



# Executive Functioning



<https://bit.ly/EFTransition>

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# Objectives

- Gain an understanding of executive function and skills
- Understand how executive functions are involved in transition, academics and social/emotional skills
- Gain instructional techniques to address academic and social/emotional difficulties related to executive function

# What Do We Mean By Executive Functioning?

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# Executive functioning refers to anything that you do with your brain that deals with :

- Thinking (Cognitive) and
- Doing (Behavior)



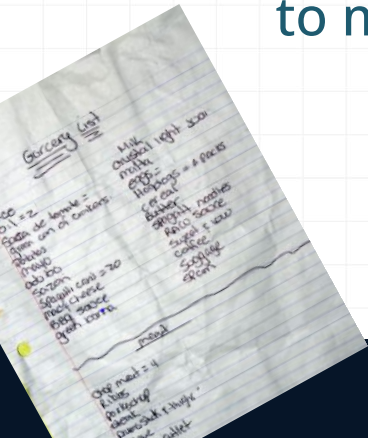
## Executive capacities are the brain's supervisory system (Prefrontal and Frontal Cortex)

# Executive Functioning Dimensions

Thinking (Cognition)	Doing (Behavior)
<ul style="list-style-type: none"><li>• Working Memory</li><li>• Planning/Prioritization</li><li>• Organization</li><li>• Time Management</li><li>• Metacognition</li></ul>	<ul style="list-style-type: none"><li>• Response Inhibition</li><li>• Emotional Control</li><li>• Sustained Attention</li><li>• Task Initiation</li><li>• Goal-Directed Persistence</li><li>• Flexibility</li></ul>

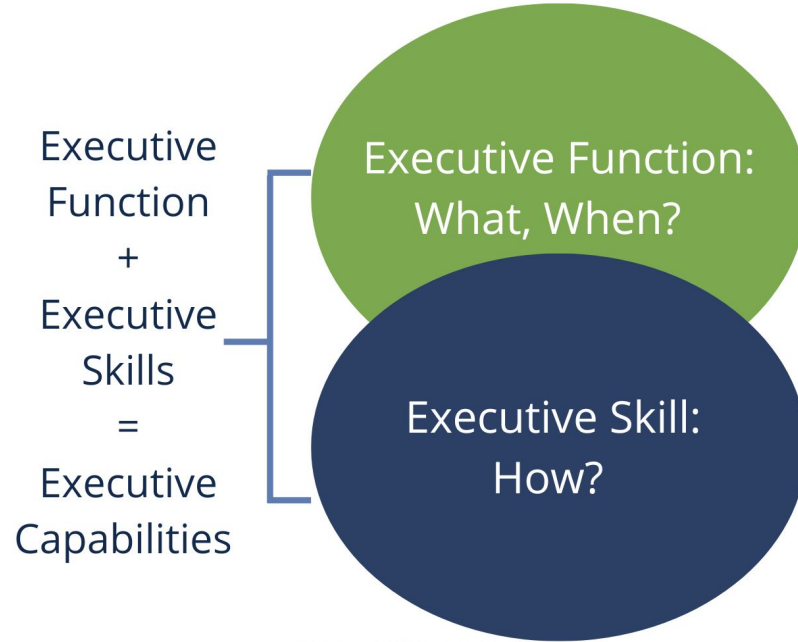
# Executive Functioning

- Executive functioning enables the brain to answer *what* and *when*
  - Executive functioning managers signal executive skill managers in *what to do* and *when to do it* (e.g. knowing when to make a plan, knowing when to inhibit)

