



North Star Inclusion
Advisory Team

Helping you to help your pupils be the best that they can be.

Quality First Teaching – Cognition and Learning

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and NIAT





Virtual Safeguarding

Please help us to keep yourself safe...

- Are you comfortable?
- Do you have a drink?
- If you are juggling home schooling, have you managed to find a corner of the house to avoid detection?

- Be kind to yourself, take care- this will all be available online.



Aims

- To explore teaching and learning strategies for deployment in quality first teaching to support pupils with cognition and learning difficulties.
- To develop our understanding of cognition and learning difficulties.
- To explore the links between the toolkit and the LA document **Walsall Getting It 'Right for SEND' Guidance Document (April 2020)**



What do we mean?

- **Cognition** is a term referring to the mental processes involved in gaining knowledge and comprehension.
- These processes include thinking, knowing, remembering, judging and problem-solving.
- These are higher-level functions of the brain and encompass language, imagination, perception, and planning.



Teaching Standards

5 Adapt teaching to respond to the strengths and needs of all pupils

- know when and how to differentiate appropriately, using approaches which enable pupils to be taught effectively
- have a secure understanding of how a range of factors can inhibit pupils' ability to learn, and how best to overcome these
- demonstrate an awareness of the physical, social and intellectual development of children, and know how to adapt teaching to support pupils' education at different stages of development
- have a clear understanding of the needs of all pupils, including those with special educational needs; those of high ability; those with English as an additional language; those with disabilities; and be able to use and evaluate distinctive teaching approaches to engage and support them.



Walsall Getting It 'Right for SEND' Guidance Document (April 2020)

The banding document is organised into 8 areas of primary need, which correlate to the 4 areas of the SEND Code of Practice.

The 8 areas of primary need are:

- **Cognition & Learning (C&L)**
- Social, Emotional, Mental Health (SEMH)
- Speech, Language, Communication & Interaction (SLCN)
- Physical & Sensory:
 - Hearing Impaired (HI)
 - Visually Impaired (VI)
 - Multi-Sensory Impaired (MSI)
 - Physical Needs (Phys)
 - Medical Needs (Med)



Walsall Getting It 'Right for SEND' Guidance Document (April 2020)

Schools are required to:

- **identify pupils primary area of need.**
- They are then required to **identify which Band a child is best matched to.**
- **Each child should only be identified once** on the banding document – according to their primary area of need.



Walsall Getting It 'Right for SEND' Guidance Document (April 2020)

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Walsall Local Authority expect that the majority of children with SEN in Walsall (including those with an EHCP) will be able to receive the **'right support at the right time'** to meet their special educational needs and will be fully included within their local mainstream school.



Walsall Getting It 'Right for SEND' Guidance Document (April 2020)

Cognition & Learning			
Universal – Band 0			
Services who can support:	Whole school approaches:	Training:	Useful websites/resources:
<p>Walsall Educational Psychology Service</p> <p>Advisory Teaching services</p> <p>Specialist Teachers spld/dyslexia</p> <p>Walsall Speech and Language Therapy</p>	<p>Peer support/modelling</p> <p><u>Scaffolded learning</u></p> <p>Differentiation by output, support, pace, resource</p> <p>Use of alternative methods of recording as required</p> <p>Differentiated approach to homework and in school support for homework</p>	<p>Effective differentiation</p> <p>Teaching and Learning approaches to support Learners with Down's Syndrome</p> <p>Teaching and Learning approaches to support Learners with ADHD</p> <p>Precision Teaching</p>	<p>johnandgwyn.co.uk/probe.html</p> <p>https://www.downs-syndrome.org.uk/for-new-parents/education/education-support-packs/</p> <p>www.bdadyslexia.org.uk</p> <p>https://educationendowmentfoundation.org.uk/</p> <p>https://educationendowmentfoundation.org.uk/tools/guidance-reports/literacy-ks-1/</p> <p>https://educationendowmentfoundation.org.uk/tools/guidance-reports/literacy-ks-2/</p> <p>https://educationendowmentfoundation.org.uk/tools/guidance-reports/improving-literacy-in-secondary-schools/</p> <p>https://nasen.org.uk/uploads/assets/e227fce8-87f7-4630-bc4606a87e2bec53/Supporting-pupils-with-SLD.pdf</p>

Whole school approaches

Toolkit offers suggests and strategies that school might want to implement as part of their QFT provision.



From the SEND Code of Practice (Jan 2015)

- 6.12 All pupils should have access to a broad and balanced curriculum. The National Curriculum Inclusion Statement states that teachers should set high expectations for every pupil, whatever their prior attainment. Teachers should use appropriate assessment to set targets which are deliberately ambitious. Potential areas of difficulty should be identified and addressed at the outset. Lessons should be planned to address potential areas of difficulty and to remove barriers to pupil achievement. In many cases, such planning will mean that pupils with SEN and disabilities will be able to study the full national curriculum.



From the SEND Code of Practice (Jan 2015)

- 6.15 A pupil has SEN where their learning difficulty or disability calls for special educational provision, namely provision different from or additional to that normally available to pupils of the same age. Making higher quality teaching normally available to the whole class is likely to mean that fewer pupils will require such support. Such improvements in whole-class provision tend to be more cost effective and sustainable.



From the SEND Code of Practice (Jan 2015)

- 6.17 Class and subject teachers, supported by the senior leadership team, should make regular assessments of progress for all pupils. These should seek to identify pupils making less than expected progress given their age and individual circumstances. This can be characterised by progress which:
 - is significantly slower than that of their peers starting from the same baseline
 - fails to match or better the child's previous rate of progress
 - fails to close the attainment gap between the child and their peerswidens the attainment gap



Walsall Getting It 'Right for SEND' Guidance Document (April 2020)

Cognition & Learning

Ordinarily Available - Band 1

Description of need

- Difficulty with the acquisition / use of language, literacy, numeracy skill
- Difficulty with the pace of curriculum delivery.
- Some problems with concept development.
- Evidence of some difficulties in aspects of literacy, numeracy or motor coordination.

Assessment & Planning

- Children should have an individual education plan (see recommended 'My SEN Support Plan'), which identifies cognition and learning as a primary need. This should be reviewed at least termly.
- Children and their parents/carers should be involved in agreeing SMART targets (see 'My SMART targets' guidance) and should know how progress will be measured.
- Targets should be focussed predominantly on Cognition and learning skills.
- Provision should be directly related to targets and area of need.
- SENCOs should be providing advice and guidance to the class/subject teacher/s.

Banding

Toolkit offers examples of learning behaviours that can help you be more specific and develop personalised targets and approaches



Walsall Getting It 'Right for SEND' Guidance Document (April 2020)

Cognition & Learning

Ordinarily Available - Band 2

Description of need	<ul style="list-style-type: none"> Continuing and persistent difficulties in the acquisition/use of language/literacy/numeracy skills. The pupil is operating at a level well below expected outcomes (this is likely to be more than a year behind age related expectations) and there is evidence of an increasing gap between them and their peers despite targeted intervention and differentiation Evidence of difficulties with aspects of cognition i.e. memory, concept development, information processing, understanding, sequencing and reasoning that impact on learning and/or limit access to the curriculum Progress is at a slow rate but with evidence of response to intervention and that ongoing support is required to maintain gains and to access the curriculum. Processing difficulties limit independence and may need adult support in some areas. The pupil will have mild but persistent difficulties in aspects of literacy, numeracy or motor coordination despite regular attendance, appropriate intervention and quality first teaching. May have difficulties with organisation and independence in comparison to peers Difficulties impact on access to the curriculum and the pupil will require special arrangements and additional support in the classroom. Self-esteem and motivation may be an issue. Possibly other needs or circumstances that impact on learning and progress
Assessment & Planning	<ul style="list-style-type: none"> Children should have an individual education plan (see recommended 'My SEN Support Plan'), which identifies Cognition & Learning as a primary need. This should be reviewed at least termly. Specialist in school assessments may be carried out such as Sandwell Maths, Salford Reading Assessment, Phonological Assessment Battery, British Picture Vocabulary Scales, YARC Children and their parents/carers should be involved in agreeing SMART targets (see 'My SMART targets' guidance) and should know how progress will be measured. Targets should be focussed predominantly on Cognition and Learning skills. Provision should be directly related to targets and area of need. <u>SENCOs</u> should be providing advice and guidance to the class/subject teacher/s.

Toolkit offers multiple strategies for each barrier to learning.

Key things to reflect upon at this stage:

- Quantity of strategies.
- Frequency.
- Impact.
- Evidence.

Cognition & Learning

Ordinarily Available - Band 3

Description of need

- Persistent difficulties in the acquisition/use of language/literacy/numeracy skills and appear resistant to previous interventions
- The pupil is operating at a level significantly below expected outcomes (this is likely to be 2 years behind age related expectations) and there is evidence of an increasing gap between them and their peers despite targeted intervention, differentiation and curriculum modification.
- Moderate difficulties with independent working and needs the ongoing support of an adult and a modified curriculum.
- Assessment by an external support service indicates significant and enduring difficulties with several aspects of cognition e.g. memory, concept development, information processing, understanding sequencing and reasoning that impact on learning and/or limit access to the curriculum and/or there may be significant discrepancies between different areas of cognition or a highly unusual profile of strengths and difficulties which require a personalised learning plan, access to advice from a specialist and is likely to require support for reading/recording to access the curriculum at the appropriate level of understanding.
- The pupil will have moderate and persistent difficulties with literacy, numeracy or motor co-ordination despite regular attendance, significant levels of focused intervention, effective provision mapping and quality teaching.
- Difficulties in some aspect of cognitive processing will be present, i.e. slow phonological processing, poor working memory, and difficulties with auditory and visual processing.
- The difficulty will affect access to curriculum and specialist support/advice and arrangements will be required. This is likely to include assistive technology and/or augmented or alternative communication supports.
- Difficulties with learning may now impact on self-esteem, motivation and emotional wellbeing despite positive support, involvement of pupil in target setting and personalised learning.

Assessment & Planning

- Children should have an individual education plan (see recommended 'My SEN Support Plan'), which identifies Cognition and learning as a primary need. This should be reviewed at least termly. If the child is not making accelerated progress then it may be appropriate to request an EHC assessment (see 'Making an EHC assessment request guidance')
- Specialist and highly targeted assessments may be carried out to inform interventions and adjustments to curriculum and learning.
- Children and their parents/carers should be involved in agreeing SMART targets (see 'My SMART targets' guidance) and should know how progress will be measured.
- Targets should be focussed predominantly on Cognition and learning skills.
- Provision should be directly related to targets and area of need. Provision at this stage would be significantly 'different from and additional to'.
- Enhanced and personalised transition planning will be required (see 'My transition plan' guidance)
- SENCo is usually directly involved at this stage to support further assessments to identify any other underlying needs.
- Advice will be sought from specialist support services such as Walsall Speech and Language Therapy Service, Walsall Educational Psychology Service, Specialist Teacher Services. Support and guidance may also be provided by Walsall special schools and ARPs.

Walsall Getting It 'Right for SEND' Guidance Document (April 2020)

Toolkit offers multiple strategies for each barrier to learning.

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- Quantity of strategies.
- Frequency.
- Impact.
- Evidence.



