Executive Function Skills

Routine or Student:	1 word:

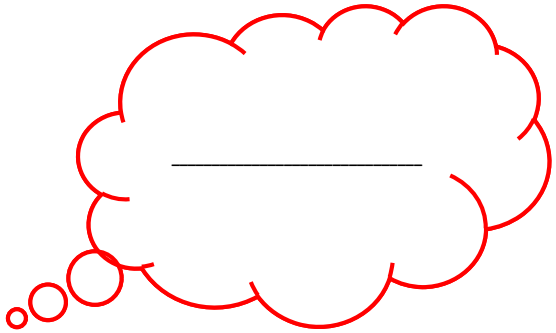
3 Strategies: 1. 2. 3.	1 word:

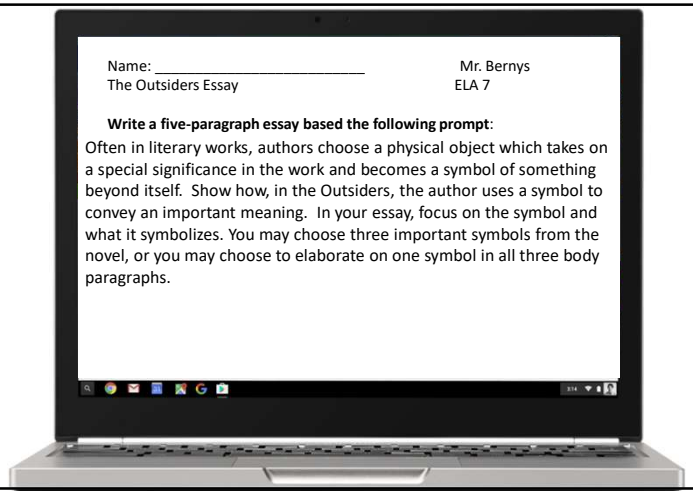
Rethinking Time Management: Teaching Students to See & Move Through Time

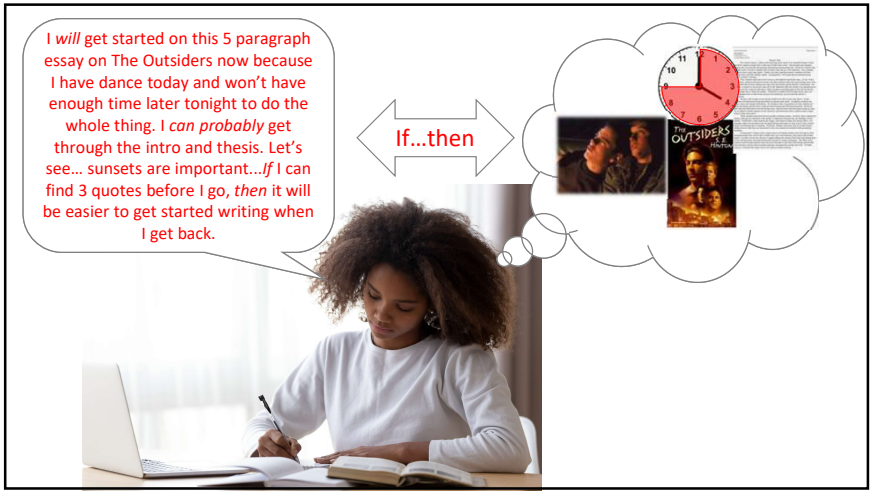
Kristen Jacobsen, M.S., CCC/SLP
Speech and Language Pathologist
and
Sarah Ward, M.S., CCC/SLP
Speech and Language Pathologist

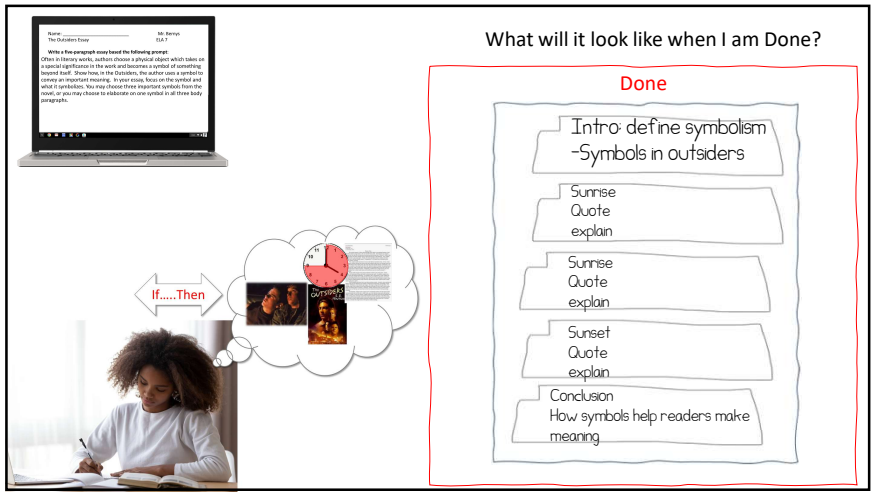
Cognitive Connections, LLP
Lynnfield, MA
www.efpractice.com

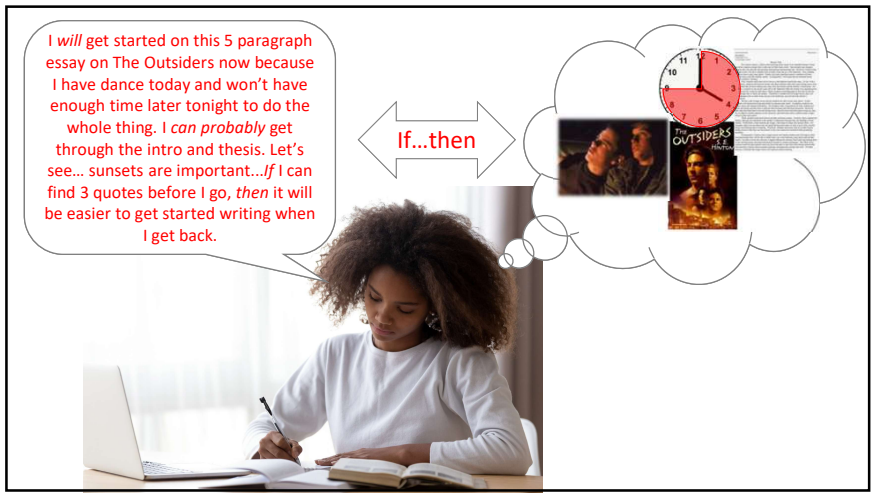
What **ONE** word comes to mind when you hear the term executive function?









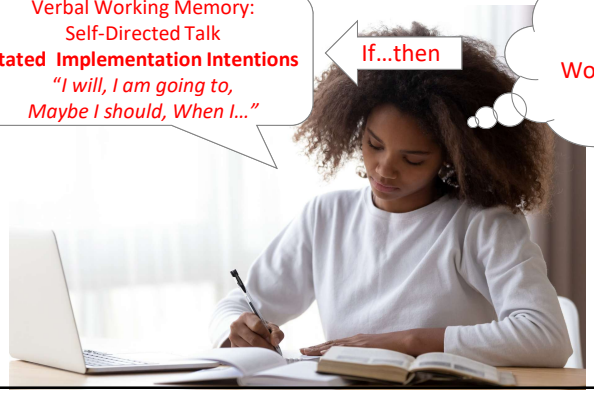


Order of Working Memory

Verbal Working Memory:
Self-Directed Talk
Stated Implementation Intentions
"I will, I am going to,
Maybe I should, When I…"

If…then

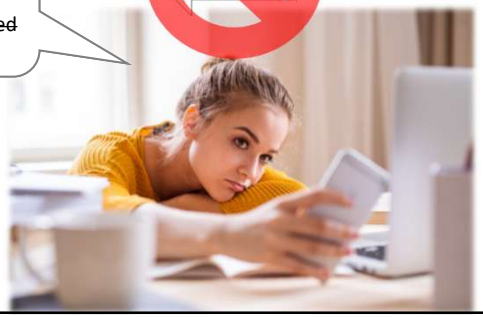
Nonverbal
Working Memory



Order of Working Memory

Verbal
Working
Memory
(~~self-directed talk~~)

If…then



Nonverbal Working Memory and Attention Span

Working Memory: Holding information in your mind while mentally working with it or updating it

- Critical for anything that unfolds over time

Inhibitory/Self Control: Resisting the strong inclination to do one thing and instead do what is most appropriate

- Attention – resist distractions
- Emotion – resist giving up
- Behavior – resist impulse to do an action that is inappropriate

Planning: Use of cause and effect & means to an end reasoning needed: "If…then…" thinking

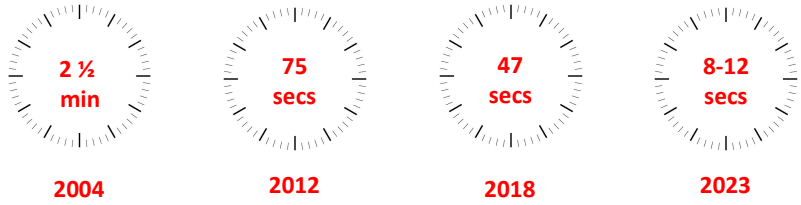
Normal Sustained Attention Span for Children

2-3 minutes per year of age (upper limit of 5 minutes per age)

By age 4, attention span increases to about 8 to 12 minutes.
By age 5, your child's attention span would likely be 10 to 14 minutes.
By age 6, 12 to 18 minutes
by age 7, 14 to 21 minutes
by age 8, 16 to 24 minutes
by age 9, 18-27 minutes
by age 10, 20 to 30 minutes
by age 11, 22 to 33 minutes
by age 12, 24 to 36 minutes
by age 13, 26 to 39 minutes
by age 14, 28 to 42 minutes
by age 15, 30 to 45 minutes
by age 16, 32 to 48 minutes
by age 17, 34 to 51 minutes
by age 18, 36 to 54 minutes

This list makes reasonable sense based on the idea of 2 to 3 minutes per year of age until you get closer to the age of teenagers and adults.

Duration of Attention Span

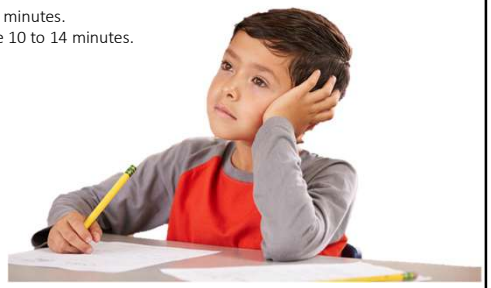


Gloria Mark University of California Irvine

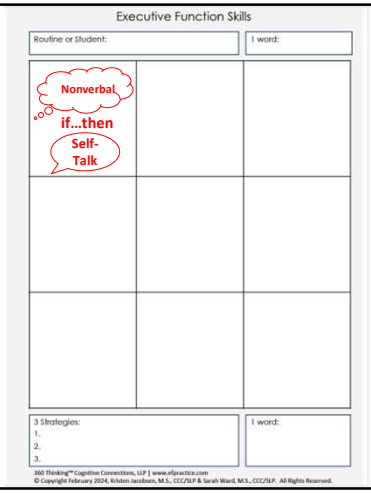
Normal Sustained Attention Span for Children

2-3 minutes per year of age (upper limit of 5 minutes per age)

By age 4, attention span increases to about 8 to 12 minutes.
By age 5, your child's attention span would likely be 10 to 14 minutes.
By age 6, 12 to 18 minutes
by age 7, 14 to 21 minutes
by age 8, 16 to 24 minutes **80 seconds**
by age 9, 18-27 minutes
by age 10, 20 to 30 minutes
by age 11, 22 to 33 minutes
by age 12, 24 to 36 minutes **120 second**
by age 13, 26 to 39 minutes
by age 14, 28 to 42 minutes
by age 15, 30 to 45 minutes
by age 16, 32 to 48 minutes
by age 17, 34 to 51 minutes
by age 18, 36 to 54 minutes **180 seconds/ 3 minutes**



This list makes reasonable sense based on the idea of 2 to 3 minutes per year of age until you get closer to the age of teenagers and adults.
Because of the influx of the media age, many children and adults are experiencing much shorter attention spans, some articles indicating as low as 8 to 12 seconds!

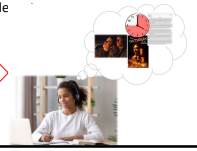


Situational Awareness/Intelligence:
STOP and Read the Room

Space	Time	Objects	People
Navigate the Room	**Get on the Timeline**	**Organization/Objects**	**Read the Person: ROLE**
❑ Kind of space? ❑ What's going on? ❑ Is it Expected or Unexpected? ❑ Pathways to efficiently navigate to different areas within the space? ❑ Is there a shift between wide-angle lens of the space (Whole), to the zones (parts) and the details?	❑ Time of day? ❑ Kind of time? ❑ **What is happening at this Moment** in Time? ❑ Sequence of actions? ❑ Pace? ❑ What is coming up? ➢Is it Predictable?	❑ Organization of the Space: Whole->Parts ❑ How is that part organized? ❑ L ocation of objects: In sight? Out of sight? ❑ Purpose/Priority of objects? ❑ What objects are necessary? ❑ Are there irrele objects?	❑ Recognizes Role for the given situation ❑ Own ❑ Other's roles ❑ Regulates actions based on Awareness of Others ❑ To Verbal Prompts ❑ To Nonverbal Prompts

STOP

The Thinking Process That Allows Us to STOP and Direct Ourselves in Each Situation



Situational Awareness: STOP and Read the Room

Space

Navigate the Room

Identifies the kind of space and what it is typically used for

Observes what's currently happening in the space

Determines if what's happening is expected or unexpected

Understands the purpose of the space in the current situation

Locates clear pathways for moving efficiently through the space

Can shift focus from the whole space (wide-angle view), to specific zones (parts), and then to individual details

Transitions smoothly between different areas or spaces as needed

Time

Get on the Timeline

Recognizes the time of day and how it influences what should be happening

Understands the purpose of the activity in this moment

Aware of available time and key time markers (start, transitions, end)

Identifies the sequence of actions required for the task

Monitors and adjusts pace: staying on pace, rushing, or moving too slowly

Initiates tasks with reduced hesitation

Anticipates what is coming next — can predict and prepare for upcoming steps

Objects

Organization/Objects

Has the expected materials or objects for the situation

Scans the space from the whole area to individual zones or parts

Observes how materials and tools are organized within personal or shared space

Locates objects easily — whether they are visible, stored, or hidden

Knows which materials are necessary and relevant for the task

Ignores or removes items that are unnecessary, irrelevant, or distracting

People

Read the Person: Role

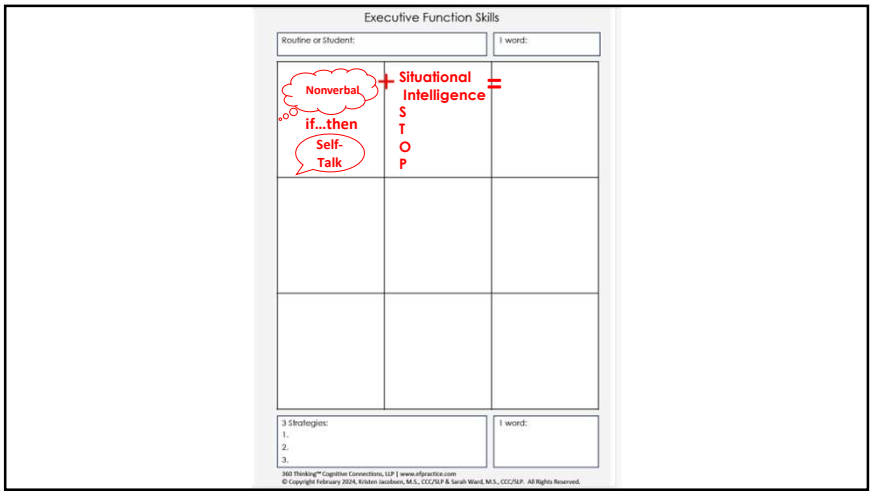
Recognizes their own role in the situation

