

SMARTS

Executive Function and Stress Reduction: Flexible Thinking Strategies for Getting Unstuck



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How flexible were you in 2020-2021?

Did you...

| | | |
|--|-----|----|
| • Easily transition to a different work situation? | Yes | No |
| • Adjust easily to remote teaching? | Yes | No |
| • Adjust to the challenges of working at home? | Yes | No |
| • Embrace new ways of teaching different groups of students? | Yes | No |



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Overview

- WHAT is Cognitive Flexibility and why is this a key EF process?
- HOW do we teach strategies that promote flexible thinking and problem-solving from the earliest grades?
- WHAT strategies help students to think and problem-solve flexibly as they complete their schoolwork?
- HOW can Cognitive Flexibility and EF strategies help to reduce students' anxiety and stress?



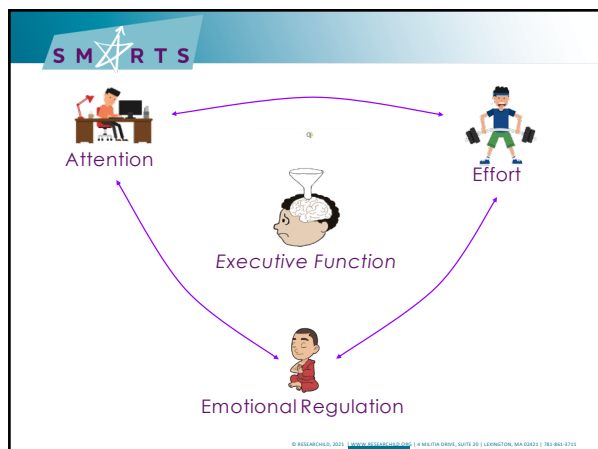
Lynn Meltzer, Ph.D., ResearchILD, 2021;
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Executive Function Paradigm
(Meltzer, 2007, 2010)

- Goal Setting
- Organizing & Prioritizing Time and Materials
- Cognitive Flexibility/ Thinking Flexibly
- Remembering/Accessing Working Memory
- Self-Monitoring & Checking



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FAMOUS FAILURES

| | |
|--|--|
| ALBERT EINSTEIN He wasn't able to speak until he was almost 4 years old and his teachers said he would "never amount to much." | MICHAEL JORDAN After being cut from his high school basketball team, he went home, locked himself in his room, and cried. |
| WALT DISNEY Fired from a newspaper for "lacking imagination" and "having no original ideas." | STEVE JOBS At 30-years-old he was left devastated and depressed after being unceremoniously removed from the company he started. |
| OPRAH WINFREY Was demoted from her job as a news anchor because she "wasn't fit for television." | THE BEATLES Rejected by Decca Recording Studios, who said "We don't like their sound—they have no future in show business." |

IF YOU'VE NEVER FAILED, YOU'VE NEVER TRIED ANYTHING NEW


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WHAT is Cognitive Flexibility?