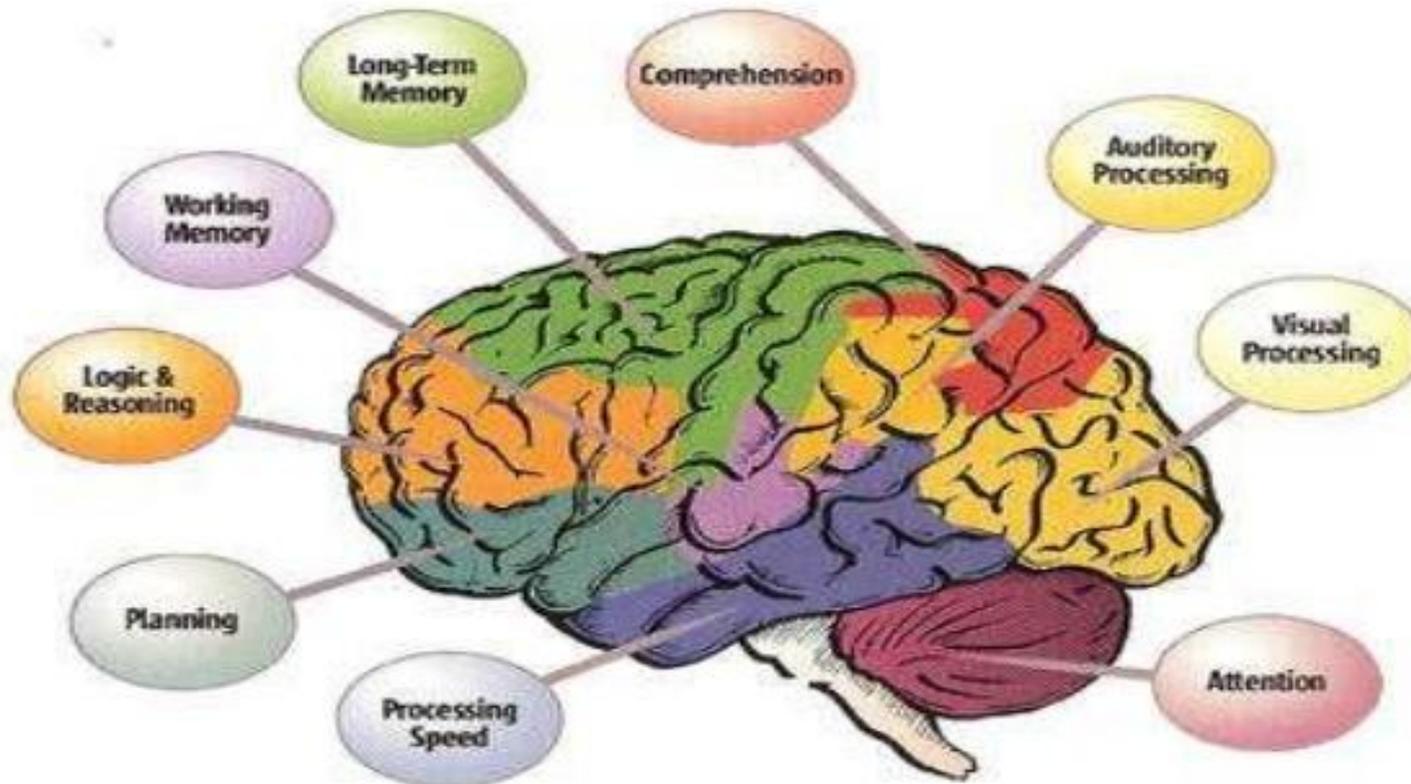
From the SEND Code of Practice (Jan 2015)

- 6.19 The first response to such progress should be high quality teaching targeted at their areas of weakness.

So...

- What are we doing to make the learning in the classroom accessible to all children?

Being able to focus, hold, and work with information in mind, filter distractions, and switch gears is like having an air traffic control system at a busy airport to manage the arrivals and departures of dozens of planes on multiple runways. In the brain, this air traffic control mechanism is called **executive functioning**, a group of skills that helps us to focus on multiple streams of information at the same time, and revise plans as necessary.

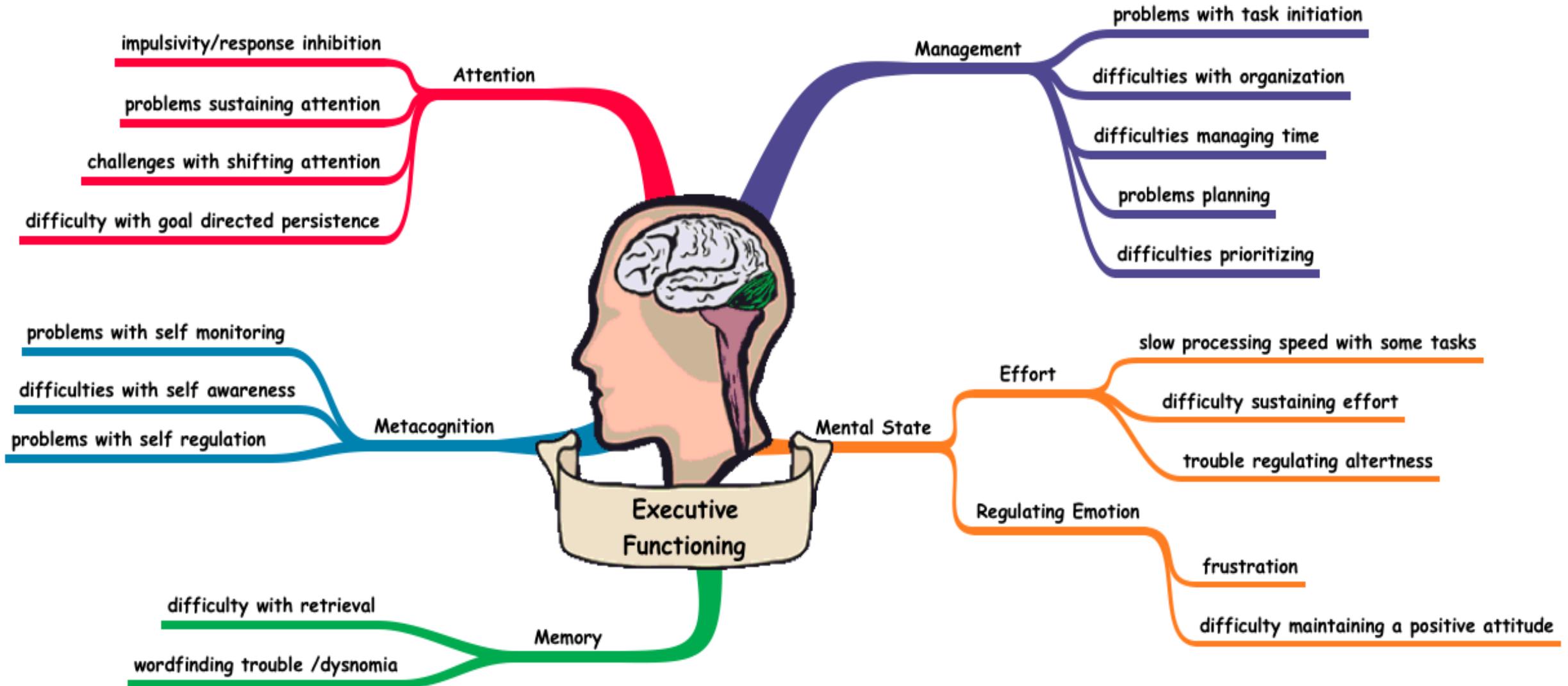


Executive Functioning

Heart of
Cognition and
Learning



Executive Functioning



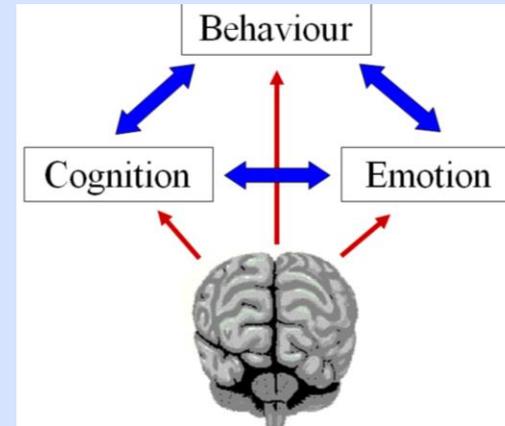


Reviewing Primary Need

When executive function isn't working as it should, your behaviour is less controlled.

This can affect your ability to:

- Go to school or work.
- Regulate your emotions and behaviour
- Maintain relationships
- Work independently





Learning

- **Cognition** – the mental process involved in knowing, understanding and learning.
- **Metacognition** – often defined as ‘learning to learn’.
- **Motivation** - willingness to engage our cognitive and metacognitive skills in order to learn.



Metacognition – Conscious Learning



- What am I doing?
- How am I doing it?
- Is it successful...better....worse?
- Have I done this before....what did I do?
- What can I do alone?
- What help might I need....from where?
- Is it time to change the way I am doing it?



Toolkit- Cognition and Learning

Executive Functioning Support:

- Memory;
- Organisation, maintenance and completion skills;
- Concentration;
- Transferring and generalising learning;
- Time management;
- Self Assessment;
- Information Processing;



Toolkit- Cognition and Learning

Skills, Gaps and Foundations

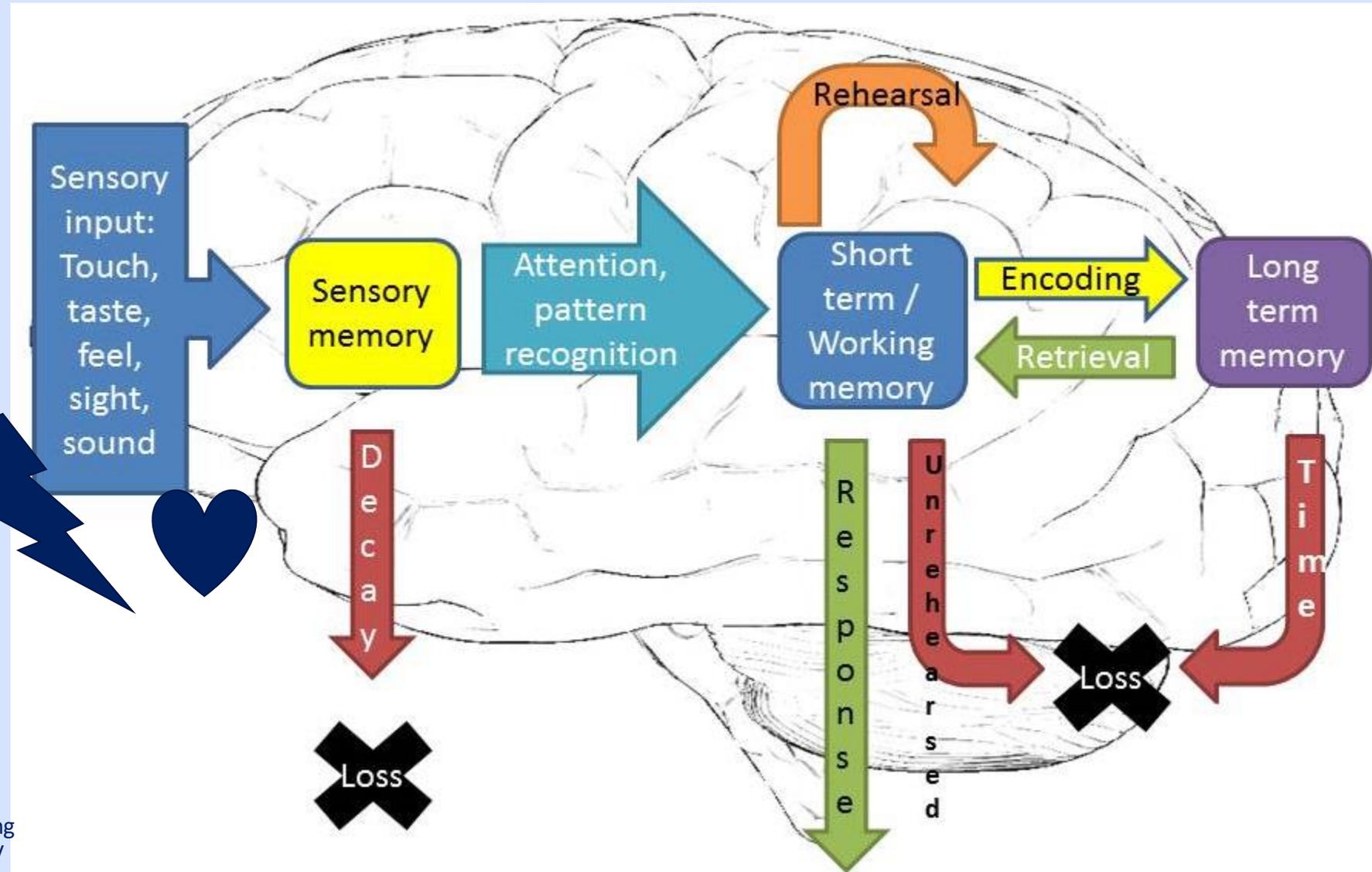
- Letter and number acquisition;
- Spelling and HFW;
- Reading accuracy;
- Reading Rate;
- Reading comprehension;
- Learning and applying number facts;
- Ideas for writing.



