Executive Functioning 101

Parent University
April 20, 2026

Agenda

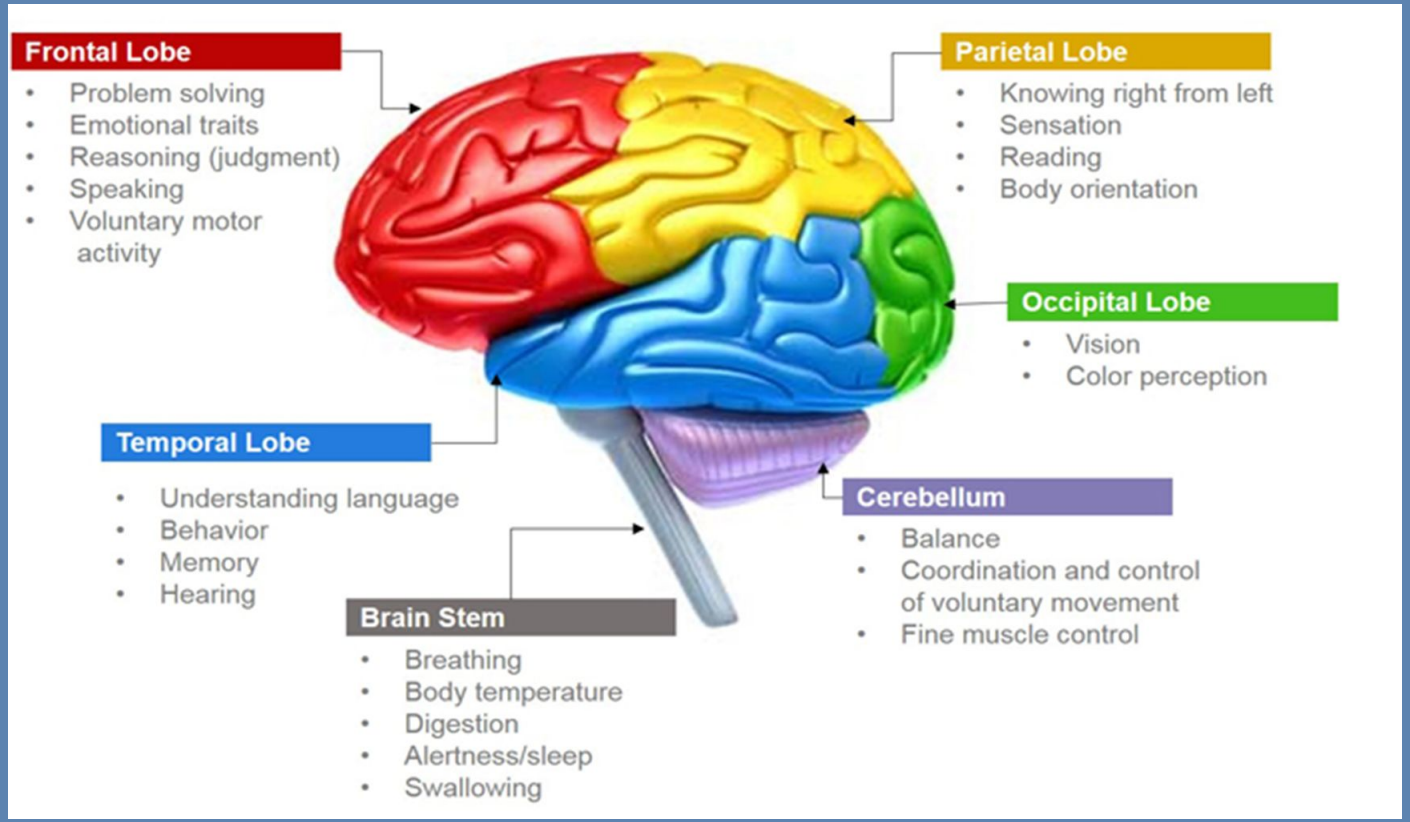
Defining Executive Functions
Executive Function Acquisition at School
Parents as Partners
Share Out

