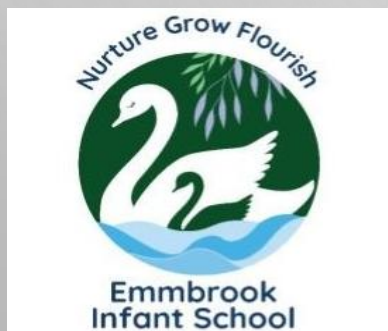




SUPPORTING CHILDREN WITH EXECUTIVE FUNCTION AND WORKING MEMORY

FRIDAY 27TH FEBRUARY 2026

EMMBROOK INFANT SCHOOL AND EMMBROOK JUNIOR SCHOOL



What is involved in Communication?

Understanding meaning – literal and non-literal



Understanding sentence structure



Understanding words

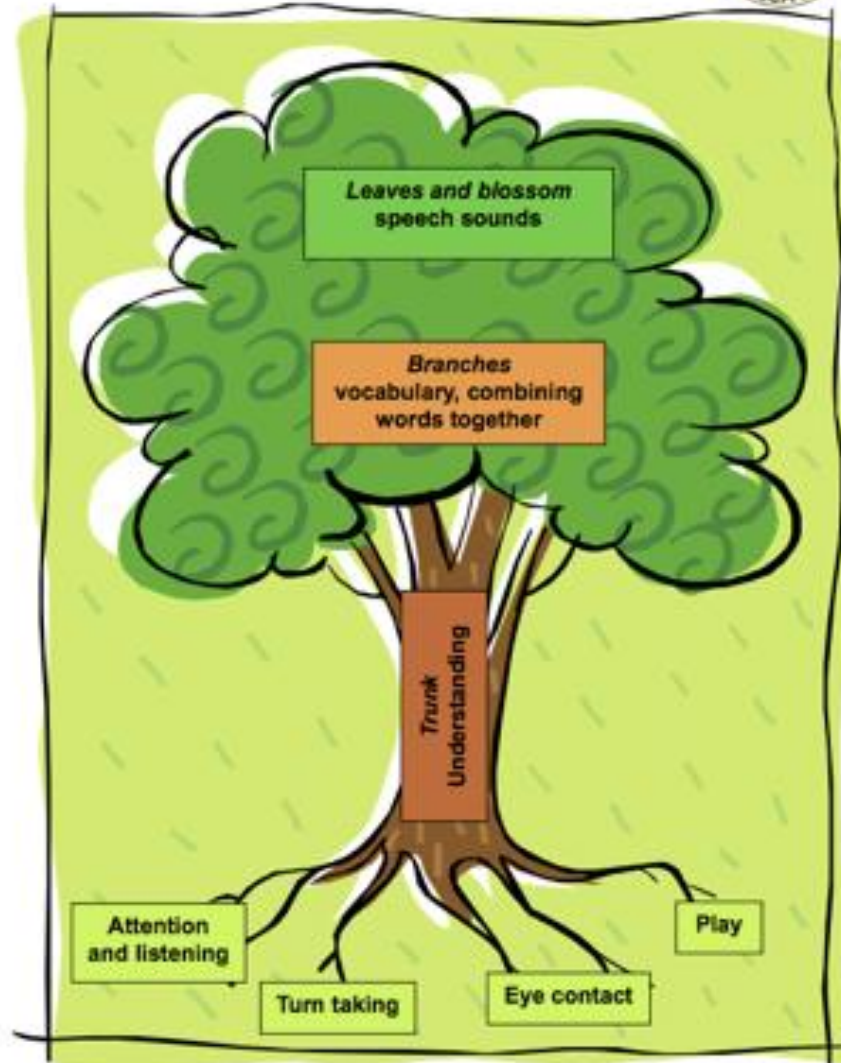


Auditory Memory



Receptive Language

The Communication Tree



For more information, visit: www.westberksECAT.info

Self-correction



Choosing sounds (phonology)
Articulation and fluency



Understanding audience and appropriateness



Choosing sentence structure



Choosing words (word-finding – memory and semantics)



Expressive Language

TRUE OR FALSE?

AROUND 500,000 PRIMARY AND SECONDARY STUDENTS IN THE UK HAVE SPEECH AND

HEARING DIFFICULTIES



FALSE

<https://speechandlanguage.org.uk/>

1.9 million out of a total number of 9,359,152 primary and secondary school-aged children in England, Scotland and Wales

[Zelazo and Carlson \(2012\)](#), educational research should focus on executive functions as they are fundamental for language development

TRUE OR FALSE?

WE ARE BORN WITH EXECUTIVE FUNCTION
SKILLS (WORKING MEMORY, INHIBITION,
CC PLANNING)

FALSE

<https://developingchild.harvard.edu/resource-guides/guide-executive-function/>

We are born with the capacity to develop executive function skills

TRUE OR FALSE?

EXECUTIVE FUNCTIONS (WORKING MEMORY,
INHIBITION, COGNITIVE FLEXIBILITY, PLANNING)

ARE NOT

PREDICTORS OF ACADEMIC

PERFORMANCE

FALSE

Pascual, Munoz, Robres (2019)
Meta Analysis
Greater influence on mathematical
performance

TRUE OR FALSE?

WORKING MEMORY CAPACITY IS THE BEST
SINGLE PREDICTOR OF A CHILD'S CURRENT AND
ACADEMIC ABILITIES



TRUE

Deficits in working memory are associated with poorer academic attainment including National Curriculum assessments²⁶ across a range of learning difficulties and ages²⁷

²⁶ Duncan GJ (2007). *Developmental Psychology*. 43, 1428–1446.

²⁷ Duncan GJ (2007). *Developmental Psychology*. 43, 1428–1446. Breslau N, et al. (2010). *Psychological Medicine*. ;40, 159–166.

(Astle, D. et al. (2022), *J Child Psychol Psychiatr*, 63: 397-417. Ziegenfusz, S., et al. (2022). *Autism & Developmental Language Impairments*, 7)

TRUE OR FALSE?

ABOUT 1 IN 20 CHILDREN ARE LIKELY TO
HAVE REDUCED WORKING MEMORY

CAPACITY



TRUE

TRUE OR FALSE?