Memory - How it Works: The Basics

Memory won't work if you are...

Stressed,
Tired,
Hungry,
Anxious,
Distracted...





Main memory thoughts...

Short Term Memory	Working Memory	Long Term Memory
<p>Short-term memory has a fairly limited capacity; it can hold about seven items for no more than 20 or 30 seconds at a time.</p> <p>Part of working memory system.</p>	<p>A mental workspace to both hold AND manipulate information in the mind.</p> <p>Receive and use <i>or</i> receive and lose.</p> <p>Recalling information from long term memory while holding related information in short term memory.</p>	<p>Permanent Storehouse</p> <p>For storing, managing, and retrieving information</p> <p>Items of information stored as long-term memory may be available for a lifetime.</p>



Other Disaster Factors

- Distraction mid-task.
- Trying to hold too much information.
- Engaging in a mentally demanding task.

Once information is 'lost' from your working memory it is gone for good! You need to go back to the beginning and start again.



Where is it likely to go wrong in the classroom?

- Place keeping tasks.
- Copying from the board.
- Multi-step instructions.
- Mental maths tasks.
- Reading words using a synthetic approach.
- Remembering new information that isn't linked in some way (for example: telephone numbers).
- Holding a sentence for writing.
- New, unrelated, meaningless information.

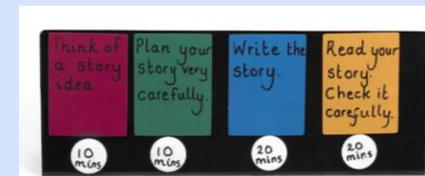
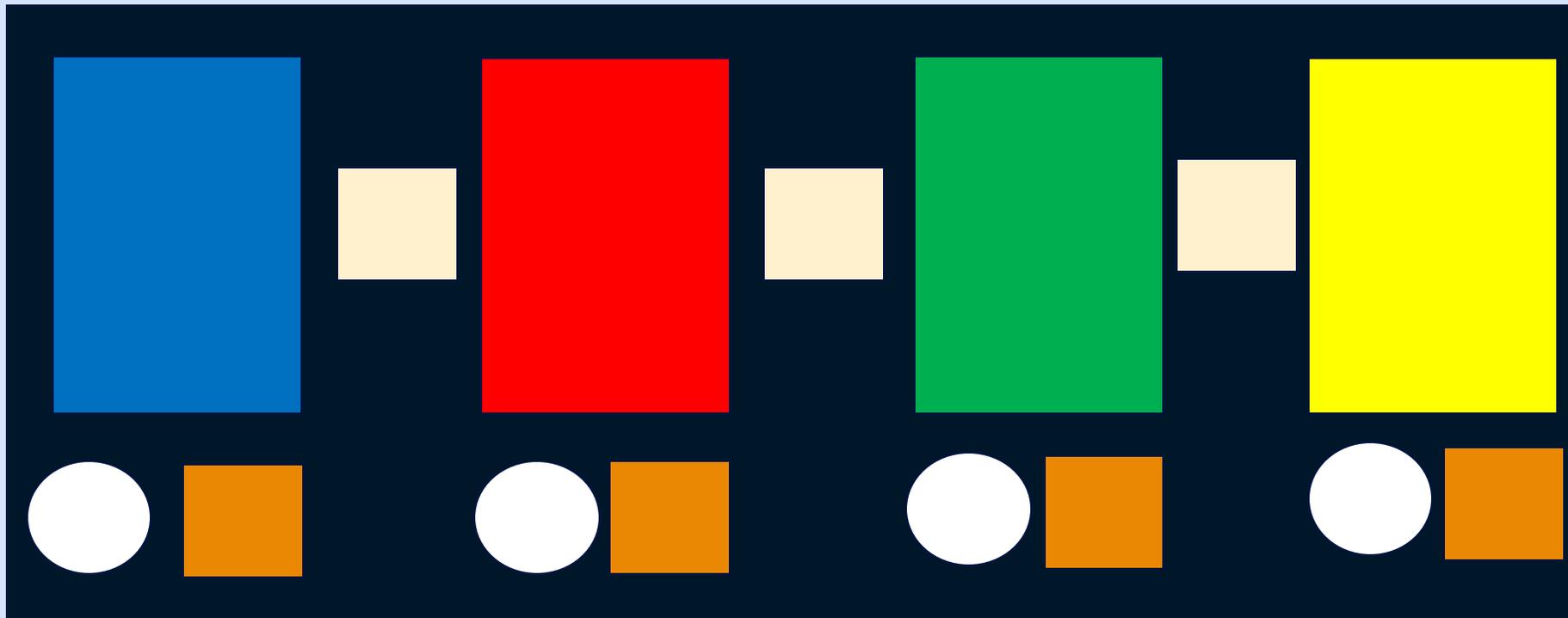
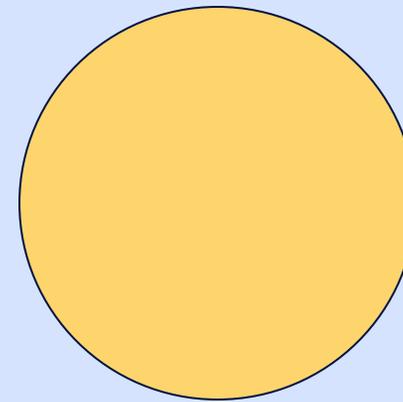
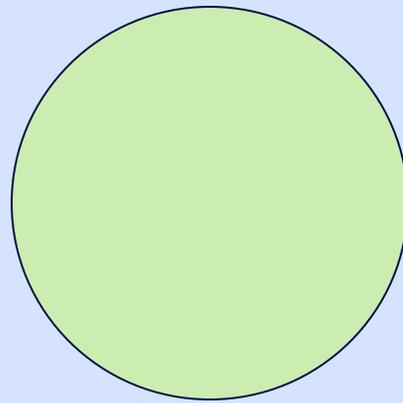


'External' Memory Devices

- White boards and dry wipe pens.
- Note books.
- Visual task timelines.
- A work station approach.
- Teach the meaningful use of note taking and jottings.
- A Talking Tin/Pen or similar.
- Rehearsal.

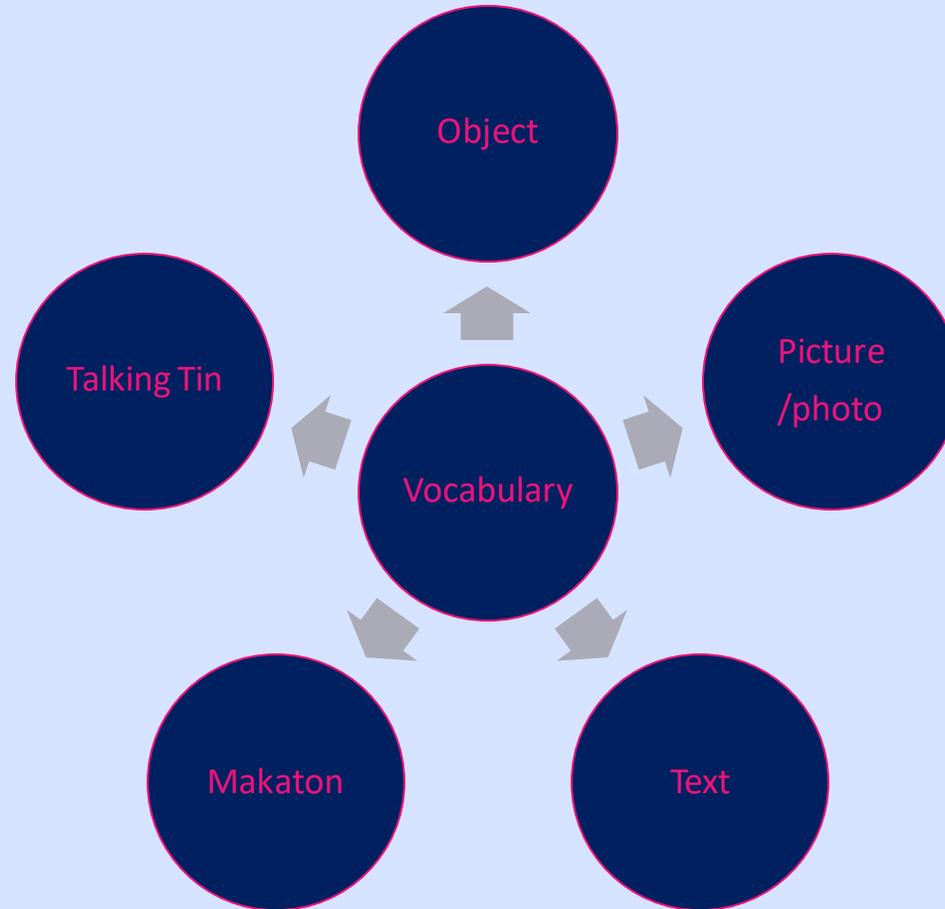


Task Slicer





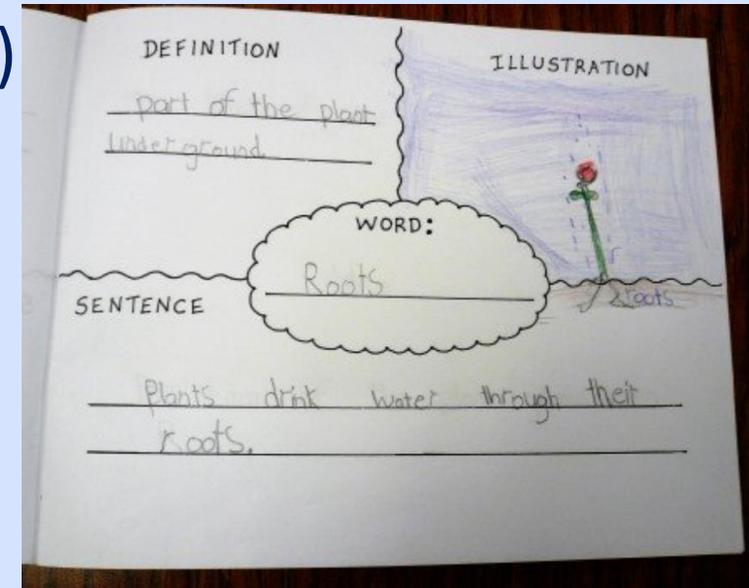
Supporting Vocabulary





Supporting Vocabulary: Pre teaching.

