Research Schools Network

Title: *Evidence Informed Curriculum Leadership*
Date: *Tuesday 13th October*
Time: *3.30pm-4.00pm*
Led by: *Ben Crockett*

researchschool.org.uk

Education Endowment Foundation

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ASPIRATION | EXCELLENCE | TRANSFORMATION

Working in a research school

Sources of information:

- INSET
- Curriculum Leaders meetings
- Journal Club
- Leadership forum
- Weekly Teaching and Learning Bulletin

- Effective questioning
- The micro rules of reading
- The teenage brain
- Memory Training
- Metacognition
- Cornell note taking
- Dual coding
- Retrieval Practice
- Cognitive load theory
- Effective PowerPoints
- Formative assessment
- Closing the vocabulary gap
- Making effective use of multiple choice questions
- An evidence informed approach to mentoring
- Moral leadership
- Psychological Interventions
- The testing effect

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Refining the focus

Curriculum, teaching and assessment policy

Curriculum area audit

Subject	Geography	Curriculum Leader	BCr	Line manager	CWo

Curriculum

Aspect	Embedded	Developing	Weak	Actions
1.1 There is a clear curriculum map and scheme of work that explicitly states the key knowledge to be taught in each year group.		Y		This was recently reviewed during SPDS based on learning from completion of 2 years of new GCSE and changes discussed. Members of staff have been allocated with planning of new sections to be reviewed by BCr in June/July for teaching by Sept 2018. BCr to create a curriculum map using same structure as currently used at KS4.
1.2 The curriculum is reviewed annually to ensure it is taught in a coherent sequence that allows for the incremental development of knowledge.	Y			Constant review and changes are made to KS3&4 curriculum in response to changes at KS4 and nationally. SAt introduced 'required reading' for each KS3 unit to ensure ongoing enhancement of staff subject knowledge, and subsequent impact on pedagogy.
1.3 The curriculum is planned with strategies such as spaced practice and retrieval practice in mind.		Y		Effectively embedded at KS4 with regular low stake quizzing and pause lessons embedded into schemes of work. This is now infiltrating into KS3, but needs solidifying in the long term planning. Introducing GCSE content in second half of summer term for Year 9 will ease time pressures in years 10&11 thus ensuring 'pause' lessons regain prominent positions in learning sequence.