Defining Executive Functions

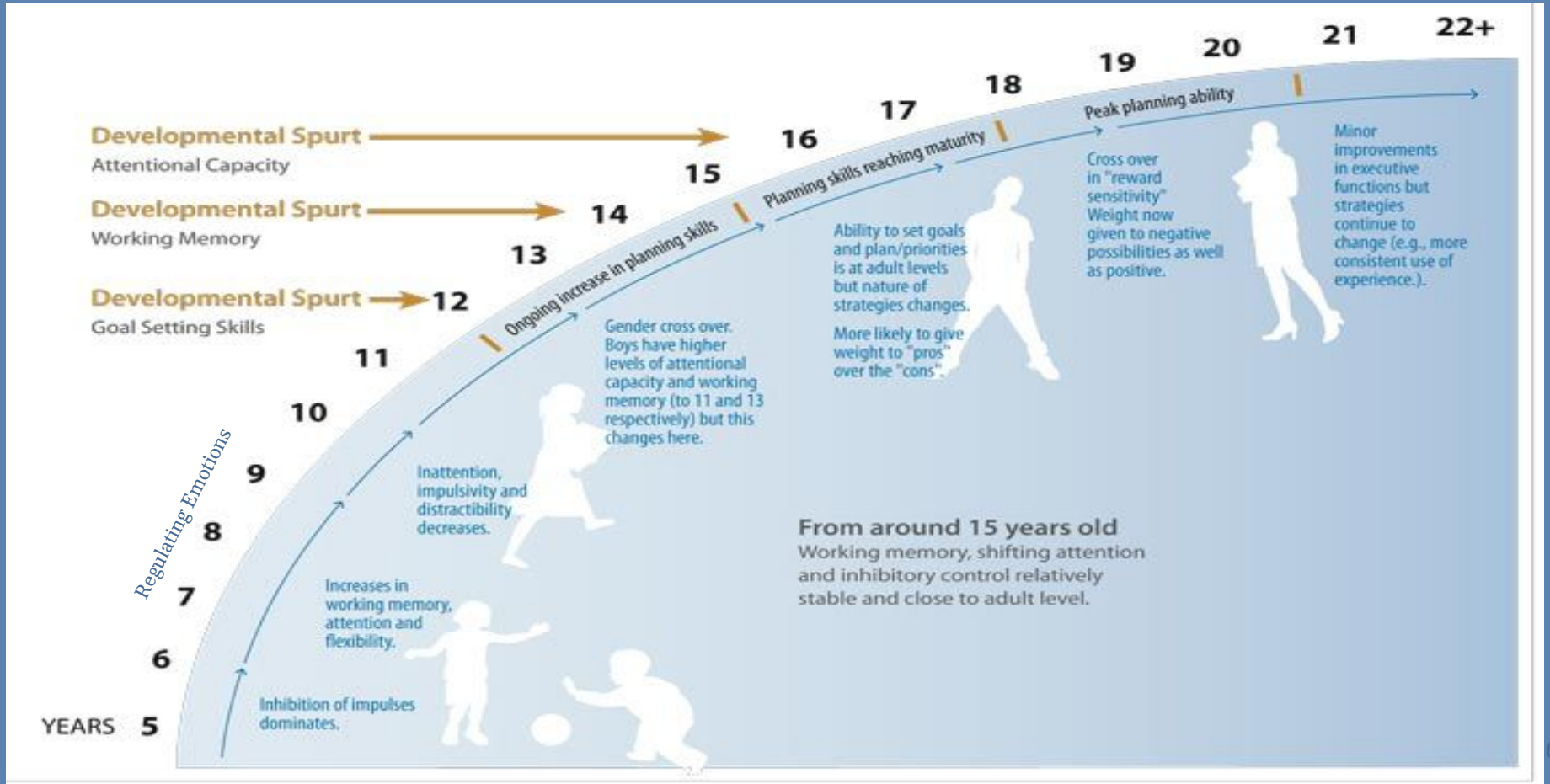
Neurological Development

- Child's brain is a "work in progress"
  - 13 ounces in infancy to 3 pounds in adolescent.
  - Connectivity and efficiency of brain pathways develops dramatically
  - Synaptic pruning – 86 billion at birth, 17 billion at adulthood
- Frontal cortex is latest developing area of brain
- Development of frontal cortex influenced by interaction with environment.
  - Experience/learning physically changes brain
  - Highlights importance of early intervention and practicing skills

Brain structures associated with Executive Functions



Developmental Course of Executive Functions



Executive Functions: Isolating Skills

Response Inhibition

Persistence/Sustained Attention

Regulation of Emotion

Working Memory

Time Awareness

Initiation

Planning

Organizing

Metacognition

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Response Inhibition

The ability to pause before acting and resist impulses

- Foundation of self-control and behavioral regulation
- Allows students to think before speaking or acting
- Critical for classroom behavior and social interactions

Without inhibition, higher-level thinking (like problem-solving) is often bypassed, which is why response inhibition is often considered the “gatekeeper” of executive functioning—if you can’t pause, you can’t use other skills effectively.