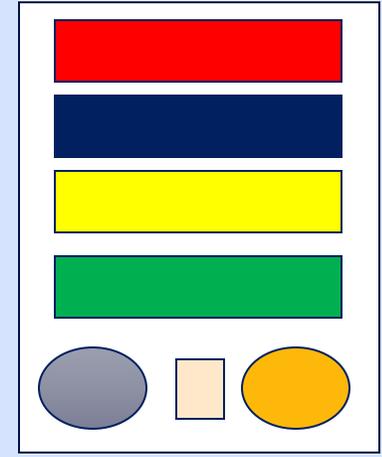
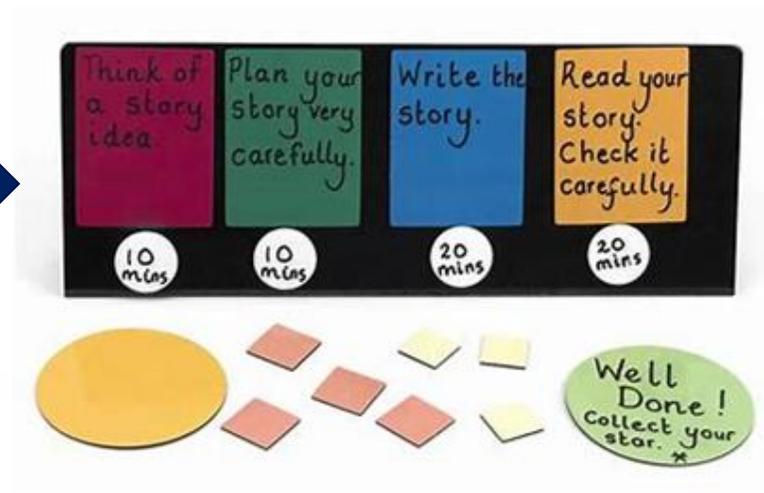
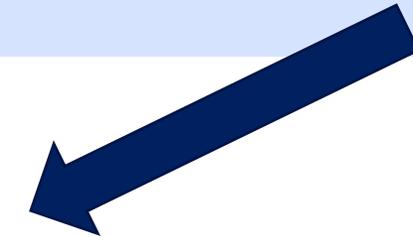
1. Select essential vocabulary.
2. Pre-test.
3. Prepare a presentation of each word (text, picture, sentence).
4. Explicitly teach each word (dialogue, word study, connect word to text, expand word meaning).
5. Provide many opportunities for practice (link task)
6. Vocabulary maps
7. Post-test
8. Word walls- classroom resource





Organisation, Maintenance and Completion Skills.

Workstation





The Enable Table

Why?

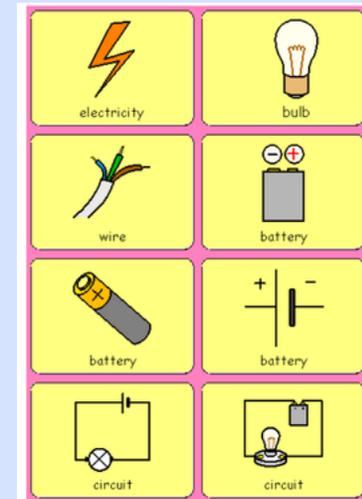
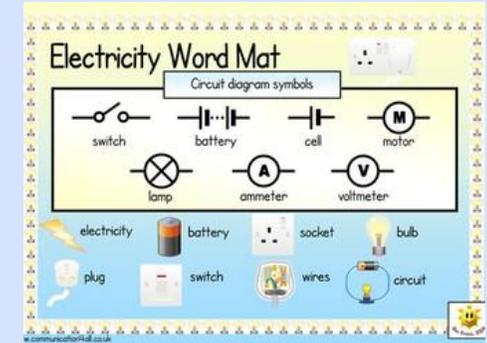
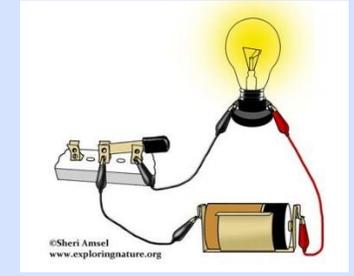
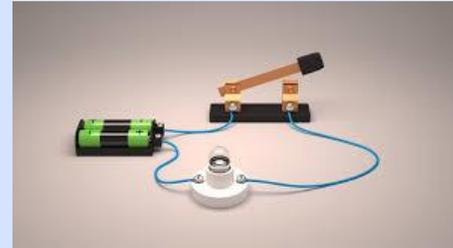
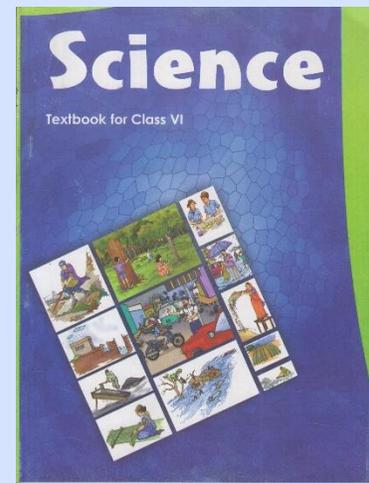
- To 'own' being 'stuck';
- Promotes conscious learning decisions;
- Promotes independent problem solving;
- Promotes independence;
- Promotes resilience;
- Can be topic, lesson or subject specific.

Can contain:

- Differentiated resources to support learning;
- General learning to learn resources;
- Stationery.



The Enable Table



Investigation Sheet

Name: _____

My hypothesis: _____

My prediction: _____

The possible variables in this experiments are: _____

<p>My Independent Variable is:</p> <p>My Dependent Variable is:</p> <p>My Control Variables are:</p>	<p>My Independent Variables is:</p> <p>() Categorical () Continuous</p> <p>My Dependent Variable is:</p> <p>() Categorical () Continuous</p> <p>So I will plot a _____ graph</p> <p>I must monitor all control variables to make sure they stay the same. What would happen if you changed variable 3/4/5?</p>
------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Variable ?	Measuring Equipment	Resolution of my equipment	Resolution -Max decimal places
1.			
2.			
3.			
4.			

My predicted sketch Graph

I may need to repeat my experiments : _____

This means:

- It will minimise random errors, such as poor measurement techniques, lack of consistency in carrying out my method.
- Be able to calculate a mean, so it is more likely to be close to the true value
- Be able to compare my results and spot anomalous results. If you find anomalies you can: Repeat readings or Discard the data

Not a person to 'fix'.



A Voice Recording Device

- To 'hold' a sentence,
- For instructions,
- Record a personal checklist for task completion,
- To support recall of 'choosing' based tasks,
- Record homework tasks - messages,
- Record the 'big' picture.



Toolkit: Concentration.

Background



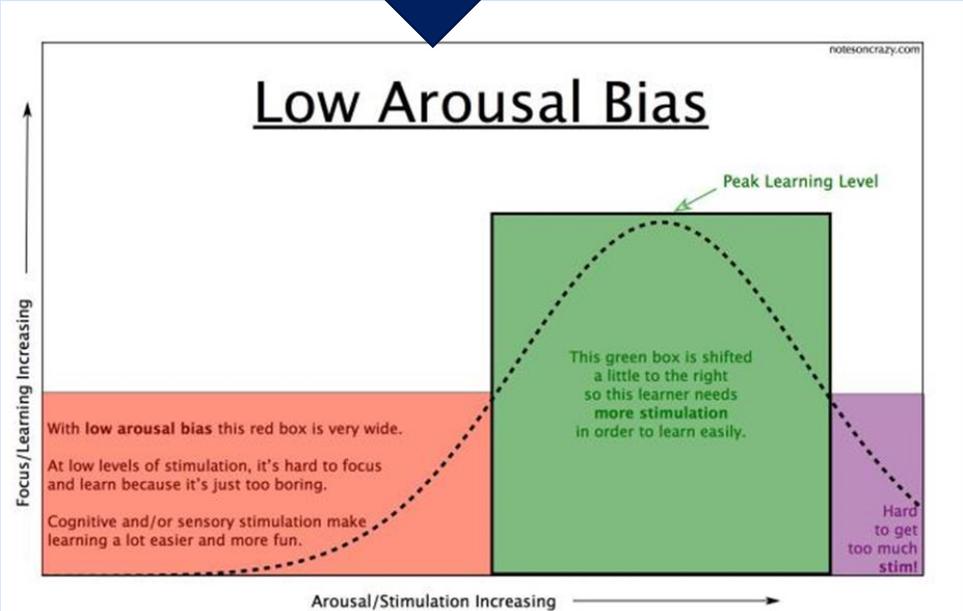
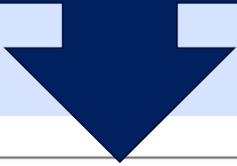
Review strategies



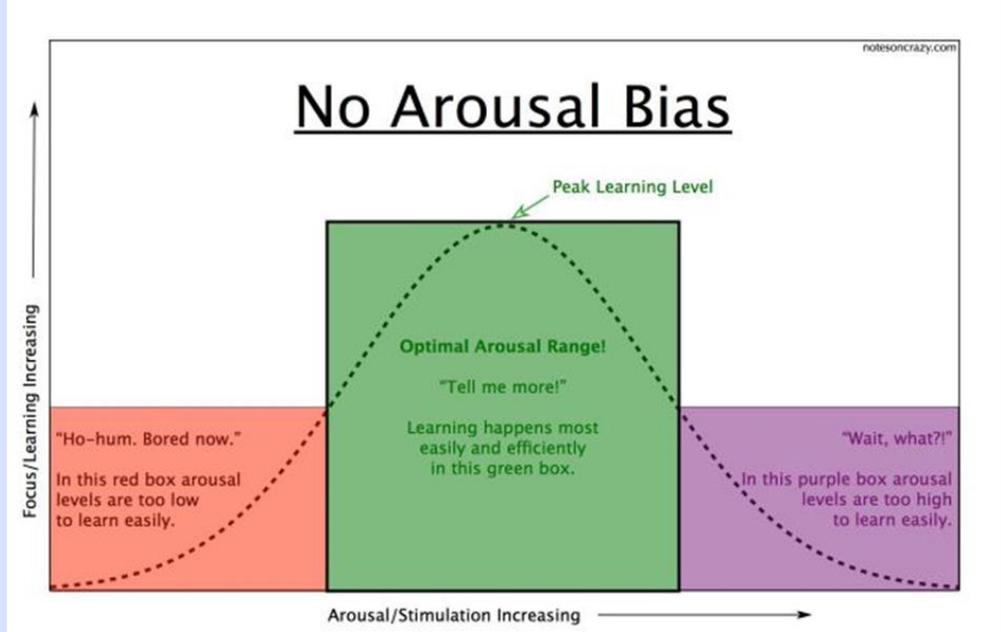
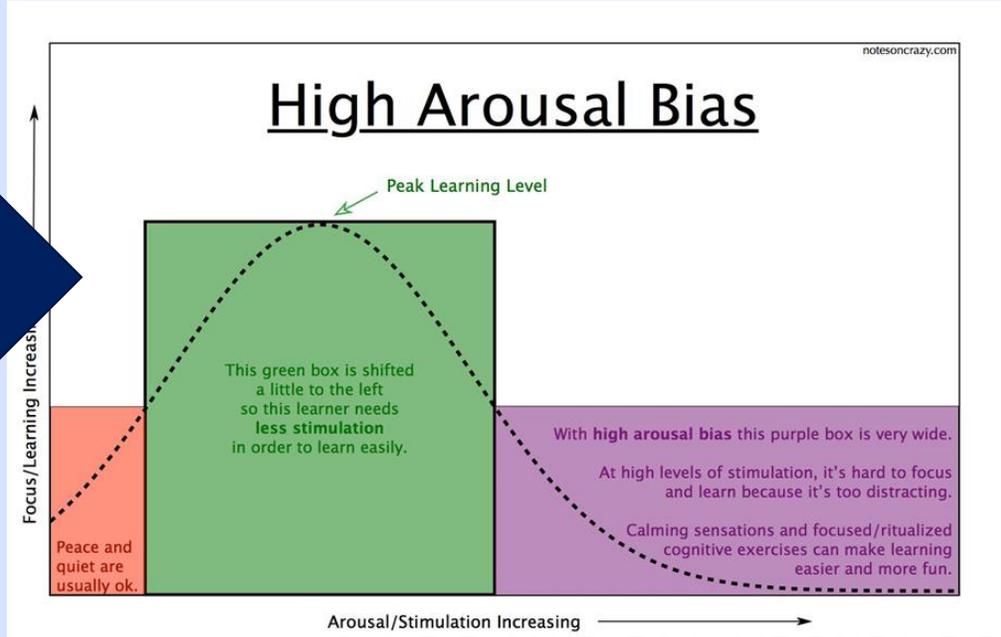
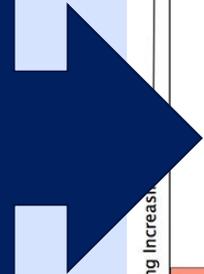


Arousal Levels for Learning

Have I seen this before?
GIVE ME MORE!
Sensory or cognitive input required



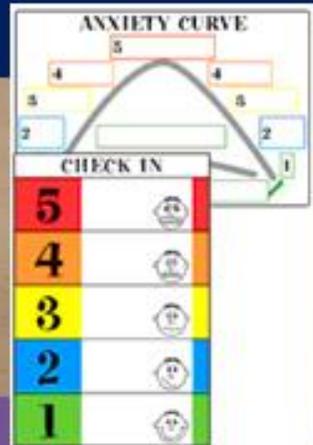
This is new and a little scary!
GIVE ME LESS!
Reduce cognitive or sensory load





Self Regulation

Everyone has feelings!