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1.Dual Coding

2. Retrieval Practice – effective use of KO's

3. Metacognition

4. Modelling

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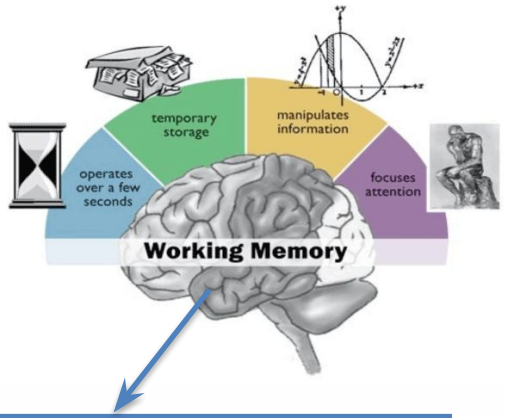
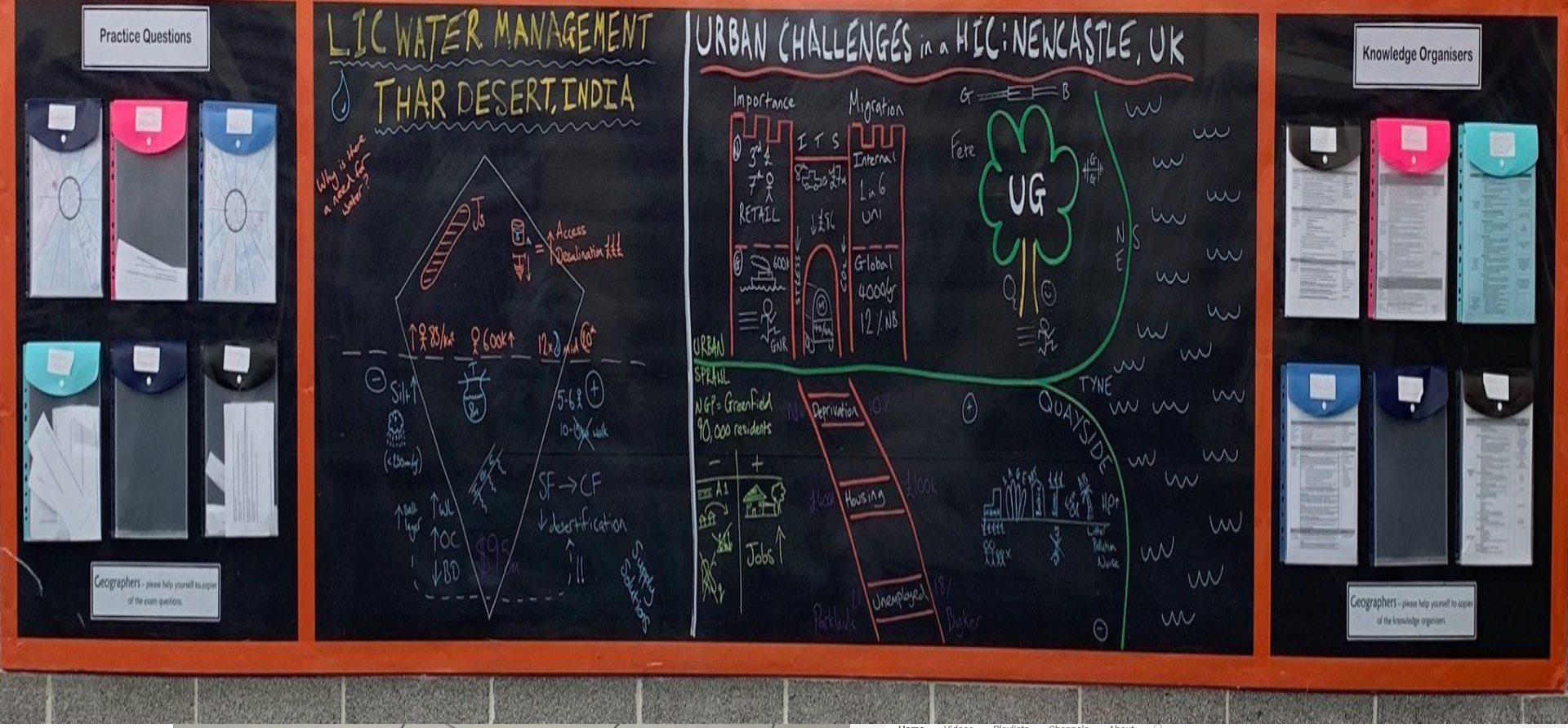
1. Dual Coding

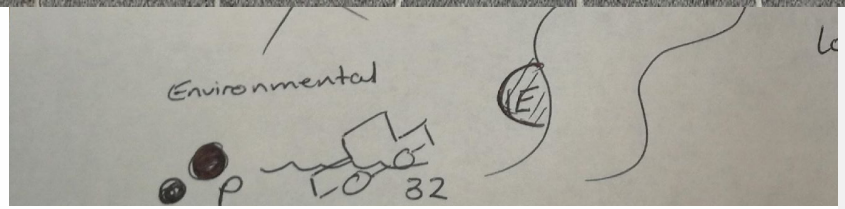
The process of combining verbal materials with visual materials, thus providing you with two channels through which to remember the information



Boscastle 2004 Floods – an example of extreme weather event and flood management

Physical and Human Causes	Impacts	Management (Inc. evaluation of success)
Intense cloud burst – 200mm in 24 hours from a storm cloud 40,000ft Steep slopes Confluence Impermeable surfaces such as tourist car park Deforestation	Social – no loss of life, however 68 homes flooded and significant loss of possessions. Economic - £15 million of repair costs, coupled with falls in house prices, increase in insurance premiums and drop in tourism. Environmental – significant erosion of riparian environments destroying habitats, water pollution caused by 32 cars being washed into harbour	Afforestation in the upper river valley Creation of new gravel car park Braiding of the river channel to reduce river velocity Widening and deepening of the channel by 3m and 0.75m respectively.





