



Executive Functioning and Study Skills

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Executive Functioning



Why do parents need to better understand executive functioning skills ?

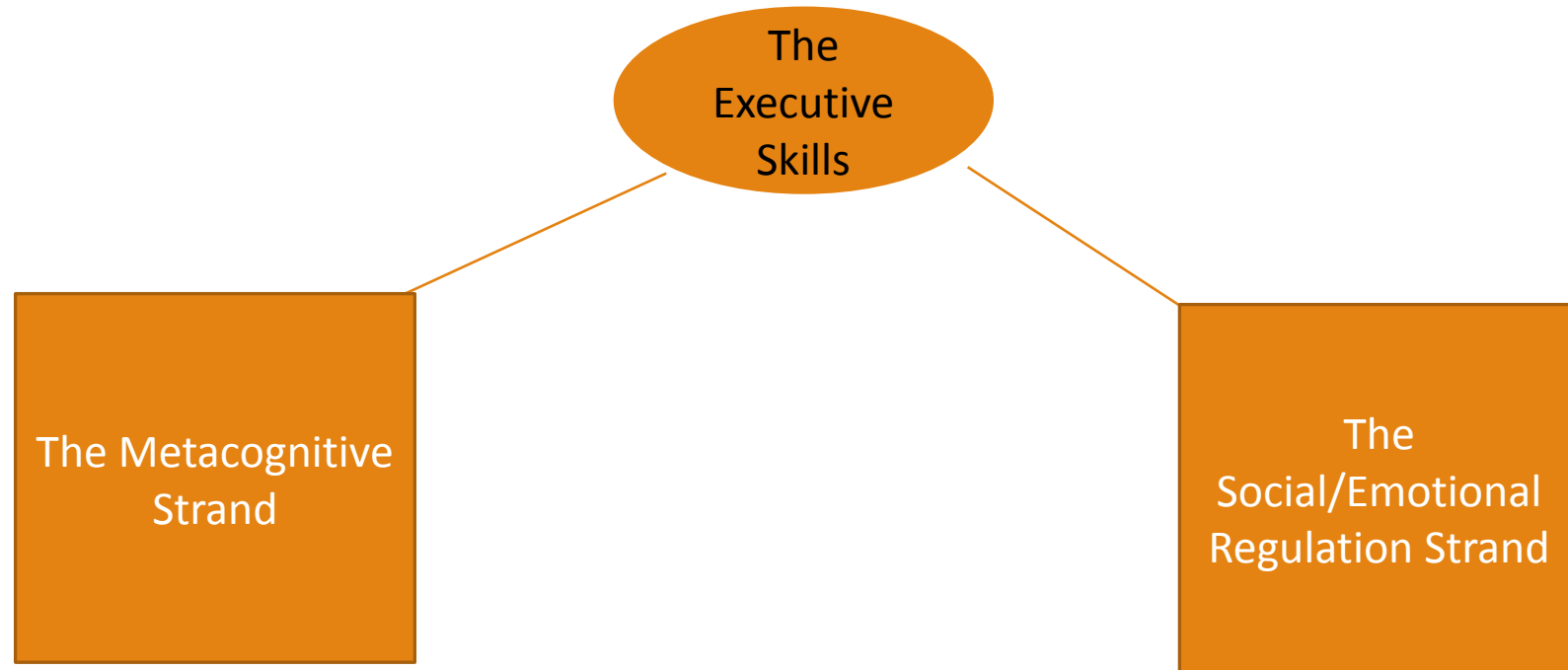
What does Executive Functioning Help us to do?

Executive functions work together to help a person...