A "5" Could Make Me Lose Control!

An activity-based method for providing self-regulation support to highly sensitive children

APC

Stressors

1	2	3	4	5
---	---	---	---	---

1 I can handle this.

2

3 This could make me really nervous.

4 This can make me MAD!!

5 This can make me lose control!



Self Regulation

CoordiKids
Childhood Development Programs

HOW DO YOU FEEL?
Find the child that looks like you

coordikids.com
ALL RIGHTS RESERVED

<p>Sleepy / Tired Sick / No energy</p>	<p>Bored / Sad Cannot focus on work Wants to get out</p>	<p>Happy / Calm Ready to learn Reay for fun / Focused</p>	<p>Worried / Fed-up Frustrated / Silly Too excited / Fidgeting</p>	<p>Angry / Yelling Fighting / Screaming Crying / Very scared</p>
TRIAL SOME STRATEGIES TO BE LIKE HAPPY CODI Write down below what works for you				
<p>10 x star jumps Go for a walk Log rolling on the carpet CoordiClass</p>	<p>Listen to music Stretch arms Use a fidget toy CoordiClass</p>	<p>Play with others Learn Work Smile and laugh</p>	<p>Take a break / ask for help Deep breathing Push-ups CoordiClass</p>	<p>Walk away from others Go to your safe place Hit/kick a ball or big cushion Go for a run/walk</p>
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Self Regulation

For older pupils:

- Co-regulation is key
- **Teach self-regulation** skills through modeling, providing opportunities to practice skills, monitoring and reinforcing adolescents' progress on skill development and goals, and coaching them on how, why, and when to use their skills in increasingly complex situations (e.g., conflicts between work and school demands, living independently).
- **Provide a warm, responsive relationship** where youth feel safe to learn and make mistakes as they increasingly navigate bigger decisions and more challenging situations on their own (e.g., making decisions regarding risk behaviors in the context of peer pressure, raising a child with or without a partner). Caregiving relationships and mentoring can also serve to motivate youth to learn, practice, and implement self-regulation skills.
- **Structure the environment** to make self-regulation manageable, providing a buffer against environmental stressors. This involves limiting opportunities for risk-taking behaviors, providing positive discipline and natural consequences for poor decisions, and reducing the emotional intensity of conflict situations (e.g., giving time and space to calm down as needed).

SOLO TAXONOMY EXPLAINED

PRE STRUCTURAL...



PRE STRUCTURAL... CAN YOU HELP ME START?

I DON'T GET IT!

I DON'T KNOW ANYTHING ABOUT THIS



UNI STRUCTURAL...



UNI STRUCTURAL... I CAN DEFINE THE KEY WORDS

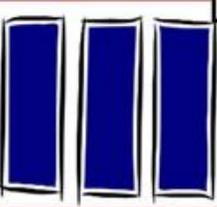
I CAN DESCRIBE MY IDEA

I CAN FOLLOW A ONE STEP PROCEDURE

I'VE GOT ONE IDEA ABOUT THIS.



MULTI STRUCTURAL...



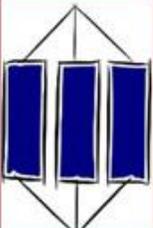
MULTI STRUCTURAL... LOOK AT ME! I'VE GOT LOTS OF IDEAS

I CAN LIST AND DESCRIBE MY IDEAS

BUT I DON'T KNOW HOW TO LINK THEM TOGETHER



RELATIONAL...



RELATIONAL... I CAN EXPLAIN WHY THINGS HAPPEN AND APPLY MY IDEAS

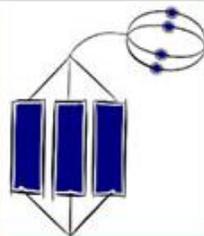
I CAN CLASSIFY AND SEQUENCE

I CAN LINK MY IDEAS TOGETHER

I CAN COMPARE AND CONTRAST DIFFERENT THINGS



EXTENDED ABSTRACT...



EXTENDED ABSTRACT... I CAN MAKE PREDICTIONS AND WRITE HYPOTHESES

I CAN EVALUATE AND GENERALISE USING MY IDEAS

I CAN APPLY MY IDEAS TO NEW CONTEXTS AND SUBJECTS

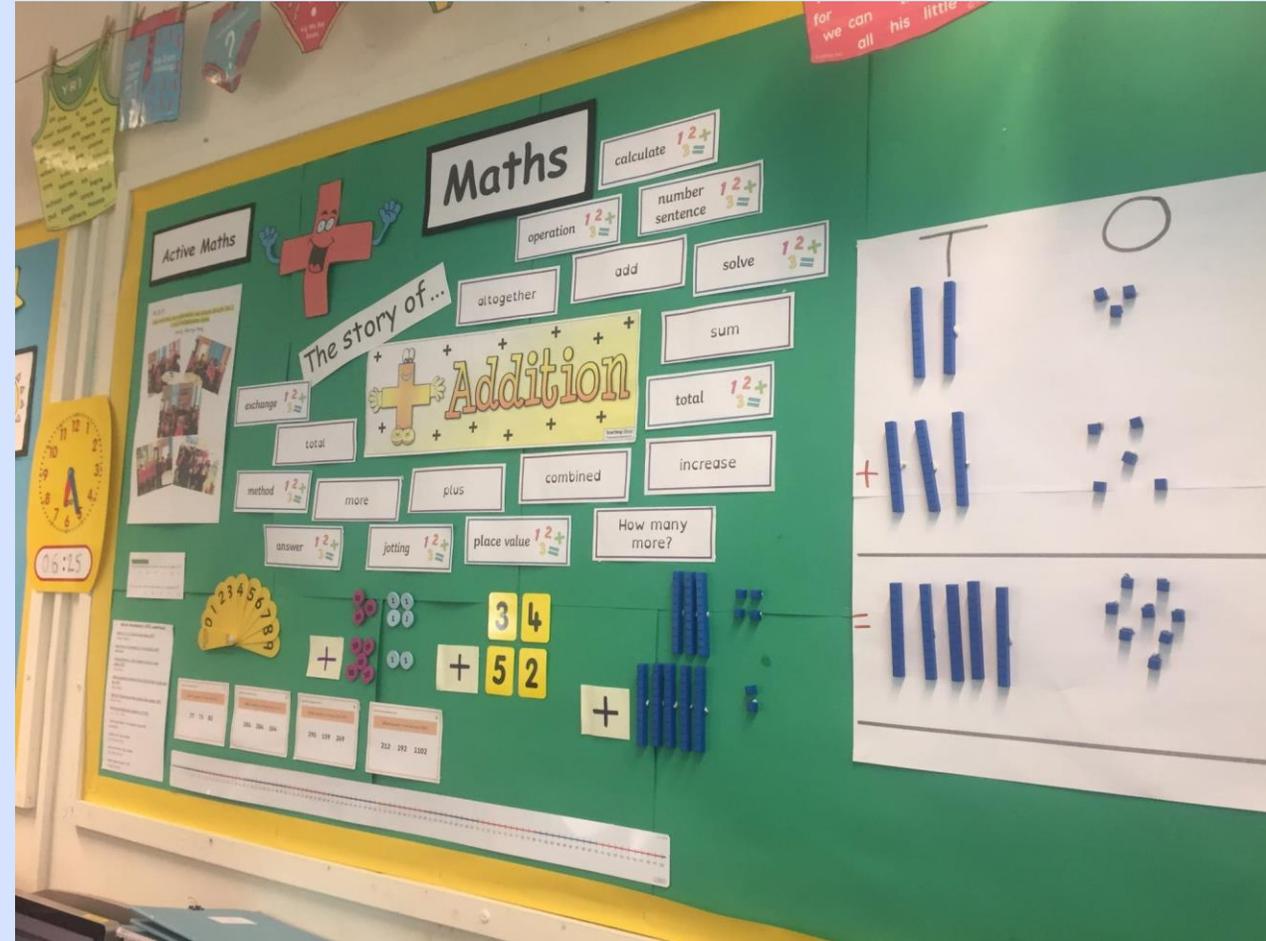
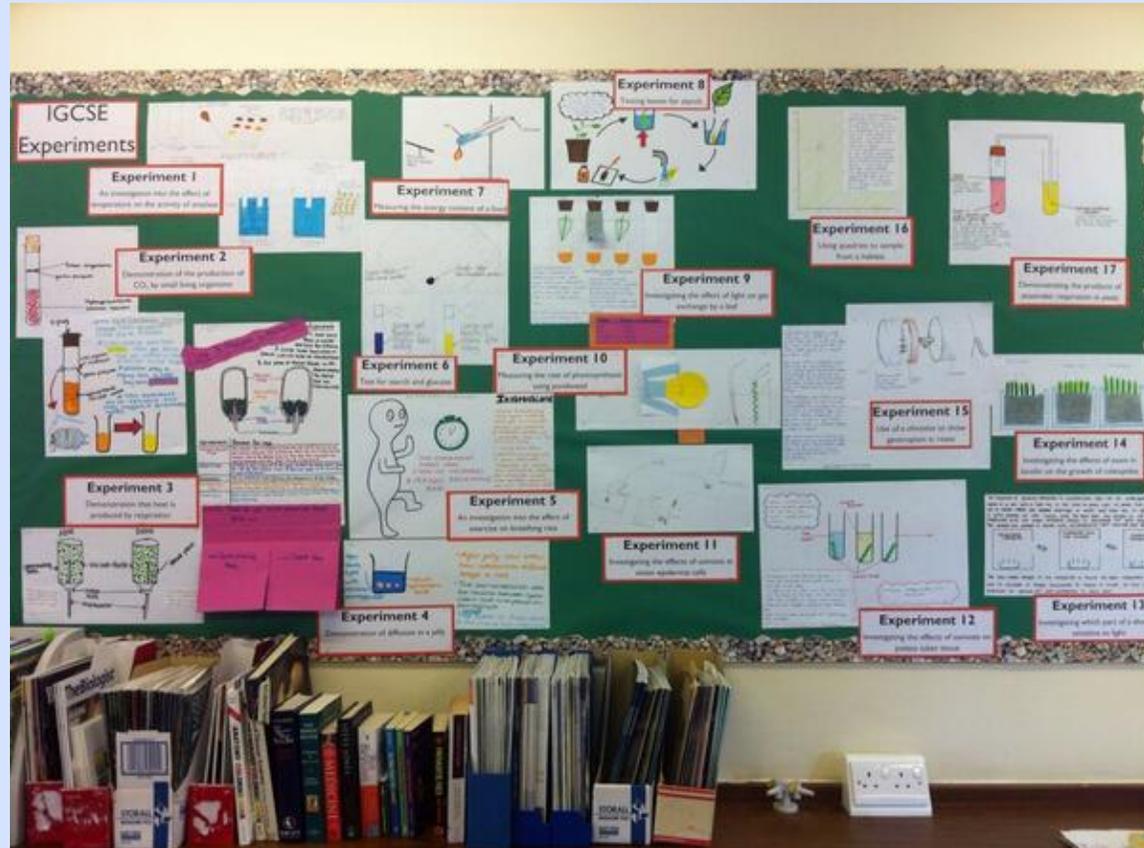
I CAN IMAGINE AND CREATE NEW THINGS USING MY IDEAS



Transferring and Generalising Learning.