Home Videos Playlists Channels About

Amazon Rainforest: Tropical Rainforest Case Study

4,717 views 1 year ago

A video explaining all aspects of the Tropical Rainforest case study for the new GCSE Geography specification. The video examines the location and climate characteristics of the TRF, the vegetation and animal adaptions, the value of the ecosystem, the causes and impacts of deforestation and management strategies.
The video also has potential exam questions for each section.

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2. Retrieval Practice

"The act of bringing information to mind from memory"

- Quizzing and testing at start of lesson (3 questions on a recent topic, 3 questions on the topic before that and 3/4 questions from even further back)
- Case Study diagrams – linking dual coding and retrieval practice
  * both require a strong degree of elaborative questioning and instant feedback

The battle with Knowledge Organisers:

We could see the merits of them and how they could be used for retrieval practice, however we kept asking ourselves how could we ensure that all students especially our focus students (M starting point boys) were actually using them efficiently for "good retrieval practice."

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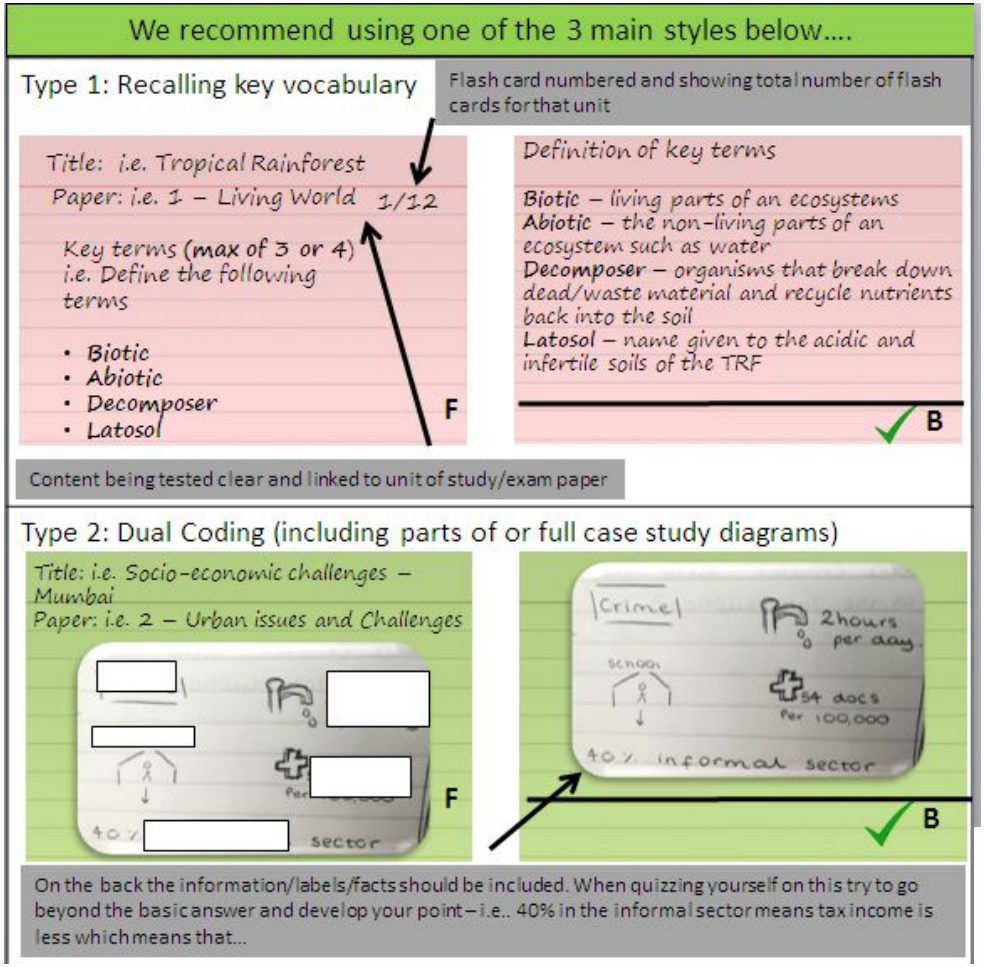
2. Using Knowledge organisers to support retrieval practice and testing.