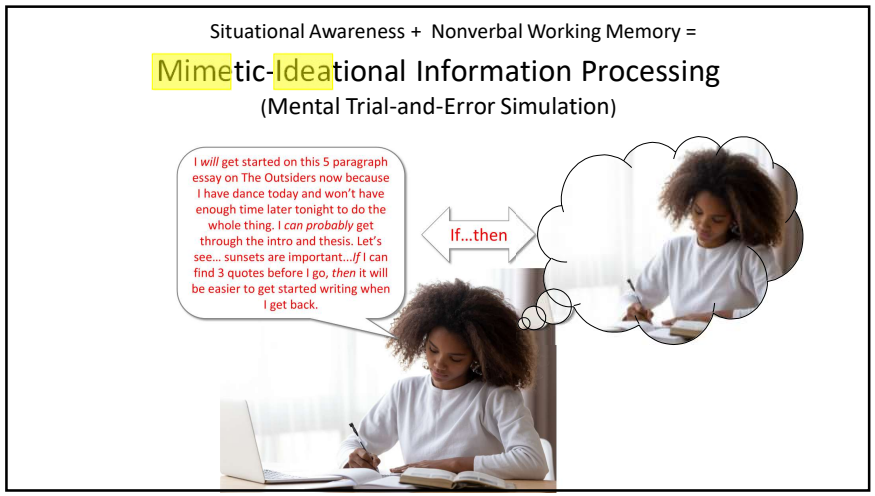
Identifies the roles and responsibilities of others in the space

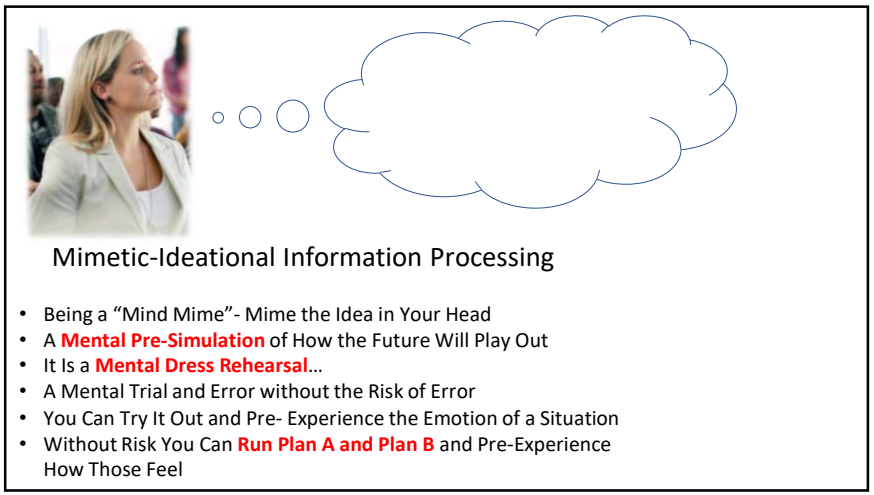
Adjusts behavior based on awareness of others

Responds appropriately to verbal prompts (e.g., directions, reminders)

Responds appropriately to nonverbal cues (e.g., gestures, facial expressions, tone of voice)







Be a Future Thinker: "Mind MIME iT"

M Future Scene Thinking: **M**ake an Image: **STOP** What will it look like?

I Episodic Future Thinking: What do **I** Look like? Self-Projection into the Future

M Mental Time Travel (Temporal - Spatial): How am I **M**oving to achieve this?

E The Future **E**motion: How will I feel? Emotional Physiological State

i If …..then

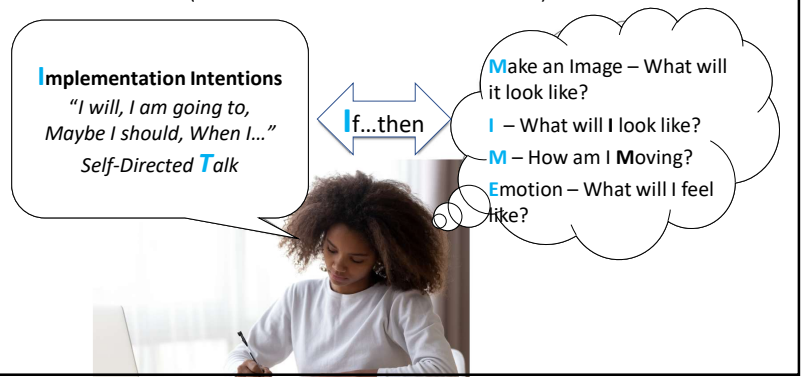
T Self **T**alk

It is 'experiencing the self in time' and talking yourself through that experience so you are efficient and successful

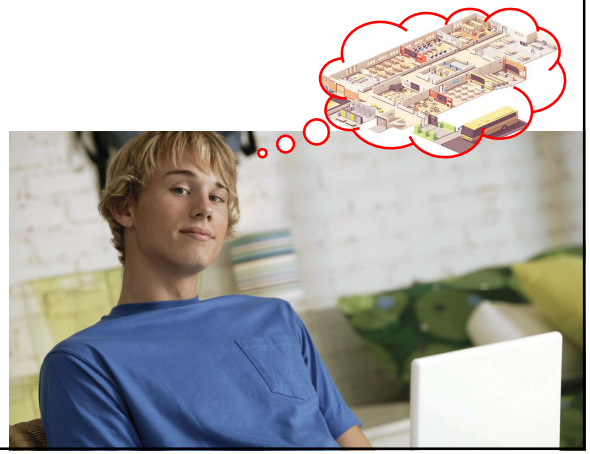
Situational Awareness + Nonverbal Working Memory =

Mimetic-Ideational Information Processing

(Mental Trial-and-Error Simulation)



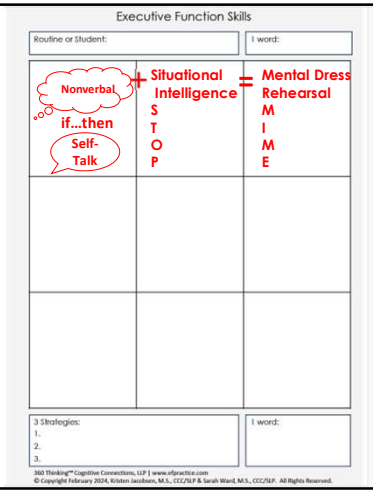
90% of the Time
Task Planning Happens in a Different Space from Where you Execute the Plan

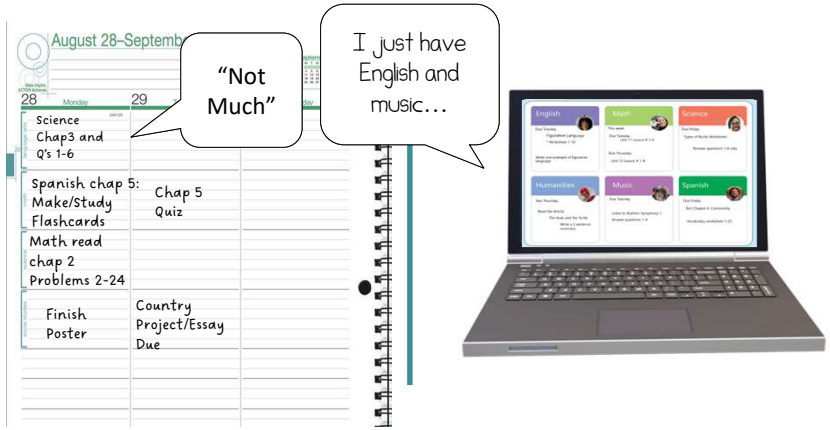


"Planning" involves the identification and organization of the steps (assignment, class, presentation)

Simulation vs Planning

"Simulation" is 'MIMEing' or the construction of a detailed future event imagining oneself carrying out the action through space and time. Allows oneself to pre-experience the future and adjust accordingly

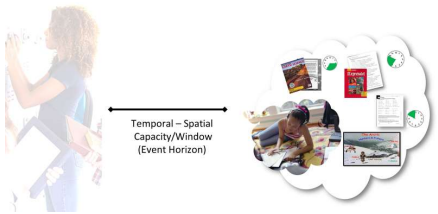




Develop the Extended Time and Space Horizon
How Far Into the Future Can You See?
Both Time and Space

Development of the Time Horizon
How Far into the Future can they Anticipate?

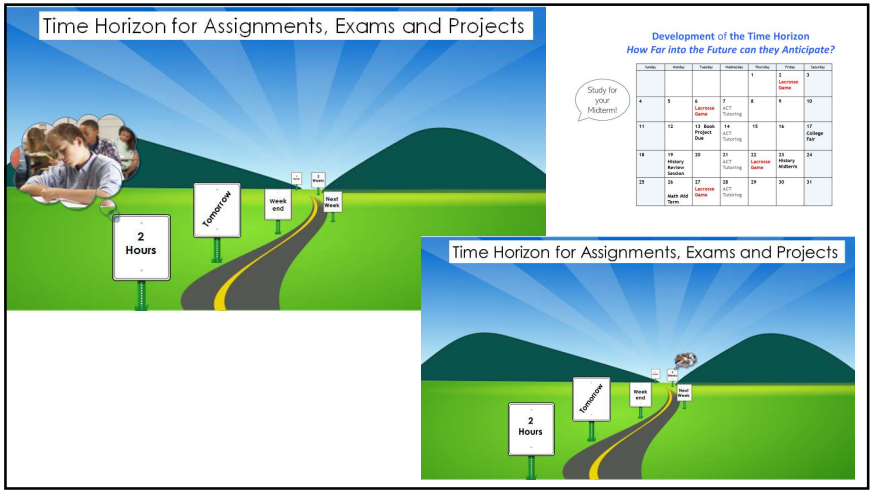
2 Years Old: *NOW*
3-5 Years Old: 5-20 Min
K- 2nd Grade: Several Hours
3rd -6th Grade: 8-12 Hours
6th-12th Grade Years : 2-3 Days
17-23 Years Old : 2-3 Weeks
23-35 Years Old: 3-5 Weeks



ADHD→EFDD: Executive Function Developmental Delay
- Typically of the Spatial Temporal Window
Average of a 3 to 3.5 year delay

Barkley, R. A. (2023, May 16). *ADHD, EF, and self-regulation* [Video]. YouTube. https://www.youtube. com/watch?v=CUApWMlyffw

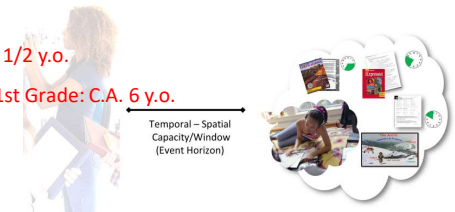
Barkley, R. A. (2022). *Treating ADHD in children and adolescents: What every clinician needs to know.* Guilford Press.



Development of the Time Horizon
How Far into the Future can they Anticipate?

2 Years Old: *NOW*
3-5 Years Old: 5-20 Min
K- 2nd Grade: Several Hours
3rd -6th Grade: 8-12 Hours
6th-12th Grade Years : 2-3 Days
17-23 Years Old : 2-3 Weeks
23-35 Years Old: 3-5 Weeks

E.F. 2 1/2 y.o.
1st Grade: C.A. 6 y.o.



ADHD→EFDD: Executive Function Deficit Disorder
- Typically of the Spatial Temporal Window
- *Average of a 3 to 3.5 year delay*

Development of the Time Horizon
How Far into the Future can they Anticipate?

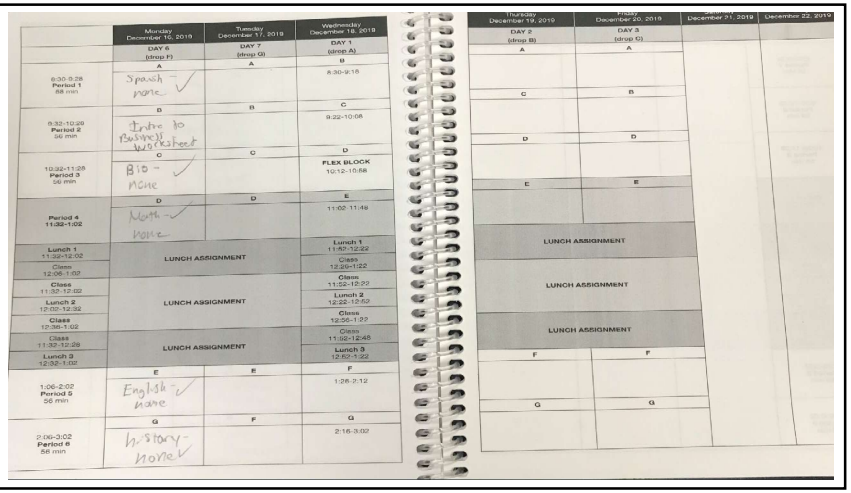
2 Years Old: *NOW*
3-5 Years Old: 5-20 Min
K- 2nd Grade: Several Hours
3rd -6th Grade: 8-12 Hours E.F. 12 1/2 y.o.
6th-12th Grade Years : 2-3 Days 10th Grade: C.A. 15 y.o.
17-23 Years Old : 2-3 Weeks
23-35 Years Old: 3-5 Weeks

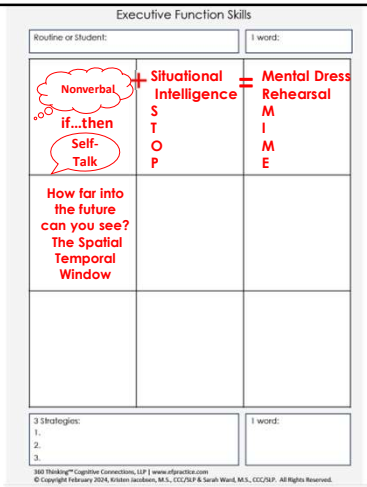
ADHD→EFDD: Executive Function Deficit Disorder
- Typically of the Spatial Temporal Window
- *Average of a 3 to 3.5 year delay*

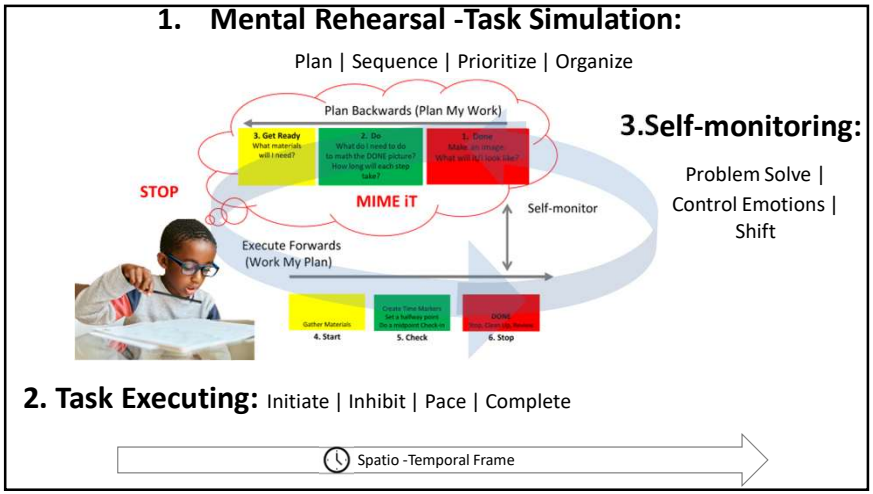
Development of the Time Horizon
How Far into the Future can they Anticipate?