ONLY A LIMITED AMOUNT OF INFORMATION
(UP TO AROUND 4 CHUNKS) CAN BE HELD IN
WORKING MEMORY AT ANY GIVEN TIME



TRUE

<https://caer.org.uk/projects/working-memory-in-the-classroom/>

Based on research (2021):

Atkinson, A. L., Allen, R. J., & Waterman, A. H. (2021). Exploring the understanding and experience of working memory in teaching professionals: a large-sample questionnaire study. *Teaching and Teacher Education*, 103, 103343.

TRUE OR FALSE?

INFORMATION IS TYPICALLY LOST FROM THE
WORKING MEMORY IN 2 MINUTES

FALSE

<https://caer.org.uk/projects/working-memory-in-the-classroom/>

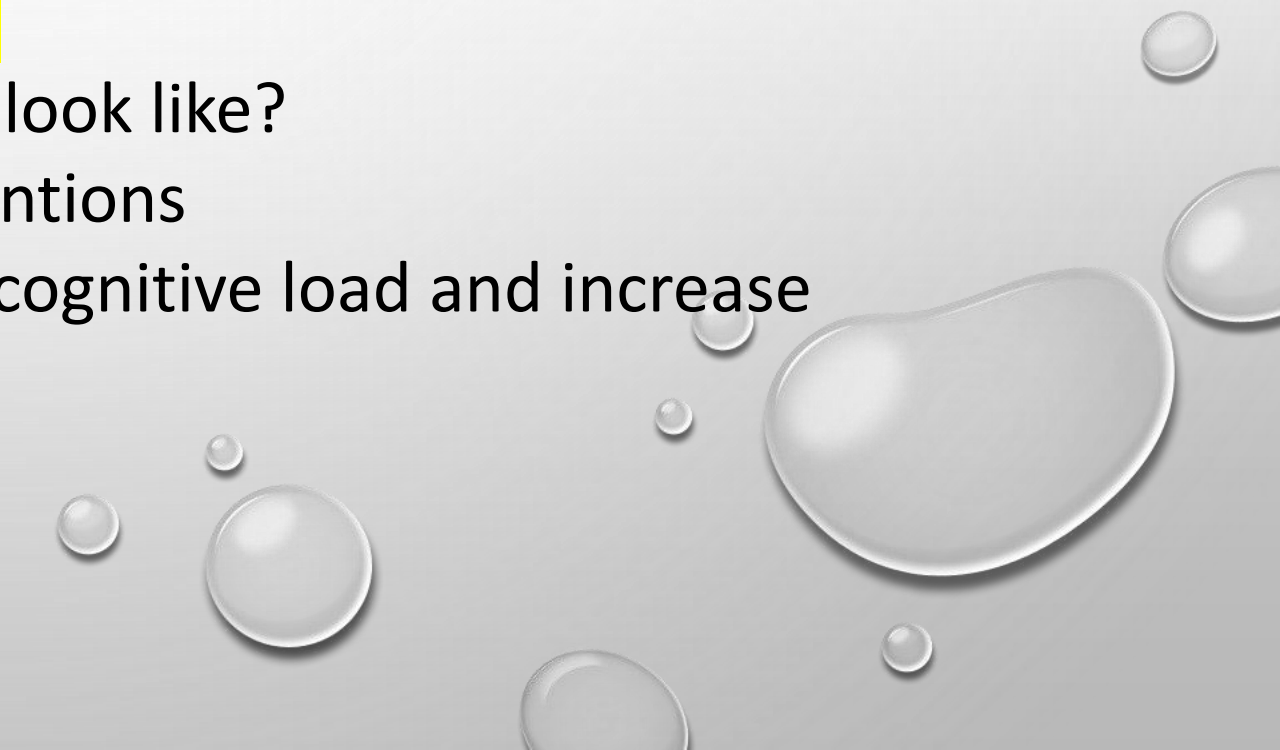
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Atkinson, A. L., Allen, R. J., & Waterman, A. H. (2021). Exploring the understanding and experience of working memory in teaching professionals: a large-sample questionnaire study. *Teaching and Teacher Education*, 103, 103343.

30 seconds



Supporting Children with Executive Function and Working Memory Difficulties

- **What are executive functioning skills?**
 - What do working memory difficulties look like?
 - Working memory trainers and interventions
 - Strategies and adaptations to reduce cognitive load and increase independence
- 

WHAT IS EXECUTIVE FUNCTION?

A set of functions for control, planning and organisation - 'air traffic control system' for the brain.

