Instructions without visual support

What work?	Spelling Lesson 27
How?	Write your words in your agenda. Have a friend check and initial. Complete Lesson 27 workbook pages Skip number 15
What do I do when I am finished?	Turn lesson 27 into the blue tray Read chapter 5 from Bridge to Terabithia and answer the Chapter 5 questions. This is due Friday.

Intervention Suggestions

- Provide written/visual directions for the student to reference so they can focus on the assignment/activity, not focus on "how" to complete the work or trying to remember the specific steps in the exact sequence.
 - Provide examples and sample finished products for the student to reference
 - Clarifies expectations, defines/clarifies "complete", increases meaning and purpose.
- Break larger tasks down into small chunks
 - Visual expectations of the different chunks with examples
 - Reduce the amount of material required by the student







Book:	Important Dates:
Chapter:	
Key Info:	
	l ————————————————————————————————————
	Questions:
Key Words/Vocab:	

Strategies to hold on to key information

"Kids with executive functioning issues can have weak <u>working memory skills</u>, making it hard for them to keep information in mind long enough to use it." (Morin, 2016).

- Teach how to
 - You can't jus

PEOPLE

WORD !

EVENT

PLACE

QUOTE

Teach the student or use post its summaries or

Teach students how to highlight with the technology they will use on standardized tests!

are in bold it.

e notes, highlight, nen be used for



or phrases

... Milliates industria in the in agen copyrational size in the Paracologi.

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not understand
? Raises a question
! Something that suprises you

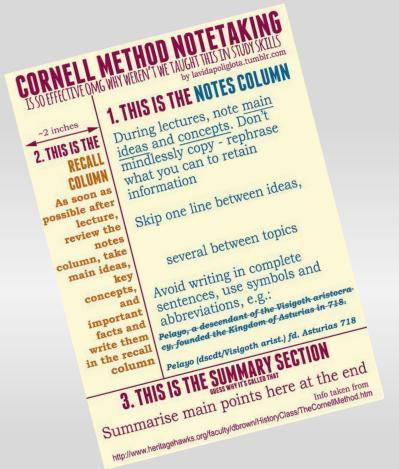
> Draw an arrow when you make a war connection to text, ideas, or experiences
EX When author provides example

OTIGOTINIO WOLGS OF PITTASES YOU do

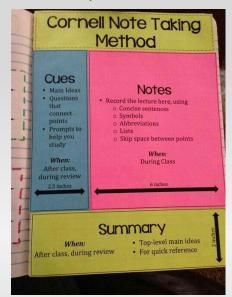
- 1, 2, 3,... Numerate arguments, important ideas, or key details
- Write important thoughts in the margin



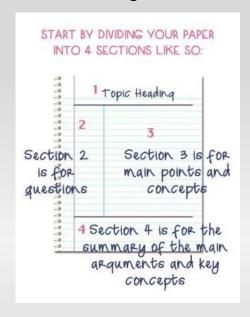
Cornell Notetaking Method



A visual template for students



"How To" in a regular notebook



OR . . . There are a number of online printable templates that can be individualized

Cornell Note Taking Method

Sample 1

Cornell Notes Learner, acading/chapterinared/orticle charing class, power point, marriese (if seed to collect into.) Tegis: Extential Questions:	Name: Class: Period: Date:
Questions/Main Ideas:	Notes:
Summary:	

Sample 2

CORNELL NOTES SHEET	Name: Class: Topic: Date:/ Period
<u>Q</u> UESTIONS	NOTES
SUMMARY: Write 4 or n	ore sentences describing specific learning from these notes.
4	

Sample 3

Chapter	Name:	concepts
	Date:	
Section:	Period:	
Questions/Main		
Ideas/Vocabulary	Notes/Answers/Definitions/E	xamples/Sentences
Summary:		

Reduce Processing Demands - (reduce the storage load of the task)

- Written Expression:
- Use word prediction to allow emphasis on the content and not the spelling
 - Emphasize content and not mechanics for initial drafts
 - Use editing checklists after initial ideas are on paper
- Provide a detailed graphic organizer or rubric with the expectations so the student can focus on content, not the process or trying to remember all of the individual requirements