- set goals
- plan and organize
- strategize
- pay attention
- remember details
- manage emotions



Two Core Strands of Executive Functioning



Social/Emotional Strand

- Response Inhibition/Impulse Control
- Emotional Control
- Adaptability

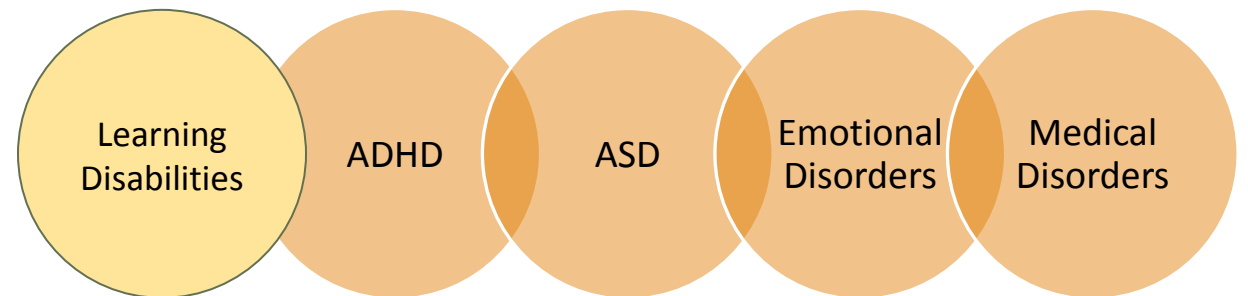


Executive Functioning

“The Big Umbrella”

Executive functioning deficits are a symptom of a number of disorders so it may be helpful to think of them as an umbrella under which many different disorders fall.

- Attention Deficit Hyperactivity Disorder (ADHD)
- Learning Disabilities (LD)
- Autism Spectrum Disorder (ASD)
- Emotional Disorders
- Medical Disorders
 - Traumatic Brain Injury
 - Tumors
 - Seizure Disorders



Executive Functioning and the Brain

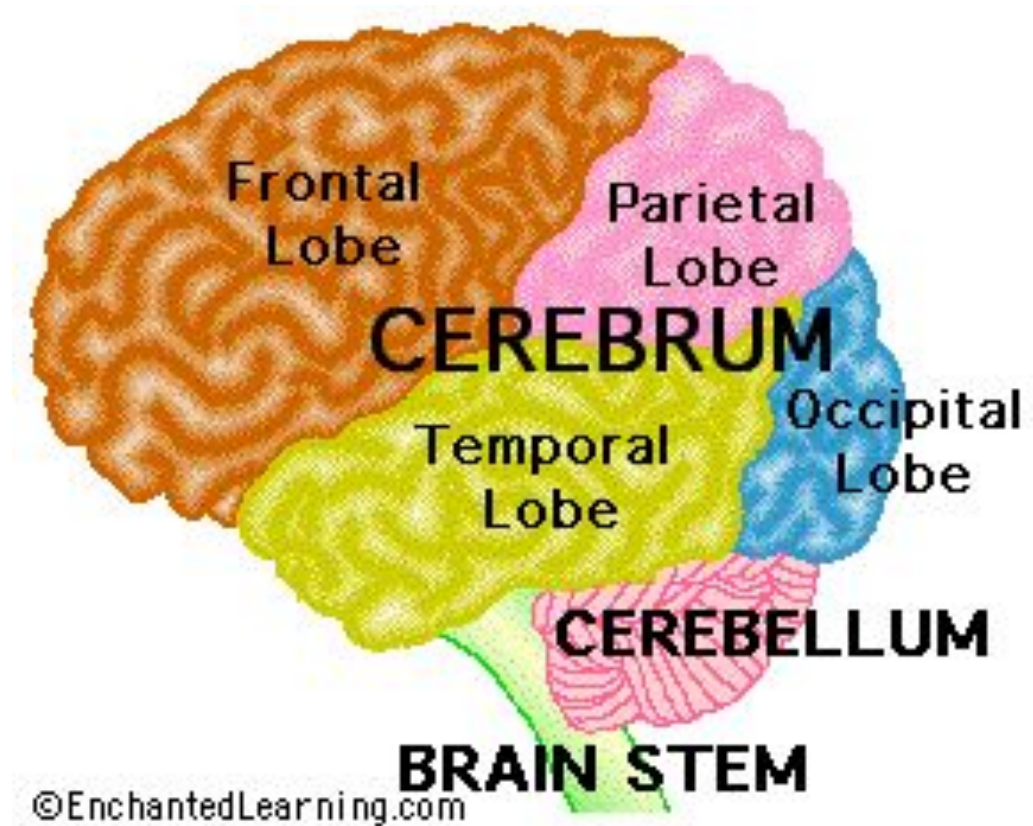
Pre-Frontal Cortex (PFC)