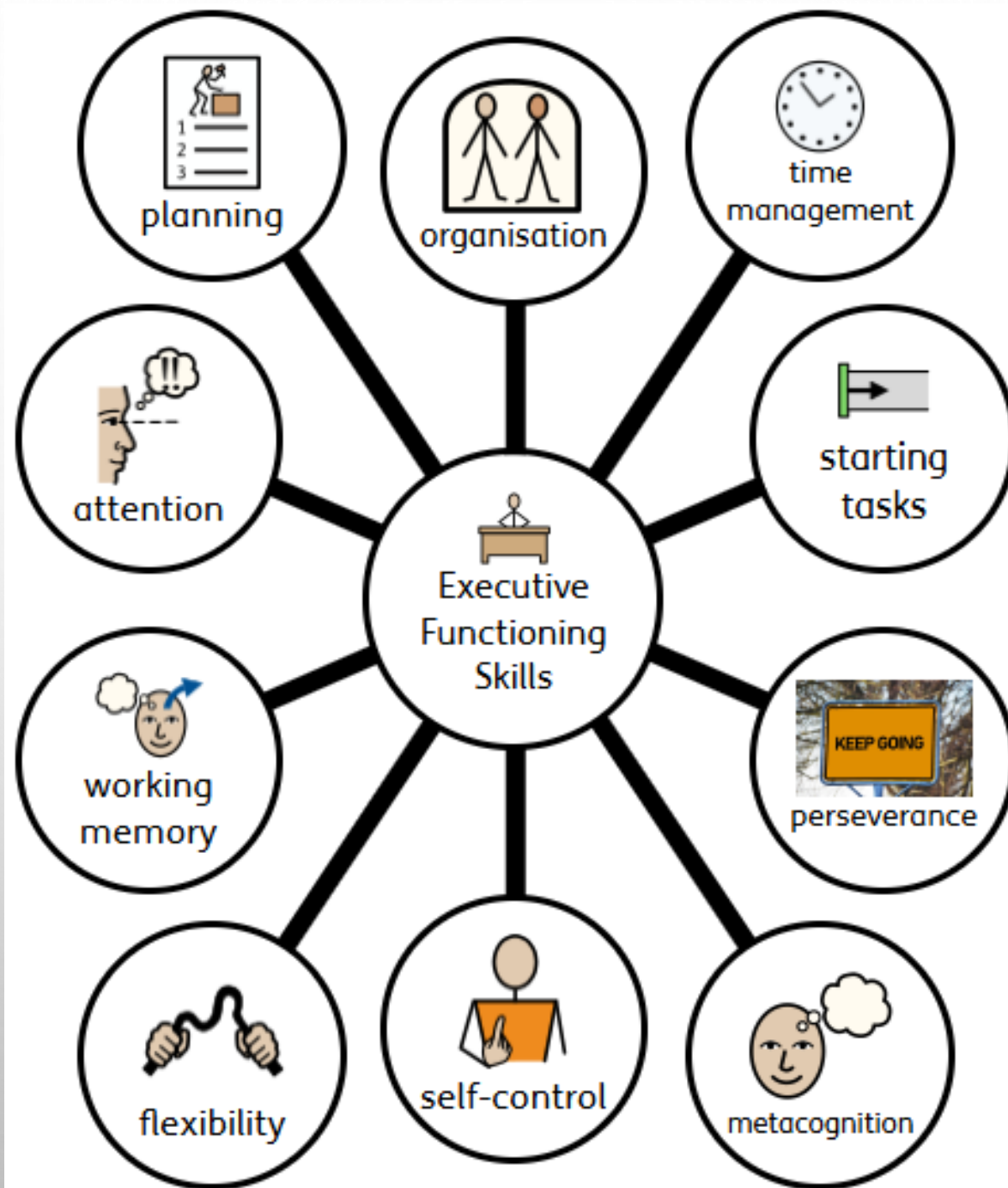
These skills are important for learning (Blair and Razza 2007)

Located in pre-frontal cortex (Garcia-Molina 2012)

Filtering of distractions

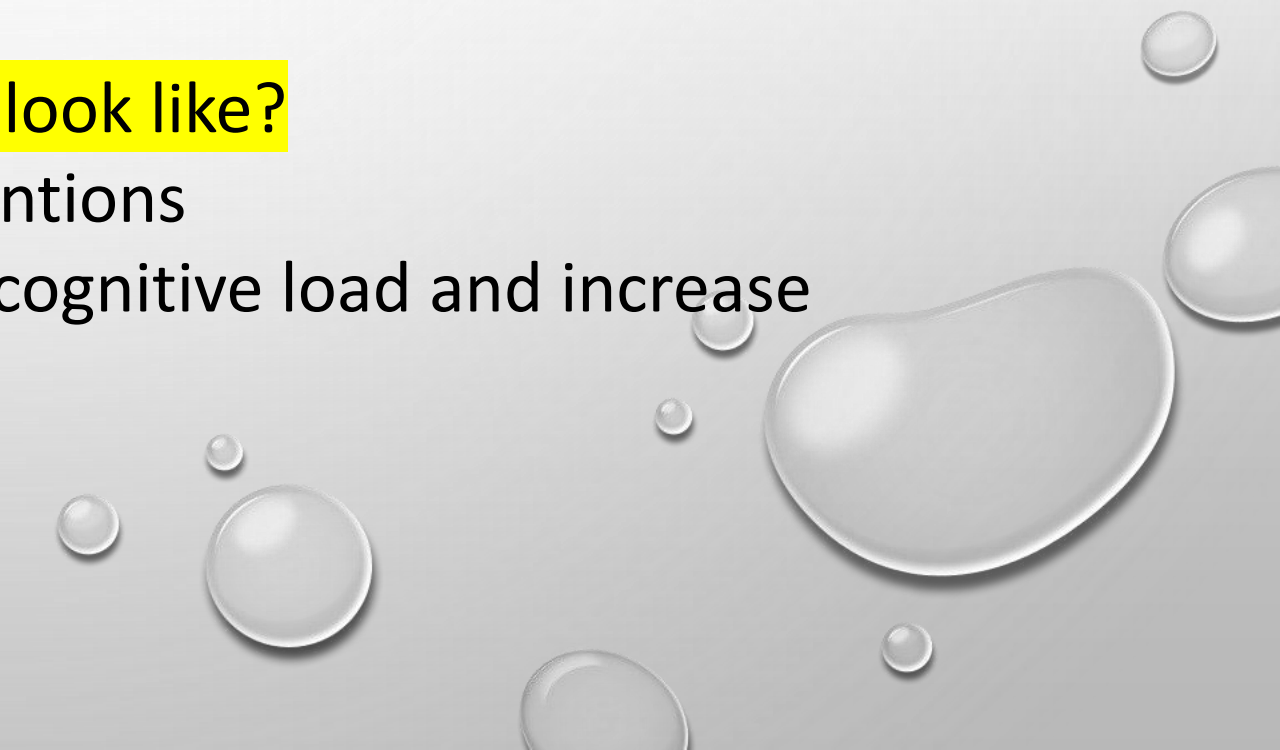
Working memory - capacity to hold and manipulate short pieces of information for a short amount of time (Baddeley and Hitch, first model 1974)







Supporting Children with Executive Function and Working Memory Difficulties

- What are executive functioning skills?
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- 



[one percent club uk](#) || [The 1% Club \(US\) S04E01](#) || [The 1 Percent Club S04E01 the one percent uk](#)

22:00

If you were singing 'Happy Birthday' to somebody named Happy, how many times would you sing the word 'Happy'?

