



# Executive Functioning:

## Supporting Brain (and Heart) Development

For you created my inmost being; you knit me together in my mother's womb. I praise you because I am fearfully and wonderfully made; your works are wonderful, I know that full well.

**Psalms 139:13-14**

Dr. Braden J. Peterson

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McLean Presbyterian Church

# *True or False?*

1. The typical brain comprises about 2% of the body's total weight but uses 20% of its total energy and oxygen intake.
2. A piece of brain tissue the size of a grain of sand contains 100,000 neurons and 1 billion synapses, all communicating with each other.
3. Babies have big heads to hold rapidly growing brains. A 2-year-old's brain is 80% of adult size.
4. According to the Laboratory of Neuro Imaging at the University of Southern California, the average brain generates 48.6 thoughts per minute.
5. With practice, the brain can learn to concentrate on two things at once.

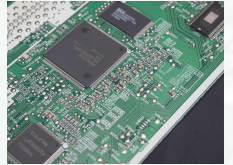
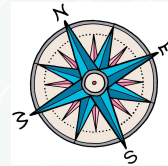


# What is Executive Functioning?

**Executive function and self-regulation** skills are the **mental processes** that enable us to plan, focus attention, remember instructions, and 'juggle' multiple tasks successfully.



1. **Working memory**
2. **Goal orientation**
3. **Self-control**
4. **Mental flexibility**



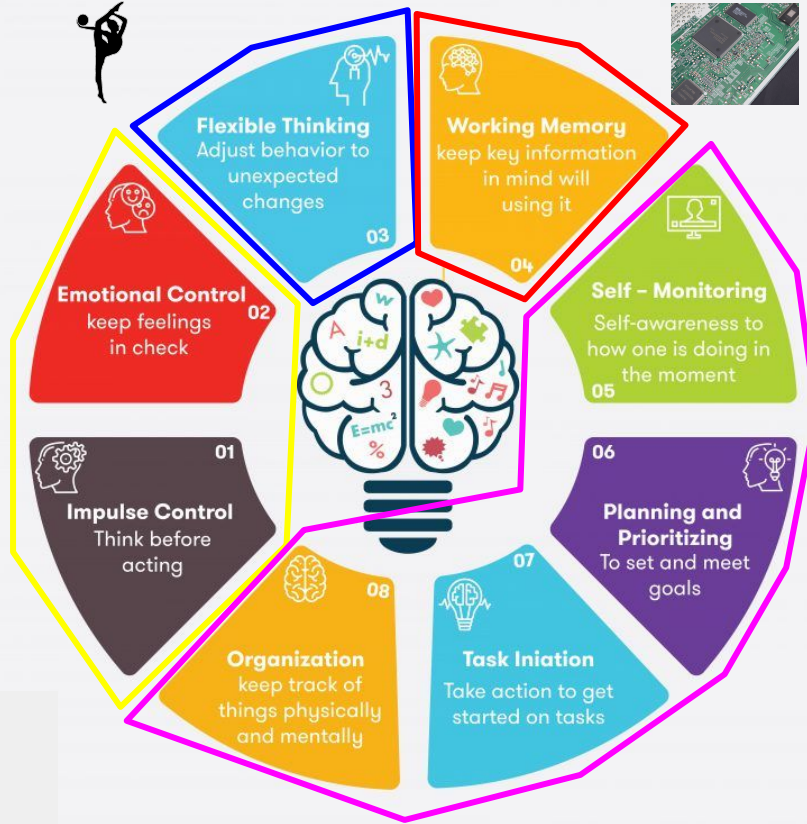
# Points to Ponder:

1. **People** are made in the **image of God**.

Alligators are not.



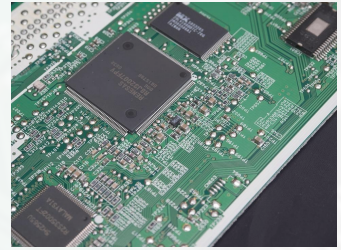
# EXECUTIVE FUNCTIONING



1. **Working memory**
2. **Goal orientation**
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# Working Memory

governs our ability to retain and manipulate distinct pieces of information over short periods of time.