Dorsolateral

- Planning
- Strategizing
- Sustained Attention
- Flexibility
- Self-Monitoring

Orbital

- Impulse control
- Emotional modulation



Executive Functioning Assessment Methods

Executive Skills are among the more difficult elements of cognition to validly assess.

Interviews

Parent, student and teacher semi-structured interview

Rating Scales

- BRIEF
- BASC
- Connors

Formal tests such as

- WISC-V (subtests)

Executive Functioning Assessment Methods

Classroom Observations

- What does the observed behavior imply?
- Is the classroom setting appropriate?
- What does a child's behavior in a particular setting reflect about what he or she needs to learn in order to be more functional?
- How might the setting be changed?

Work Sample and Performance Reviews

Marshmallow Experiment

The classic [Marshmallow Test](#), where children were offered a choice between one small but immediate reward (eg, one marshmallow) or a larger reward (eg, two marshmallows) if they waited for a period of time, instigated a wealth of research on the relationships among impulsive responding, self-regulation, and clinical and life outcomes.



Why Are Executive Functions Important?

- 1. School Readiness...**even more than are IQ or entry-level reading or math.
- 2. School Success...**as working memory and inhibitory control each independently predict both math and reading competence throughout the school years.
- 3. Job Success...**because weak executive functioning skills lead to poor productivity and difficulty finding and keeping a job.
- 4. Calm Home Environment...**children's executive functioning deficits have the potential to increase parent stress and household chaos, and affect the quality of parent-child interactions.

Executive Function skills are critical for cognitive, social and psychological development.

How Can Executive Functioning Affect Learning?

Trouble initiating and completing tasks in a timely manner

Difficulty generating ideas independently

Difficulty retaining information that is required to complete a task

Difficulty in communicating details in an organized, sequential manner

Struggles to understand the planning that is needed to complete a project



Impact of Executive Dysfunction on Reading



Fluency

- Fast and accurate reading requires purposeful attention, impulse control, and self-monitoring.
- Inattentive readers omit parts of words, disregard punctuation, or might insert words or ideas not on the page.
- Students who lack cognitive flexibility will have a difficult time shifting attention back and forth between word identification and comprehension.
- Students with goal-directed attention deficits have a difficult time reading for meaning.

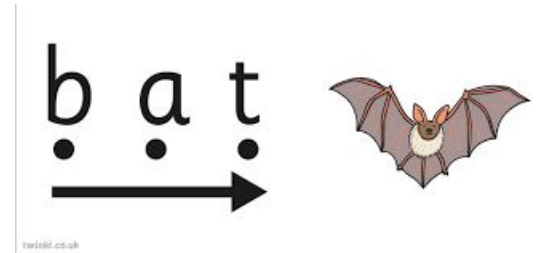
Comprehension

- The construction of meaning from text is very dependent upon the quality of a student's self-directed cognitive abilities
- Working memory and planning skills are linked to comprehension skills
- Good readers have self awareness and awareness of what they read and monitor their comprehension
- Attentive readers develop strategies such as note taking and highlighting. They reflect on what they read. Students with poor self-awareness and self-monitoring are apt to have limited recognition of their levels of comprehension and therefore do not engage in such strategies