[ITV's : The 1% club - 30 Second Timer](#)

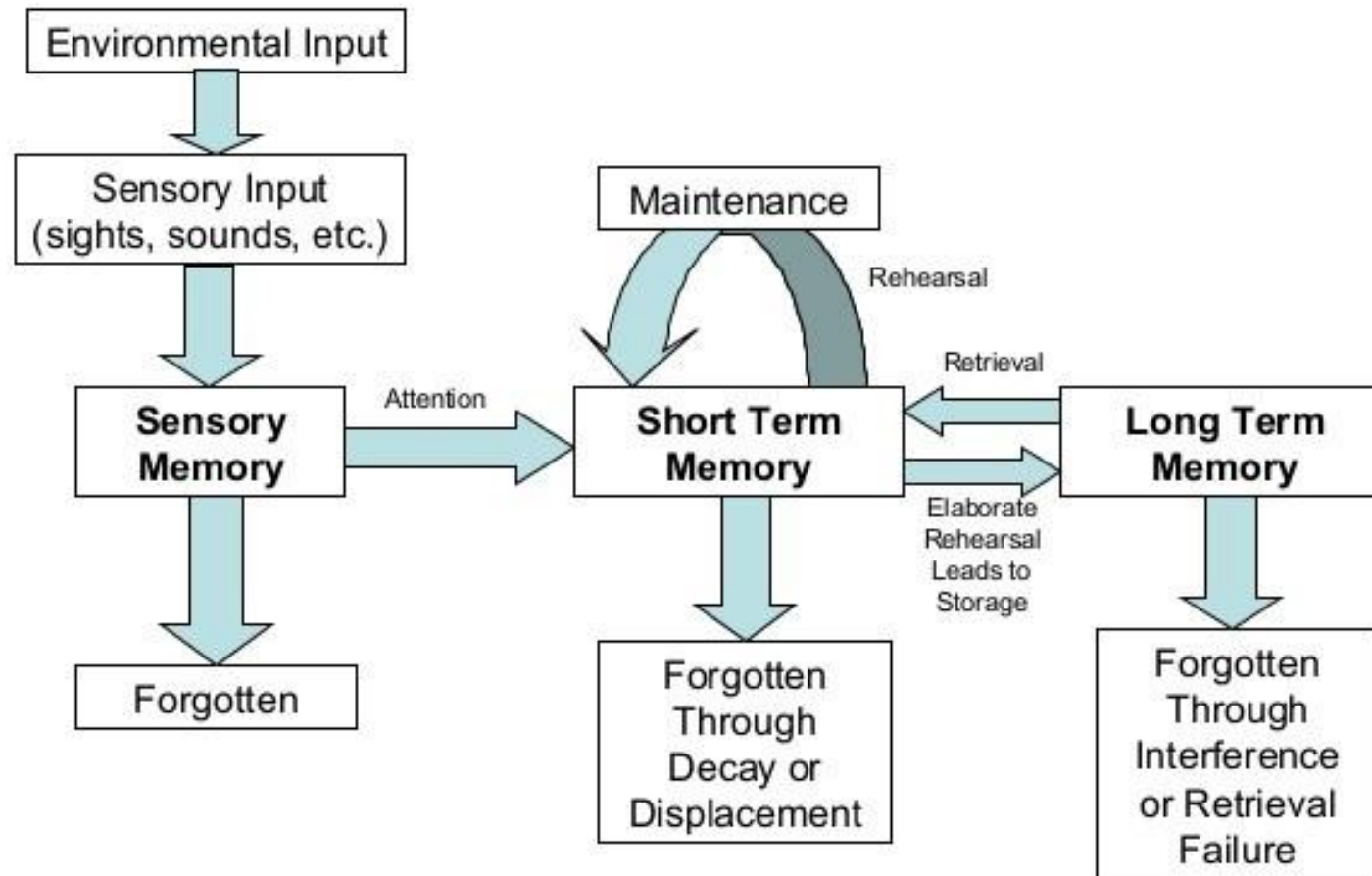
A child who needs Working Memory support might:

1. Need to be reminded what to do next
2. Struggle to hold information in mind
3. Not progress well with reading
4. Ask others or not remember what to do next
5. Appear to be not listening
6. Be easily distracted
7. Forget what they are doing or have done
8. Not reach expected levels of learning
9. Ask for instructions to be repeated
10. Not complete tasks
11. Not remember what they want to say
12. Start but not complete instructions
13. Lose concentration
14. Struggle with maths tasks



INFORMATION PROCESSING MODEL

Multi Store Model - Atkinson & Shiffrin (1968)



'It's in one ear and out of the other'

- Information is permanently lost from working memory through overload or distraction
- Children will need access to the critical task information again in order to proceed
- If they can't, the child is forced either to guess or to abandon the task
- Repeated activity failures are missed learning opportunities, and the more frequent they are, the more that learning will be delayed.

Have a go!

DIGITS FORWARDS

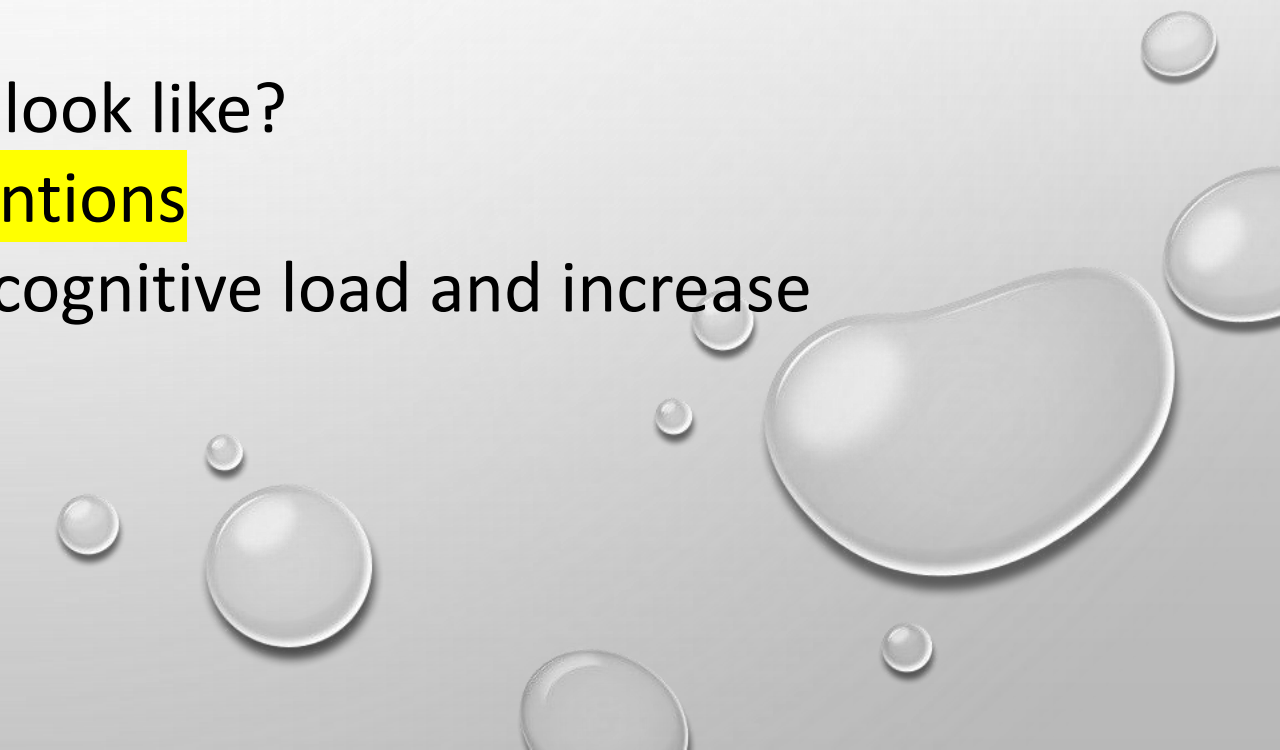
Item	First trial	✓ or X
A	43	
B	792	
C	5941	
D	93872	
E	152649	
F	3745261	
G	82973546	
H	246937185	