Transferring and Generalising Learning.





Toolkit: Time Management

Background



Review strategies





Toolkit: Time Management.

Why is it important to support pupils in this area?

Things to consider:

- Select the right elements of the Task Slicer to support.
- Observations could hold the key- pupil and teacher.
- Implement commentary as a strategy.



Toolkit: Self Assessment

Background



Review strategies



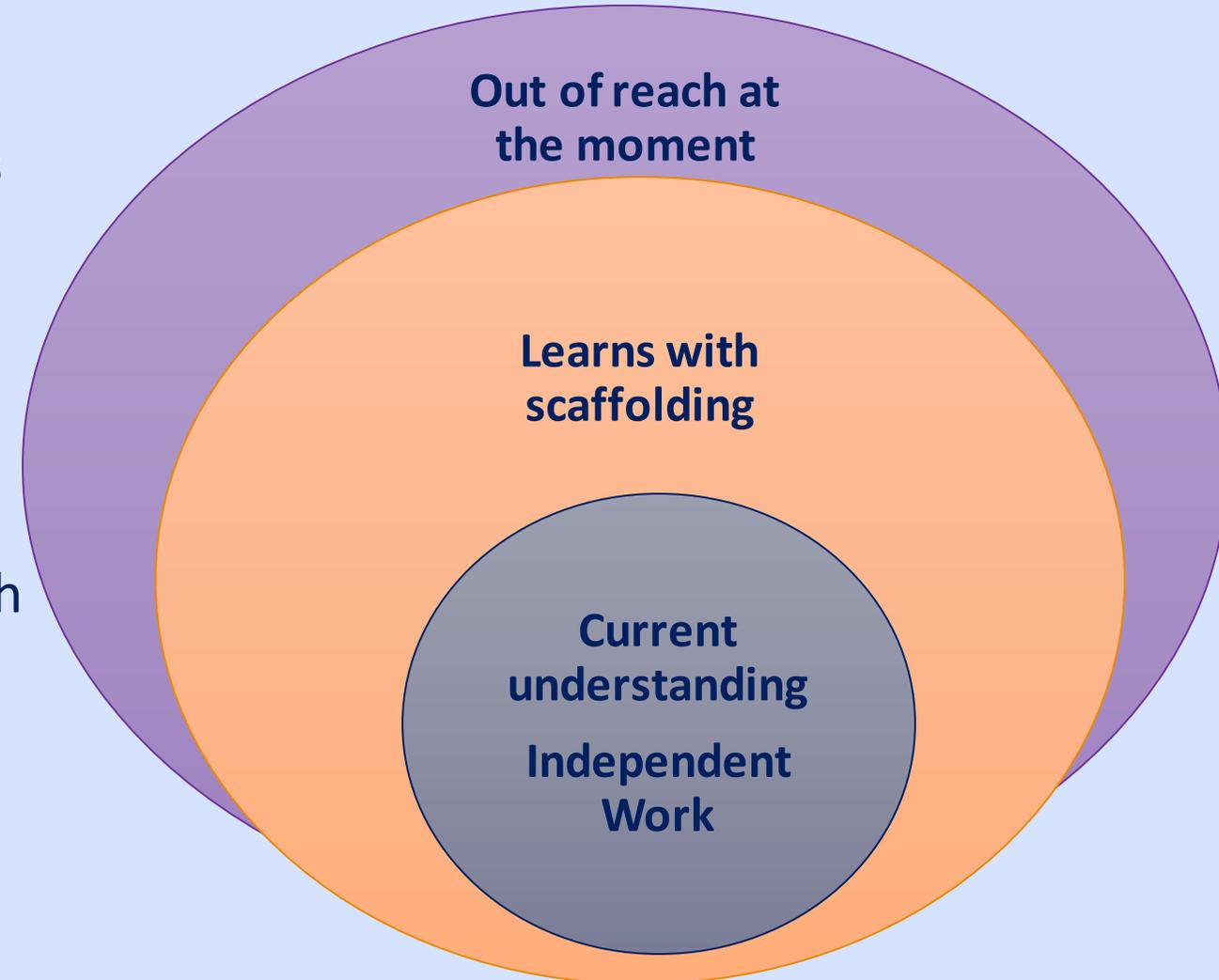


Toolkit: Self Assessment.

The zone of proximal development (ZPD) has been defined as:

“The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem-solving under adult guidance, or in collaboration with more capable peers.”

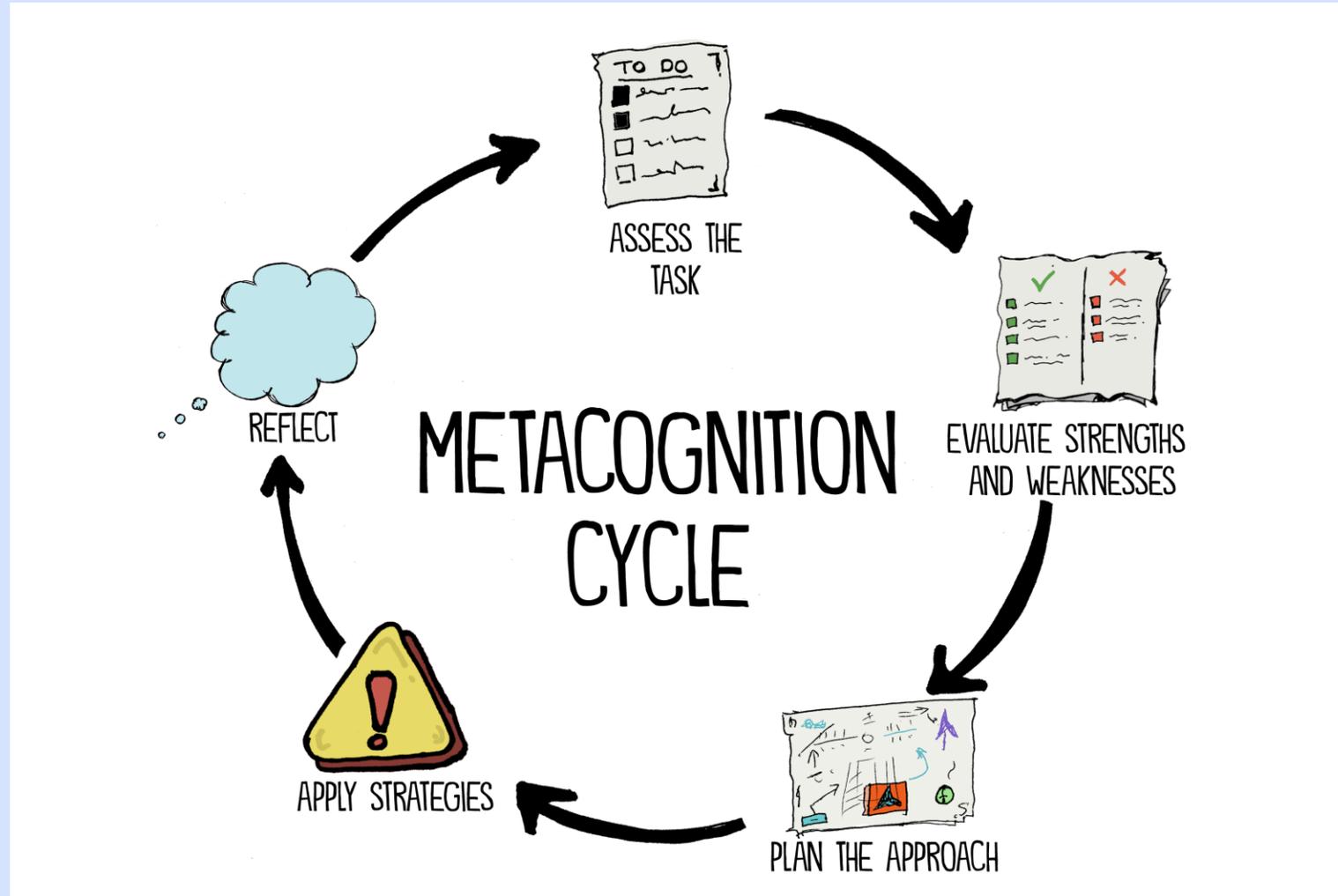
(Vygotsky, 1978, p. 86).





Self Assessment

- Increase the pupils awareness of where they are in the learning process and what tools they have to help them= METACOGNITION.
- SEMH support.
- Remember- one size does not fit all!





Tiered Support

Supporting towards confident independence:

- I'll do the first one;
- We'll do the second one;
- You do the third one and I will watch;
- On your own – productivity target (I'm going over here and will come back and check).



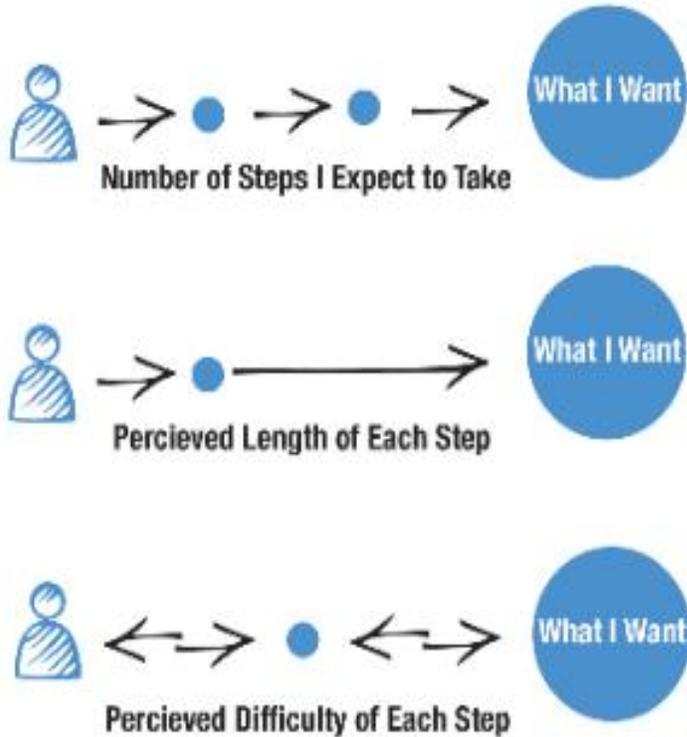
Tiered Support: Writing your name

1. You do it, I'll watch and give feedback.
2. I'll give you a prompt/cue then you'll do it and give feedback.
3. I will model and think aloud. You watch and copy and then I'll feedback.
4. I will model and think aloud. You'll then trace on the top and I'll offer feedback.
5. I will model and then think aloud. You'll trace on the top with hand-over-hand support. I'll give feedback.

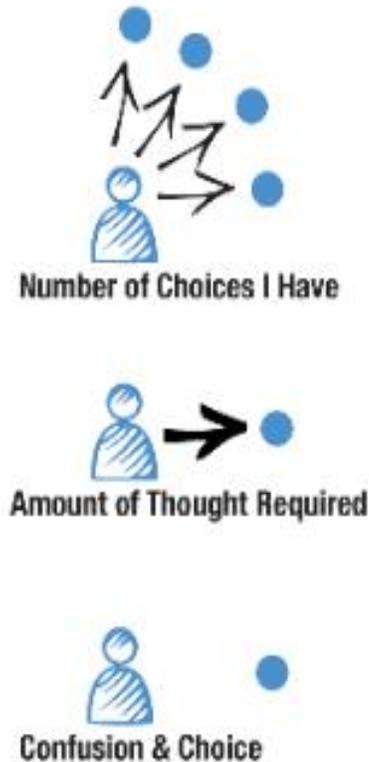


Toolkit: Information Processing .