House rules for using knowledge organisers:

1. Practice the exam questions in the left hand column
2. Retrieve 3 pieces of key information into the bottom box – do this at least one day after revising the KO.
3. Link at the bottom takes you to a MCQ quiz – use this to see what you remember without looking back at the KO.
4. Use the KO to create flash cards
5. Use the blank templates to fill in from memory.



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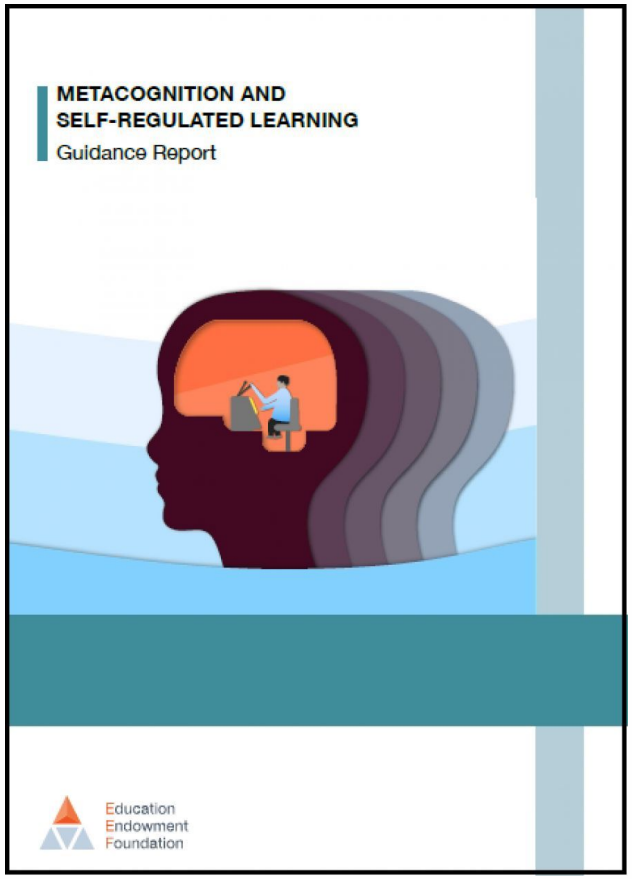
3. Metacognition

Concerns:

- Strong subject knowledge not being reflected in exam answers
- Gap between subject experts (teachers) and novices (students) despite strong knowledge
- Ability to apply knowledge
- Reluctance or inability to monitor and evaluate learning - reliance on teachers to do this for them
- **Poor metacognition impacts on academic outcome**



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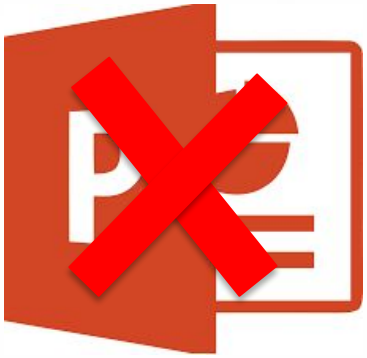
"Whilst subject experts inherently embed metacognitive skills in their thinking (Chauhan and Singh, 2014); whether our students do likewise is questionable." (Crockett, 2018)