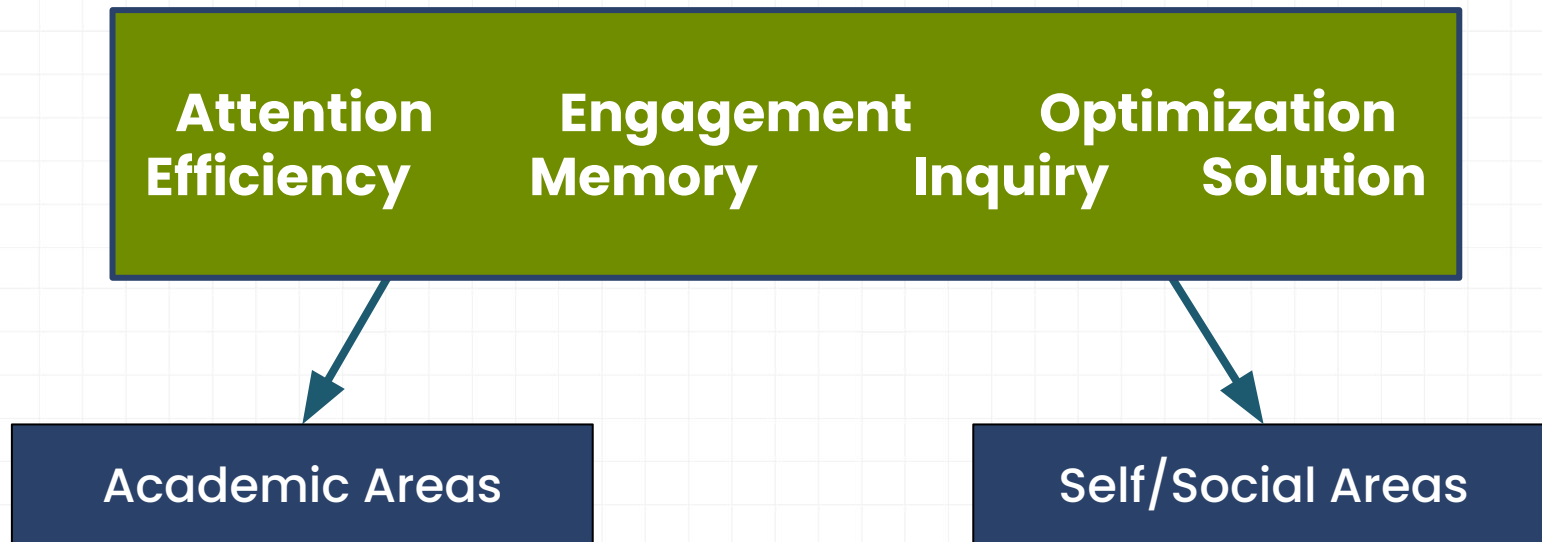


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# Management Structure within Holarchical Model of EF



# 7 Self-Regulation Executive Function Clusters





# Self-regulation Executive Function "Clusters"

## Engagement



Energize  
Initiate  
Inhibit  
Stop  
Pause  
Flexible  
Shift

## Attention



Perceive  
Focus  
Sustain

## Solution



Generate  
Associate  
Prioritize  
Plan  
Organize  
Decide

## Optimization



Monitor  
Modulate  
Balance  
Correct

## Memory



Manipulate  
Hold  
Store  
Retrieve

## Inquiry



Estimate time  
Anticipate  
Gauge  
Analyze  
Evaluate

## Efficiency



Sense Time  
Pace  
Sequence  
Use routine

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BLACK RED GREEN  
PURPLE YELLOW RED  
ORANGE GREEN BLACK  
BLUE RED PURPLE

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ORANGE GREEN BLACK  
BLUE RED PURPLE

# Turn and Talk

Your experience with EF challenges in students or your own EF challenges personally or professionally and your workarounds

# What Are Some Causes Of These Challenges?



# Causes/Symptoms of Executive Functioning Challenges in Students

- Irregular or Slow Development of the Brain
- Physical and Mental Health Conditions
  - ADHD
  - Conduct Disorder
  - Depression
  - Learning Disorders
  - Autism
  - Anxiety Disorders
  - Traumatic Brain Injury
  - Traumatic events
  - Genetic Component
  - No previous practice

# Executive Functioning and ADHD

## Executive Functioning and ADHD

- Students with ADHD have deficits, but not all student with deficits have ADHD
- Medication for ADHD does not address all areas
- Students with ADHD need assistance with self-regulation that medicine does not address