DIGITS BACKWARDS

Item	Trial one	✓ or X
A	83	
B	475	
C	2619	
D	28736	
E	624719	
F	4183627	
G	52624197	



Supporting Children with Executive Function and Working Memory Difficulties

- What are executive functioning skills?
 - What do working memory difficulties look like?
 - **Working memory trainers and interventions**
 - Strategies and adaptations to reduce cognitive load and increase independence
- 

Working Memory Training – a variable evidence base

Some studies show a positive immediate effect on verbal and visual-spatial working memory and processing

No positive immediate or long-term effect on numeracy or literacy

<https://research.manchester.ac.uk/en/studentTheses/evaluating-the-utility-of-working-memory-training-programmes-for->

Digital edition now available!

The logo for MeeMo features the word 'MeeMo' in a playful, rounded font. The letters are colored as follows: 'M' is blue, 'e' is purple, 'e' is yellow, 'M' is red, and 'o' is green.

The whole-class working memory programme

<https://www.elklan.co.uk/MeeMo/>

For KS2

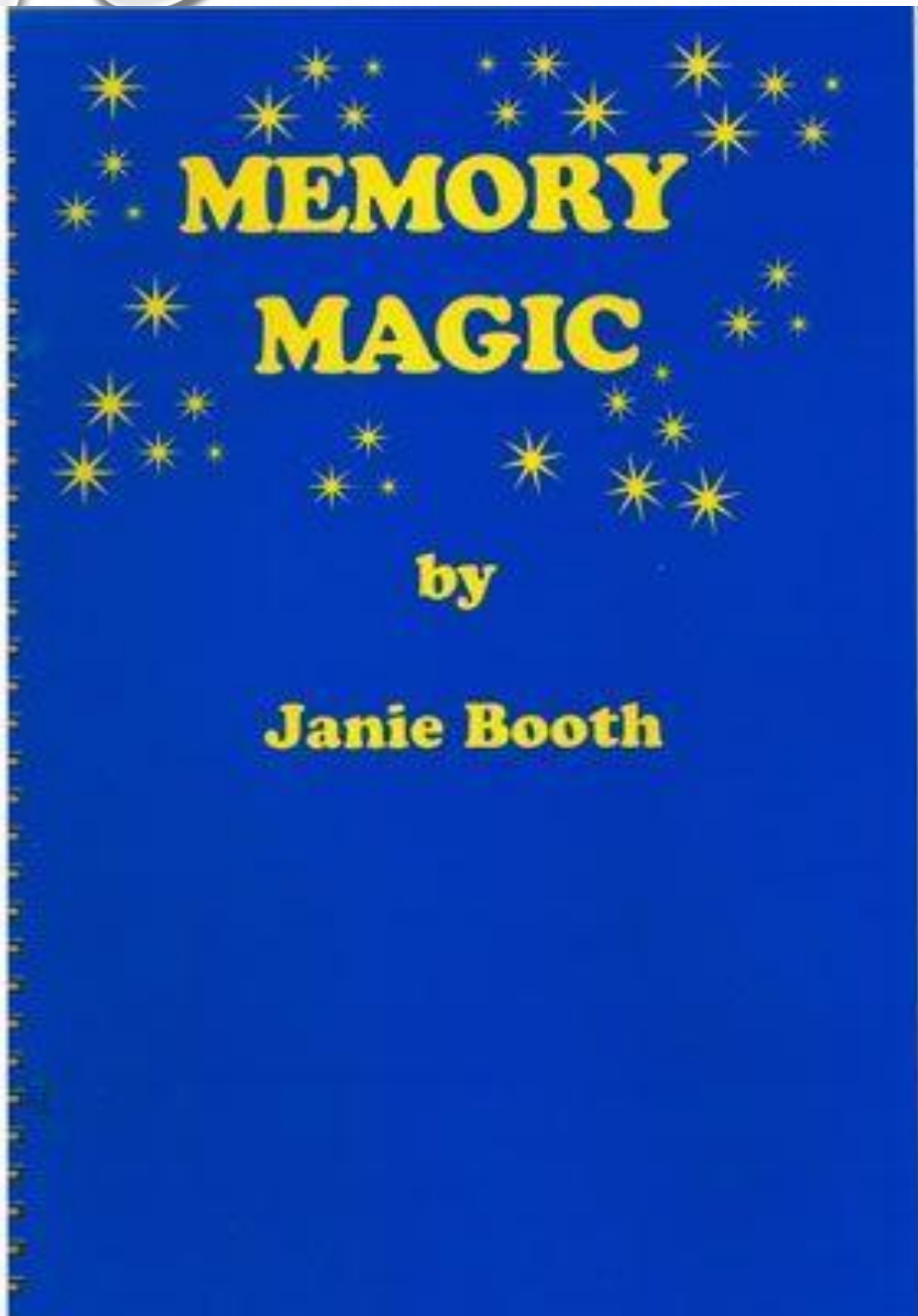
£200 + VAT whole school licence

£50 = VAT a year after that

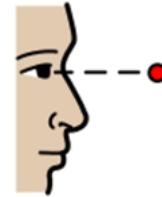


https://www.pearsonclinical.co.uk/store/ukassessments/en/Store/Professional-Assessments/Cognition-%26-Neuro/Memory/Cogmed-Working-Memory-Training-/p/P100009002.html?srsId=AfmBOoo6_yASnrrFnQK-z_jg8N6KuwLYfsRWTHCqsd3UOgLgD3vwJqHd