## Wear the process breaks down:

- Q: “What were you thinking?”  
A: “I wasn’t.”
- Students with EF weaknesses lack the WM capacity to ponder their options, and they bypass the “thinking/planning” stage of social problem-solving

## Teachable Opportunities:

- Limit # of rules
- Increase Structure
  - 1-2-3 Tasks
- Create Different ‘spaces’

# *The Myth of Multi-tasking*

Four Step Process EVERY time we switch tasks

(1)Shift Alert

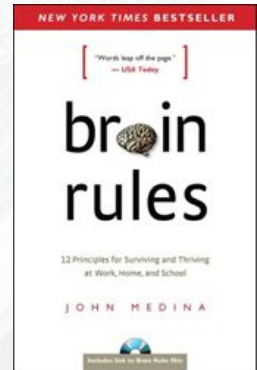
(2)Rule Activation for Task #1

(3)Disengagement

(4)Rule Activation for Task #2

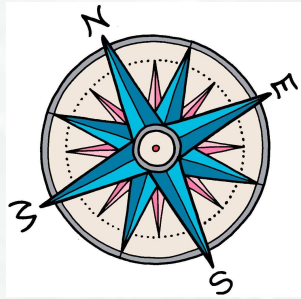
→ 50% longer to complete task

→ 50% increase in errors



# Goal Orientation

creating and carrying out multi-step plans



## Wear the process breaks down:

- They are very overwhelmed by large amounts of work.
- Students who lack planning skills are less likely to think strategically on their own in the face of social challenges

## Teachable Opportunities:

- Chunking
- Positive & Proactive Instructions
- Reflective Moments:  
How did we do?

# Points to Ponder:

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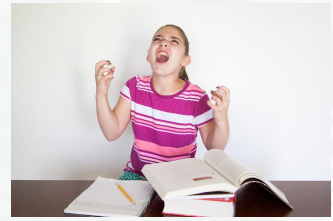


2. **God didn't "count to 3".**



# Self-Control

enables us to set priorities and resist impulsive actions or responses.



## Wear the process breaks down:

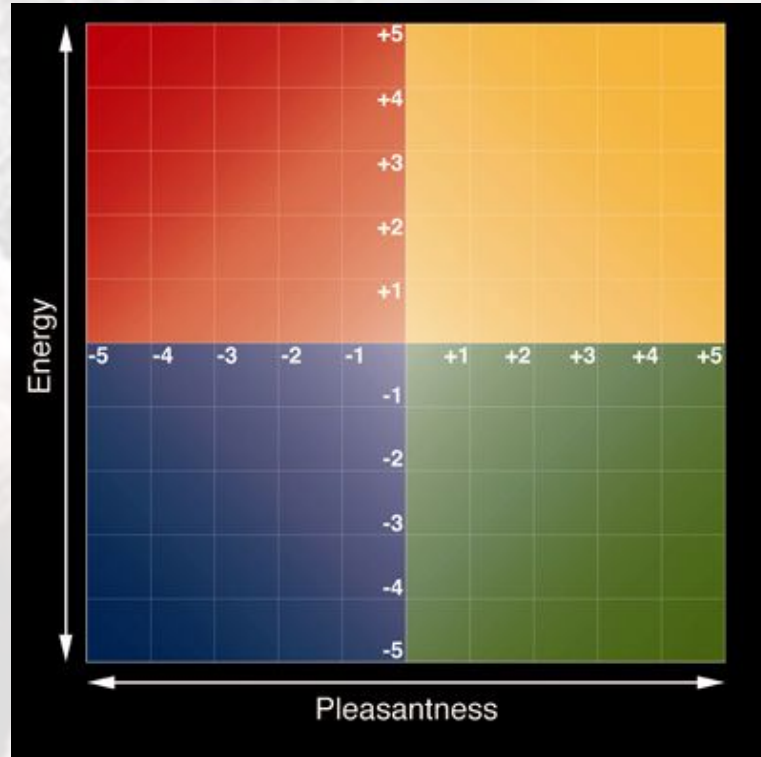
- **Lack of *self-awareness***
- Poor foresight: responding quickly with little regard for consequences.
- Significant difficulty managing emotions
- Verbal and physical impulsivity/overflow
- Limited recognition of others' perspectives



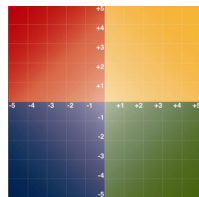
# So what happens when we, “flip our lid”?