# Executive Functions In Our Students





# Executive Capacities in School



## Learning and Producing

- Learning cannot be directly observed
- Referrals are generally made because of a lack of *production* not a lack of *learning*
  - The assumption is that a lack of production *is* a lack of learning

In many instances, the lack of production is not a lack of learning, but rather a lack of knowing when or how to demonstrate what has been learned

# How Do We Address These In The Classroom?



# Executive Functioning Developmental Tasks

KG to Grade 2	Grades 3–5	Grades 6 +
<ul style="list-style-type: none"><li>• 2 – 3 step directions</li><li>• Perform simple tasks</li><li>• Inhibit behaviors: ex: follow safety rules</li></ul>	<ul style="list-style-type: none"><li>• Run errands</li><li>• Perform longer tasks (15–20 min)</li><li>• Keep track of belongings</li><li>• Plan simple school projects</li><li>• Keep track of daily schedule</li><li>• Inhibit/self-regulate</li></ul>	<ul style="list-style-type: none"><li>• Perform longer tasks (60–90 min)</li><li>• System to organize schoolwork</li><li>• Follow complete school schedule</li><li>• Plan and carry out long term projects</li><li>• Plan time</li><li>• Inhibit rule breaking</li></ul>

# Match Child to Task

1. Pay attention to emotional and behavioral responses to tasks.
2. Can they do the task?
3. What skill does the task require?
4. Monitor environment for distractions.
5. Identify Executive Skill weakness.
6. What does success look like?
7. What is child's own estimation of ability

# Principles to Improve EF Skill

- Teach deficit skill
- Consider development level
- Move from external to internal
- External included changes to environment, task or interaction
- Use child's innate drive
- Modify task
- Use incentives when appropriate
- Provide just enough support
- Keep supports in place until success
- Fade supports
- Consider context

# Direct Interventions

1. Identify the Problem
2. Set a Goal
3. Outline the Steps
4. Supervise the Child
5. Fade the Supervision



# Metacognition Cycle

ASSESS THE  
TASK

EVALUATE  
STRENGTHS AND  
WEAKNESSES

PLAN THE  
APPROACH

APPLY  
STRATEGIES

REFLECT



# Instructional Strategies

- Small Group Instruction
- Chunk tasks and assignments
- Teach problem solving
- Break projects into manageable portions
- Minimize amount of information students must hold in working memory
- Use visual, verbal, and physical cues Teach students how to take notes
- Teach students how to plan and organize



# Instructional Techniques

## Strategy Reflection Sheet/Card

- Promoted with incentives
- Include sheet in the grade
- Set aside time for share-outs
- Personalize strategies

## Goal-setting

- Help students to set attainable goals
- Teach students to break goals down into smaller steps



# Tools for Classroom Support

- Timer
- Class Calendar
- Checklists
- Color-Coding
- Workbooks
- Highlighter



- Class Master Binder
- Supply Storage Caddy
- Graphic Organizers
- Large Laminated Folder
- Student Day Planner



# Executive Functioning and Reading



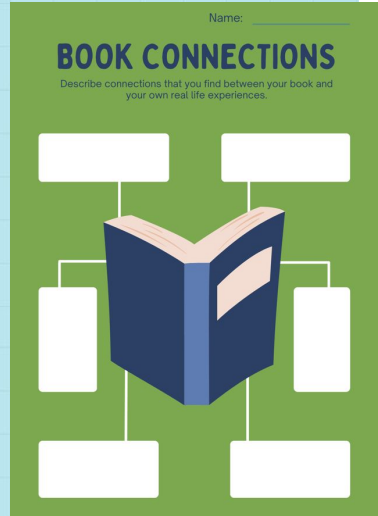
## Common behaviors in students with poor executive control while reading

- Inconsistent application of learned decoding skills
- Inconsistent oral reading fluency measures
- Zoning out while reading (reading without comprehension)

I have branches but  
no fruit, trunks or  
leaves... What am I?