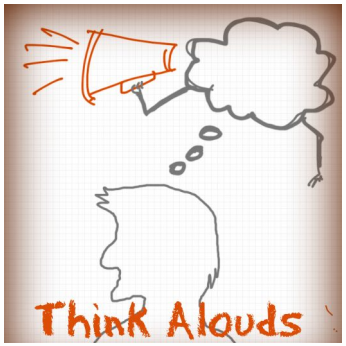


1. Live Model:

- **Consciously model our metacognitive strategies to our students. Providing them with a finished product without making the process of achieving this visible to students has minimal impact.**

2. Think Aloud

- **Ask questions that go beyond the knowledge but ask students to consider why you or them are doing something – i.e. "so why would we use that phrase?", "where would be the next logical step?", "Why is that not an appropriate strategy?"**
- **Encourage them to think like a subject expert – "Why am I doing this way?"**



3. Provide prompt and scaffolds to make metacognition explicit

- **Exam wrappers**
- **Metacognition prompt sheets**
- **Embed reviewing points in written tasks.**

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Metacognition Assessment Review				
Name			Predicted score out of 40:	
On a scale of 1-5 (1 being did no revision, 3 being re-read my notes, 5 being I effectively attempted to revise by creating revision resources such as flash cards, revision quizzes and re-writing my notes in a different format) – how well do you think you prepared for this assessment.				
1	2	3	4	5
Sections of the assessment you feel you did well on				
Sections of the assessment where you feel you may have lost marks (list the topic or question – i.e. coral reef importance)				

3. Modelling

Concerns:

- Variations in quality of modelling within the team – some staff very confident and able to live model, while others dependent on pre-written models.
- Pre-written models can create a disconnect – students can't see the processes used to create the model

Actions:

- Observed all members modelling
- Conducted a review on the most effective strategies to support modelling and looked for good practice elsewhere in the school
- IRIS observation of staff members that modelled well recorded and shared in SPDS – with staff member explaining the processes behind their actions
- SPDS focus on modelling one thing for one year group for the forthcoming fortnight and ensuring everyone had a shared vision of how this was going to be done.
- Followed by T&L monitoring focusing on this being done and book reviews to evaluate impact.