2 Years Old: *NOW*
3-5 Years Old: 5-20 Min
K- 2nd Grade: Several Hours
Anxiety 9 y.o.
3rd -6th Grade: 8-12 Hours E.F. 12 1/2 y.o.
6th-12th Grade Years : 2-3 Days 10th Grade: C.A. 15 y.o.
17-23 Years Old : 2-3 Weeks
23-35 Years Old: 3-5 Weeks

ADHD→EFDD: Executive Function Deficit Disorder
- Typically of the Spatial Temporal Window
- *Average of a 3 to 3.5 year delay*







MIMETIC processing is Episodic Forethought

The ability to *imagine oneself* at a particular *time* in a future *situation*

Important for

"Intention" to set goals and implementation intentions;

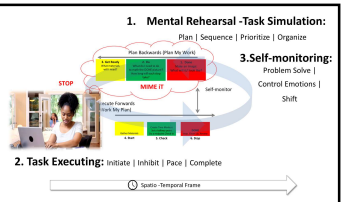
"Simulation" of a future event;

"Planning" to identify, organize, and prioritize the steps of a future task

"Predicting" to forecast affective states (e.g., how one will feel when one attains a goal; how one will feel if one encounters an obstacle along the way, and how one can "feel better" by imagining a Plan B to avoid that obstacle);

Teaching Students *HOW*
to Independently Execute Tasks

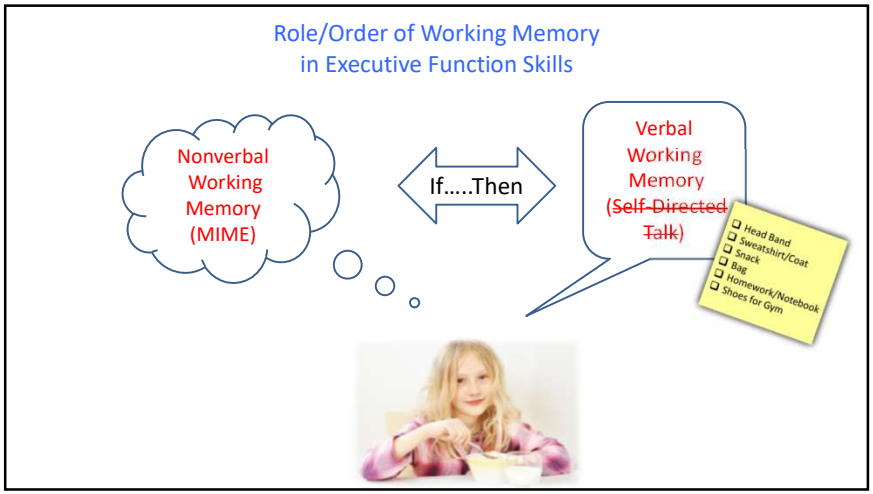
Teach Students to Be a **Mind MIME**



"repeatedly practice self-monitoring, self-**STOP**ping, **see**ing the future, **say**ing the future, **fEEl**ing the future, and **play**ing with the future to effectively "**plan and go**" toward that future." (Barkley, 2012)

Spatio-Temporal Frame

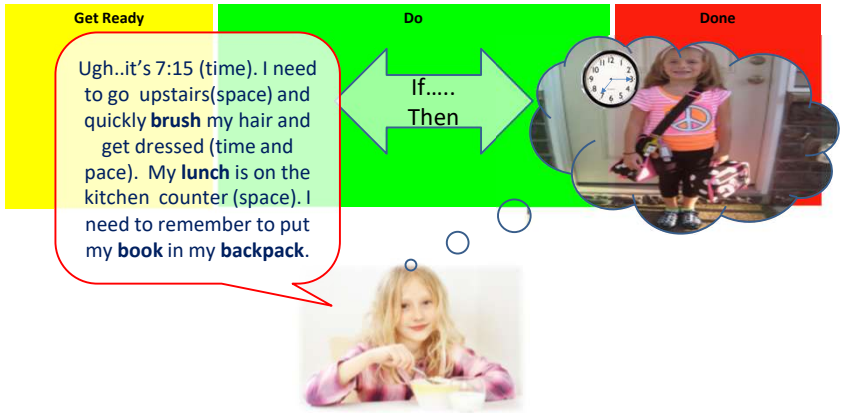
Adapted from *Executive Functions: What They Are, How They Work, and Why They Evolved* by Russell A. Barkley. © 2012 The Guilford Press.



SEE the Future

Becoming a Mind MIME

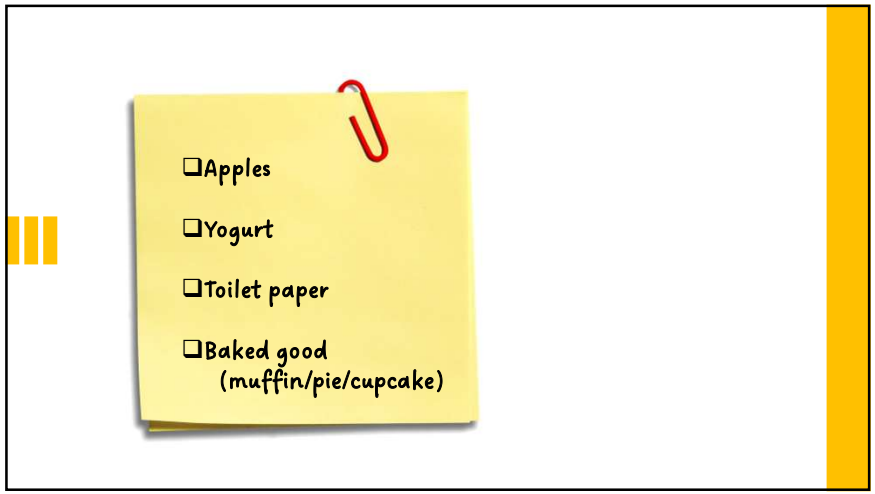
Role/Order of Working Memory in Executive Function Skills

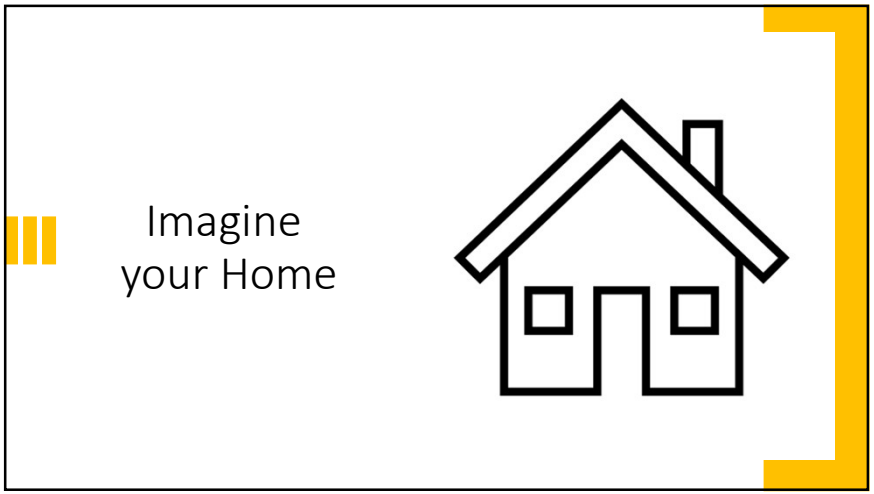


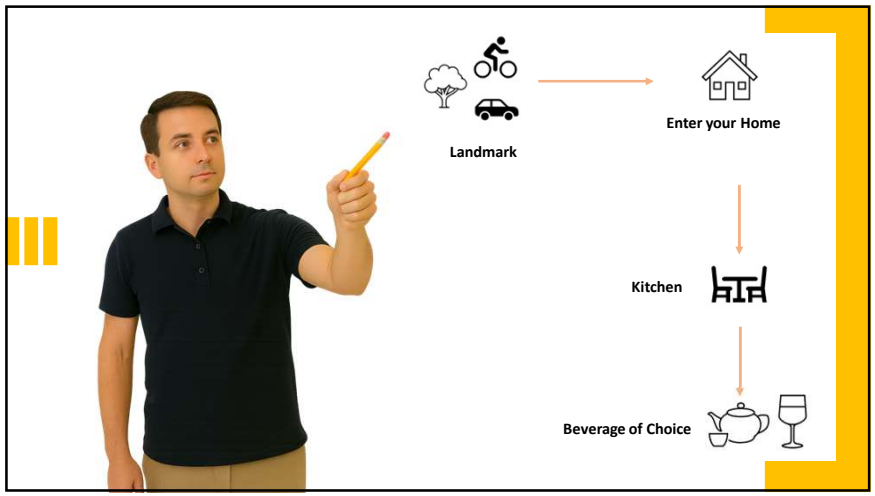
FEEL the Future

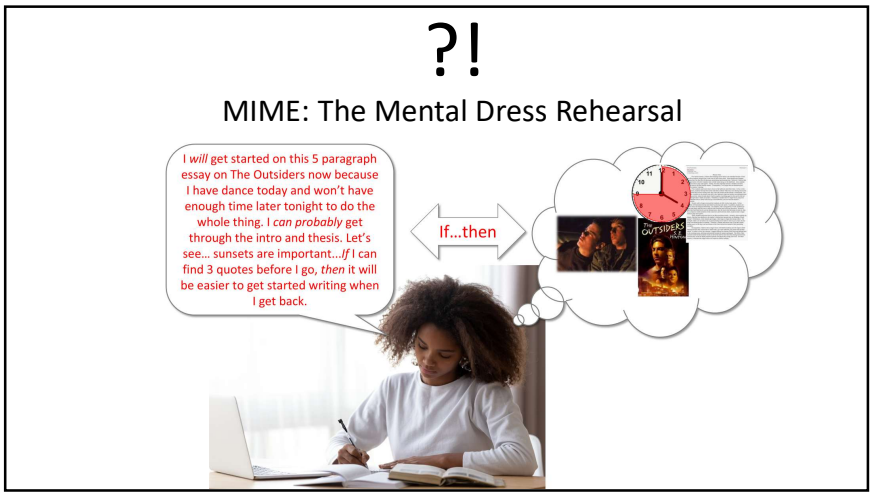
Becoming a Mind MIME

What grocery store do you usually go to?



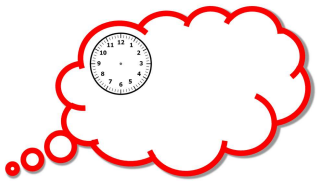






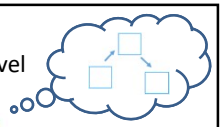
Where are you going?

What are you doing tonight?



Representational Co-thought Gesture

We Gesture to Pre- Experience Mental Spatial Time Travel

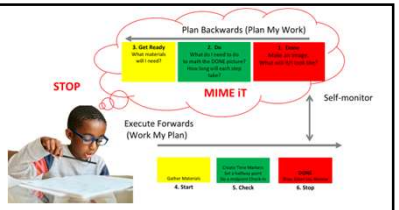


- Co thought gestures are really just an outgrowth of how we mentally simulate planning (performing actions to go from the first to the final step)
- Gestures give life to our mental scratch pads, allowing us to perform actions with our hands before we have to do them in real life or before we have even thought these activities all the way through to put them into words
- Gesture helps infuse planning with an emotional charge to make the memory for it more enduring

Gesture changes thought by introducing action into our mental representations
It Externalizes our Thinking!

Teaching Students *HOW* to Independently Execute Tasks

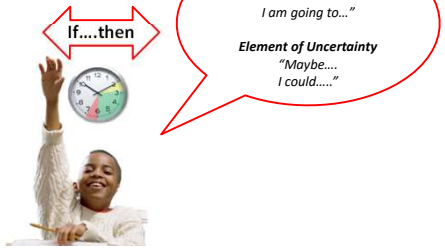
Teach Students to be a **Mind MIME**



Repeatedly practice:
Self-monitoring, self-**STOP**ping, **see**ing the future, **say**ing the future, **fEEl**ing the future, and **play**ing with the future so as to effectively "**plan and go**" toward that future. (Barkley 2012)

Spatio -Temporal Frame

Be a Future Thinker: "Mind **MIME iT**"



Gesture enables us to FEEL or "pre-experience" the mental spatial time travel and actions of the future so we can "experience the self in time" and then talk ourself through that experience to be efficient and successful

Gestures help hold onto that image over time in the presence of distractors…

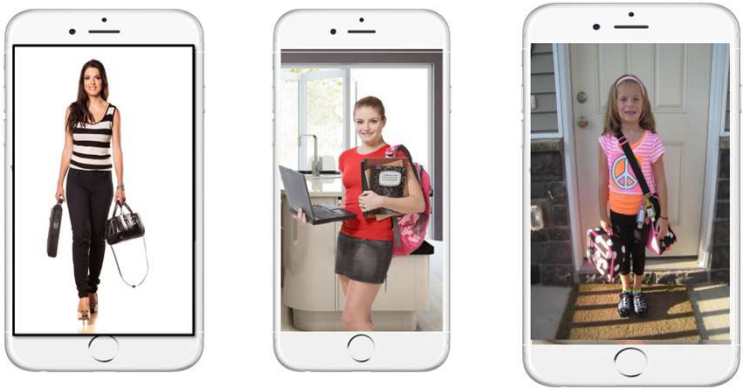
Think of gesture as a mental highlighter!

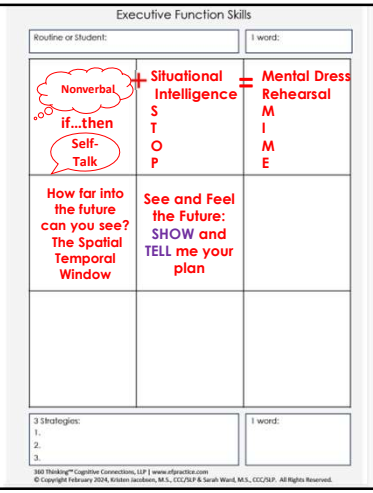
SEE and **FEEL** the Future
What will it/I look like?

Becoming a Mind MIME

Take a Photo of What "Done" Looks Like

"Get Ready for School!
Show and Tell Me Your Plan!"




Executive Function Skills

Routine or Student: | 1 word:

Nonverbal if...then Self-Talk + Situational Intelligence S T O P = Mental Dress Rehearsal M I M E

How far into the future can you see? The Spatial Temporal Window

See and Feel the Future: SHOW and TELL me your plan

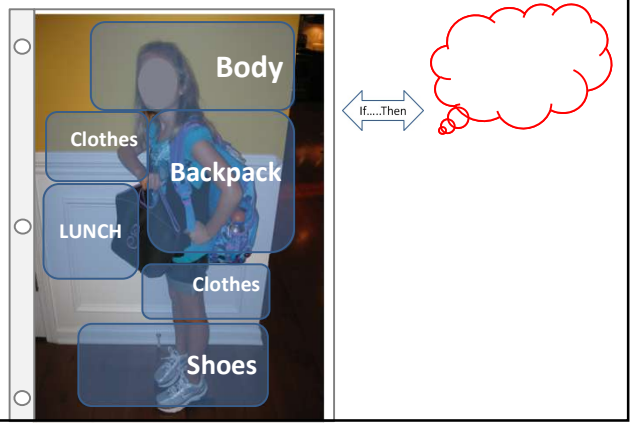
3 Strategies: 1. 2. 3. | 1 word:

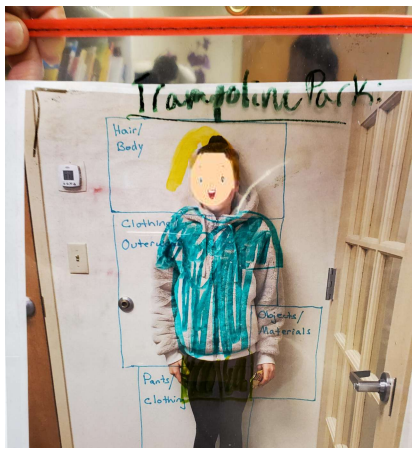
360 Thinking™ Cognitive Connections, LLP | www.efpractice.com
© Copyright February 2024, Kristen Jacobsen, M.S., CCC/SLP & Sarah Ward, M.S., CCC/SLP. All Rights Reserved.

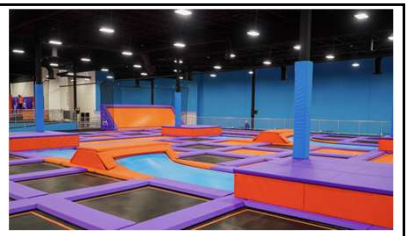
PLAY with the Future – Cognitive Flexibility

Becoming a Mind MIME

Teach "Same but Different" to Develop Cognitive Flexibility & Generalize the Routine



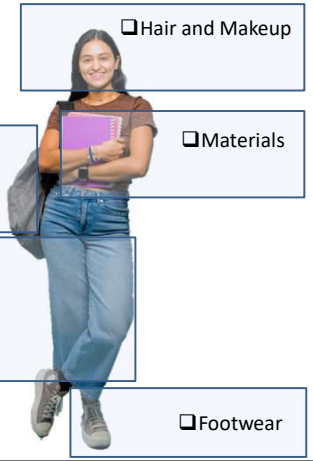




Meeting with My Boss

Birthday Dinner with Friends

Running Saturday Errands



Executive Function Skills

Routine or Student:		1 word:
Nonverbal if...then Self-Talk	+ Situational Intelligence S T O P	= Mental Dress Rehearsal M I M E
How far into the future can you see? The Spatial Temporal Window	See and Feel the Future: SHOW and TELL me your plan	Play with the Future: Same but Different
3 Strategies: 1. 2. 3.		1 word:

STOP and MIME:
Current Context → Future Context

MIMEtic Processing

Guides Planning

Across Space and Time

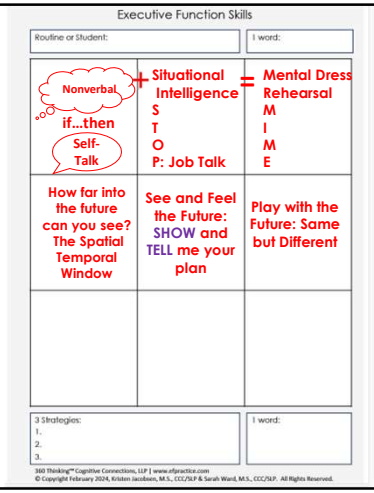
Job Talk - Task Identity

Low task identity: A person with a low task identity does not get to see how their work impacts a finished product.