£1,417.50



Memory Magic



Focus



Rehearse



Group



Picture It



Mindmap



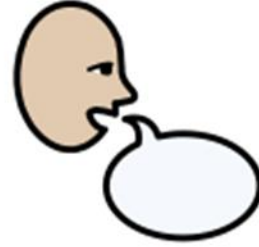
Link



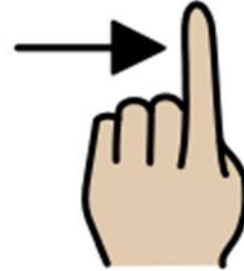
Your Spell

Memory Strategies

Say it back to
myself



Count
instructions on
my fingers



Draw a picture or
comic strip of the
book chapter

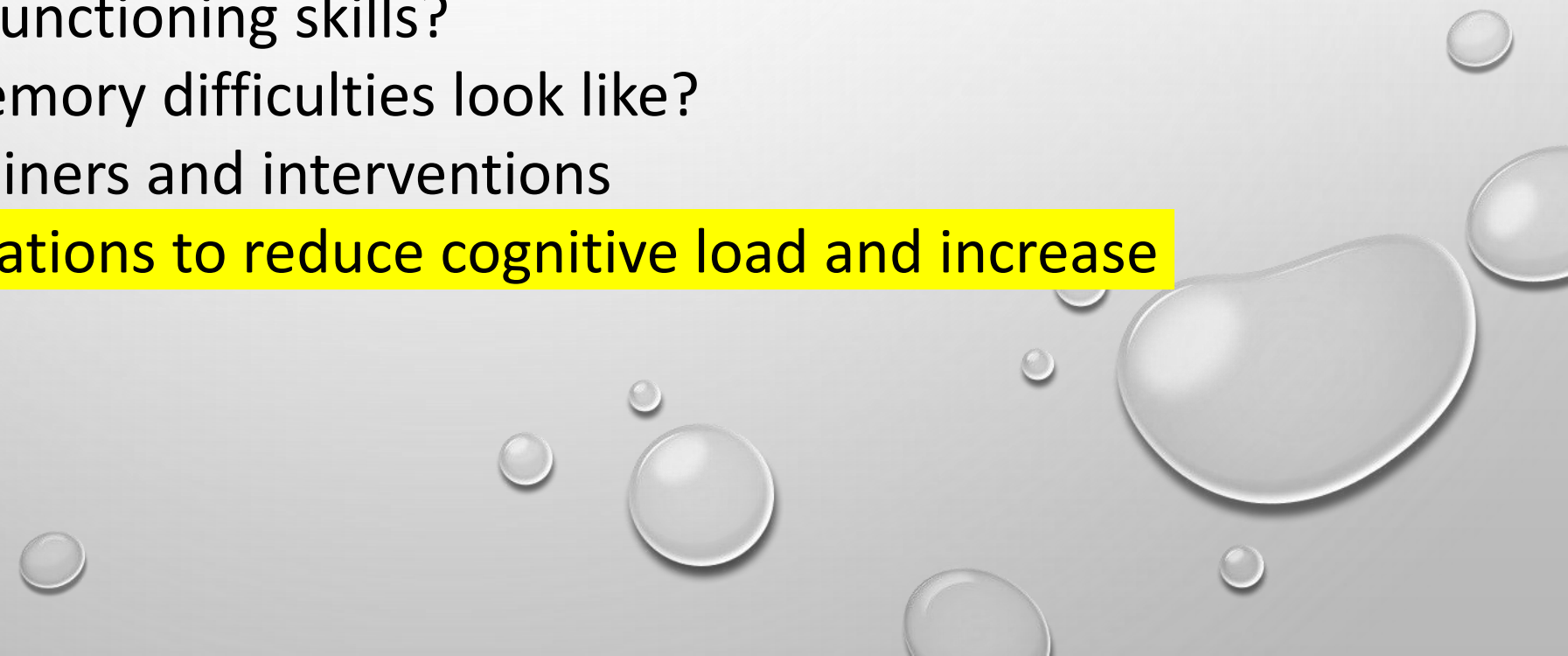


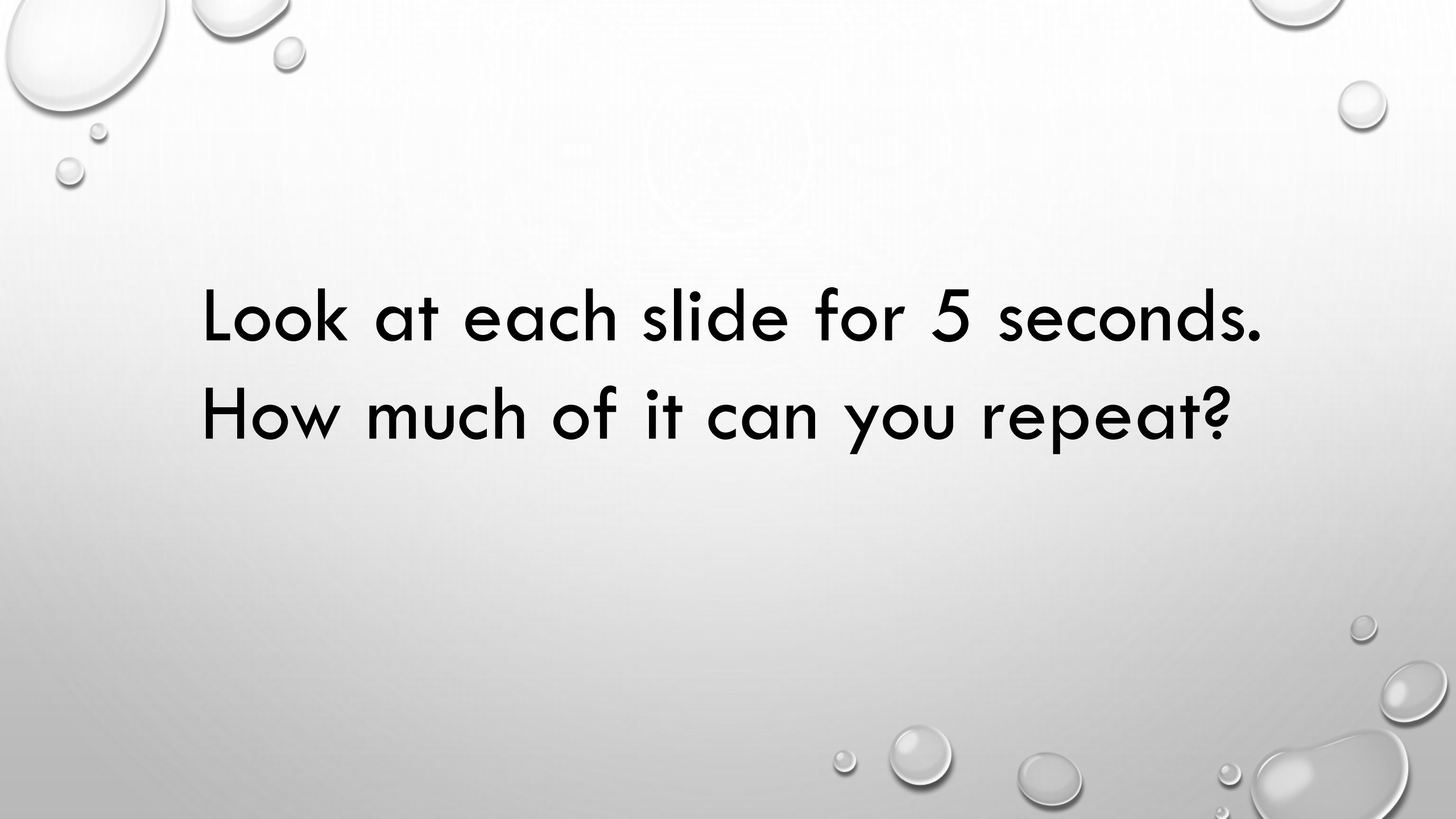