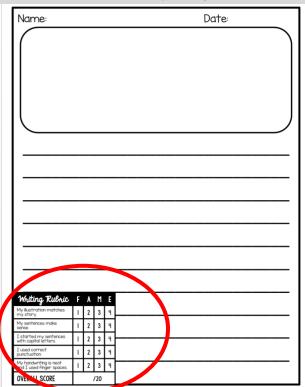
Graphic Organizers – help eliminate the need for the student to remember the "how to do the assignment, they can focus on the context of the assignment

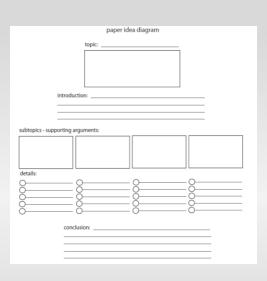
Rubric – provide the rubric for students BEFORE they begin the assignment so expectations are

clear then check for understanding



Opinion Graphic Organizers





Essay Writing Outline

	DUCTION Ion grabber:
Suppo	rting sentences:
Thesis	statement:
	Paragraph #1 entence:
	rting ideas:
Conclu	iding sentence:

Supportin			
al\			
u)			
e)			
f)			
_			_
Concludin	g sentence:		
Rody Dara	graph #3		_
Body Para			_
			_
Topic sent	ence:		_
Topic sent	g ideas:		= = =
Supportin	g ideas:		
Supportin g)	ence: g ideas:		

CONCLUSION		
Lead-in sentence:		
Re-state thesis:		
Challenge sentence:		

Pair graphic organizers with with Get Ready, Do, Done!

2. Do 1. Done 3. Get Ready What Do I need? What steps do I need to take do be What will it look like when I am done? done? Future sketch or picture How long will each step take? Get Ready Dο Done Read the Story Essay Writing Outline Book Annotate with the INTRODUCTION Attention grabber: Pink highlighter pink highlighter **Essay Outline paper Complete Essay** Supporting sentences: Pencil Outline Chrome Book Turn in for check Thesis statements Write Final Draft Body Paragraph #1 Topic sentence: Turn in Concluding sentence:

Create a work system with visual supports — this reduces processing demands, can focus more on what they are to do then how they are to do it.

What do I do?	Complete the math problems
Start	(Hints to the different steps)
How much do I have	Complete the odd problems, 1-25
	Show your work
What do I do when	If you do not finish, put it in your
I am finished?	green take home folder
FINISHED	If you do finish turn it in to the blue tray
	You can read or work on other
	homework







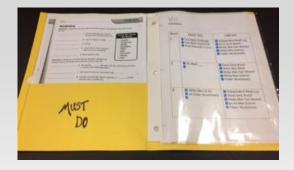


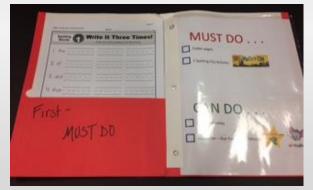
Structured Work System

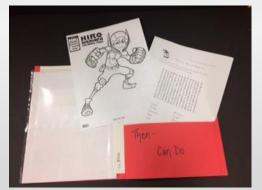
• Must do - Can do folders – Students complete the MUST DO portion of the folder before they are allowed to move on to the CAN DO portion containing more preferred activities and choices.









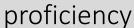


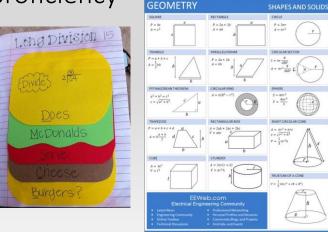


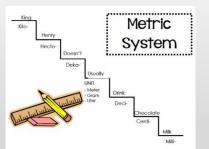
Visuals and Mnemonic Devices to assist with Math&Science

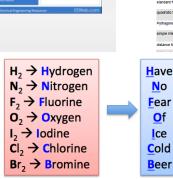
- struggles to remember the formulas inhibit the ability to demonstrate

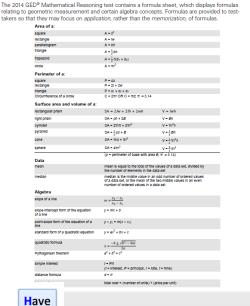
Mathematics Formula Sheet & Explanation

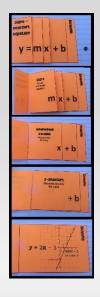














Tweedle-dee-dee,
Around the circle is pi times
d,
But if the area is declared,
Think of the formula pi "r"
squared.