**P**review, predict  
**R**ead/reread  
**I**dentify key idea  
**D**o the question  
**E**vidence  
underlined

*What month of the  
year has 28 days?*



# Instructional Techniques for Reading

- Prioritizing and Organizing Information/Ideas
- Accessing Working Memory
- Shifting/Thinking Flexibility
- Self-Monitoring/Self-Checking
- Orthographic Processing
- Orthographic Mapping
- Practice the Complete Act of Reading
- Rehearsal with Feedback
- Metacognitive Awareness Development



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# Executive Functioning and Writing

**Common behaviors in students with poor executive control while writing:**

- Ideas
- Physical Act of Writing
- Organization/Initiating Task




# Instructional Techniques for Writing


Name: \_\_\_\_\_

## Thesis Statements

A thesis statement is a sentence that summarizes the main idea that will be presented in an essay. For each topic listed below, write a thesis statement that includes a claim and the points that could be used for supporting evidence.



Should colleges pay student athletes?	
Are standardized tests an effective tool?	
Should college be required for everyone?	



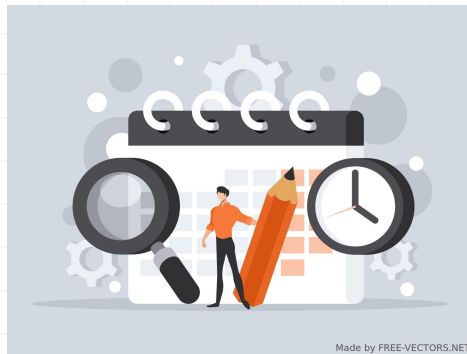
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- Pre-writing is an essential part of writing
- Thesis sentences lay out the road map of writing
- Teachers need to coach students through the process
  - Set goals once an outline is complete

# Executive Functioning and Math

Strong executive functioning skills determine success in math

- **Attention**
- **Working memory**
- **Mental Flexibility**
- **Organizational Skills**
- **Self-Awareness**



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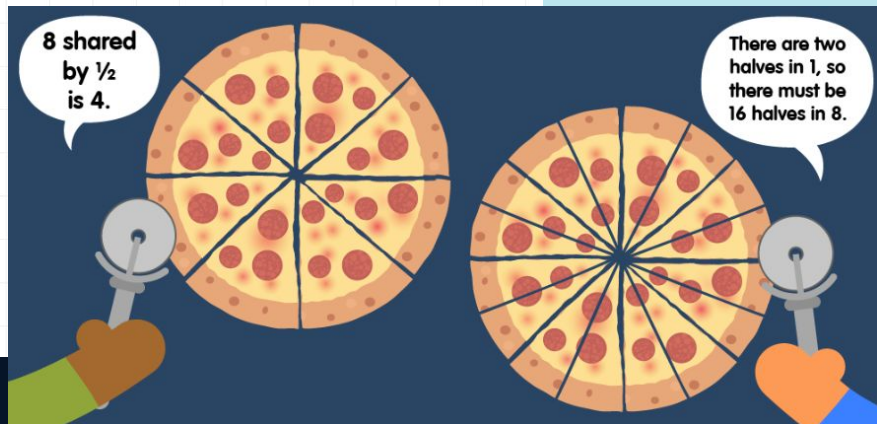
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# Executive Functioning and Math



Common behaviors in students with poor executive control when doing math

- Rushing through homework
- Math Rules (New)
- Automaticity
- Getting lost in the middle of complex problem
- Not catching mistakes





Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Probability Practice Worksheet

Directions: Read each question carefully. Solve the problems by applying your knowledge of probability. Show all your work neatly and clearly. Write your final answer on the line given.



**Example:** If you roll a fair six-sided die, what is the probability of rolling a number greater than 4?

Total outcomes = {1,2,3,4,5,6}

Favored outcomes = {5, 6}

$P = \text{favored outcomes} / \text{total outcomes}$

$P = 2/6$

$P = 1/3$

Answer: \_\_\_\_\_ 2/6 or 1/3 \_\_\_\_\_

1. If you roll a fair six-sided die, find the probability of rolling an even number.

Answer: \_\_\_\_\_

# Instructional Techniques for Math

## Attention

- Clear instructions in multiple formats
- Guiding questions
- Model their thinking
- Emotions

According to Dr. Mark Mahone, director of the Department of Neuropsychology at Kennedy Krieger Institute, “Emotion is the gatekeeper to attention.”