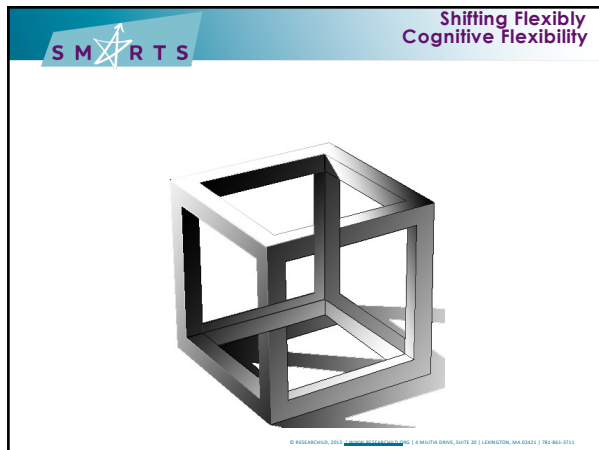


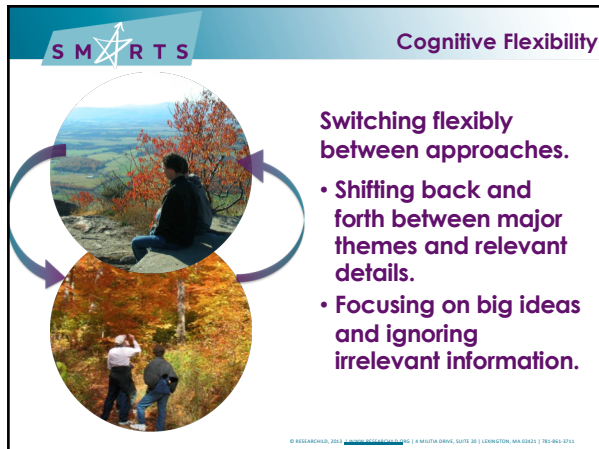
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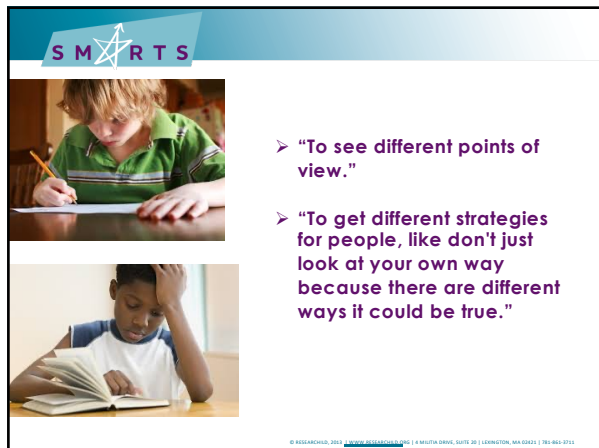
Cognitive Flexibility: Shifting & Thinking Flexibly



| When I begin something new: | never | Rarely | Sometimes | Usua lly | Always |
|---|-------|--------|-----------|-------------|--------|
| 1) I try to connect it to something I already know. | 1 | 2 | 3 | 4 | 5 |
| 2) I try to think of something that was helpful that I have done before. | 1 | 2 | 3 | 4 | 5 |
| 3) I try to come up with effective ways of approaching the new task. | 1 | 2 | 3 | 4 | 5 |
| 4) I think about how long a task will take and set aside chunks of time to complete it. | 1 | 2 | 3 | 4 | 5 |








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What classroom tasks require students to shift approaches flexibly?

- Switching flexibly from classroom instruction to online instruction.
- Staying flexible and shifting to different technologies during remote learning.
- Switching applications on the computer within and between classes.
- Managing with open-ended projects and assignments.
- Finding information quickly.
- Handling Information overload to prevent a "clogged funnel".
- Following unclear or vague directions- some teachers give too much information and others give too little.
- Organizing and prioritizing open-ended tasks.

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HOW do we teach strategies that promote flexible thinking and problem-solving from the earliest grades?



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Teach EF Strategies Explicitly

Use metacognitive prompts for teaching all strategies:

- **WHAT** is the strategy?
- **WHEN** is the strategy most helpful?
- **HOW** should the strategy be used?

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Shifting Flexibly

Use 5 minute warm-ups daily to promote flexible thinking and metacognitive awareness...

- ✓ Jokes
- ✓ Riddles
- ✓ Puns
- ✓ Ambiguous language

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Shifting Flexibly:
Teach Multiple Meanings

Dress the chicken

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Shifting & Flexible Thinking

Have you ever seen... A vegetable stand?

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Shifting & Flexible Thinking

Have you ever seen...



A home run?




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SHIFT WORD CARDS (EASY)



Directions: Cut out cards, and distribute one to each student. Each student should find the other student who has the same silly word. Ask students to think of two potential meanings for the word on their card. They may want to draw a picture of the two meanings.

| | | | | |
|---------|----------|------------------|----------|----------|
| Hot Dog | Bass | Interest | Produce | Division |
| Crop | Channel | Lounge | Pitch | Formula |
| Produce | Bass | SHIFT WORD CARDS | Interest | Channel |
| Formula | Organ | Hot Dog | Lounge | Crop |
| Coast | Division | Coast | Pitch | Organ |

Hot dog
Crop
Produce....


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Shifting Flexibly: Reading and Writing

SHIFT
the meaning


Note

1. the 
2. to notice, to write
3. note book

Scale

1. the  for scale
2. to scale, actual size
3. ~~scale~~



Bar

1. the Candy ~~Emile~~ 
2. to bar, to block
3. bar exam

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Shifting Flexibly

Teach students to think and shift flexibly so that they:

- Set and adjust their short-term goals.
- Set and adjust long-term goals.
- Create and self-monitor their daily schedules.
- Manage their schoolwork, especially while remote learning is ongoing.

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Shifting Flexibly: Strategy Sheets

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Name: Tyler Parry Date: 10/17/14

LESSON 1.2: WORDS WITH MULTIPLE MEANINGS

Directions: Read the sentence that was given to you and identify the multiple meaning word (s). Answer the questions below.