Write new words
at the back of my
green book





Supporting Children with Executive Function and Working Memory Difficulties

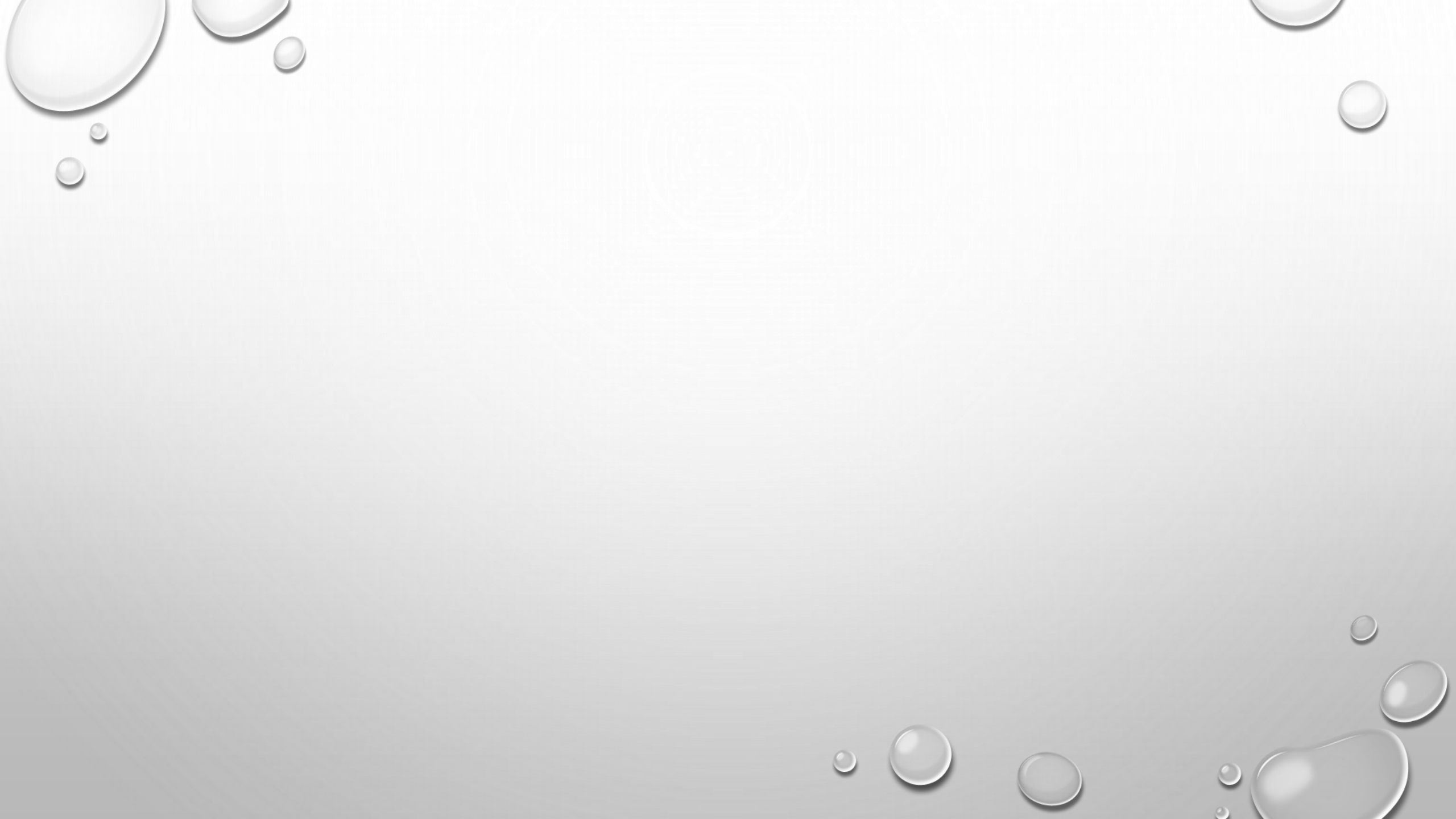
- What are executive functioning skills?
 - What do working memory difficulties look like?
 - Working memory trainers and interventions
 - Strategies and adaptations to reduce cognitive load and increase independence
- 