- Personal connections

# **Executive Functioning and Social & Emotional**



# Executive Functioning and Social and Emotional



## Theory of Mindblindness:

- Understanding that people have thoughts and feelings different from their own.
- Understanding that their behavior can impact the way other people think and feel.

## Social Thinking



# Mind Camera



## Thinking about what other people are thinking

*Example:* If you have a camera when you are looking at other people, other people have a camera also looking back at you. What feelings do you get when you see other people do certain things? What thoughts and feeling are you giving other people when you do certain things? Is this behavior giving people good thought and feelings or weird/uncomfortable thoughts and feeling?"

# Social Interaction Instruction

## Teaching students how to:

- Ask for help
- Listen to others
- How to handle conflict
- When to interject in a conversation
- Make an appointment
- Interact with others in different situations
- Know what is appropriate to talk about in some situations and not in others
- **iLaugh Framework**
  - i = Initiation, L = Listening with one's eyes and brain, A = Abstract and inferential = Understanding the perspective of others, G= Getting the big picture or gestalt processing, H= Humor

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- Goal-setting
- Self-monitoring
- Self-instruction/talk
- Self-Reinforcement

# Self-regulation strategies

## MY SELF MONITORING

Read each statement below. Place a check mark in the box that best match your behavior in the classroom.

	Always	Sometimes	Never
I follow directions.			
I do my best work.			
I cooperate with others.			
I am polite and respectful to others.			
I complete my work on time.			
I listen to the teacher.			
I raise my hand before I answer questions.			
I participate in class discussions.			
I keep my hands and feet to myself.			

- Consciously attend to breathing-relaxing
- Exercise
- Movement
- Awareness of body sensations
- Attending to care for my body--nutrition, hydration, and self-care
- Go inside with intentional nurturing of self
- Self expression --art, music, dance, writing, etc
- Caring, nurturing self-talk
- Laughing - telling jokes
- Positive self-talk "I can" "I'm sufficient" messages



# Executive Functioning and Transition



**How does executive  
functioning affect  
Transition?**

**Areas of  
Transition**

**Independent  
Living**

**Education  
and  
Training**

**Employment**



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## Executive Functioning skills for Independent living

- Planning and organizing
- **Time Management**
- Problem solving
- Working memory
  - Performing Tasks
- Starting and initiating tasks
- **Household management**
- Financial Management





## Time Management Strategy

### Pomodoro Strategy

- Pick a task
- Set the timer for 25 minutes
- When timer goes off take a 5 minute break
- Repeat step 3 more times
- After the third time take a longer break (15-30 minutes)



## 5 THINGS TO CLEANING



## EF and Independent Living Strategy

5 Things Method for cleaning your house  
(From the book *How to Keep House While Drowning* by KC Davis.)

- Laundry
- Dishes
- Trash
- Things that have a place
- Things that don't have a place