1. Rewrite the sentence: it won over my head

2. What is the multiple meaning word? some said something
it goes over your head

3. List all of the possible meanings of the word: you don't listen


4. Circle and analyze context clues in the sentence that help you to identify the appropriate meaning of the word. After you have circled the clues, go back to question # 3 and cross out meanings that do not make sense.

5. Rewrite the sentence in your own words: I didn't listen



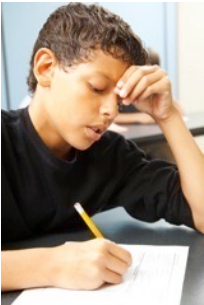
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WHAT strategies help students to think and problem-solve flexibly as they complete their schoolwork?



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Shifting Flexibly



Teach students to shift perspectives and to self-monitor flexibly when they read, write, and solve math problems.

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Shifting Flexibly: Reading & Writing

Color-Coded Highlighting

Shipwrecked in Antarctica

When Ernest Shackleton packed for his trip to Antarctica in July, 1914, he seemed ready for anything. Among the items stowed in his ship were cans of meat, a miniature pool table, a banjo, lanterns, a bicycle, and soccer balls. Shackleton hoped to become the first person to travel across the frozen continent at the bottom of the world. But nothing could have prepared Shackleton or his crew for what did happen. Instead of crossing Antarctica, they made history in one of the most incredible survival stories ever.

Breathtaking photos of the doomed trip have been published for the first time in two books! for kids, Jennifer Armstrong's *Shipwreck at the Bottom of the World* (Crown); for adults, Caroline Alexander's *The Endurance* (Knopf). The pictures were taken by a photographer, Frank Hurley, who went with Shackleton on the expedition, along with 26 sailors and scientists and 50 sled dogs.

Shackleton's last stop before heading for Antarctica was a whaling station on South Georgia Island. Norwegian whalers told the crew that it was "a bad year for ice."

Main Ideas

Important Details


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Shifting Flexibly: Reading & Writing

STAR Strategy

Remember, all stories have the same basic parts:

- Who = Characters
- What = Conflict/Problem
- Where = Setting/Place
- When = Time
- Why = Theme/reason for conflict



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Shifting Flexibly: Reading & Writing

STAR 'WH' Strategy

Reading and Writing

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Shifting Flexibly: Triple Note Tote for Reading, Writing, Studying

| Topic/Main Idea | Details | Memory Strategy |
|--|---|---|
| <ul style="list-style-type: none"> Vocabulary word Math Formula Main Idea | <ul style="list-style-type: none"> Definition Explanation of term Details related to main idea | <ul style="list-style-type: none"> Association Cartoon Drawing |

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Shifting Flexibly: Triple Note Tote for Reading, Writing, Studying

SMARTS EF Curriculum For Middle & High School

Triple Note Tote Strategy

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Shifting: Students' Reflections

> "To see different points of view."

> "To get different strategies for people, like don't just look at your own way because there are different ways it could be true."

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"With the SMARTS Triple Note Tote strategy, I learned to make a hierarchy of notes and have it structure around itself and relate to things. This structure helped me to study and to write long papers. I did not stress out so much about tests any more." (Billy, 16 yrs)

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Cognitive Flexibility & Goal-setting

• CANDO Goals

C= Clear
A=Actionable
N=Numerical
D=Doable
O=Obstacles considered

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Cog Flex & Organizing & Prioritizing

Pollica, ResearchILD, 2009

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Organizing & Prioritizing

Juggling and sorting important information to stress what is most important:

- Organizing Time
- Organizing Materials
- Organizing Information
- Organizing Ideas

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Cog Flex & Memorizing

Cartoons & Associations

Funny Phrases

Acronyms

Cog Flex:
Self-Monitoring & Self-Checking

- Recognizing and fixing the kinds of mistakes YOU make.
- Knowing, finding AND correcting errors.
- Asking, “Does it make sense?”

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SMARTS ONLINE EXECUTIVE FUNCTION CURRICULUM

Now more than ever,
 students need to learn
 HOW to learn.
(SMARTS can help.)

Helping students develop Executive Function (EF) strategies – goal setting, cognitive flexibility, organizing and prioritizing, memorizing, self-checking and monitoring – can be the difference between success and failure, particularly in the current environment. With learning now taking place across multiple settings (in person, hybrid, and remote), never has it been more important to help students apply EF.