Strategies to Improve Reading Skills of Students with Executive Dysfunction

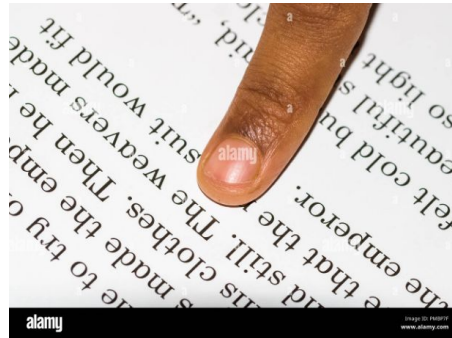
Decoding

- Systematic and explicit Phonics Instruction and practice in left to right sound blending



Fluency

- Provide frequent opportunities for guided oral reading
- Preview unfamiliar books and text passages
- Explicitly cue students before they read
- Use fingers and other place markers



Strategies to Improve Reading Skills of Students with Executive Dysfunction

Comprehension

- Teach your child the importance of thought gathering
- Help them plan for comprehension –KWLS
- Book walks
- Encourage them to be cognitively active while reading-note taking and highlighting
- Stress the importance of visualization
- Monitor comprehension

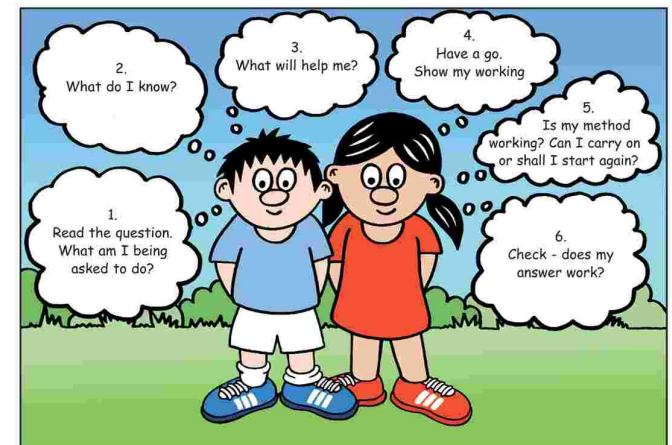
After Reading

- Ask your child to summarize the story or passage
- Role play

Impact of Executive Dysfunction on Math

Math problem solving skills are linked to executive skills.

- Impulse control and working memory can affect math problem solving.
- Ability to choose strategies
- Ability to ignore extraneous information
- Carelessness
- Students with planning weaknesses approach math problem solving in a random or passive manner
- Impulsive students may solve “recklessly”



Strategies to Improve Math Skills of Students with Executive Dysfunction

Highly explicit, direct and strategic instruction

Demystify Math

Allow students experiences of “getting it”

Minimize demands on working memory by building math fact retrieval fluency and by explicitly embedding strategic algorithms into worksheet materials

Approach problem solving in careful, methodical manner

Modeling

Self-talk strategies

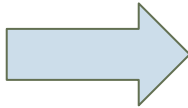


Strategies to Improve Math Skills of Students with Executive Dysfunction

Solving word problems

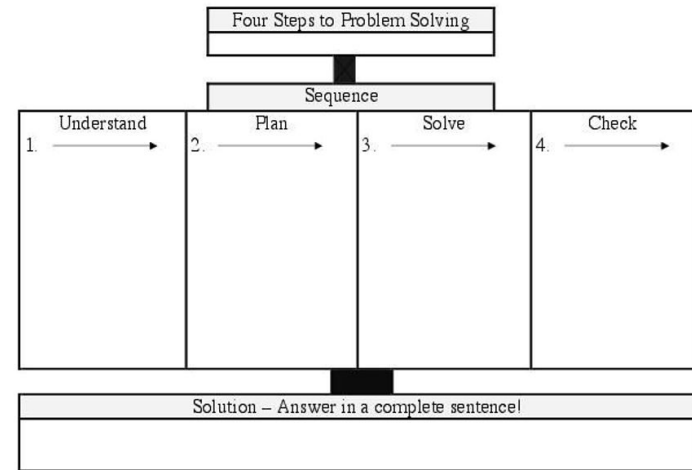
- Understand the problem being posed
- Select a strategy
- Execute the strategy
- Check the solution

Visual cues (colors, arrows, circle squares)



Strategies to improve fluency

- Build number sense by working with number lines
- Teach only a few facts at a time
- Teach rules, patterns and number families



Neatness Counts

Space

One step per line

Units under units

Use boxes, columns or dividing lines

Name: _____ Date: _____

"SHOW AND TELL"

Show how you solved the problem step by step. Replace what you did at each step and you are all set.