Rule:

Name the ink color.

red blue green blue green

red blue red green red

blue green blue red blue red blue red blue red

blue green blue green red green blue red blue green

red green red blue green red green red blue green

Persistence/Sustained Attention

The ability to sustain effort toward a goal despite challenges, distractions, or fatigue

- Involves endurance, motivation, and frustration tolerance
- Requires maintaining focus over time
- Often breaks down when tasks feel too hard or too long

Persistence is closely tied to the concept of “grit,” which is why it is a major predictor of long-term success.

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Regulation of Emotion

The ability to manage and modulate emotional responses in a goal-directed way

- Not about suppressing emotion, but adjusting intensity and duration
- Closely tied to stress tolerance and frustration management
- Impacts learning, relationships, and resilience

Emotional dysregulation can derail cognitive performance—even when a student knows the material, as emotional regulation and executive functioning share the same neural systems—*you cannot separate thinking from feeling in the brain.*

Working Memory

The ability to hold and manipulate information in mind over short periods

- Essential for following directions, mental math, and reading comprehension
- Limited capacity—can be easily overloaded
- Different from long-term memory

Working memory capacity is one of the strongest cognitive predictors of academic achievement, especially in reading and math.

Time Awareness

Time management, setting priorities, and appreciating saliency

- Includes time estimation, pacing, and future time perspective
- Requires internal monitoring (“How long has this taken?”)
- Often impaired in students who “lose track of time”

As students’ time awareness develops, it evolves from “now vs. not now” to a continuous flow.

Initiation

The ability to begin a task independently

- Often misunderstood as laziness or lack of motivation
- Requires overcoming inertia and ambiguity
- Strongly tied to task clarity and perceived difficulty

Initiation is hardest when tasks are unstructured, boring, or overwhelming—not necessarily when they are difficult.