Formative Assessment

Metacognition/Self Regulation

Modelling

Managing cognitive load

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SPDS

Formative Assessment

Metacognition/Self Regulation

Modelling

Managing cognitive load

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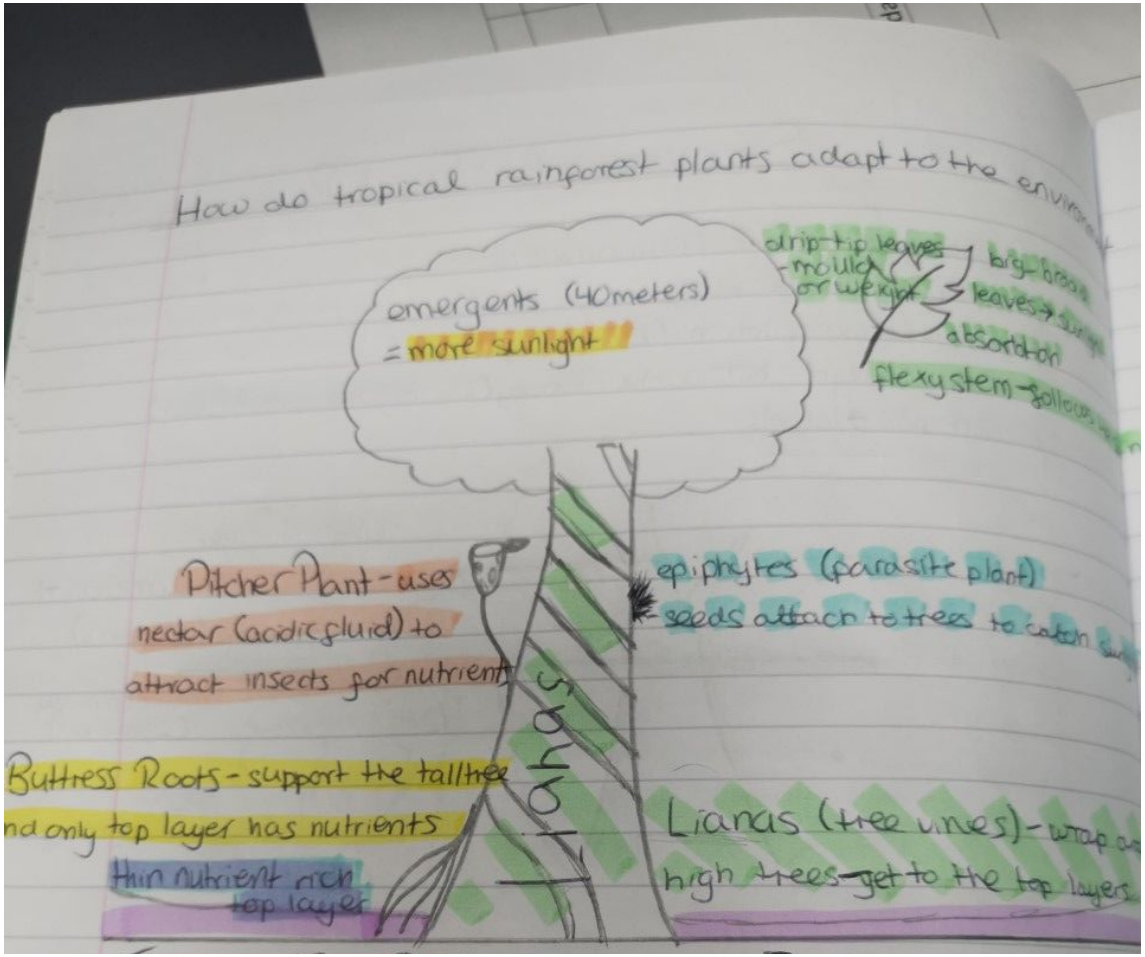
Tropical Rainforest Vegetation

Explain how tropical rainforest vegetation has adapted to the physical conditions of its environment (6 marks)