INFORMATION I NEED	
STEP 1	
STEP 2	
STEP 3	
STEP 4	
MY SOLUTION	

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Frayer Model

Model for learning new words or concepts in math.

Write the definition.	Use the definition in a sentence.
Give an example or draw a picture.	Describe it or show how it works.

Word / concept

Adapted with permission from Linda Ward Beech



Sound familiar ?

You tell your child to go upstairs and get a hat and gloves. Child goes upstairs, forgets what they're supposed to get and comes back downstairs, just to be reminded that she was supposed to get her hat and gloves, so she goes back upstairs and comes down with a hat. Now, you're running 5 minutes late.

You give the child your car keys to get something out of the car, and she puts them down somewhere once back inside and can't remember where she put them.

You tell your child to clean her room and she starts cleaning. Then, she gets distracted by something she picks up to put away and never gets any further with the cleaning.

Executive Functioning Difficulties at Home

Inhibition

Shifting

Initiation

Working Memory

Planning and Organization

Self-Monitoring



Inhibition

Definition: Ability to stop one's own behavior at the appropriate time, including stopping actions and thoughts (i.e., impulse control).

Example: A child interrupting their parents when they are on the telephone, grabbing someone else's toy.

Strategies:

- The use of visual cues can be highly effective for this deficit area.
Some examples may include: stop sign, hand signals, pictures of 'quiet mouth,' traffic light
- Use of a fidget toy or object.
Some examples include: Tangle, velcro, squishy ball, fun-tac/ therapy putty
- When a child begins to interrupt, ask them to pause
- In order for this strategy to be effective, make sure you give the child time to talk about what they want to say.

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Shifting/Transitions

Definition: Ability to move freely from one situation to another and to think flexibly in order to respond appropriately to the situation.

Example: A child does not want to stop playing their video games and begin their homework.

Strategies:

- Provide warnings or countdowns as to when the transition will occur (i.e., “In 5 minutes, I need you to clean up your toys and begin your homework.”)
- The use of visual timers. This strategy provides a non-verbal warning and helps children understand the concept of time. Keep them posted.
- Use a chime. Using a calming sound like a chime when it’s time for transitions can help prime kids and young adults for the change.
- Schedules can be used to prepare child for the series of activities they need to complete. Based on child’s developmental level and ability, a visual schedule (i.e., with pictures) may be useful.
- Create routines. Practice your transitions several times with students so they become second nature.
- Use social scripts. Previewing the steps of a transition can be extremely helpful for kids. A social script is a short narrative a child or young adult can read to themselves prior to the transition to remind them of the expectations and plan.

Initiation

Definition: Ability to begin a task or activity and to independently generate ideas, responses, or problem solving strategies.

Example: You tell a child to begin their homework and when you check-in 5 minutes later, no work has been completed.

Strategies:

- Provide adult assistance with the first item to ensure the child understands the task demands.
- “Talk” through- the steps .. First, second, .. checklists
- For writing tasks, the use of graphic organizers may be helpful in formulating their ideas.
- Initially, have a brief discussion with your child in order to brainstorm ideas/responses before your child begins working independently.
- Provide incentives when asking your child to engage in non-preferred activities (i.e., chores and homework). (In the beginning reinforce, alot)

Working Memory

Definition: Capacity to hold information in your mind for the purpose of completing a task.

Example: When you ask your child to complete multi-step directions (e.g., brush your teeth, get dressed, and come downstairs for breakfast).

Strategies:

- Repeat orally presented information.
- Simplify the language in directions.
- Chunk/break down multi-step directions.
- Use of mnemonics or other strategies to help remember a series or other information.
- Use visualization strategies to enhance recall.