Cognitive Barriers



& Cognitive Load



CAUSES



COGNITIVE LOAD



CONSEQUENCES



https://www.bing.com/images/search?view=detailv2&id=9A2CF0B80A2E1E3A4E0A67044CDC014AB76A0A9C&thid=OIP.7jnAPeXQNFqE8Ot_sD89wgHaEL&mediaurl=http%3A%2F%2Ffuxmag.com%2Fsites%2Fdefault%2Ffiles%2Fuploads%2Fjulien-cognition%2FCognitive_Full1.jpg&exph=340&expw=602&q=cognitive+load&selectedindex=20&ajaxhist=0&vt=0&ccid=7jnAPeXQ&simid=608039619328607473&sim=11



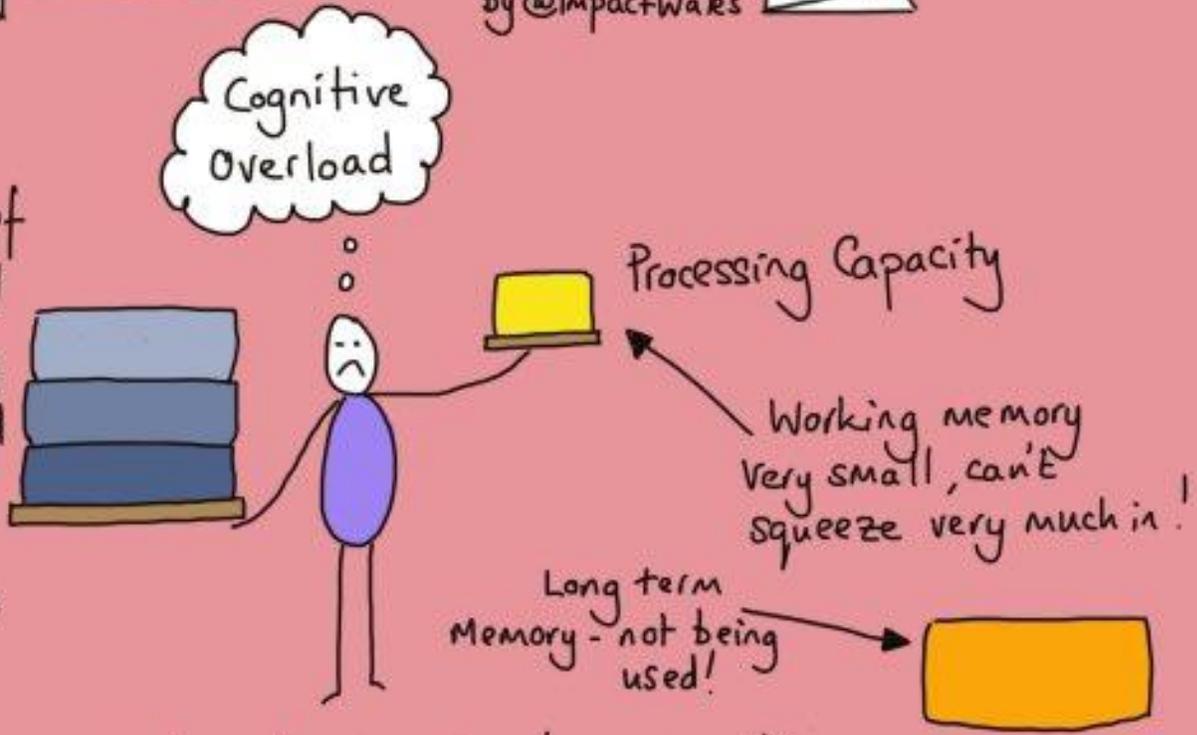
COGNITIVE LOAD THEORY

a short guide for teachers

by @ImpactWales

Cognitive Load

- * Intrinsic - the difficulty of the material, influenced by prior knowledge.
- * Extraneous - load generated by way material is presented
- * Germane - the work put into creating a permanent store of knowledge or schema



Cognitive overload occurs when cognitive load outweighs processing capacity.

Reduce Cognitive Load for learners →

① Use deliberate practice to shift some of the knowledge to long term memory & free up space in working memory.

② Present new material effectively to reduce load, e.g. dual coding - use text & pictures to illustrate.

<https://pbs.twimg.com/media/DZYyAgPXkAANdKt.jpg>



Cognitive Load

Intrinsic cognitive load is reduced as some of the knowledge has been shifted to long term memory

Extraneous is reduced as method of presentation is improved eg. through dual coding

Germane stays the same



Processing Capacity

Short term memory is small, but has less to process.

Long term memory used to access some of the knowledge

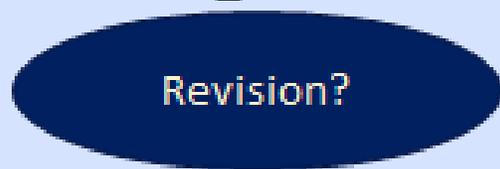
Cognitive balance is when there is sufficient processing capacity available for the required load.

For support to make research part of your school improvement process enquiries@impact.wales

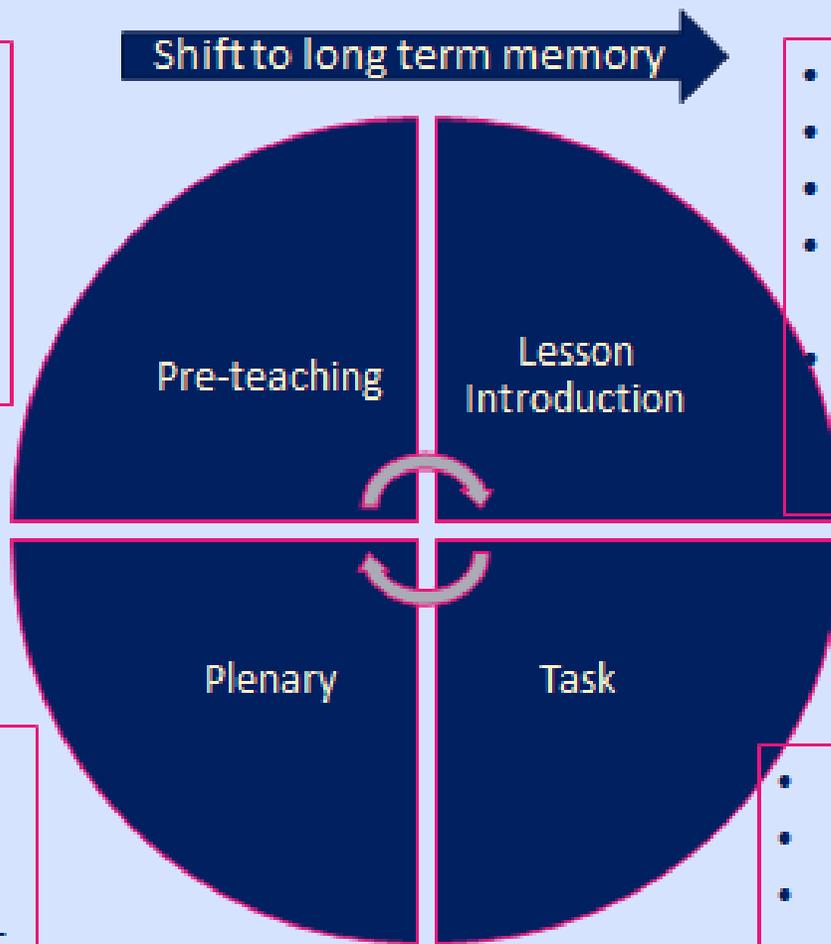


Supporting Cognitive Load

- Provide learning outcomes in advance.
- Pre-teach key concepts/vocabulary/strategies.
- Pre-expose to new resources.
- Make a 'thing' to use in the lesson.



- Consider how you will make the learning 'stick'.
- Review the learning.
- Preview what is to come – make a link.
- How will you support retrieval?



- Make links to previous learning.
- Increase visual cues/supports.
- Remove any extra details.
- Provide additional processing time.
- Limit listening time.
- 'Do'.
- Signpost the key parts to recall.

- Limit processing demands.
- Nothing new – use what you have.
- Aim for at least fluency of a skills.
- Avoid distractions and extras.



QFT support for Cognitive Load

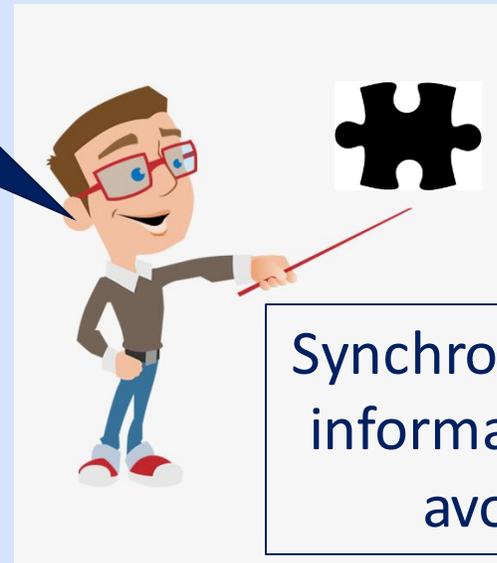
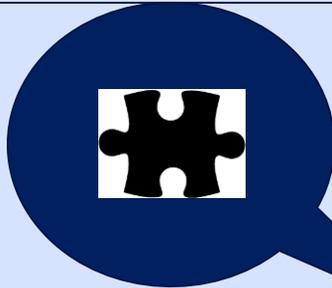
What *specifically* do you want them to learn?

Declutter – get rid of anything extra and repetitive.

Reduce transient information – record 'disappearing' information.



Add modality – simple complimentary visuals.



Synchronise – present the relevant information at the same time but avoid splitting attention.



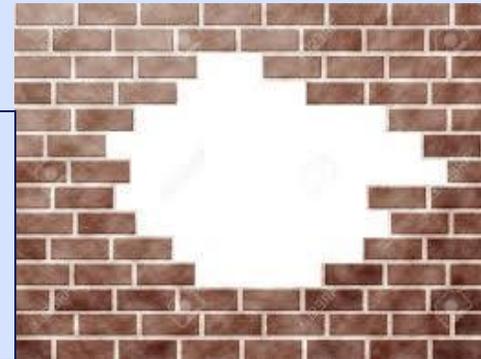
$$\frac{7}{15} + \frac{1}{5}$$
$$\frac{7}{15} + \frac{1 \times 3}{5 \times 3} = \frac{7}{15} + \frac{3}{15} = \frac{10}{15}$$
$$\frac{10}{15} = \frac{10 \div 5}{15 \div 5} = \frac{2}{3}$$

- Focus on the steps involved not the end goal.
- Helps to build schemas of knowledge.
- Problem pairs – one worked example and one without the example.

The Worked Example Effect

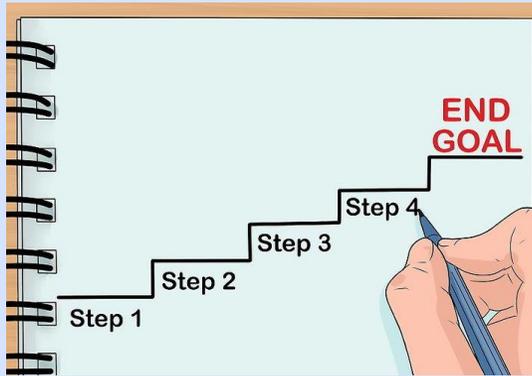
The Completion Problem Effect

A partial worked example where the learner has to complete some key solution steps.

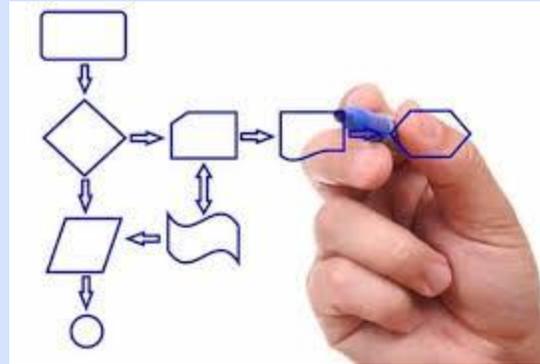




Plan the Learning Path



Plan the steps –
what would you do
and in what order?



Break it down
further – mini
goals.



Demonstrate and
make your thinking
explicit – which
schema.



Review Learning

Check understanding.