Morally neutral

# Laundry and Dishes

## STEPS TO DO LAUNDRY



1. SORT CLOTHES: SEPARATE CLOTHES INTO PILES BASED ON COLOR AND FABRIC TYPE.



2. LOAD WASHER: PLACE CLOTHES INTO THE WASHING MACHINE.



3. ADD DETERGENT: MEASURE AND ADD DETERGENT.



4. SELECT AND START CYCLE: CHOOSE THE APPROPRIATE WASH CYCLE AND START THE MACHINE.



5. TRANSFER TO DRYER: MOVE CLOTHES TO THE DRYER AFTER THE WASH CYCLE ENDS.



6. SELECT AND START DRYER: CHOOSE THE DRYER SETTINGS AND START THE MACHINE.



7. REMOVE CLOTHES: TAKE CLOTHES OUT OF THE DRYER AND FOLD THEM.



8. FOLD AND PUT AWAY: PLACE THE FOLDED CLOTHES IN DRAWERS OR CLOSETS.



## STEPS TO WASHING DISHES

DISHWASHER



1. GATHER DISHES



2. SCRAPE AND RINSE DISHES



3. LOAD DISHWASHER



4. ADD DETERGENT



5. DRY DISHES



6. PUT DISHES AWAY



## STEPS TO WASHING DISHES

HANDWASHING



1. GATHER DISHES



2. SCRAPE AND RINSE DISHES



3. FILL SINK WITH SOAPY WATER



4. WASH DISHES



5. RINSE DISHES



6. DRY DISHES



7. PUT DISHES AWAY



# BUDGETING TIPS

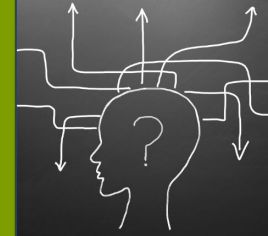


# Education/Training

## Decision-Making

	Strategies
<b>Evaluate options</b>	<ul style="list-style-type: none"> <li>• Discuss passions, interests, strengths, skills, goals and values</li> </ul>
<b>Consider Consequences</b>	<ul style="list-style-type: none"> <li>• Pros and cons list</li> <li>• Reflecting on outcomes</li> </ul>
<b>Trust your instincts</b>	<ul style="list-style-type: none"> <li>• Mindfulness practice</li> <li>• Role-playing</li> </ul>
<b>Seek Advice Wisely</b>	<ul style="list-style-type: none"> <li>• Mentors</li> <li>• Peer support groups</li> </ul>

Decision-Making Insights



### • Evaluate Options



### • Consider Consequences



### • Trust Your Instincts



### • Seek Advice Wisely





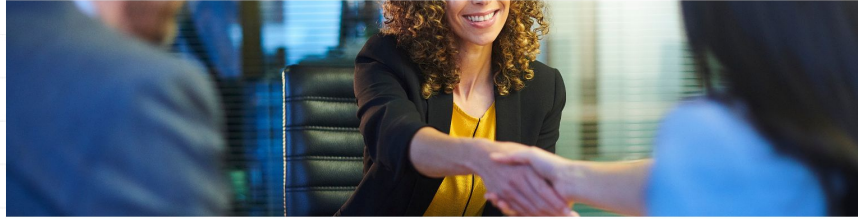
# EF and Employment

## STAR Method:

- **Situation (20%)**
  - Explain situation, challenge or project
- **Task (10%)**
  - Talk about the task or challenge that took responsibility for completing your goal.
- **Action (60%)**
  - Actions you took to complete the task or reach the goal
- **Results (10%)**
  - Results of your actions and efforts.



# 5 INTERVIEW STRATEGIES TO IMPRESS EMPLOYERS



## ■ Use the STAR Method

Structure your answers using the STAR method (Situation, Task, Action, Result) for behavioral questions.

## ■ Highlight Relevant Achievements

Share specific accomplishments that showcase your skills and contributions.

## ■ Showcase Problem-Solving Skills

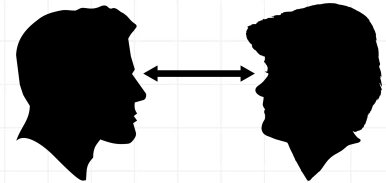
Discuss challenges you've overcome and how you approach problem-solving.

## ■ Emphasize Soft Skills

Highlight interpersonal skills like teamwork, communication, and leadership.

## ■ Stay Positive and Professional

Maintain a positive attitude throughout the interview.







**Through your  
child's eyes**

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# Questions/Comments

## Evaluation



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# Executive Functioning Resources



- Executive Functioning Resource Folder
- Executive Functioning slide resources

# What's executive function?



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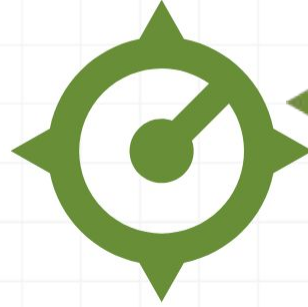
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