I have history homework.

High task identity: In simple terms, a person with a high task identity can see their work to its final state

I am a fact finder.



Job Talk:

Politicians wanted to increase voter turnout and turned to psychological research for help. It worked! Researchers framed voting as either a personal identity label (e.g. "be a voter") or as a simple behavior (e.g. "voting"). This change in phrasing to a personal identity label significantly increased interest in action and a substantially larger percentage of individuals voted! Research has shown that people want to feel like they are a part of something and take ownership of something rather than being told what to do.

Children are no different! Motivation to complete a task is increased by invoking one's sense of self. Subtly manipulating the *verb form* of a behavior ("Brush your teeth please") to feature a *noun label* (Annie is a toothbrusher!) creates an essential part of one's identity. In other words it creates confidence and a positive sense of self that this is "What I can do!" This subtle change in language can change an occasional behavior of helping around the house ("Please set the table.") into a child who has confidence in their permanent trait or skill (I am a tablesetter!). When packing for a ski trip, being asked to be a 'packer' is a positive thing and requires the child to imagine in their mind "what does a *packer* do? What tools will a *packer* need?". On the other hand just asking a child to "Please pack the car with your warm clothing, boots and poles." Just asks the child to do something, does not invoke their reasoning of what is required and likely does not fire them into action except perhaps to make excuses for why they can't! Using the declarative noun form (*clothes gatherer*) creates psychological essentialism and develops in children a positive attitude, a strong and stable sense of self and generalizes to how they perceive themselves and their essential role over time.

Sarah Ward, M.S., CCC/SLP and Kristen Jacobsen M.S.,CCC/SLP have translated this research into a simple trick to help our children to take ownership of and participate in various tasks. They advise to turn the child's task into a "job" and add "er" to the action that you are asking the child to do which gives them the "job title" such as "Washer", "Wiper", 'Tooth brusher", "Listener", etc. Give it a try, it's amazing!

Declarative Job Talk (Noun Form)	Imperative Verb Form
Please be a handwasher!	Wash your hands.
Be a counter wiper!	Wipe the counter off.
Time to be a toothbrusher!	It is now time to go upstairs and brush your teeth.
You are getting ready to be a mathematician!	Please take out your homework and start your math.

Resources:

Bryan, C. J., G. M. Walton, T. Rogers, and C. S. Dweck. "Motivating Voter Turnout by Invoking the Self." *Proceedings of the National Academy of Sciences* 108.31 (2011): 12653-2656.

Gelman, S. A., & Heyman, G. D. (1999). Carrot-eaters and creature-believers: The effects of lexicalization on children's inferences about social categories. Psychological Science, 10, 489-493

Heyman, G. "Talking about Success: Implications for Achievement Motivation." Journal of Applied Developmental Psychology 29.5 (2008): 361-70.

Verbal Mediators:
The Language of Executive Function

Edited by: Kristen Jacobsen & Sarah Ward, MS CCC-SLP

Declarative Language

Authored by: Linda Murphy

Why is Declarative Language so important in fostering Executive Function Skills?

1. **Inner Voice**: Self-narratives help students develop an inner voice. After the initial language spark is ignited, most of us then go on to develop our own voice that we use to share our thoughts, recap experiences, talk about what we are doing, and talk about what we are thinking. Most of us also then go on to create our own inner voice. This is an important by-product of our language learning. We use our inner voice to problem solve and plan. We remember what we have learned or noticed in the past, and apply it to the here and now. For example, imagine you are getting ready to go to work and you can't find your keys. Your inner voice may say something like, 'Hmmm…. Now when did I last see my keys? Where do I usually put them down? What jacket did I have on yesterday?... Maybe they're in the pocket." Your inner voice helps you think through the problem so you can get started on a plan of action to solve it. Children with Executive Functioning difficulties do not usually develop this inner voice to regulate their thoughts and actions on their own. Just as modeling was important when your child was learning to talk, thoughtful modeling now, in this regard, is equally important. So – talk out loud, think out loud, work through a problem, make predictions, ponder opportunities, consider possibilities, and reflect on past experiences when you are with your child. They will learn from your models, internalize the ideas, and begin to form their own inner voice.

2. **Perspective Taking:** Provide a window into another person's perspective. Some children with executive function challenges have difficulty taking perspective. Using declarative language to share your thoughts and feelings provides a student with a regular window into these communication exchanges in an inviting, nonthreatening way. We are providing them information that is critical in a social interaction that we know they may not pick up on their own. When we present declarative language in this way, we are not asking them to provide an answer that may be right or wrong. Rather, we are clueing them into social information and then allowing them to decide what to do with the information. By regularly using declarative language, we are also slowly building episodic memories and awareness that different people have different thoughts, opinions, perspectives and emotions. For example, you say something to your child but he is facing the other way, appearing not to listen. Rather than say to him "turn around!" or "look at me" (both imperatives) share your feelings and perspective with declarative language: "I notice you looking out the window", "What would help me know you are listening to me" or "I feel like you are not listening to me."

3. **Big Picture Thinking:** Students can better see the big picture in order to create multiple solutions to a problem. Declarative language can also help students create a visual image of the gestalt and how they would like to see the outcome of a situation in their "mind's eye". Often times when we focus on having students carry out specific detailed directions, we can all lose sight of the big picture. Because some children with executive

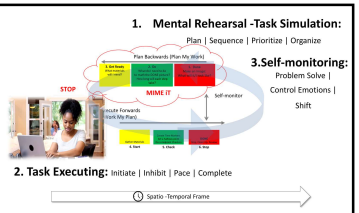
function challenges are strong when it comes to details, but weak when it comes to seeing the big picture, it is important to think about the big picture when we present information. Giving very specific directions or questions that have one right answer promotes that focus on details. For example, if we tell a child to "put the book in the book-box" or "line up at the door for music" we are zooming into the details and creating a situation where there's one and only one right answer. However, if we use language instead to comment on what we see in the big picture: "I see a book on the floor" or "what do you look like if you are ready to go to music?" - we are instead encouraging our children to take a step back, notice the context and situation around them, and subsequently form a plan of action that makes sense to them. We are also leaving open the possibility that there may in fact be more than one solution –i.e., maybe the toy could go on a shelf or in the toy box, maybe the students could put away their work, line up by the door, or collect their music instruments and line up by the door.

4. **Problem Solving Skills**: Declaratives support students ability to develop problem solving skills rather than merely than just following direction skills. When we direct students as to what to do, ask them to follow directions, or ask them to answer questions with a definitive right/wrong answer, we are honing their receptive language skills. This is not a bad thing, but it may not be what the student with an executive function challenge needs most. In contrast, if we use declarative language to present information about the environment or situation at hand, we are instead inviting her to notice this information and develop a plan of action. We are inviting him or her to have an "aha!" moment where he or she figures out what to do with given information. We are giving students an opportunity to think more independently! Problem solving moments are critical for all students as they learn to see themselves as more independently functioning human beings in the world.

5. **Read the Room:** Help your child read what's going on in his environment. We know that it can be difficult for some kids to tune into the social information that is going on around them. Rather than telling them exactly what to do and when to do it, use declarative language to help them notice what is important! For example, if it is time for a transition, instead of telling your child "go to the table for snack" or "put on your coat," direct his attention toward the changes in the environment: "I notice all the kids are at the table" or "I notice all the kids are putting on their coats." This will help internalize the importance of periodically checking in on one's environment; there are visual clues available all the time, and they are important to pay attention to! We want our kids to learn that information is not always going to come to them - they have to become active information gatherers. In contrast, if we are using imperatives all the time with our kids, information is coming to them on a regular basis, and they don't have the same need to look around or read the behaviors of others.

Teaching Students *HOW*
to Independently Execute Tasks

Teach Students to Be a **Mind MIME**

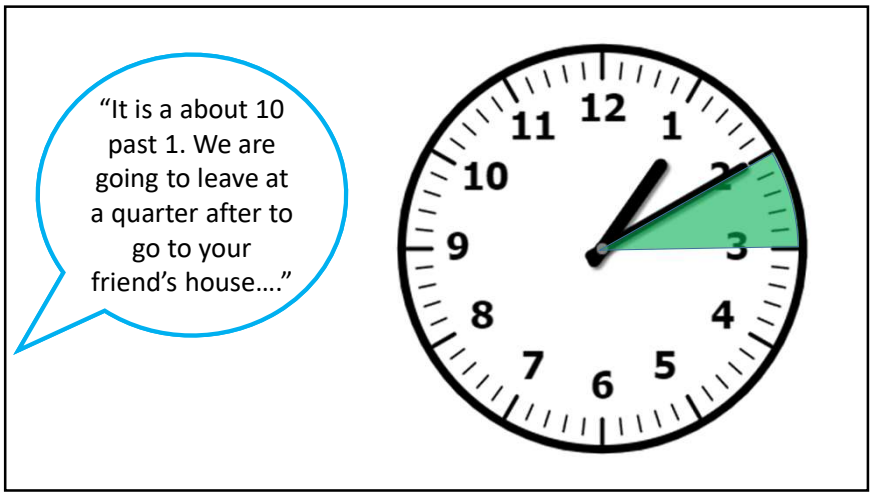


"repeatedly practice self-monitoring, self-**STOP**ping, **see**ing the future, **say**ing the future, **fEEl**ing the future, and **play**ing with the future to effectively "**plan and go**" toward that future." (Barkley, 2012)

Spatio-Temporal Frame

Adapted from *Executive Functions: What They Are, How They Work, and Why They Evolved* by Russell A. Barkley. © 2012 The Guilford Press.

Verbal Working Memory
~~(Self Talk)~~



See and Sense
the Passage of Time

MIME What does Time look like?
What do I look like?
How am I moving across time?
Emotion of time

The **Wall** Clock

- Have Analog Clocks in the Room (Make sure they are not Roman Numeral!)
- Try to not only have digital clocks (alarm clock, cable box, microwave, etc.)

The **Wall** Clock

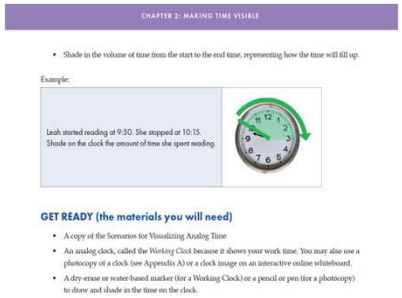
- Have Analog Clocks in the Room – Make sure they are not Roman Numeral!
- Ideally located in the front of the classroom where the child can compare their work to the time of the day.

It is just after 10:00.
You have until 10:25
to be ready for
Saturday tutoring.

The **WORKING** Clock

"It is just after 10:00. You have until 10:25 to be ready for Saturday tutoring."

The Working Clock: Making Time Visible



CHAPTER 2: MAKING TIME VISIBLE

- Shade in the volume of time from the start to the end time, representing how the time will fill up.

Example:

Leah started reading at 9:50. She stopped at 10:15. Shade on the clock the amount of time she spent reading.

GET READY (the materials you will need)

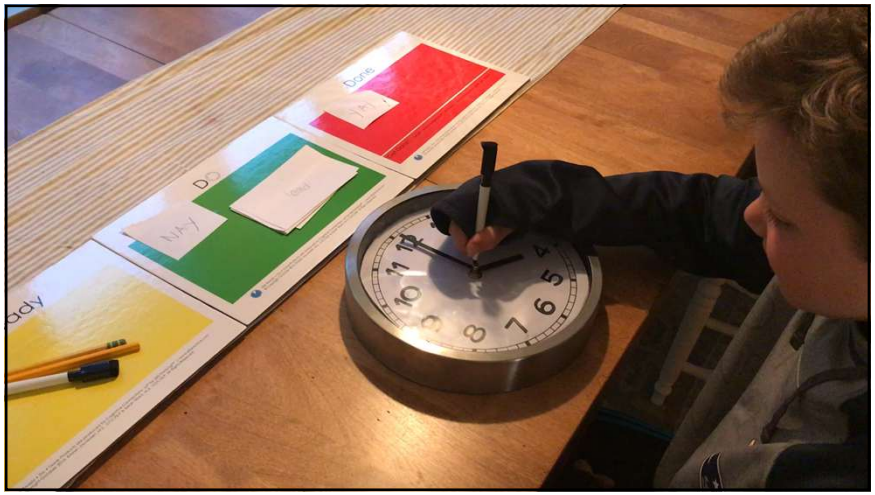
- A copy of the Scenarios for Visualizing Analog Time
- An analog clock, called the *Working Clock* because it shows your work time. You may also use a photocopy of a clock (see Appendix A) or a clock image on an interactive online whiteboard.
- A dry-erase or water-based marker (for a Working Clock) or a pencil or pen (for a photocopy) to draw and shade in the time on the clock.

See Time

Plan Time

The Do and Don't of Making Time Visible

1. Start in the middle of the clock and draw out the minute hand
2. Count by 5's the volume of time needed
3. Draw back to the center of the clock
4. Shade in time how time will fill up.

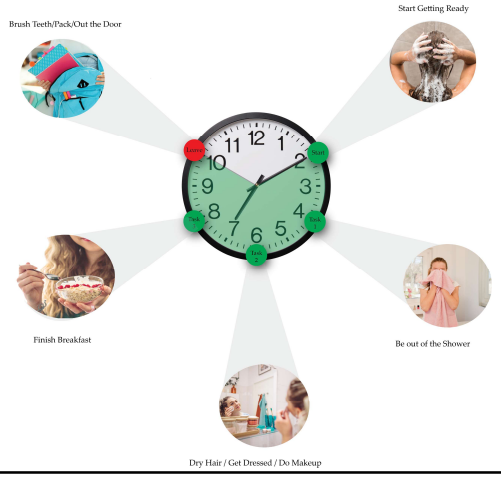


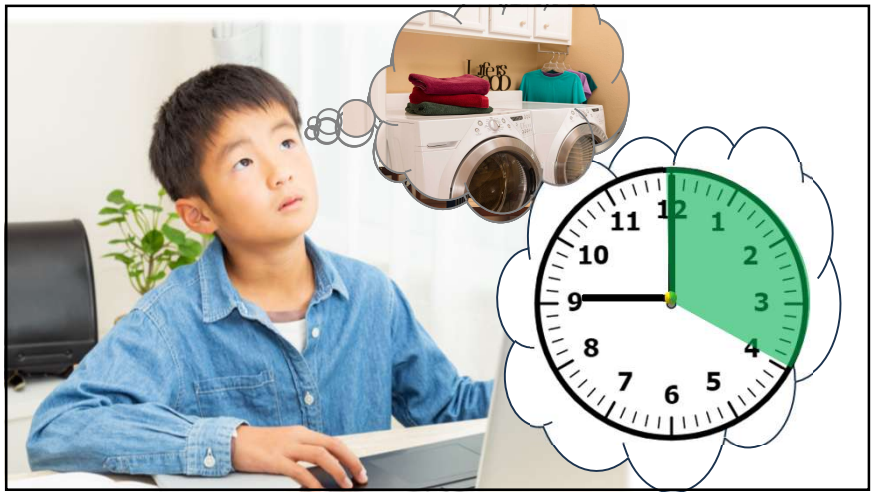
Executive Function Skills

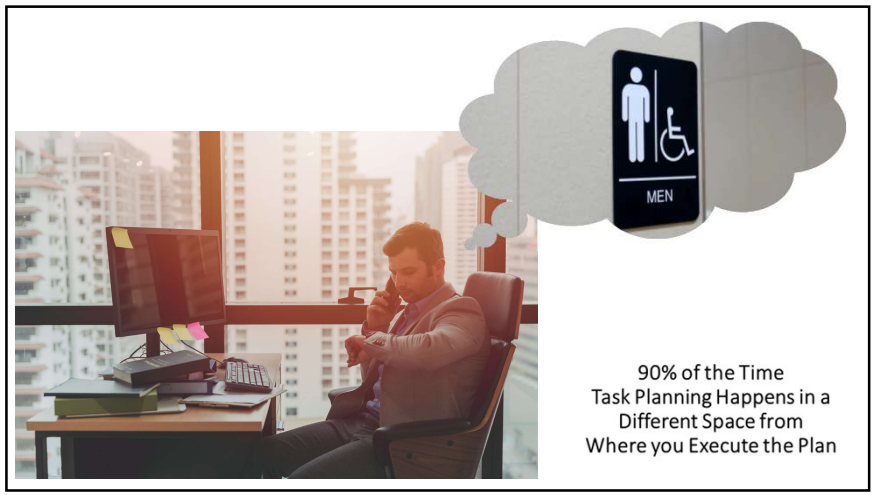
Routine or Student:		1 word:
Nonverbal if...then Self-Talk	+ Situational Intelligence S T O P: Job Talk	= Mental Dress Rehearsal M I M E
How far into the future can you see? The Spatial Temporal Window	See and Feel the Future: SHOW and TELL me your plan	Play with the Future: Same but Different
Make Time Visible		
3 Strategies: 1. 2. 3.		1 word:

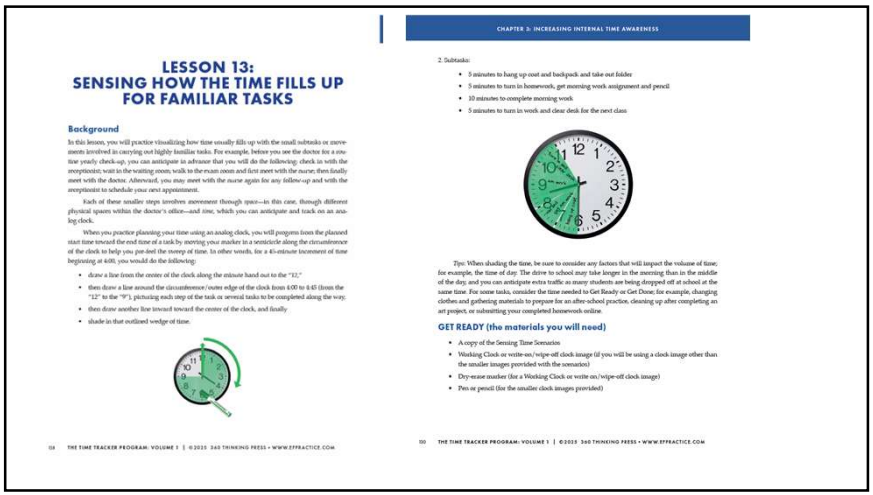
MIME iT

People Think
in Time
and Space Markers









LESSON 13:
SENSING HOW THE TIME FILLS UP FOR FAMILIAR TASKS

Background

In this lesson, you will practice visualizing how time usually fills up with the small subtasks or movements involved in carrying out highly familiar tasks. For example, before you see the doctor for a routine yearly check-up, you can anticipate in advance that you will do the following: check in with the receptionist; wait in the waiting room; walk to the exam room and first meet with the nurse; then finally meet with the doctor. Afterward, you may meet with the nurse again for any follow-up and with the receptionist to schedule your next appointment.

Each of these smaller steps involves movement through space—in this case, through different physical spaces within the doctor's office—and time, which you can anticipate and track on an analog clock.

When you practice planning your time using an analog clock, you will progress from the planned start time toward the end time of a task by moving your marker in a semicircle along the circumference of the clock to help you put-feel the energy of time. In other words, for a 45-minute increment of time beginning at 4:00, you would do the following:

- draw a line from the center of the clock along the minute hand out to the "12."
- then draw a line around the circumference/outer edge of the clock from 4:00 to 4:45 (from the "12" to the "9"), picturing each step of the task or several tasks to be completed along the way.
- then draw another line toward toward the center of the clock, and finally
- shade in that outlined wedge of time.

CHAPTER 3: INCREASING INTERNAL TIME AWARENESS

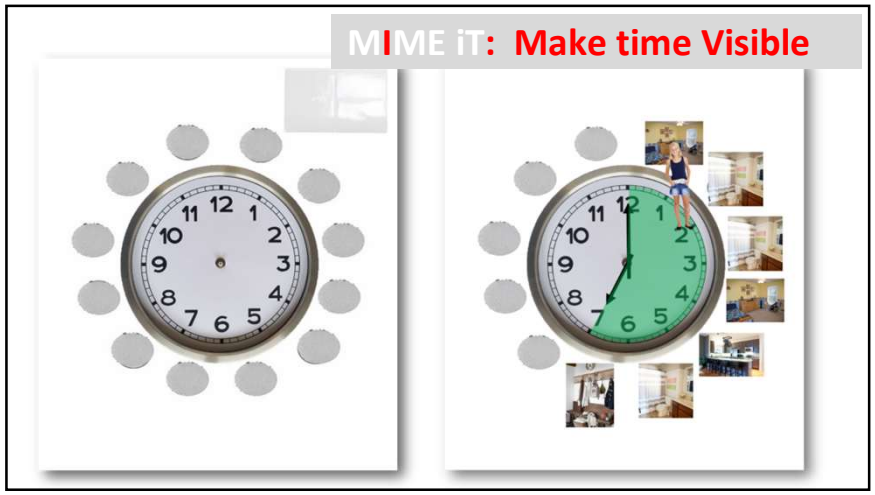
2. Subtasks:

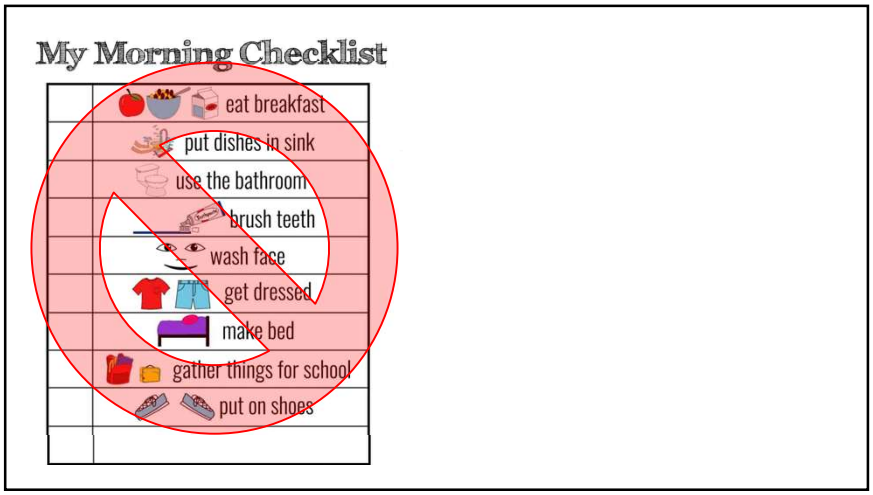
- 5 minutes to hang up coat and backpack and take out folder
- 5 minutes to turn in homework, get morning work assignment and pencil
- 10 minutes to complete morning work
- 5 minutes to turn in work and clear desk for the next class

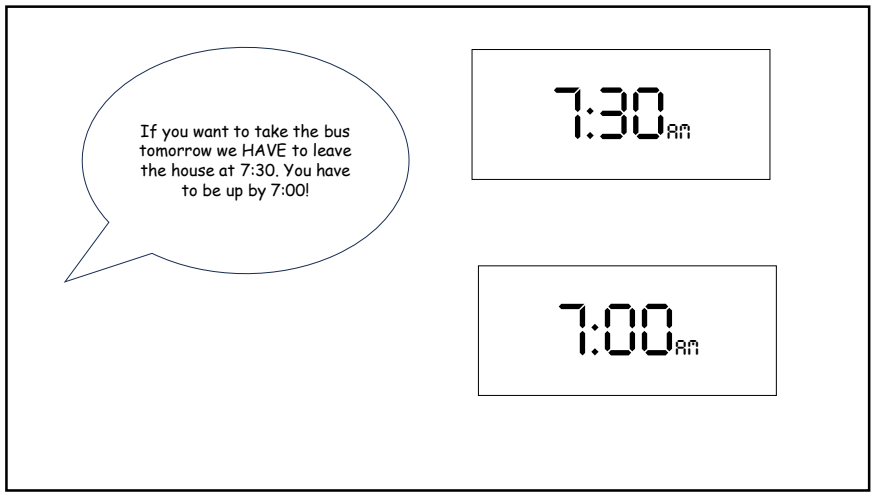
Tips: When shading the time, be sure to consider any factors that will impact the volume of time; for example, the time of day. The drive to school may take longer in the morning than in the middle of the day, and you can anticipate extra traffic as many students are being dropped off at school at the same time. For some tasks, consider the time needed to Get Ready or Get Done; for example, changing clothes and gathering materials to prepare for an after-school practice, cleaning up after completing an art project, or submitting your completed homework online.

GET READY (the materials you will need)

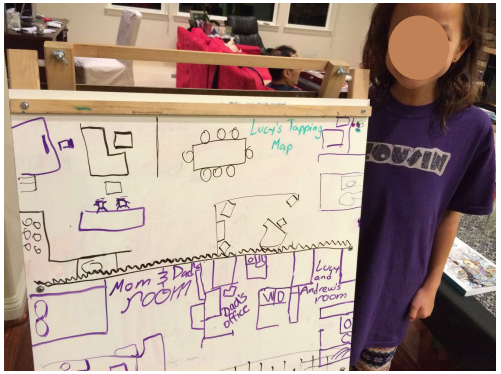
- A copy of the Sensing Time Scenarios
- Working Clock or write-on/wipe-off clock image (if you will be using a clock image other than the smaller images provided with the scenarios)
- Dry-erase marker (for a Working Clock or write on/wipe-off clock image)
- Pen or pencil (for the smaller clock images provided)





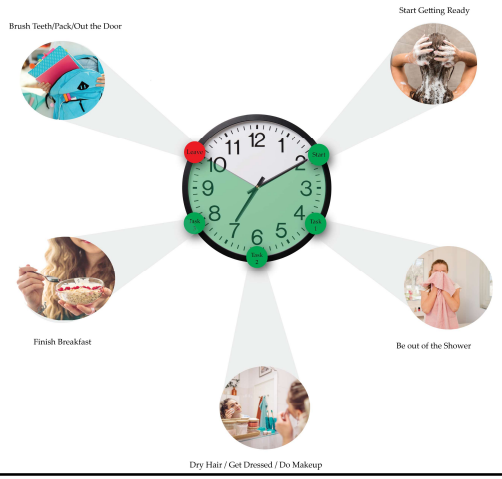


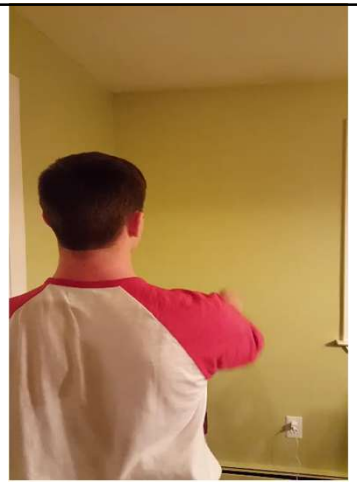
Our "map tapper" is more focused when heading downstairs to accomplish tasks on her own and both kiddos are now "time managers" with their morning and homework routines. What simple approach is to solve so many issues!

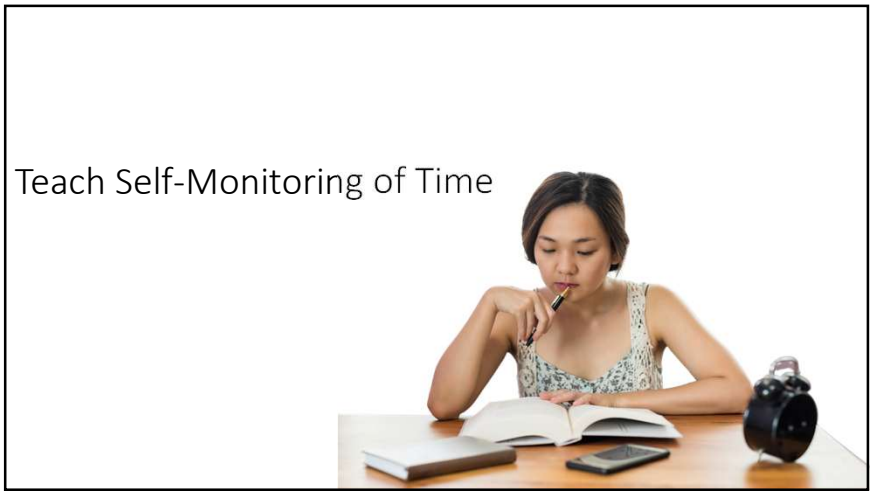


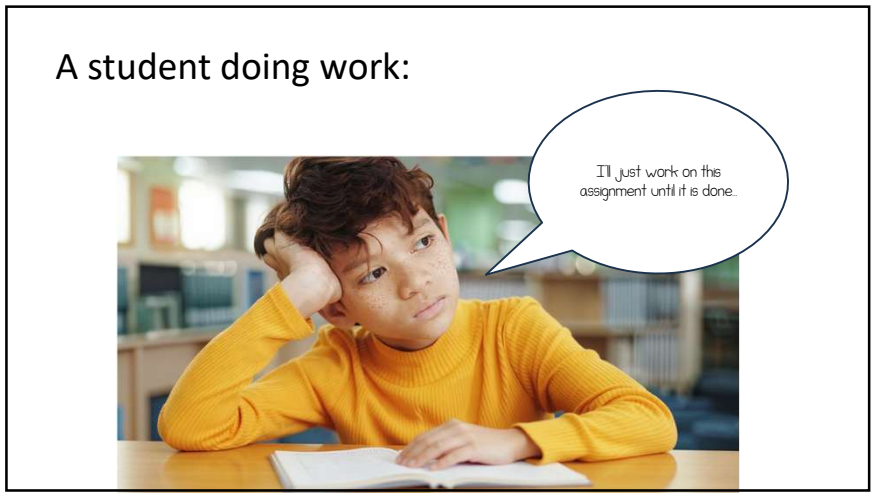
MIME iT

People Think
in Time
and Space Markers

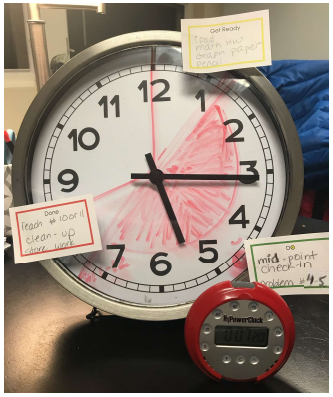


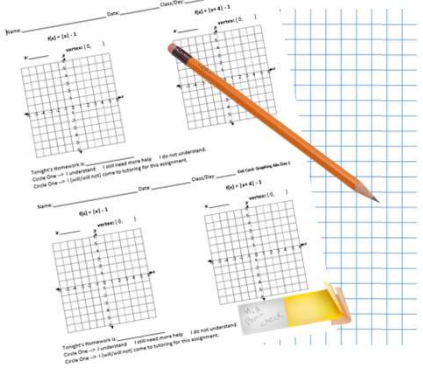


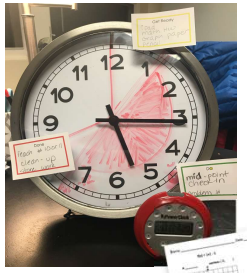


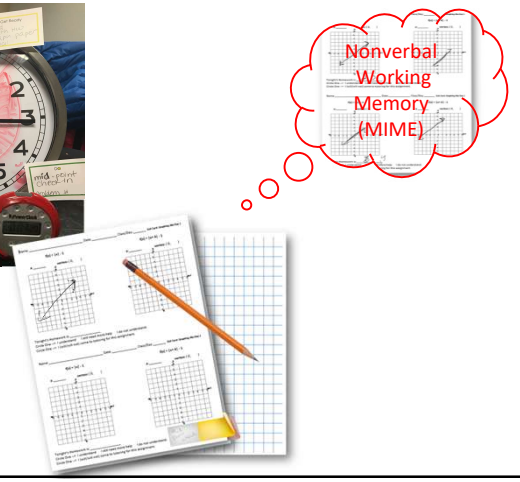


Create Time Markers and Corresponding Space Markers





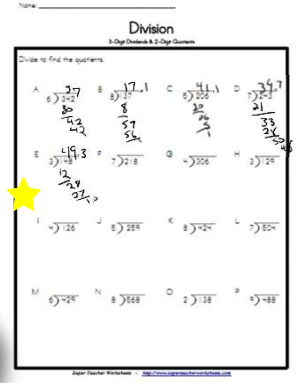




Use a Timer and Set it to the Mid Way Point of the Duration of Time Blocked to Work

At the "Mid Point Check In" the Student Can Self Monitor to See That They are Still on Track and If They are Not, Determine if They Have Any Time Robbers and How to Change their actions to Stay on Track

The **WORKING** Clock: Shade * Mark * Check



The Midpoint Check-In

Am I still focused on the goal? Yes ☐ No ☐

Is the work: Easy ☐ Medium ☐ Hard ☐

Do I need any help? Yes ☐ No ☐

From who? _____

or from what? _____

Any distractions? Internal ☐ External ☐ Digital ☐

List them: _____

_____

What would some time savers be? _____

_____

Be **SMART** about my Time

S How are my **Strategies** working?
Do I need a new or different strategy?

