

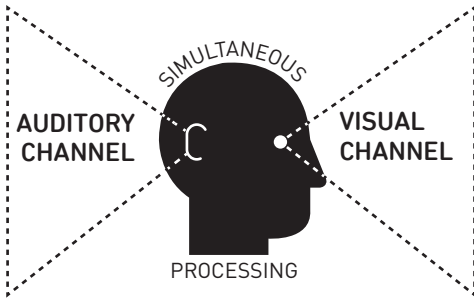
# Dual Coding: Making Knowledge Stick

DERBY FE & SKILLS SHOWCASE 2017 | OLIVER CAVIGLIOLI



*Without knowledge of human cognitive processes, instructional design is blind.*

John Sweller, co-author [2001] Cognitive Load Theory, Springer



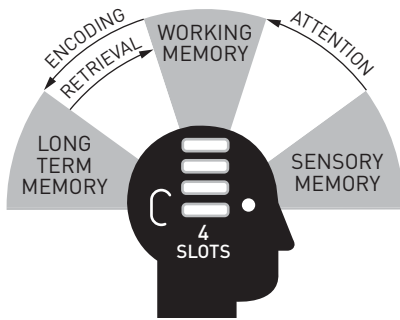
## Dual Coding

Information coming in from both seeing and hearing is processed separately and simultaneously without creating cognitive overload. Additionally, both sources trigger each other for more effective retrieval.



*People learn better from graphics and words than from words alone.*

Richard Mayer, 2004  
Graphics for Learning (foreword),  
Clark, R. & Lyons, C.



## Memory System

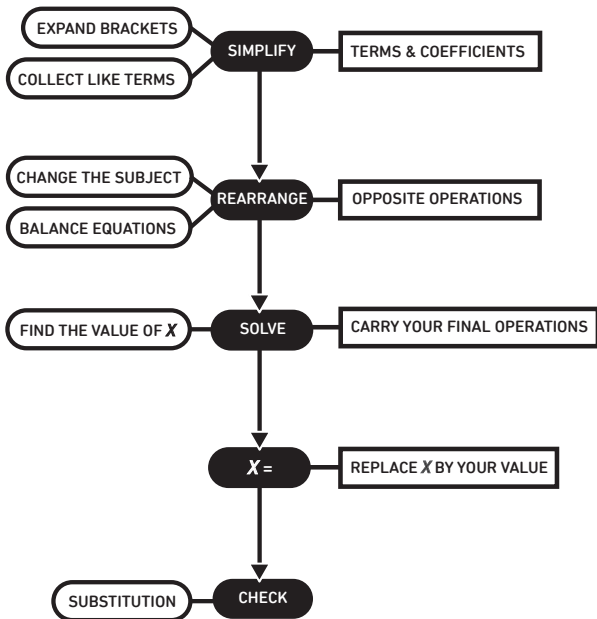
Working memory is much more restricted than first thought. It's the bottleneck of learning by being the single route to long-term memory. Reif's image of WM as four slots helps us design better instruction.



*Learning is a product of working memory allocation.*

Shell, D. F., 2010  
The Unified Learning Model, p.3

## Nico's GCSE Maths Visual Instruction Plan



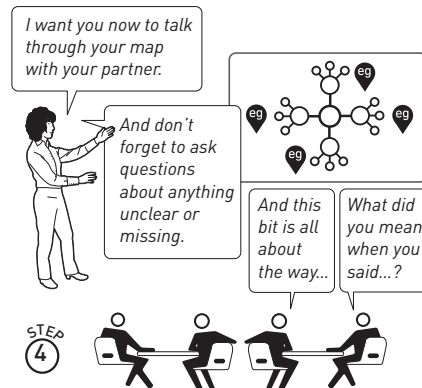
## Cognitive Science HOW2s

Visualising cognitive science evidence into step-by-step guides to classroom practice helps bridge the gap between researcher and teacher. Access your free 6 HOW2s today.



*The Learning Scientists worked with the HOW2 team in creating these ready-for-classrooms visual guides to cognitive science strategies.*

Dr Yana Weinstein



## REFERENCES

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Reif, F., 2008, Applying Cognitive Science to Education, MIT

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