Planning/Organization



Definition: Ability to manage current and future-oriented task demands. Also includes the ability to impose order on work, play, and storage spaces.

- Explicitly teach organization.
- Give time to organize.

Example: You are bringing your child to football practice and ask them to gather all of their necessary materials before it is time to leave.

Strategies:

- The use of checklists is highly effective in increasing organizational skills.
- The use of a calendar for upcoming activities and/or assignments.
- Color coding books/folders by subject area
- A consistent place to keep their school supplies
- Review long-term assignments and breakdown to smaller components and set deadlines accordingly.
- Designate a quiet and clean space for your child to complete their homework or other tasks
- Supervise homework and studying

Organization, Study Skills and Time Management

- **Deficits of skill versus deficits of will...**deficiencies of will are almost always preceded by deficits of skill
- Motivational deficits do exist, but we need to stop the name calling!
- Put aside the myth of laziness



Strategies for Helping Students with Executive Functioning Challenges

Provide students with executive function weakness with the “surrogate prefrontal lobe” support they need to succeed.

Individualized support

Individualized social mentoring

Visual reminders



Strategies for Helping Students with Executive Functioning Challenges

Teach new skills systematically and explicitly

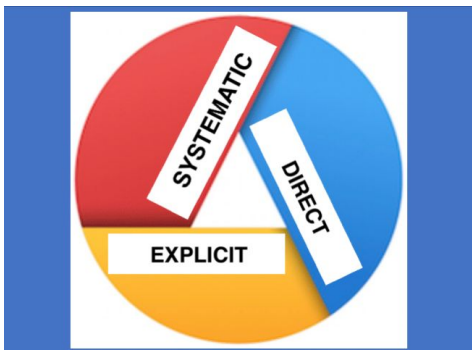
Executive skills come heavily into play in novel task situations. Confusion can be minimized by teaching the new and unknown by presenting novel skills in highly explicit, step by step ways that clearly link the unfamiliar to the familiar.

Clear and repeated modeling and ample time for practice.

Explicitly teaching and modeling note taking strategies.

Explicitly teaching and modeling the use of pre-reading strategies to build comprehension

Explicitly teaching and modeling the use of a structured pre-writing (thought organization) strategy



Strategies for Helping Students with Executive Functioning Challenges

Minimize demands on working memory



Do not overestimate the role of working memory in the learning and production process. Essential for following directions and holding onto steps of a task and heavily involved in the ability to comprehend, store and retrieve

Lower the simultaneous processing load placed on students by providing sequential instruction (step by step, bit by bit)

Separate stages of writing process (complete one portion each day)

Supplement oral directions with written instructions separated into discrete steps

Minimize the amount of factual information students must hold in working memory.

Strategies for Helping Students with Executive Functioning Challenges



Provide many opportunities for practice

Practice builds fluency and lessens the load on the prefrontal cortex

Guided oral reading practice (to increase enjoyment of reading)

Explicitly model the use of specific writing templates.

Teachers may employ math worksheets and workbooks that present new skills in a spiraling manner in order to practice material introduced earlier in the year on a frequent basis.

Explicitly remind your children about your rules and expectations and review them periodically

Strategies for Helping Students with Executive Functioning Challenges

Keep things as predictable and consistent as possible

Consistency is good. Self-directed cognition will not have to be allocated to tasks as they become routine.

Make behavioral expectations and organizational routines clear.

Keep homework expectations routine and clear.



Strategies for Helping Students with Executive Functioning Challenges

Anticipate the aspects of tasks and situations students might find threatening or frustrating, and model strategies to manage these challenges when they occur.

Ability to engage executive skills is highly dependent upon the amount of fear and frustration your child experiences from moment to moment.

Children with weak executive functioning skills will have less self-directed learning and behavior regulation when stressed. **Try to keep stress and anxiety levels low.**

Try to identify academic tasks that might frustrate your child and provide explicit directions regarding ways to handle them. Consult with your child's teacher for ideas and strategies.