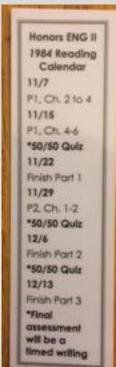
Tweedle-dee-dum and

Use <u>visuals</u> or to do lists to help reduce anxiety (defines expectations, breaks up assignments, helps with sequencing difficulties).

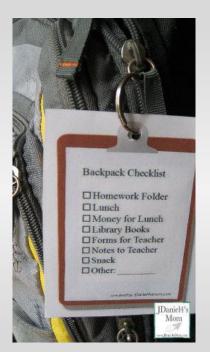
THE STUDENT for longer projects or assignments, or multi-step projects (color code subjects or even different subjects)



Sun	Mon	Tues	Wed	Thu	Fri	Sat
	Feb 24	Quiz Ch1-3 Factions	Guiz Ch 4-6 Char. Chart	Quiz Ch 7-9	Fri 28	1
	Read Ch 1-3				Read Ch 13-18	
2					Qui2 28-307	8
	Read Ch 19-31	Read Ch 22-24	Read 0125-27	Read Ch 28-30	COMPLETE THE A	JOVEZ BY MONDY
9	10	11	12	13	14	15
	4	SPP	ING BREAK		>	
16		Wovel Test 18	Project 19	Project 20	Project 21	22
	c/c Themes -	>				
23	24	25	Unit 54/5B Assessment	27	28	29
30	31	April 1	2			



The use of <u>visuals</u> or to do lists helps students who struggle to visualize themselves completing a task in a different space and time or think through and remember the different steps required to complete a task in a different space and/or time. It is truly a case of out of sight, out of mind.



Click here for this visual

I need to be careful with the things I own. It is important to keep track of and not lose my things.	What do I need to take home for homework today?	
Before I leave school for the day, I have to check for	1)	
-my hat	2)	
-my gloves	3)	
-my wallet	4)	
-my lunch bag	5)	
-my school bag	6)	
-the books I need	7)	
-my agenda	8)	
-anything else I brought with me		

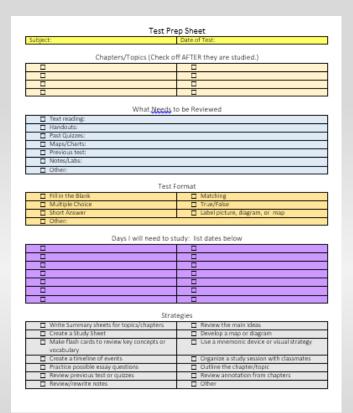
Click here for this visual

My Checklist Week of:		
Monday:	Tuesdaus	13
Things I need to do at school:	Things I need to do at school:	This weekend:
Chings I need to do at home:	Things I need to do at home:	eeker
	:	į.
Things that are due tomorrow:	Things that are due tomorrow:	
Co do before bed:	To do before bed:	
□Do I have my homework done? □Is my agenda signed?	□ Do I have my homework done? □ Is my agenda signed?	
□ Is my bag ready to go? What is due soon?? When??	Is my bag ready to go? What is due soon?? When??	
	:	
	•	
Vednesday: Trings I need to do at school:	Thursday: Things I need to do at school:	
hings I need to do at home:	Things I need to do at home:	
rungs I need to do at nome:	traings I need to do at nome:	
hings that are due tomorrow:	Things that are due tomorrow:	
	:	
o do before bed: Do I have my homework done?	To do before bed: Do I have my homework done?	
□ls my agenda signed? □ls my bag ready to go?	☐ is my agenda signed? ☐ is my bag ready to go?	
What is due soon?? When??	What is due soon?? When??	

Tests:

• Teach students what and how to study – this test prep sheet can prime students for what they need to do to prepare for a test.