# How are you feeling this evening?

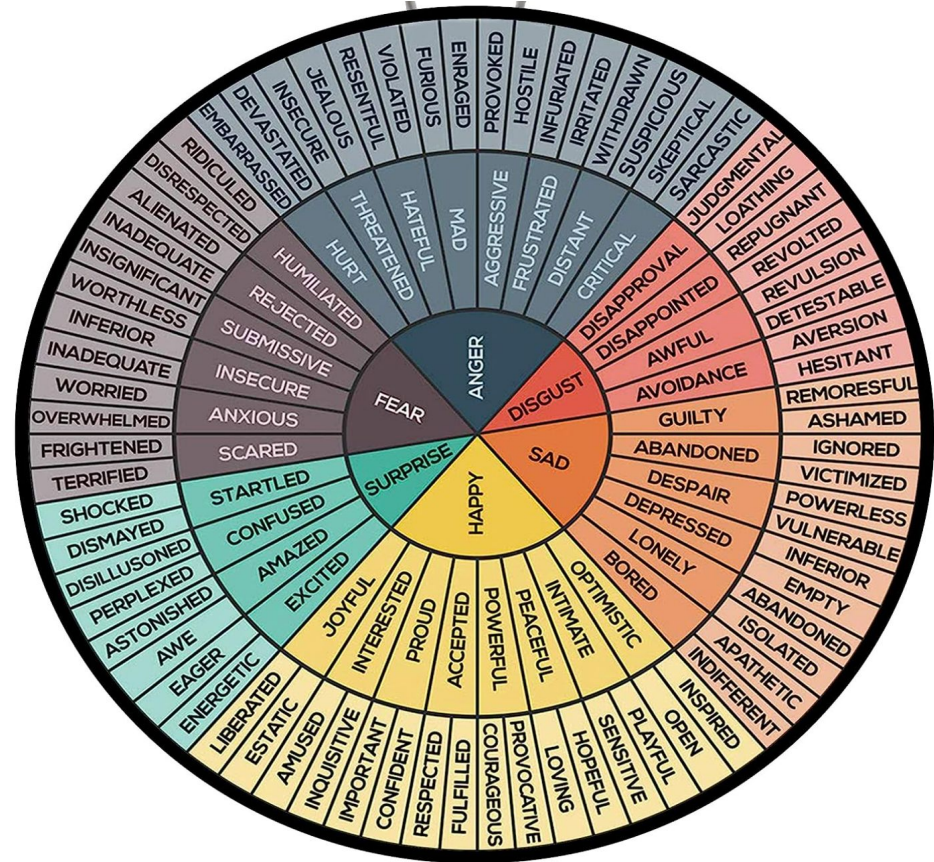
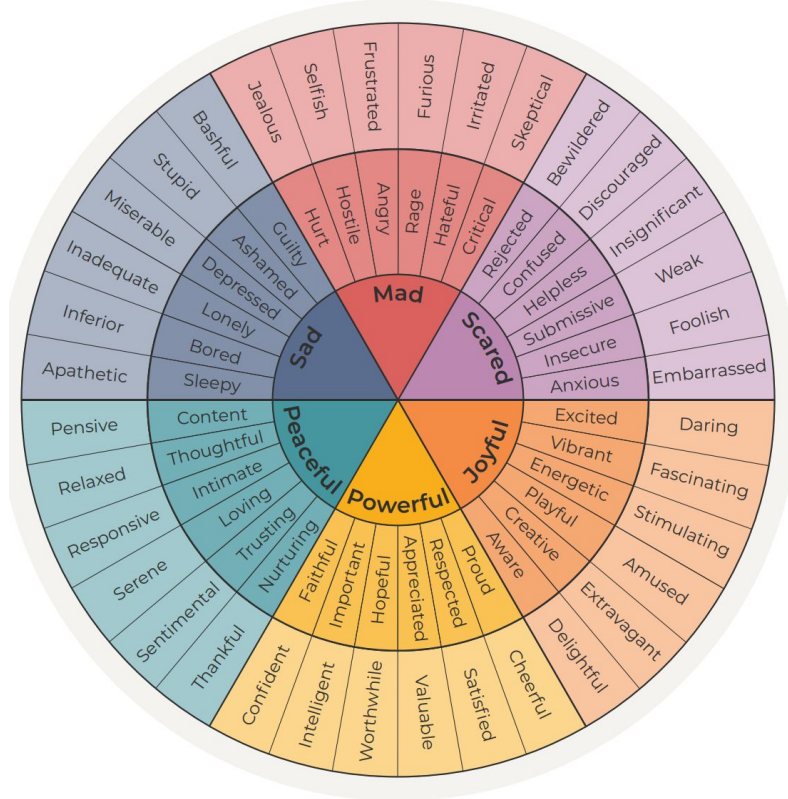