Worked Example	Reflection	Now Try						
$\begin{array}{r} 653 \\ - 228 \\ \hline \end{array}$		$\begin{array}{r} 452 \\ - \text{XXXXXXXX} \\ \hline 229 \end{array}$						
<table border="1"><thead><tr><th>h</th><th>t</th><th>o</th></tr></thead><tbody><tr><td>600 50 3</td><td>50 20 2</td><td>3 0 0</td></tr></tbody></table>	h	t	o	600 50 3	50 20 2	3 0 0	Why did I put 5 tens in the tens column?	
h	t	o						
600 50 3	50 20 2	3 0 0						
$\begin{array}{r} 653 \\ - 228 \\ \hline \end{array}$	Why can't I do any calculating yet?							
<table border="1"><thead><tr><th>h</th><th>t</th><th>o</th></tr></thead><tbody><tr><td>600 50 3</td><td>50 20 2</td><td>3 0 0</td></tr></tbody></table>	h	t	o	600 50 3	50 20 2	3 0 0	Why did I exchange one ten for ten ones?	
h	t	o						
600 50 3	50 20 2	3 0 0						
<table border="1"><thead><tr><th>h</th><th>t</th><th>o</th></tr></thead><tbody><tr><td>600 50 3</td><td>50 20 2</td><td>3 0 0</td></tr></tbody></table>	h	t	o	600 50 3	50 20 2	3 0 0	Why did I move these counters over to the ones column?	
h	t	o						
600 50 3	50 20 2	3 0 0						



Toolkit: Remaining Sections

Review strategies





Toolkit: Letter and Number Recognition





Toolkit: Spelling and HFW

Morphology...

morph + o + log + y

Stem

'study of'

base

<morph>

'form, structure'

Greek *morphe* 'form'

amorphous
metamorphosis
polymorphic
anthropomorphic

connector
vowel

<o> connector
vowel indicates
word of Greek origin

base
<log>

'speech, word,
account, reason'

Greek *logos*

logic psychology
eulogy geology

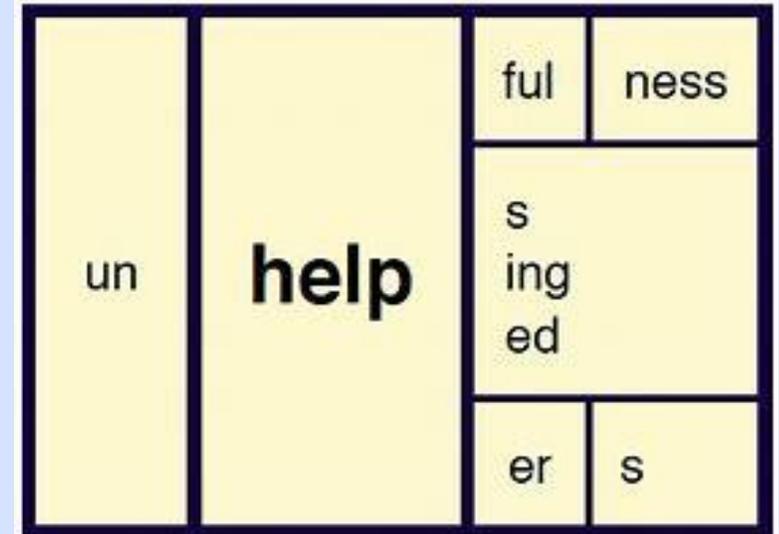
suffix

Morphemes

- smallest units that can carry meaning in a word
- bases, affixes (prefixes or suffixes), connector vowels
- "The letter or letters between plus signs in a word sum."
(working def. with my grade 4 students)

base:

Via Latin *basis*
'base,
pedestal,' from
Greek





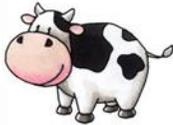
Toolkit: Reading Accuracy, Reading Rate and Comprehension

- Presentation of information is key.
- Teach skills explicitly.
- Coloured overlay- visual stress assessment.
- Reduce amount of text and increase the level of questioning.



Readability

Level	How much?
Frustration	Under 90% accuracy
Instructional	90 – 95 % accuracy
Easy	96 % + accuracy

Once upon a time there lived a <u>boy called Jack</u> . He lived with his mum. They were <u>very poor</u> .	
One day Jack's mum asked him to <u>sell their cow at the market</u> .	
On the way Jack swapped the cow for <u>five magic beans</u> .	

1. Italy is a country that is situated in the continent of Europe.

2. The capital city of Italy is Rome.

3. Italy has borders along the alps with: Austria, France, Switzerland and Slovenia.

4. Italians use the Euro as their currency.



Sparkly Folder: sight word reading

Word list
Reward chart
Mind map
Cue cards

1

2

3

4

5

I can read...
I can spell...
I can explain...



Toolkit: Learning and Application of Number Fact

03

24 → 864

- 72

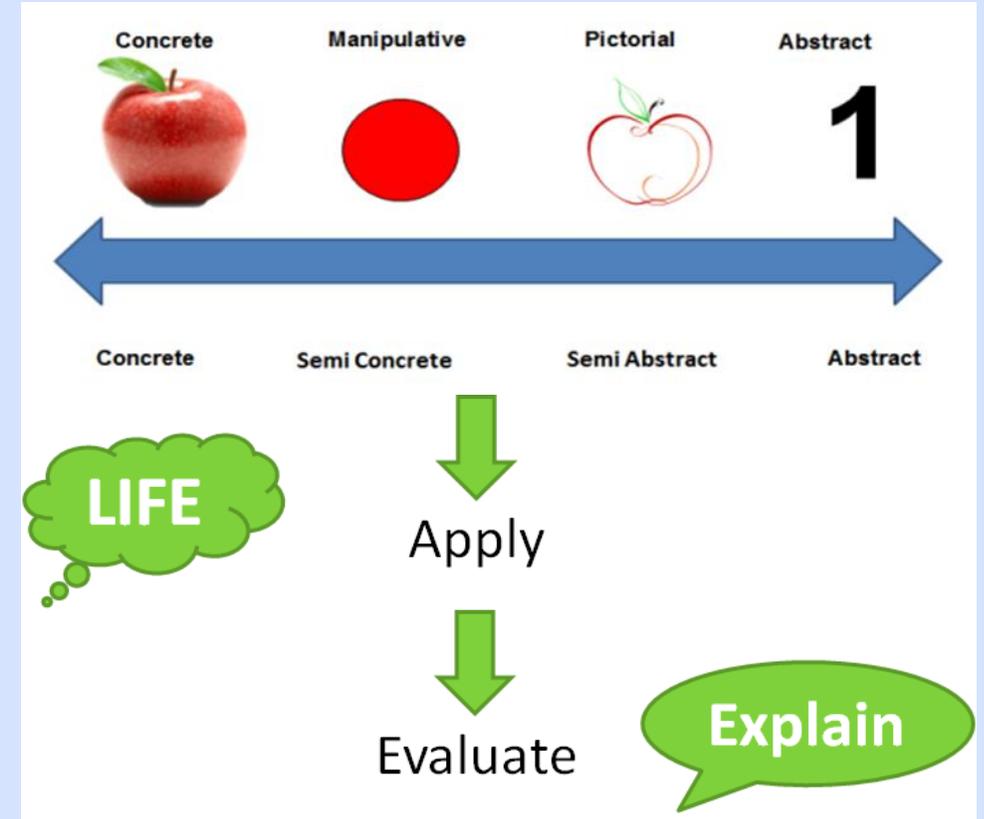
14

Put up your 3

Takeaway 72 from 86 to get remainder

Put the 72 under the 86

$24 \times 3 = 72$





Toolkit: Ideas for writing

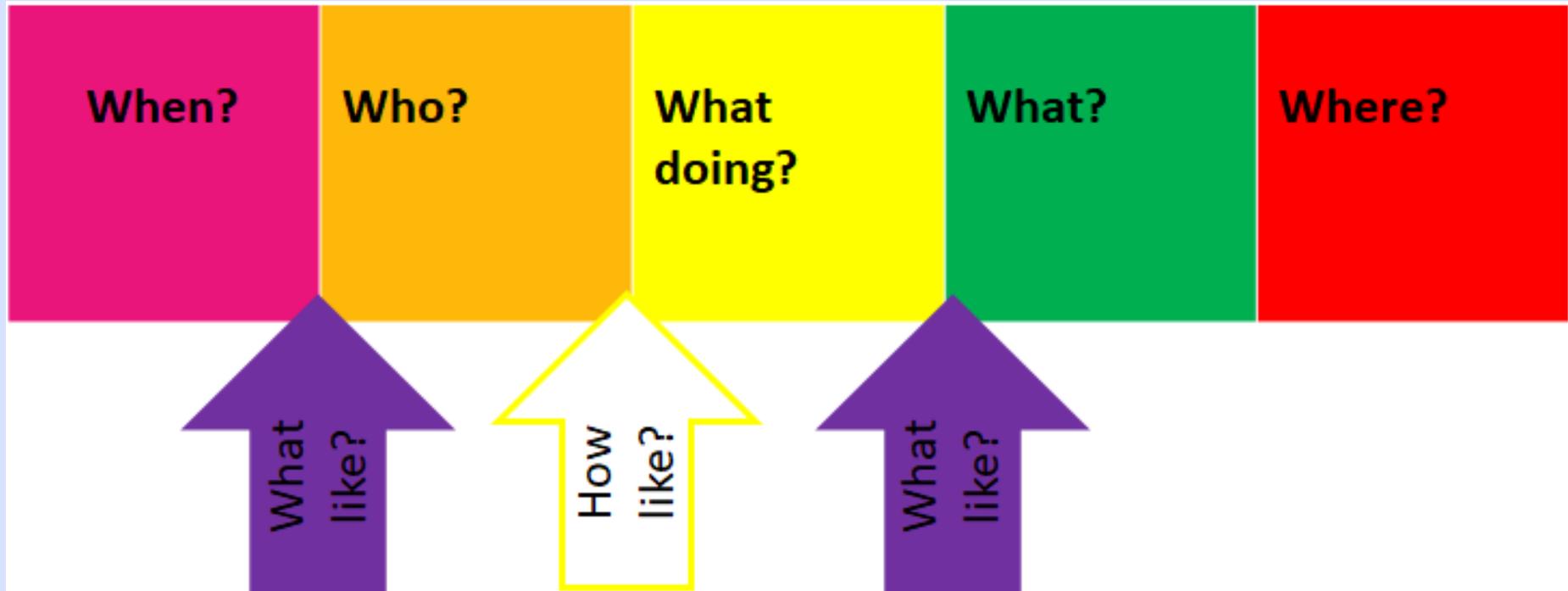
- Sensory links- don't underestimate





Toolkit: Ideas for writing

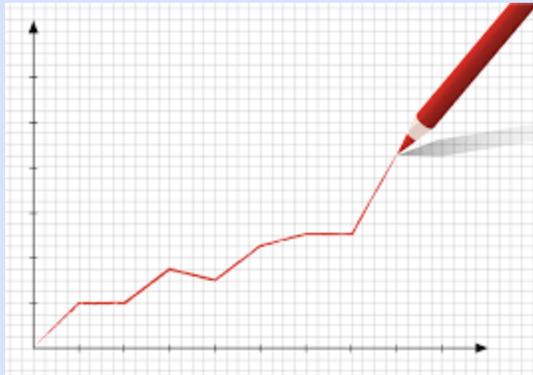
- Colourful Semantics





Offer Choices

- Presentation:



	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Reading							
Watching TV							
Exercising							



Taught as a skill first!



Offer Choices

Writing Motivation:

Today we are writing a letter of persuasion. Choose from:

- Batman is a much better superhero than Spiderman.
- We should be allowed to play football everyday instead of doing maths.
- Princesses are pointless.



Offer Choices

Where to work:

- Clipboards – more mobile.
- Flexible seating arrangements.
- Work standing up.
- A low arousal space.
- Avoid destination activities where possible.



Using the Toolkit

Issue	Initiative	Impact



Questions?

Remember NIAT website!