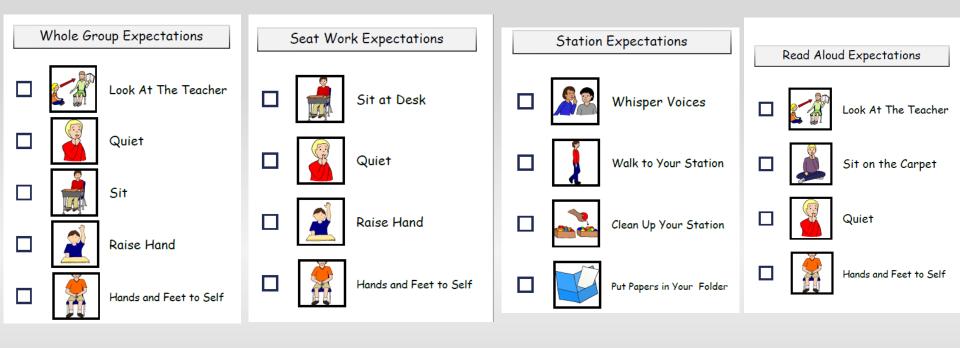
Allow re-do for students with parameters and requirements





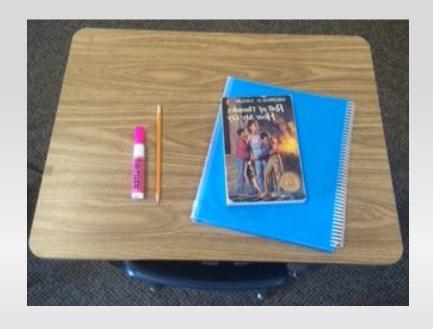
- Give students several days to prepare/study for a test.
- Most often students are told when tests will occur NOT HOW to study for them!

Alert students to expectations and when expectations are going to change: (use visuals to cue expectations)



We assume students know our expectations (can read our mind) or that students know when the expectations change and that they remember our verbal instructions!

Don't forget the model desk for supplies/materials needed!



Resources

- Rubistar — website to develop rubrics or pull sample rubrics
- Rubric template in word -
- <u>iRubric</u> –
- Opinion Graphic Organizers
- Academic essay structure and format
- Project Write Graphic Organizers
- 1300 Math Formulas PDF
- Common Math Formulas PDF
- mathportal.org online sample problems and free math help
- <u>Education World</u> list of math mnemonic devices

- 12 Memory Strategies that Maximize Learning
- Test Prep Document
- Re-Test Option 1
- Re-Test Option 1
- Reading Comprehension Bookmark in word
- Reading Comprehension Bookmarks with different strategies
- Yellow and Green Visual Checklist
- My Checklist Visual

There is an APP for that!

- <u>Cogmed</u> -Cogmed Working Memory Training is an evidence-based intervention for improved attention. Based on the concept of neuroplasticity and with more published research behind it than any other cognitive training program, Cogmed is trusted by healthcare professionals and educators around the world.
- Study Blue With StudyBlue's mobile app, you can make, study, and share mobile flashcards, study guides, and quizzes. It's mobile, it's social, and it's free
- <u>Fit Brains Trainer</u> Fit Brains Trainer is a brain training & fitness app with more than 360 games & unique training sessions that are designed to enhance your Memory, Processing Speed, Concentration, Problem Solving and Visual skills. Use the Fit Brains Trainer a few minutes daily to improve the performance of your brain
- <u>Vismory</u> Memorize the shape, color, and position of small beautifully crafted 3D objects, then answer challenges by touching the correct case and you win!

 Give the correct answer and you progress toward the next level, make an error and lose part of your progression. Faster is your answer, higher is your score!
- Memory Memory! is very cute and funny memory matches game with many different colorful and vivid pair cards which your child will definitely love. This game is the best way to engage your kids and in parallel to train their memory and concentration ability. With three levels of difficulty the complexity of the game can be adjusted accordingly to the age and skills of your kid.
- <u>Elevate</u> an app that personalizes a training regimen for each user, depending on his or her goals. The user can play 30-plus games that boost memory skills, focus, and processing speed. The games are designed in collaboration with experts in neuroscience and cognitive learning.
- <u>Dual N-Back</u> A classic working-memory training app with solid research to back up the benefits. In general, N-Back tasks present an ongoing sequence of stimuli (in this case, pictures), and the player's job is to indicate when the picture he sees matches a picture that was seen "n" steps earlier in the sequence. One study suggests that playing N-Back games can result in long-term working-memory improvement.
- <u>Flashcards+</u> an engaging and fast-paced app to bolster the studying process and exercise working memory. Users can choose subjects and categories from a user-curated bank of topics or create their own flashcards. The app also allows you to track your results and your speed.

References

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