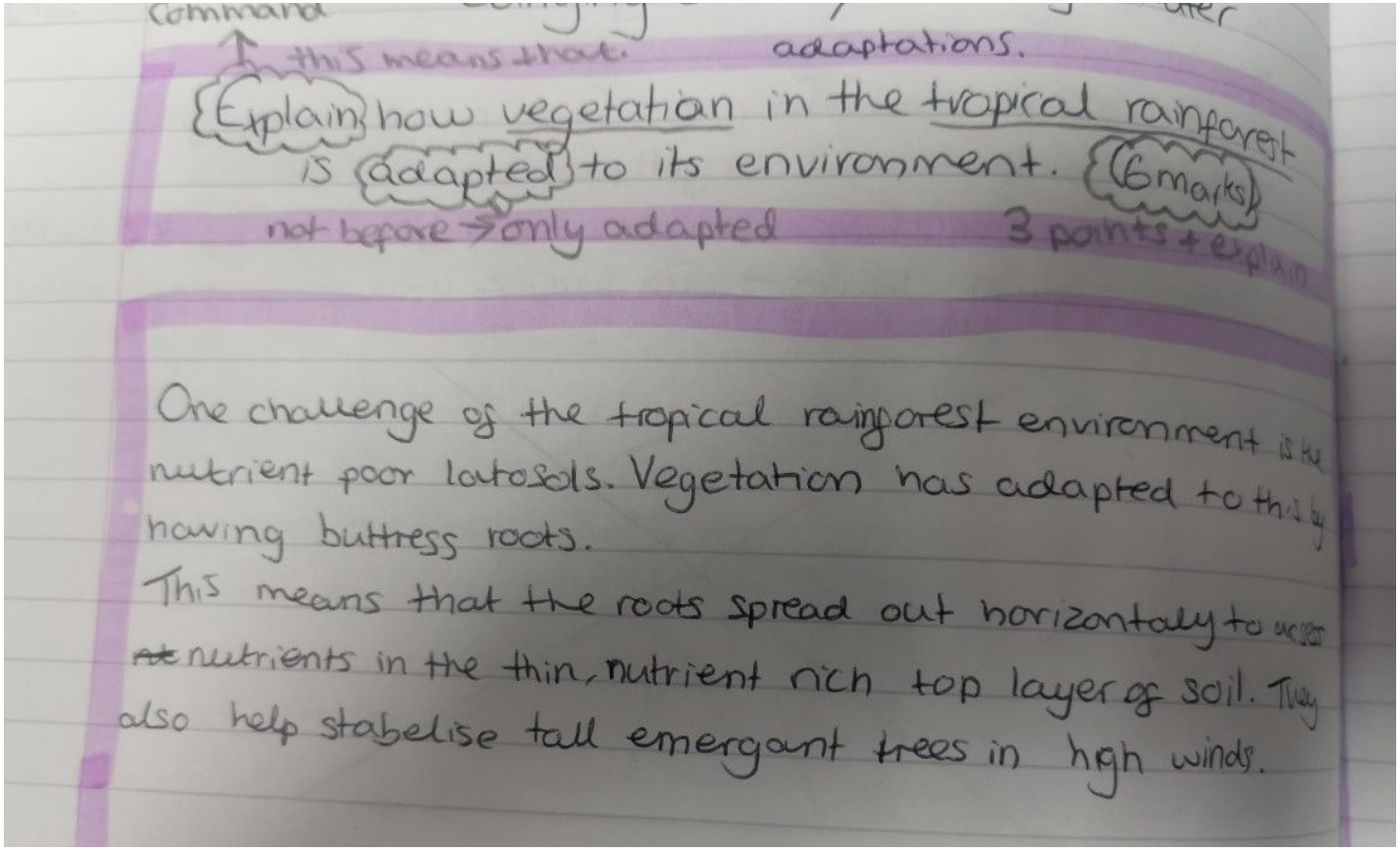
- Understand the physical conditions
- Use tier 3 vocab
- Link to challenges of surviving
- Describe and explain adaptions

Planning:

Challenge/Condition	→	Adaptation	→	How this helps?



Reducing the cognitive load through dual coding (also will support memory)



command this means that. adaptations.