Before independent work commences anticipate confusion, provide directions on best ways to manage these areas. Tell them to stop and ask for help if they are confused.

Define unknown terms or academic language before your child begins a reading assignment. Tell them to add question marks to the margins if they are confused with something they have been tasked to read.

Homework

Daily Homework

Be cognizant of the fact that at the end of the day your child's self control and will may be depleted.

Establish consistent schedules and routines

Start homework shortly after arriving at home.

Give choice on start time but you set the parameters

Provide a snack

Set up a separate work space for your child, with all necessary supplies-

No distractions

Set a timer and rotate subjects

Tougher assignments first

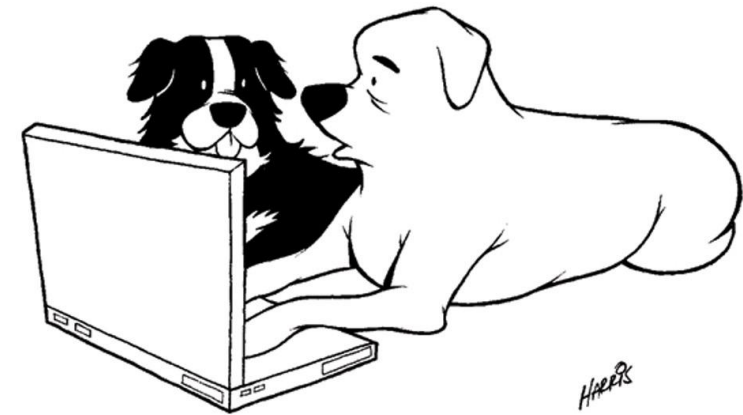
No learned helplessness

Time Management and Project Planning

Turn mountains into molehills

Be specific about project steps and deadlines and use assignment books (agendas)

Provide individualized project coaching



"And then I just hit delete. I haven't actually eaten any homework for years."

Improve Executive Function through Play

Freeze

Musical Chairs

Simon Says

Role Play

Jenga

Blurt

Scrabble

Chess

Sudoku

Brain Teasers

Pictionary

Battleship



Strategies for Supporting Executive Functioning Needs

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Have homework written down in the same spot every day



Explicitly teach executive functioning & study skills



Give an extra 3-5 minutes to organize before transitions



Schedule a weekly organization time



Create routines and practice them often



Incorporate movement during instruction

Create an end-of-the-day checklist to remember materials



Provide brain breaks during and after instruction



Clearly explain academic & social expectations



Keep an extra set of books at home and in the classroom



Use countdowns & time checks during work periods



Have students set up homework binders

Find more tips at:

www.thepathway2success.com

Clipart by Kate Hadfield

Learn More

- [Executive Functioning Skills Explained](#)
- [Games to Improve Executive Functioning Skills](#)
- [15+ Executive Functioning Strategies Teachers Can Use](#)
- [5 Daily Struggles for Kids with Executive Functioning Challenges](#)
- [Interventions for Attention Challenges](#)
- [Interventions for Organization Challenges](#)
- [Practicing EF skills with Play Activities](#)
- [Using Task Cards to Teach Executive Functioning](#)

<https://www.thepathway2success.com/executive-functioning-skills/>

Questions



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Resources

- Executive Skills in Children and Adolescents: A Practical guide to Assessment and Intervention
By Peg Dawson and Richard Guare
- Executive Function in the Classroom: Practical Strategies for Improving Performance and Enhancing Skills for all Students
By Christopher Kaufman
- Children and Adults with Attention- Deficit/ Hyperactivity Disorder (CHADD)
<http://www.chadd.org/LinkClick.aspx?fileticket=nuleM7StKko%3D>
- National Center for Learning Disabilities (NCLD)
<http://www.ldonline.org/article/29122/>
- Late, Lost, and Unprepared: A Parents' Guide to Helping Children with Executive Functioning
By Joyce Cooper-Kahn & Laurie Dietzel
- Center on the Developing Child-Harvard University
<https://developingchild.harvard.edu/resources/>