WATCH : Introduction to SMARTS Online

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Shifting Flexibly: SMARTS Lesson

I'm Wearing Your Shoes

When we take someone else's perspective, we try to see things from their point of view

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Regulating Emotions:
I'm Wearing Your Shoes

Perspective-taking is important when solving problems with friends.
Some examples of conflicts

- Arguing about who sits where at lunch.
- Arguing about who won a contested play in a sports game.
- Getting upset when a friend forgot to do something you asked.
- Getting frustrated when a friend did not complete their part of a class project.

Describe the conflict here.

- What was something you may not have understood about your friend's situation. Put yourself in your friend's shoes.
- What is something your friend may have understood about your situation?

SMARTS Elementary
Regulating Emotions

I'm Wearing Your Shoes

"Oops! I Misunderstood"

Regulating Emotions:
I'm Wearing Your Shoes

What could I have done differently?

Think of a time when you were angry or overwhelmed...

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Regulating Emotions:
I'm Wearing Your Shoes

What could I have done differently?


- How could shifting flexibly and perspective-taking have helped solve the conflict?
- How can we use this knowledge to stop conflicts before they start?





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• HOW can Cognitive Flexibility and EF strategies help to reduce students' anxiety and stress?



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EF Strategies Reduce Stress




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EF and Stress

- Stress shifts cognition from top-down control processes to bottom-up automatic processes.
- Stress affects working memory, cognitive flexibility, and cognitive inhibition.
- Stress impairs executive control and forces attention toward salient information.
- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5003747/>





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Suicide in School-Aged Children

- Suicide is now the 2nd leading cause of death among adolescents aged 15-19 years
- Suicide accounts for 12% of the mortality in adolescents and young adults.
- 8% of H.S. students have made a suicide attempt some time in their lifetime.
- Many of these students show academic and behavioral difficulties at school, antisocial problems, and problems with inhibition, perfectionism, and explosiveness.

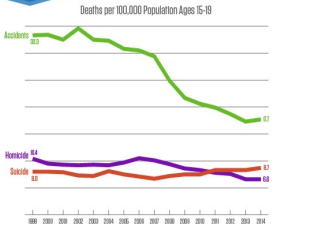


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Suicide in School-Aged Children

SUICIDE SURPASSED HOMICIDE TO BECOME SECOND-LEADING CAUSE OF DEATH FOR TEENAGERS, AGES 15-19, IN THE UNITED STATES



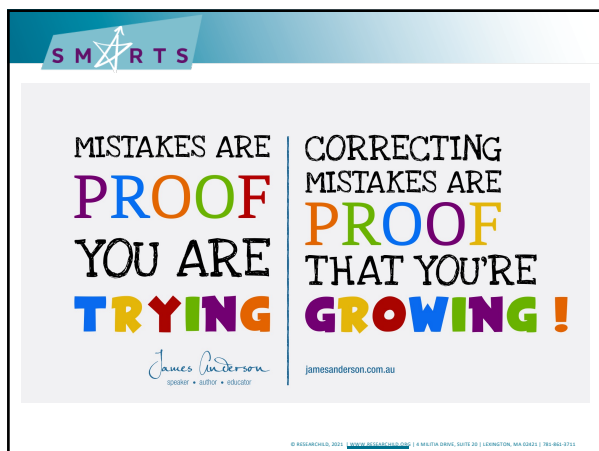
Source: Population Reference Bureau analysis of Centers for Disease Control and Prevention, National Center for Health Statistics, "Underlying Cause of Death 1999-2014" CDC WONDER Online Database, accessed at <http://wonder.cdc.gov/ucd1010.html>, on May 27, 2016.

- Suicide rate rose 56% in 10 years for 10-24yr olds.
- Significant increase in suicides during the pandemic.
- Contagion effect has increased.

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SMARTS Foster Positive Mindsets in Students to Reduce Stress

★ Change Your Mind(set) ★

-Don't think of STRESS as

- a threat
- a demoralizer
- pressure
- overwhelming
- debilitating

-Don't focus on problems

-Don't fight stress

+Do think of STRESS as

- a challenge
- a motivator
- an opportunity
- manageable
- energizing

+Do focus on possibilities

+Do embrace stress

Ref: Dr Carol Dweck, Mindsets

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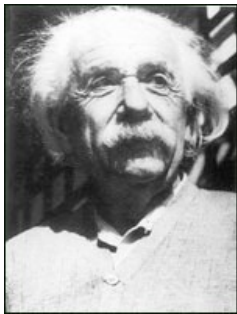
SMARTS Teach EF Strategies and Reduce Stress

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SMARTS Overview

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**"Know where to find
the information and
how to use it- that's
the secret of
success."
(EF strategies)**

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