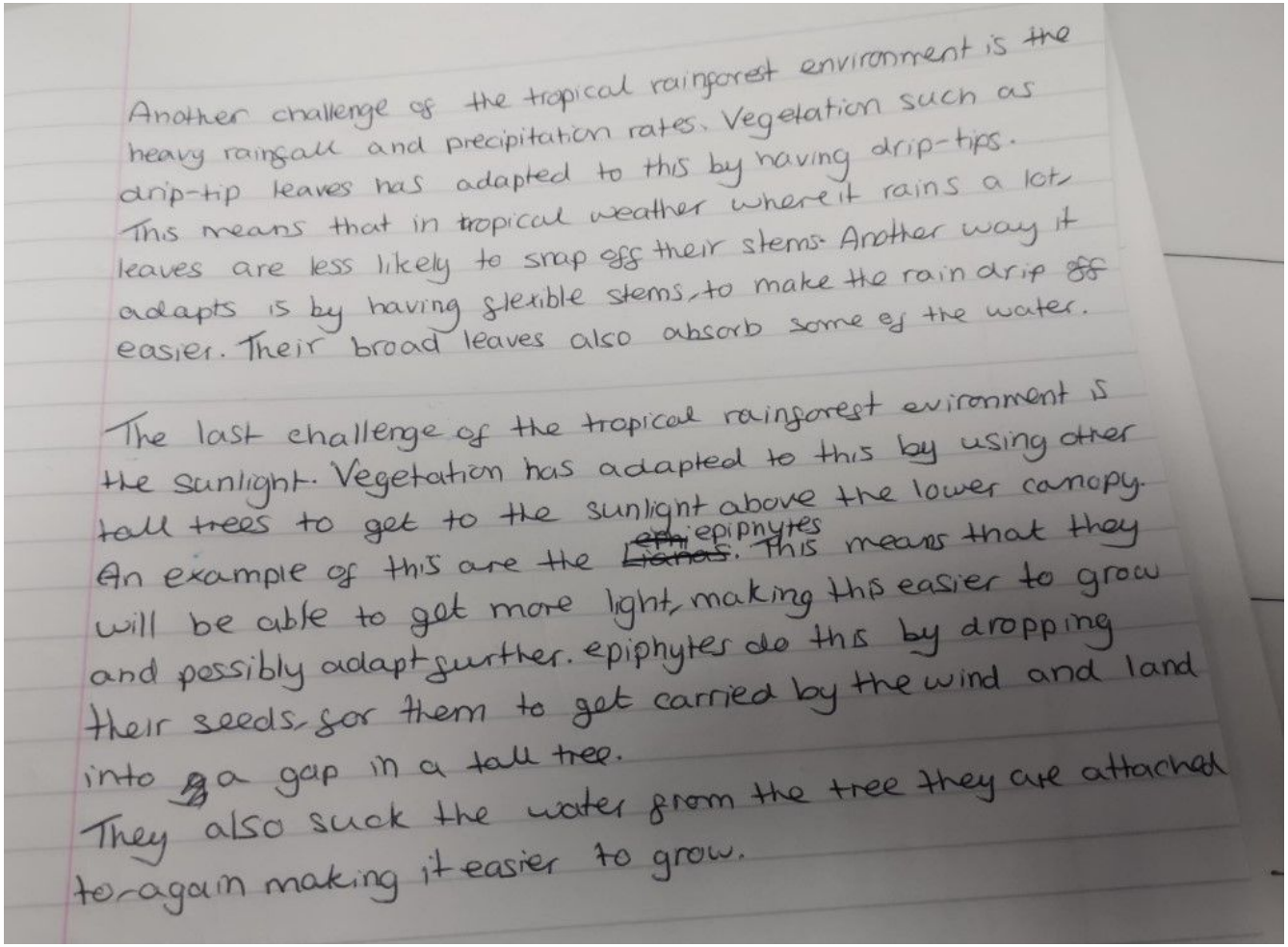
Explain how vegetation in the tropical rainforest is adapted to its environment. (6 marks)

not before → only adapted 3 points + explain

One challenge of the tropical rainforest environment is the nutrient poor latosols. Vegetation has adapted to this by having buttress roots.

This means that the roots spread out horizontally to access ~~ate~~ nutrients in the thin, nutrient rich top layer of soil. They also help stabelise tall emergant trees in high winds.

Live Modelled paragraph



Another challenge of the tropical rainforest environment is the heavy rainfall and precipitation rates. Vegetation such as drip-tip leaves has adapted to this by having drip-tips. This means that in tropical weather where it rains a lot, leaves are less likely to snap off their stems. Another way it adapts is by having flexible stems, to make the rain drip off easier. Their broad leaves also absorb some of the water.

The last challenge of the tropical rainforest environment is the sunlight. Vegetation has adapted to this by using other tall trees to get to the sunlight above the lower canopy. An example of this are the ~~Lianas~~ epiphytes. This means that they will be able to get more light, making this easier to grow and possibly adapt further. epiphytes do this by dropping their seeds for them to get carried by the wind and land into a gap in a tall tree.
They also suck the water from the tree they are attached to again making it easier to grow.

Monitor and Evaluating during/post completion of the work.

Any questions?

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