**Look at each slide for 5 seconds.
How much of it can you repeat?**

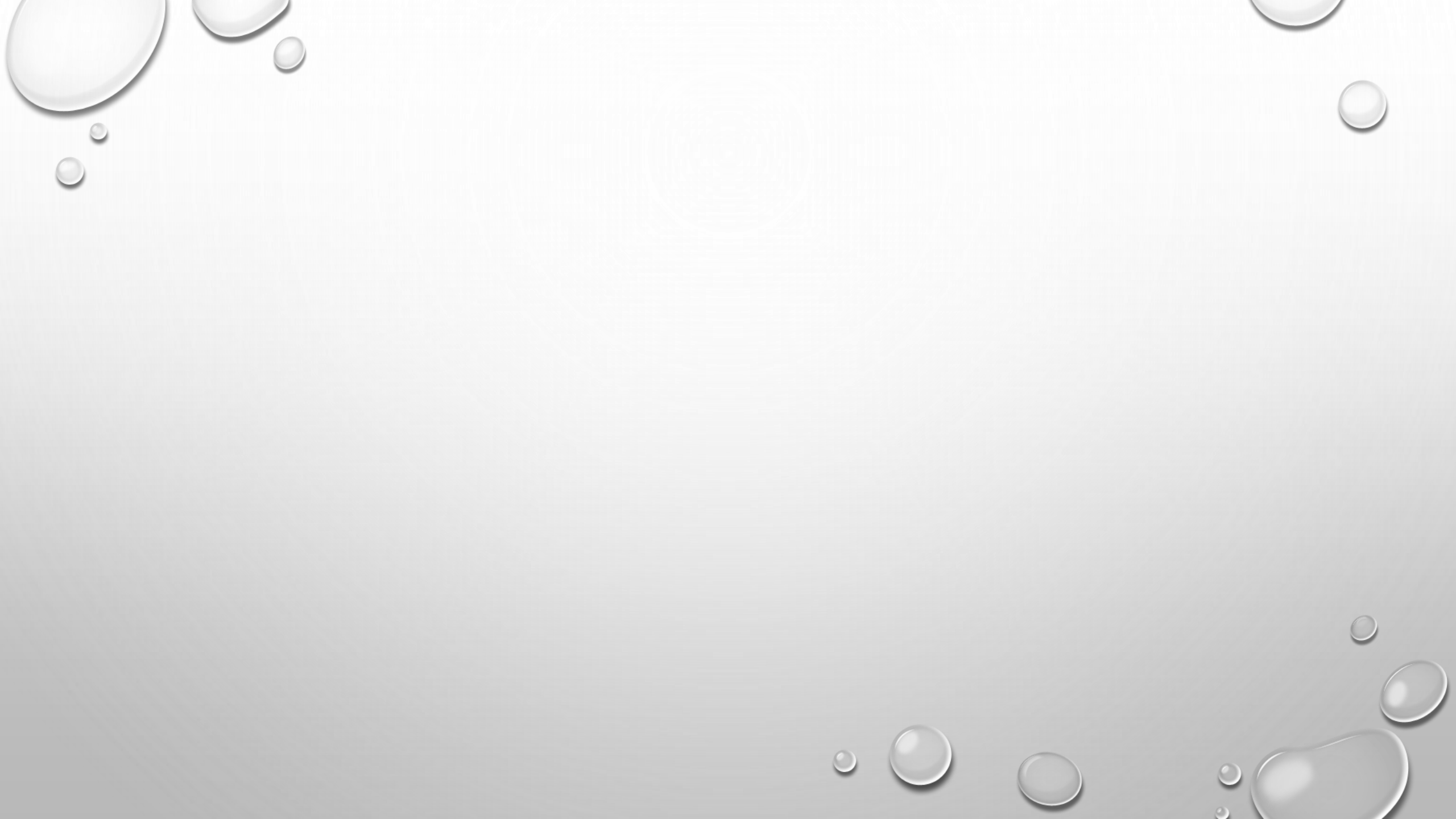
The image features a light gray background with a subtle gradient. In the top-left and bottom-right corners, there are several realistic-looking water droplets of various sizes, some overlapping. The text is centered horizontally and consists of five words in a dark blue, bold, sans-serif font. The words are 'G', 'BPR', 'AGW', 'HOU', and 'SA', each separated by a wide space.

G BPR AGW HOU SA





GBP RAG WHO USA



Why was the second slide easier to remember than the first?

It's meaningful (we have prior knowledge we can stick it to)

It comes in small chunks (4 chunks instead of 12 letters)

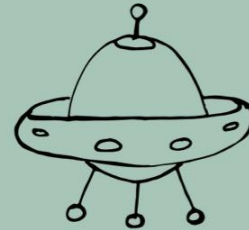
We have enough time to take it in

The task was the same but the information demands of the task were different

Working Memory Key Messages



Working memory capacity is very small and easily overloaded



Off task behaviours can be a sign of working memory overload



Any child can get overwhelmed so adaptations benefit everyone



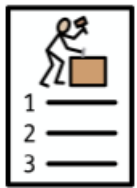
Adapting language & tasks to memory limits can promote learning success



EF / Working Memory Friendly Strategies



Give children time to get organised



Use vocabulary of prioritisation, time management, organisation, perseverance and flexibility



When planning, consider the information demands of the task



Have key information at eye level and easy to find



Look out for signs of working memory overload



EF / Working Memory Friendly Strategies



Present the big picture first, then the details



Prime children for certain information – “I will ask you.....”



Ask the child to tell you what they have to do

123

Give instructions sequentially



Break down longer instructions into shorter chunks and give time to complete each part