M Do I need a new or different **Materials**?

A Are my **Actions** achieving the goal?

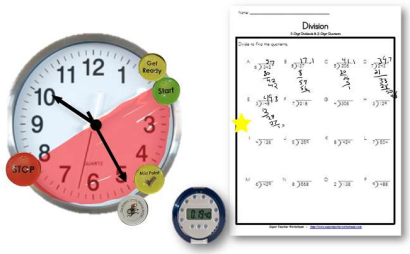
R Should I consult a **Resource**?

- Parent
- Teacher
- Friend
- Class Notes
- Book

T Can I use a **Technology** to help?
What type of technology would help?

Am I using the computer wisely?

Do I need to stop using a distracting app/program/site?



PLANNING TIME: THE MID POINT CHECK IN

Am I still focused on the goal? Yes ☐ No ☐

Is the work: Easy ☐ Medium ☐ Hard ☐

Do I need any help? Yes ☐ No ☐

From who? _____

Or From What? _____

Any Distractions? Internal ☐ External ☐ Digital ☐

List them: _____

What would be some time savers? _____

Be SMART about my Time

S How are my Strategies working?
Do I need a new strategy?

M Do I need new or different Materials?

A Are my Actions achieving the goal?

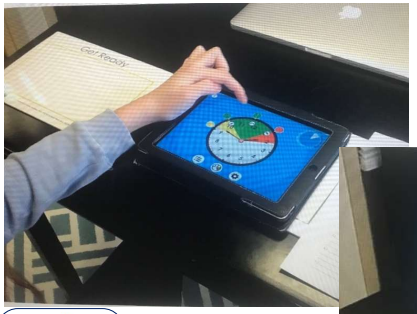
R Should I consult a Resource?
Parent
Teacher
Friend
Class notes
Book

T Can I use a Technology to help?
What type of technology would help?
Am I using the computer wisely?
Do I need to stop using a distracting app/program/site?

Self-Monitoring Time: The Mid-Point Check In

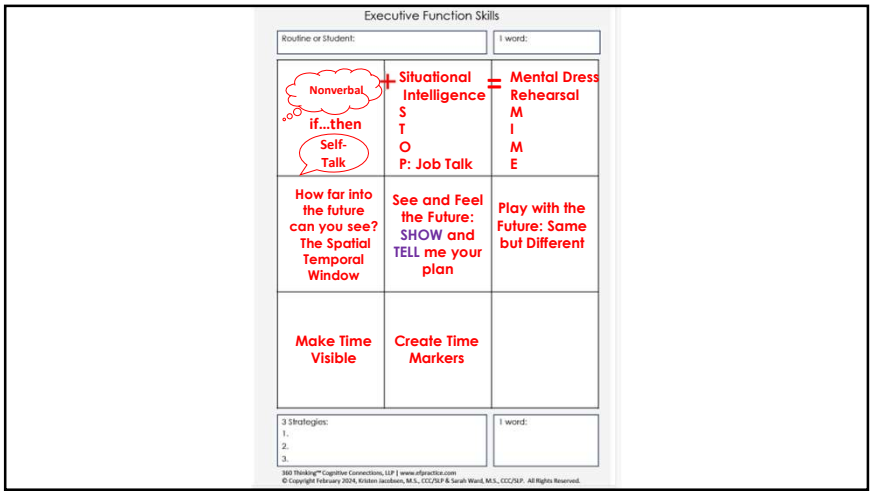
- Check in with my Task
- Check in with any Distractions

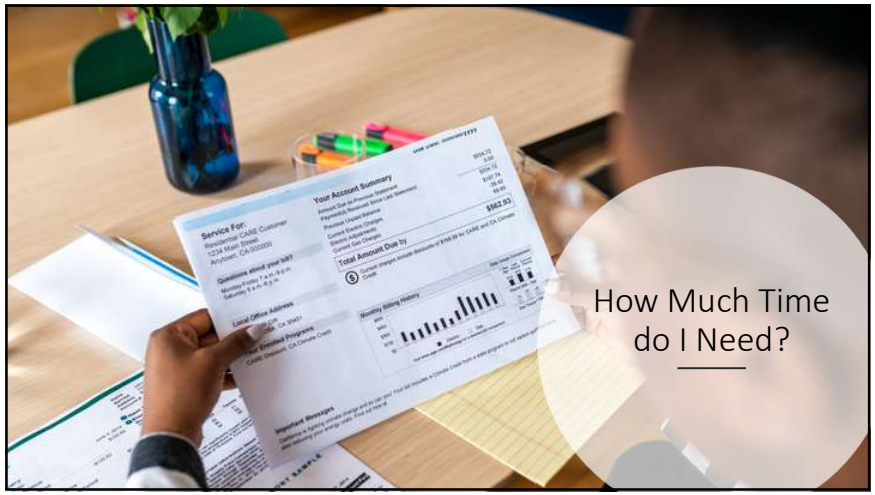
  Do I have Time Robbers?
  Do I need Time Savers?

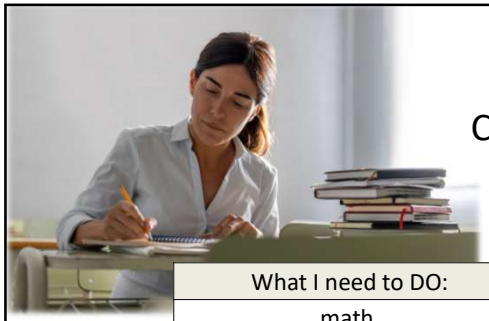


360 Thinking Time Tracker App

Learning to Think in **Time** Markers



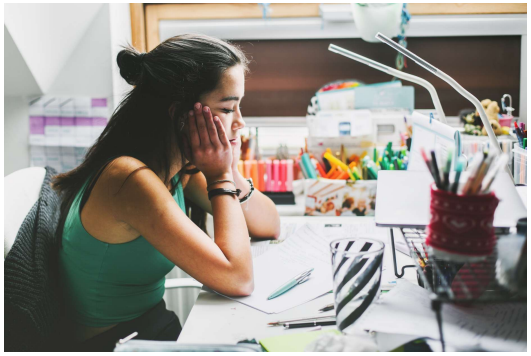


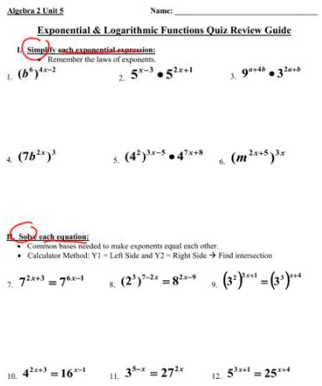


Creating Tangible Goals

What I need to DO:	When I am Done I have:
math	solved 10 problems
Science homework	made 8 flashcards
grade papers	graded 10 tests
handle the bills	paid 4 bills
write the legal brief	written the issues presented

Many Individuals Guess how Long Something Will Take Based upon Emotion





Algebra 2 Unit 5 Name: _____

Exponential & Logarithmic Functions Quiz Review Guide

I. Simplify each exponential expression:
- Remember the laws of exponents.

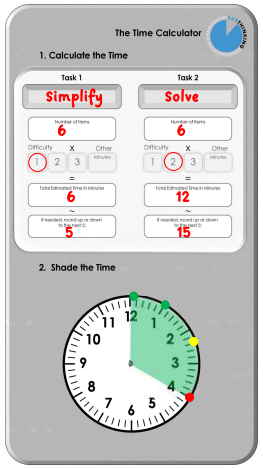
1. $(b^5)^{4x-2}$ 2. $5^{x-3} \bullet 5^{2x+1}$ 3. $9^{x+4b} \bullet 3^{2x+b}$

4. $(7b^{2x})^3$ 5. $(4^2)^{3x-5} \bullet 4^{7x+8}$ 6. $(m^{2x+5})^{3x}$

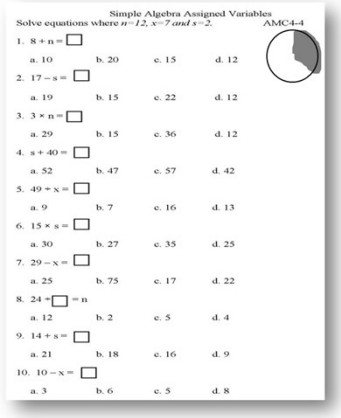
II. Solve each equation:
- Common bases needed to make exponents equal each other.
- Calculator Method: Y1 = Left Side and Y2 = Right Side → Find intersection

7. $7^{2x+3} = 7^{4x-1}$ 8. $(2^3)^{7-2x} = 8^{2x-9}$ 9. $(3^2)^{3x+1} = (3^x)^{x+4}$

10. $4^{2x+3} = 16^{x-1}$ 11. $3^{5-x} = 27^{2x}$ 12. $5^{3x+1} = 25^{x+4}$



Calculate Time:
Volume x Difficulty
(Minute Multiple Rule)

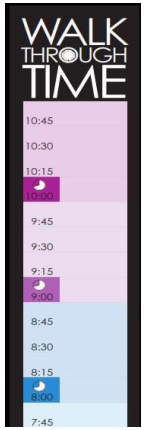


Simple Algebra Assigned Variables
Solve equations where $n=12$, $x=7$ and $s=2$. AMC4-4

1. $8 + n =$ ☐
   a. 10 b. 20 c. 15 d. 12
2. $17 - s =$ ☐
   a. 19 b. 15 c. 22 d. 12
3. $3 \times n =$ ☐
   a. 29 b. 15 c. 36 d. 12
4. $s + 40 =$ ☐
   a. 52 b. 47 c. 57 d. 42
5. $49 \div x =$ ☐
   a. 9 b. 7 c. 16 d. 13
6. $15 \times s =$ ☐
   a. 30 b. 27 c. 35 d. 25
7. $29 - x =$ ☐
   a. 25 b. 75 c. 17 d. 22
8. $24 \div$ ☐ $= n$
   a. 12 b. 2 c. 5 d. 4
9. $14 + s =$ ☐
   a. 21 b. 18 c. 16 d. 9
10. $10 - x =$ ☐
    a. 3 b. 6 c. 5 d. 8

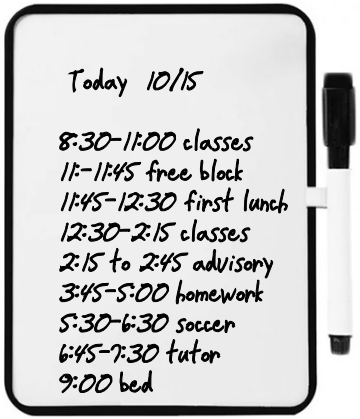
Shrink the Time Horizon to Increase your Focus

See/ Experience Daily Time



PLAN and GO toward that Future
What does the day look like?

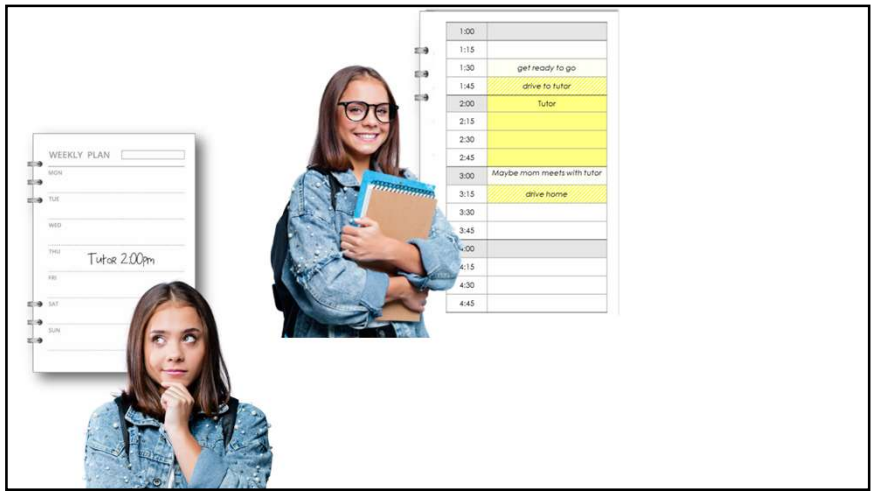
Becoming a Mind MIME



It's a NO

Written Schedules and
Lists with verbal time estimates
access Verbal Working Memory
and not Nonverbal Working Memory –

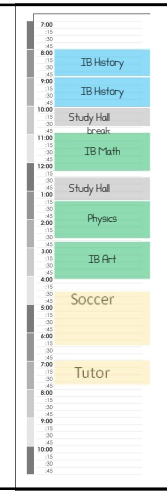
Make Time Visible



Seeing Daily Time
Make Time Visible by 15 min increments

ACE your Time

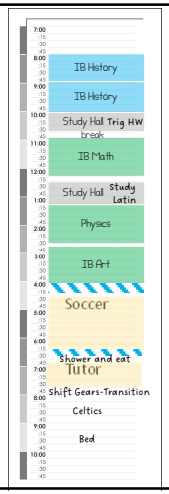
Activities At a Certain Time
Assign a Time
Chill Time
Extra Time



Seeing Daily Time
Make Time Visible by 15 min Increments

ACE your Time

Activities At a Certain Time
Assign a Time
Chill Time
Extra Time



ACE My Time

At a Specific Time

Appointments At a specific time: school, practices, meetings, rehearsals, medical appointments, etc.

Activities At a specific time: bus pick-up, exercise class, job, a planned social event, volunteer, etc.

Assign a Specific Time To Do

Morning routine
Bedtime routine
Assignments
Projects
Study
Tasks
Exercise
Practice
Chores

Chill Time/ Creative Time

Rest, relax, rejuvenate
Social media
Art/crafts
Socialize
Hang out with friends
Watch TV
Play video games
Browse online
Make a music playlist
Play music
Hobbies
Ride a bike, etc.

Extra Time

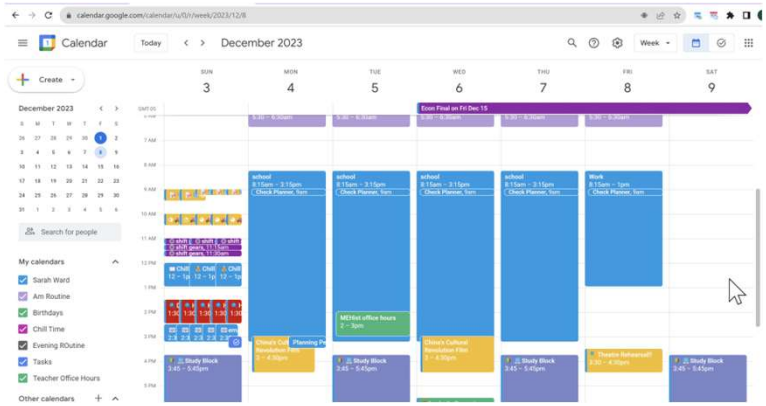
Time to travel to and from an activity or appointment

Time to Get Ready for the activity

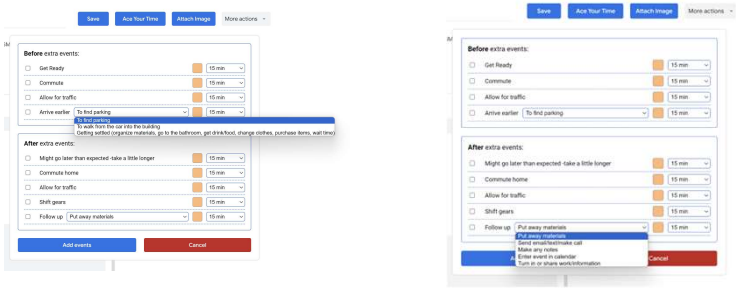
Time to shift gears and transition between activities (e.g., to put away items, change clothes, get a snack, go to the bathroom, etc.)