# The Mood Meter



ENRAGED	PANICKED	STRESSED	JITTERY	SHOCKED	SURPRISED	UPBEAT	FESTIVE	EXHILARATED	ECSTATIC
LIVID	FURIOUS	FRUSTRATED	TENSE	STUNNED	HYPER	CHEERFUL	MOTIVATED	INSPIRED	ELATED
FUMING	FRIGHTENED	ANGRY	NERVOUS	RESTLESS	ENERGIZED	LIVELY	ENTHUSIASTIC	OPTIMISTIC	EXCITED
ANXIOUS	APPREHENSIVE	WORRIED	IRRITATED	ANNOYED	PLEASED	HAPPY	FOCUSED	PROUD	THRILLED
REPULSED	TROUBLED	CONCERNED	UNEASY	PEEVED	PLEASANT	JOYFUL	HOPEFUL	PLAYFUL	BLISSFUL
DISGUSTED	GLUM	DISAPPOINTED	DOWN	APATHETIC	AT EASE	EASY GOING	CONTENT	LOVING	FULFILLED
PESSIMISTIC	MOROSE	DISCOURAGED	SAD	BORED	CALM	SECURE	SATISFIED	GRATEFUL	TOUCHED
ALIENATED	MISERABLE	LONELY	DISHEARTENED	TIRED	RELAXED	CHILL	RESTFUL	BLESSED	BALANCED
DESPONDENT	DEPRESSED	SULLEN	EXHAUSTED	FATIGUED	MELLOW	THOUGHTFUL	PEACEFUL	COMFY	CAREFREE
DESPAIR	HOPELESS	DESOLATE	SPENT	DRAINED	SLEEPY	COMPLACENT	TRANQUIL	COZY	SERENE

# The Feeling Wheel



The Gottman Institute  
Developed by Dr. Gloria Willcox

# Mental Flexibility

helps us to sustain or shift attention in response to different demands  
or to apply different rules in different settings.



## Wear the process breaks down:

- Poor adaptability (easily “stuck”)
- Black-and-white thinking
- Alternative thinking skills = the internalized self-talk that allows options to be weighed and social plans developed
- Students *shut down* or *melt down* in challenging contexts because, when stressed, they cannot shift set to summon into working memory a range of problem-solving options

## Teachable Opportunities:

- Create Pause
- Thumbs up/ thumbs down check-in

# Points to Ponder:

1. **People** are made in the **image of God**.



Alligators are not.

2. God didn't "count to 3".



**3. "Discipline" is not punishment, it is how we develop habits.**

For the Spirit God gave us does not make us timid, but gives us power, love and self-discipline.

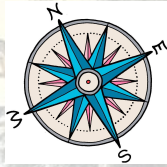
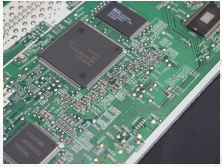
**2 Timothy 1:7**

## TEN THE COMMANDMENTS

- I. I AM THE LORD YOUR GOD:  
YOU SHALL NOT HAVE  
STRANGE GODS BEFORE ME.
- II. YOU SHALL NOT TAKE  
THE NAME OF THE LORD  
YOUR GOD IN VAIN.
- III. REMEMBER TO KEEP HOLY  
THE LORD'S DAY.
- IV. HONOR YOUR FATHER  
AND YOUR MOTHER.
- V. YOU SHALL NOT KILL
- VI. YOU SHALL NOT COMMIT ADULTERY.
- VII. YOU SHALL NOT STEAL.
- VIII. YOU SHALL NOT BEAR  
FALSE WITNESS  
AGAINST YOUR NEIGHBOR.
- IX. YOU SHALL NOT COVET  
YOUR NEIGHBOR'S WIFE.
- X. YOU SHALL NOT COVET  
YOUR NEIGHBOR'S GOODS.



# Discipline... outward (authority) → inward (self)



1. **Working memory**
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- External to Internal Regulation
  - Children begin to “think words” vs say them
- Establish schedules and routines
  - Children require adult direction with scheduling
- Limit or carefully structure choices
  - Children w/ EF difficulties become overwhelmed when faced with a potentially endless series of topics
- High expectations with scaffolds to success

# EXECUTIVE FUNCTIONING

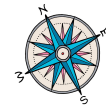


[www.advantageslearningcenter.com](http://www.advantageslearningcenter.com)

## Table Questions:

1. What aspect of EF am I most 'fluent' in?  
a. What about my child?
2. Where does my child struggle the most?
3. What supports (schedules, routines, structures) can I put in place to build his/her executive functioning?

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# Sources & Resources

- Executive Function Activities for Adolescents
- Center on the Developing Child at Harvard University (2014). *Enhancing and Practicing Executive Function Skills with Children from Infancy to Adolescence*. Retrieved from [www.developingchild.harvard.edu](http://www.developingchild.harvard.edu).
- Executive Function & Self-Regulation retrieved from <https://developingchild.harvard.edu/science/key-concepts/executive-function/>
- Medina, John. *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home and School*. Retrieved from: <https://dl.icdst.org/pdfs/files3/b192292515163f2f4e3868dc5488b073.pdf>
- <https://bebrainfit.com/human-brain-facts/>
- <https://advantageslearningcenter.com/executive-functioning/>