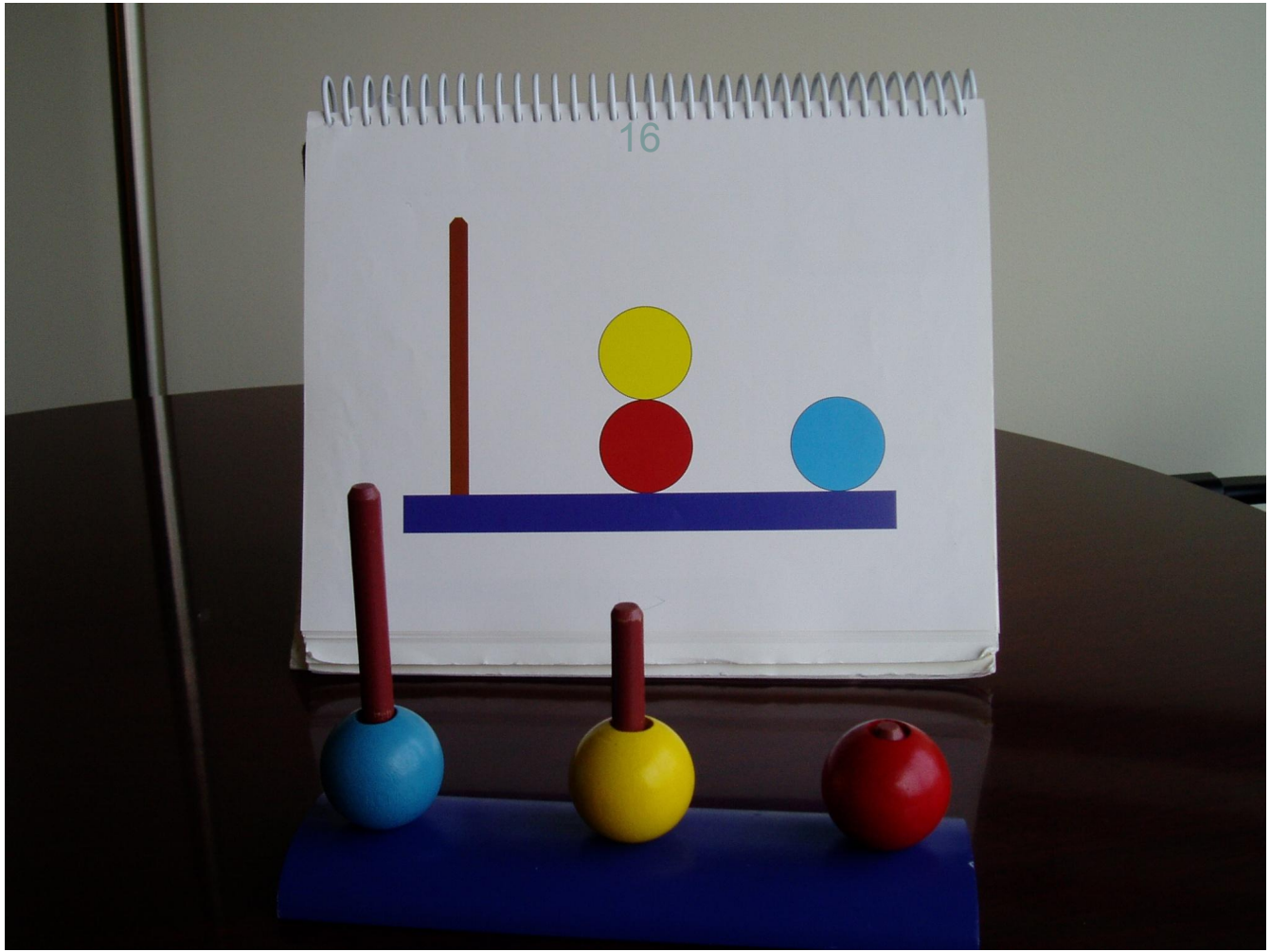
Planning and Organizing

Planning: Selecting the goal

Organizing: Arranging logical sequences of steps to meet the goal.

- Involves both mental organization (ideas, strategies) and physical organization (materials, workspace)
- Requires anticipating future demands and breaking tasks into manageable steps
- Strongly tied to academic tasks like writing, project completion, and studying

Planning and Organizing develop later than many other cognitive skills—they continue maturing into early adulthood, which is why even bright teens may struggle with long-term projects.


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Flexibility

The ability to shift thinking, adapt to change, and consider multiple perspectives ("Shifting Set")

- Includes transitioning between tasks and adjusting strategies
- Supports problem-solving and social understanding
- Opposite of rigid or "stuck" thinking

Flexibility allows students to recover from mistakes and adjust when plans change. It is strongly linked to creativity and innovation—it's what allows us to think "outside the box."

Metacognition

The ability to think about one's own thinking—self-monitoring and self-evaluating performance

- Includes asking: "How am I doing?" and "Does this make sense?"
- Critical for error detection and self-correction
- Develops gradually with age and explicit instruction

Metacognition is the executive function which allows students to realize when they are making mistakes. Expert learners constantly engage in metacognition—they monitor and adjust in real time, not just at the end.

Interactions of Executive Functions

Executive Functions operate within **interdependent, integrated systems**, not as isolated skills

- Planning depends on working memory (holding steps in mind)
- Initiation relies on response inhibition (overcoming avoidance) and regulation of affect (managing anxiety or overwhelm)
- Persistence is sustained by emotional regulation and time awareness
- Flexibility requires metacognition (recognizing when a strategy isn't working)

In practice, executive functioning challenges are rarely isolated—they present as clusters of interacting difficulties

Executive Function Acquisition at School

Students need explicit, scaffolded instruction across multiple skills at once that addresses both the cognitive and emotional components of tasks

Effective Instruction

Externalizes the system: Checklists, visual schedules, models

Reduces cognitive load: Breaks tasks into steps while supporting working memory

Teaches self-talk and reflection: Build metacognition alongside task completion

Co-regulation before independence: Adults model and support before expecting autonomy

Executive functioning is not a set of separate skills to “fix”—it is a dynamic, interdependent network that must be taught, supported, and practiced in context

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Breakout Groups

1. Emotional Regulation: *Develop skills to support your child's ability to regulate their emotion and in turn, leverage their full executive functioning capacity.*

2. Initiation/Sustained Attention: *Develop skills to support your child's independent ability to initiate tasks and sustain their attention toward attaining a goal.*

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Resources:

Executive Functions across grade levels



Executive Function and Emotion Regulation



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