Time for the anticipated "Goes Withs" and "Maybes"

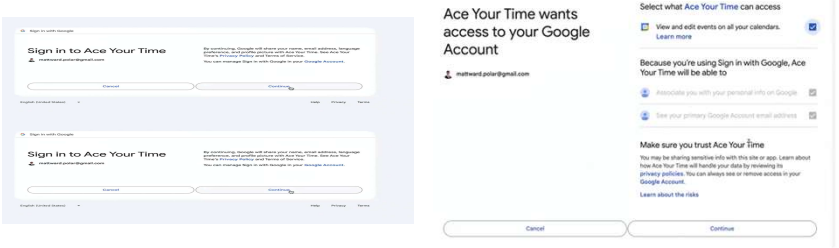
ACE your Time Chrome Extension!

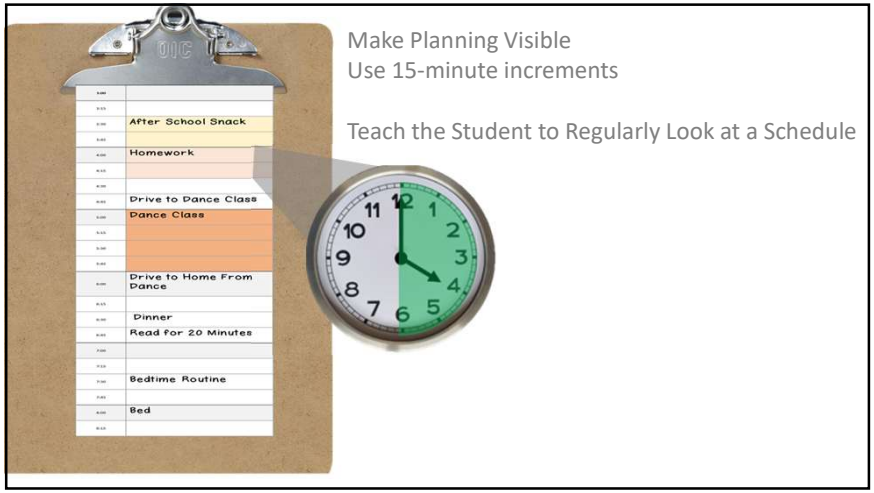


ACE your Time Extras



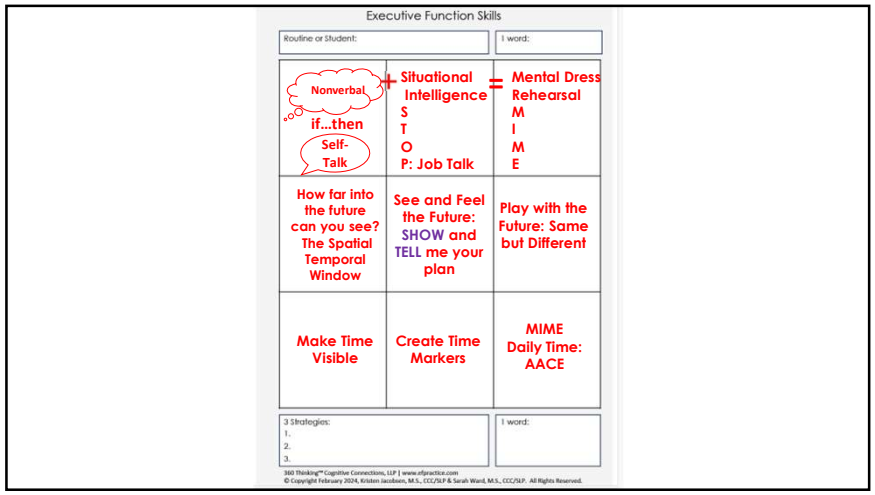
ACE your Time Chrome Extension: Allowing Google Access

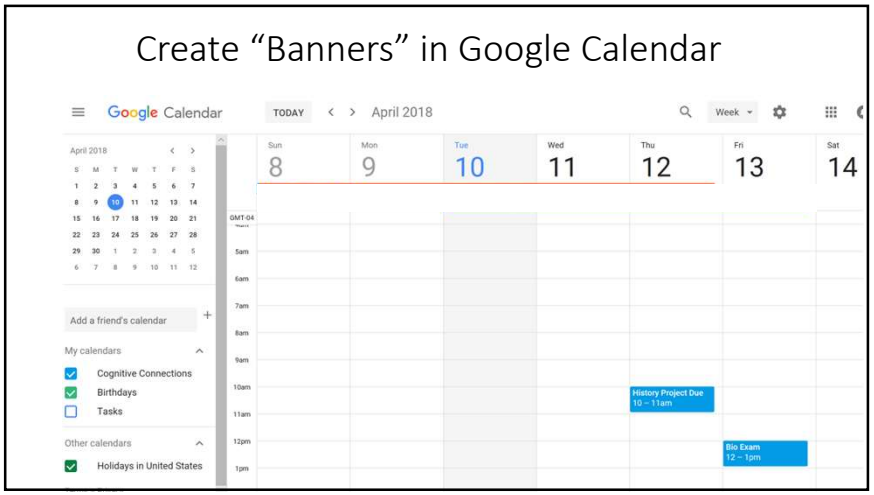


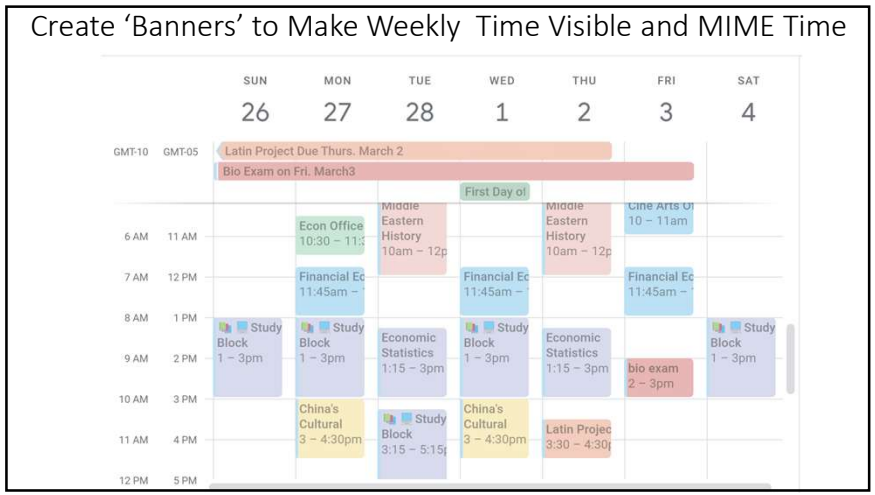


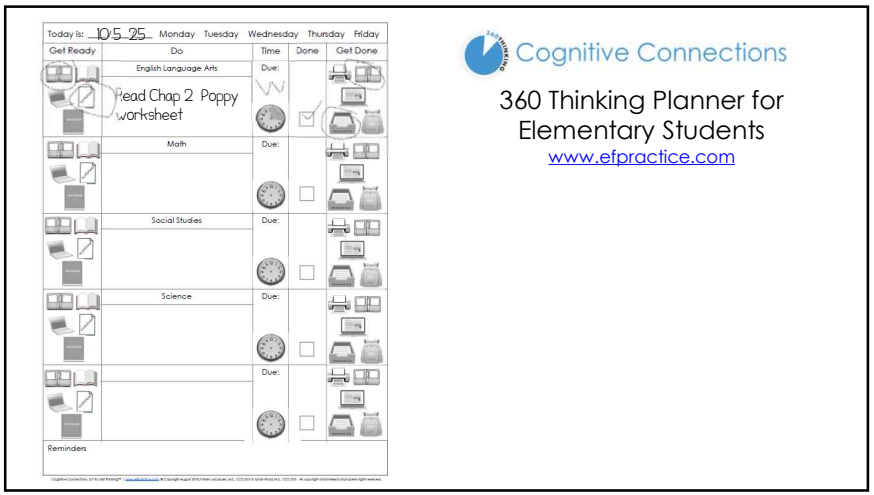
Make Planning Visible
Use 15-minute increments

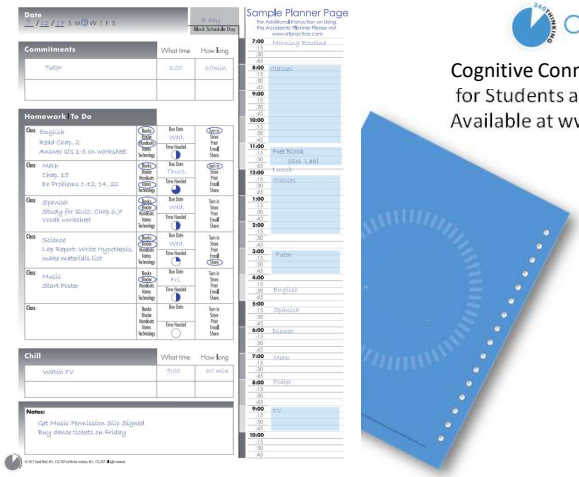
Teach the Student to Regularly Look at a Schedule











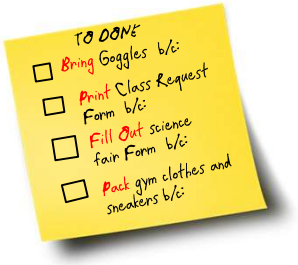
Cognitive Connections

Cognitive Connections Academic Planners for Students and Adults are Available at www.efpractice.com

Can I just give the student a checklist?

Teach the Process of *How* to Make a Checklist

Include the MIME -ACTION VERB and the Future Value



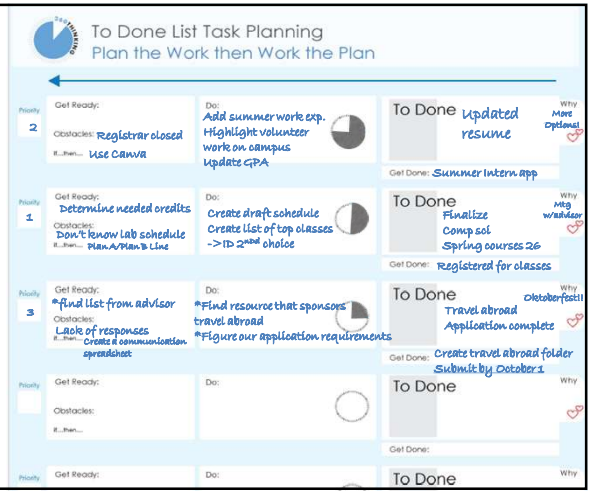
Shifting from Intention to Action

The To-Done! Organizer:

Breaking Down Plans to Carry Out Tasks

https://www.efpractice.com/shop

The To-Done! Organizer



https://www.efpractice.com/shop

Use Promo Code:
college10 for 10% discount

Time Management Informal Assessment

Section A: Future-Oriented Perception and Organization of Space and Materials

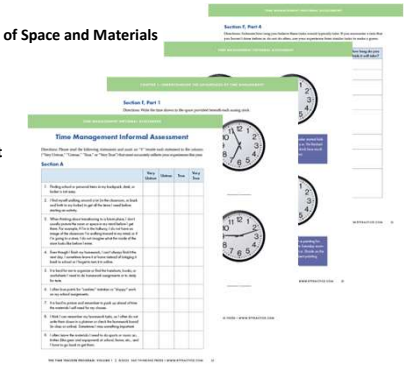
Section B: Estimating Time

Section C: Task Initiation and Shifting

Section D: Self-Monitoring and Tracking Time

Section E: Feelings and Beliefs About Time Management

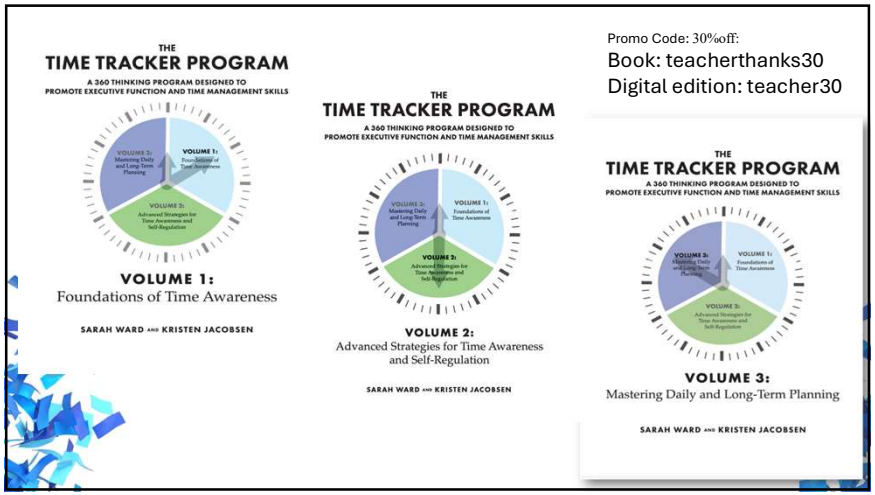
Section F: Visualizing Time



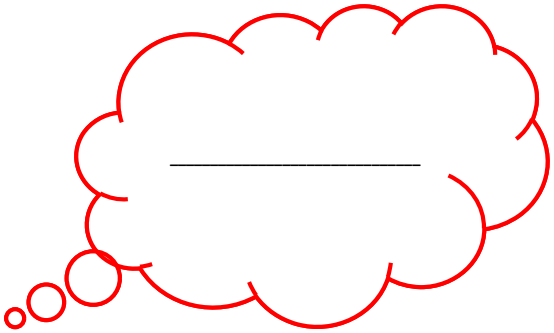
Let's Experience the Tool!

You'll complete a short sample — Section D: Self-Monitoring and Tracking Time — to see how students reflect on their time awareness.
www.bit.ly/ratetime or Scan the QR code to respond to 10 statements.

Promo Code: 30%off:
Book: teacherthanks30
Digital edition: teacher30



Now what **ONE** word comes to mind when you hear the term executive function?



Cognitive Connections, LLP
www.efpractice.com

If you share our ideas, please make attribution to Sarah Ward and Kristen Jacobsen.

Please reach out to us! We love to hear from you!

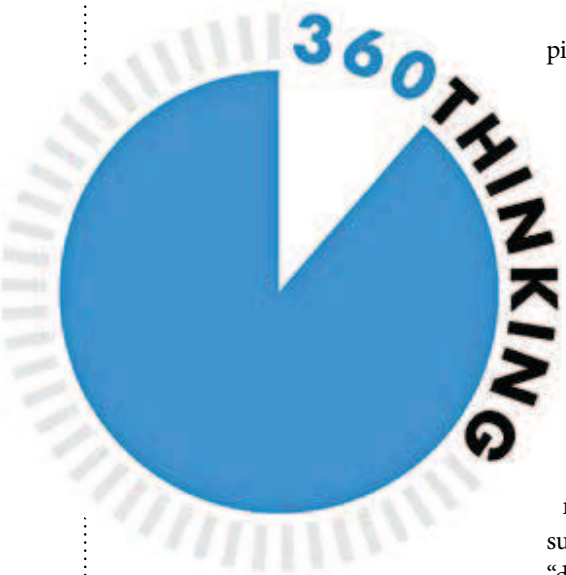
Kristen Jacobsen, M.S., CCC/SLP
Speech and Language Pathologist
kjefpractice@gmail.com

Sarah Ward, M.S., CCC/SLP
Speech and Language Pathologist
sward@efpractice.com

by Mark Katz, PhD

360 Thinking: An Executive Function Model and Program

Thanks to the 360 Thinking executive function model and program, a growing number of children with executive function challenges are enjoying the autonomy, independence, and self-confidence that comes from successfully completing projects and assignments on their own. The model is the brainchild of Kristen Jacobsen, MS, CCC-SLP, and Sarah Ward, MS, CCC-SLP, who are co-directors of Cognitive Connections Executive Function Practice, LLP, in Concord, Massachusetts.



This innovative approach weaves together an array of functional hands-on tools and strategies to strengthen core features of executive control, as described by Dr. Russell Barkley in his theory of executive functioning. Ward and Jacobsen pay particular attention to helping children to "see the future, say the future, and feel the future." To accomplish this, they start by showing students how to begin a project or assignment by planning a visual image of the final product.

Start with the question: What will it *look* like?

Before students can initiate assignments, they use multisensory strategies aimed to elicit the self-imagery and self-speech that support planning. Students slip on their "future glasses" to help them see, say, and feel a future project or assignment successfully completed.

Children learn to sketch the future picture of a project when beginning to plan. Motivation to accomplish the end result can be established when students reflect on the emotional state they anticipate experiencing once their future picture is accomplished.

Children then "work their plan." They draw from their visualized image to help them "work backwards" and master two other planning stages necessary for completing a project successfully: rehearsing the steps to "do" and organizing the materials to "get ready."

Three steps to success: "Get ready, do, done"

The planning process is taught as a sequential process with visual tools that fade to mental imagery. Students learn the executive function process of "planning backwards" to "move forwards" for completing tasks.

Using self-talk, the children ask themselves, "What three questions do I ask myself to be a planner?"

1. *What will it look like when I am done?*
2. *What steps do I need to take to match my done image?*
3. *What materials will I need?*

Once the students anticipate what it will look like and feel like to be "done," they engage in a mental dress rehearsal and practice the steps to "do" the task, and determine what they will need to "get ready." To help them remember to "plan backwards," three different colored mats are provided: red for "done," green for "do," and yellow for "get ready." The mats are also laminated, so the children can be "future sketchers" and sketch images of the tasks to be accomplished as part of that particular step.

Once students have sketched out their plan, they are ready to move forward and carry out their plan. The yellow "get ready" mat reminds them to slow down and gather needed materials. Rather than having materials provided beforehand, children practice learning to locate them on their own. The green "do" mat shows how the student decided to divide the project up into specific steps (planning, organizing, and prioritizing).

Step 2 also provides strategies for estimating and keeping track of time (temporal awareness), a skill often lacking in those with executive function challenges. To help master this skill, children are provided with a clock with a glass face. Using a dry erase marker, they first practice sketching directly on the clock their

estimated time for completing their project. Next, they sketch a starting time, a checkpoint, and an ending time.

Children are also provided with a timer so they can practice keeping track of their progress during the checkpoints (self-monitoring). Once they reach their checkpoint, they are then coached on how to identify and navigate around "time robbers." A list of examples can be provided, which are grouped into specific categories. Examples include: my body ("thirsty," "hungry," sleepy", "antsy"), my organizer ("I can't find my assignments and papers," "I don't have a plan for how to do this"), my scope ("I don't know how to start," "I'm trying to make this perfect"), and my focus ("I'm distracted by the computer or other electronic," "I'm socializing").

Children started with step 3 (done) and return back to step 3 after successfully completing their task. They now learn how to "get done" and close out a task by putting materials away, cleaning up their workspace, and placing their completed project or assignment in its appropriate folder. They also review their plan from start to finish to figure out what worked, what didn't work, and what if any changes to make when tackling a similar project in the future.

This process can be taught to students by teachers, special educators, therapists, and parents who are trained in using the 360 Thinking model. Visit http://efpractice.com to learn more about the model, as well as its many other innovative strategies and tools and how they directly target core areas of executive control. Readers are also referred to two recent articles written by Ward and Jacobsen, both referenced below.

ADDITIONAL READING

Barkley, Russell A. *Executive Functions: What They Are, How They Work, and Why They Evolved*. New York: Guilford, 2012.

Ward, Sarah, and Kristen Jacobsen. "Staying a Beat Ahead," in *Attention*, August 2014, Vol. 21, No. 4, pp. 12-15.

Ward, Sarah and Kristen Jacobsen. " A Clinical Model for Developing Executive Function Skills," in *Perspectives on Language Learning and Education*. American Speech-Language-Hearing Association, March 2014, Vol. 21, 72-84. **http://sig1perspectives.pubs.asha.org/article.aspx?articleid=1882672&resultClick=3**

A clinical and consulting psychologist, **Mark Katz, PhD,** *is the director of Learning Development Services, an educational, psychological, and neuropsychological center in San Diego. He is a contributing editor to* Attention *magazine and a member of its editorial advisory board, a former member of CHADD's professional advisory board, and a recipient of the CHADD Hall of Fame Award. His book,* Children Who Fail at School But Succeed at Life *(Norton) is due out in April 2016.*

Staying

by Sarah Ward, MS, CCC-SLP, and Kristen Jacobsen, MS, CCC-SLP

AFTER RECESS, as part of the daily routine, the class reconvenes on the rug. Jackson runs from the back of the room where he has been playing with the class hamster to his cubby and slips off his jacket. It drops to the floor. He kicks off one boot. The teacher calls stragglers to join the others on the rug, so he hops to the circle wearing one boot and plops down. The teacher shares the agenda for the afternoon, which includes reviewing the science homework. Looking alarmed, Jackson pops up, and races back to his cubby while kicking off his other boot.

He pulls out his backpack, removes a homework folder, and grabs his assignment. Leaving the backpack open and boots scattered, he races to the homework bin. Realizing his name is not on the assignment, he zooms back to his desk to grab a pencil and sits back down on the rug with the rest of the class.

As the teacher gives instructions for the next activity, Jackson slips his homework underneath him and sits on it. The class is dismissed to their desks, and Jackson, talking excitedly to the boy next to him, stands up and follows the boy to his desk. His nameless homework is left on the floor. When he gets to his desk, his morning work folder and silent reading book are on the floor with assorted bits of paper. As the class starts the next activity, Jackson does not have the materials he needs. Again, he needs to walk about the class to get ready.

Anne has a music lesson Saturday morning at 9:00. Her mom wakes her at 7:30; Anne rolls over and groans, "Ten more minutes." Mom returns ten minutes later and tries again to wake Anne. After two more rounds of "Ten more minutes," Anne finally gets out of bed and heads for the shower. She showers for twenty minutes. Mom knocks on the door to announce the time. She encourages Anne to hustle so they can leave the house in thirty minutes. Anne gets out of the shower, puts on a robe, plops herself on the living room couch, flips open her laptop, and checks her social media sites. Mom reminds her to get ready for music. Ten minutes later, Anne saunters into her room and stares at a land mine of clothes trying to decide what to wear. She sits on her bed and starts to remove her nail polish.

Mom hollers a reminder, "Get dressed!" Finally, ten minutes later, Mom exclaims anxiously, "We have to go…!" Anne responds to this seemingly sudden pressure and shouts, "I'm coming!" She heads into the bathroom in her bathrobe to blow dry her hair. Patience waning, Mom asks about her instrument and sheet music; Anne directs her to the basement. Finally finished with her hair, Anne heads to the kitchen for something to eat.

Exasperated, Mom, who is standing at the door holding Anne's instrument, music sheet, and breakfast bar, exclaims, "We need to go now. We are late!" Anne yells back in frustration, "I told you to wake me up earlier!"

As adults, we joke about "senior moments." That moment when you have imagined an item you are going to retrieve and then when you finally that room to get it you draw a blank. "What did I come in here for?" Ack. A senior moment.

What do a student zigzagging about the classroom, a slow-paced teen, and a senior moment all have in common? Challenging executive function skills.

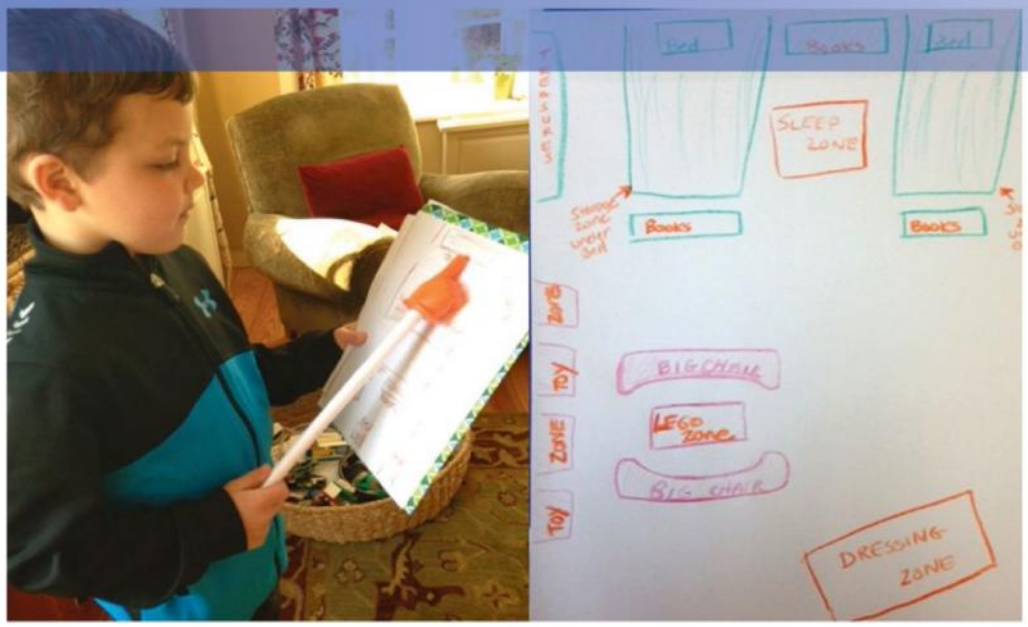
Weak executive function skills

Individuals with strong executive function skills stay a beat ahead. In contrast, teachers and parents describe individuals with weak

a Beat Ahead

executive function skills as being "a beat" or—as Jackson's teacher sighs—"twenty-two beats behind." How do executive skills enable us to stay a beat ahead? Strong executive function skills enable us to imagine and plan a "dry run" of the task in our mind before we begin to carry out the plan. If a task is planned in a different space than where the task will be carried out, then we create an image of the future space in our minds. For example, when a child hears the direction, "Get ready for lacrosse," he might be downstairs in the family room and imagine walking upstairs into the bedroom, heading over to the dresser, opening the third drawer, and retrieving their uniform. Then he might envision a transition from the bedroom to the mudroom and then the garage, where cleats and gear bags are stored.

The imagery is a mental anchor that allows the child to better resist distractions and maintain a pace so as to reach a goal. When forethought guides children's actions, they can carry out tasks more successfully. Small glitches, such as looking for a missing item, can also be handled more smoothly. However, when children with weak executive function skills hear the instruction "get ready," they hear the words, but do not pre-imagine the task or the steps to be ready. Even if they respond, "Okay," they do not initiate any actions to move toward their goal. When these children finally enter their rooms, because they have not pre-imagined the task, they are only starting to ask themselves, "Okay, what am I doing?" Without the vision of an outcome in mind, they are open to distraction. When these children go into their bedrooms and see books, Legos, and a laptop, they easily disengage from the goal of getting ready. They are



ORGANIZATION & FOLLOWING DIRECTIONS: A basic map of a bedroom or a classroom can be used with a pointer to plan out directions and rehearse routines. This strategy can improve the use of mental imagery and self-talk, which are two skills that support a child's ability to carry out tasks and routines.

now a beat behind. Likewise, a senior moment is simply the loss of this pre-imagined intention.

Developing strong executive function skills

So, what can we do to develop a child's capacity to be a beat ahead and successfully carry out intentions in the future? According to Russell Barkley, in order to develop strong executive function skills, individuals "need to repeatedly practice: self-monitoring, self-stopping, seeing the future, saying the future, feeling the future, and playing with the future so as to effectively 'plan and go' toward that future."

Our natural inclination might be to provide checklists. While this strategy can sometimes work, it is limited. Checklists made by adults are not that helpful in creating mental imagery for children. For example, as adults, we might make a list of items to buy at the market. While making this list, we create, if only for a brief moment, a mental image of the supermarket, our dinner table, or shelves in our cabinets. These images help us navigate the market and remember items even if the list is left at home. When we hand children a checklist we've made, they have not used imagery to create the list and may find it hard to create imagery after the fact.

A better technique, when giving directions, is to use words that create mental imagery. For example, rather than asking a child, "What do you have for homework tonight?" pose a question such as: "When you walk into class tomorrow, what do you see yourself handing to your science teacher Mr. Jenson?" Instead of directing your child to get ready for soccer, try asking, "If you were standing at the door ready to go to soccer what would you look like? What does 'ready' look like?" To improve the effectiveness of your instruction to go upstairs and get dressed, try saying, "What drawer do you see opening to find your sport clothes?"

Visuals are also helpful in teaching kids to get ready and organize themselves. It's often a struggle to get children out the door in the morning. Multiple prompts and checklists might get your child out the door, but the process is likely to be difficult. Instead, try snapping a quick photo of your child when he is ready for school and standing by the door with his coat, clothing, shoes, backpack, and lunch. The next morning, show your child the photo, and simply say, "This is what 'ready' looks like." Ask him to imagine a plan that enables him to "match the picture." Once children remember the images in these photos, they can use their mental imagery and the photos no longer need to be shown.

In the classroom, cue students to imagine their actions before they transition. For example, when students are transitioning from recess, as they line up, say: "Imagine yourself at your cubby. What do you look like? What do you see yourself doing?" For younger students, ask them to describe how they will prepare for an activity. They can use a pointer to point to the space they will go to and pre-imagine themselves in

What does 'ready to start the lesson' look like? You need 5 minutes before your lesson actually starts at 4:30 to prepare so that you are ready when the lesson starts. This 5 minutes gives you time to take your instrument out of the case, open the sheet music to the practice warm-up page and to be seated in front of the music stand.

Working backwards to shade in the time needed, what does the travel time look like? 5 minutes to walk through the parking lot, 15 minutes to drive to the music lesson.

Shading in 5 minutes to gather your instrument and sheet music and 10 minutes to dress and brush your hair and teeth, you can see that you need to start getting ready for your 4:30 music lesson at 3:50.

that space carrying out the expected actions, "I am going to go to the back of the room and get a worksheet, then I am going to walk to the counter under the windows and get my text book, then I am going to sit at my desk and take out my pencil."

Take this technique a step further. Ask the student to draw a blueprint of the classroom or their house. Tape this blueprint to a clipboard, so the child can 'tap out their plan' before a task. Use a pencil or pointer to tap on the blueprint while encouraging them to pre-imagine and verbalize their plan; this method will foster an important skill—self-talk. For example: "I am going to walk into the bathroom, brush my teeth, then go across the hall to my bedroom. Next, I'll go to my closet, get my shoes, then walk downstairs to the front hall to get my backpack."

Use an analog clock

Children may still have difficulties using an appropriate pace even if they have a mental image of the directions. If their pace is slow, then they are vulnerable to distractions. What helps children to imagine carrying out a plan within a particular time frame? An analog clock.

As adults, we often strategize times before verbalizing the plan to children. We say, "You need to start getting ready at 3:45." However, this direction is given after we have thought, "Dance starts at 4:30, so we need to leave the house at 4:00." Try asking children to work backwards from an end time. Many children benefit from seeing how time fills up on an analog clock. A dry erase marker can be used to shade "slices" of time and write actions when planning backwards on a glass analog clock. See the example of backwards planning for estimating the time to prepare and travel to a music lesson *(see graphic above)*.

Students can also use the clock to visually plan their time for homework or in-class assignments.

Another advantage of drawing on the clock is building self-awareness. Students can see visual markers of the time that has passed, and then determine if they have used time effectively or had any "time robbers" such as daydreaming or getting distracted by the television or Internet. To stay a beat ahead, students must monitor how closely their outcomes match the future plan they had imagined.

Ask students to plan checkpoints when they can stop and determine if they are on track with their plan. Students set a midpoint timer to stop and check how well they are working towards completing an assignment. The purpose of the timer is to improve self-monitoring and an awareness of how time is used, but not how quickly they can complete an assignment. Students who set timers for the end of a task frequently experience more stress, whereas a timer set for check-ins midway through a task provides opportunities for problem solving. Overall, when students are given guidance to plan and self-monitor while using mental imagery, they often experience independence and a better sense of self-control. Try it!

Sarah Ward, MS, CCC-SLP, *and* **Kristen Jacobsen, MS, CCC-SLP**, *are the codirectors of Cognitive Connections: Executive Function Practice, LLP, in Concord, Massachusetts. Ms. Ward has over fifteen years of experience in diagnostic evaluations, treatment and case management of children, adolescents and adults with a wide range of developmental and acquired brain-based learning difficulties and behavioral problems. Her particular interest is in the assessment and treatment of executive function deficits. Ms. Jacobsen, an ASHA certified speech-language pathologist, has worked in public education, private schools and hospital settings and has provided teacher training seminars and school consultations nationally. She has strong interests in cognition, language and mindfulness.*