

Alliance Members

Lead Schools:

- Bonner Primary School
- Morpeth Secondary School

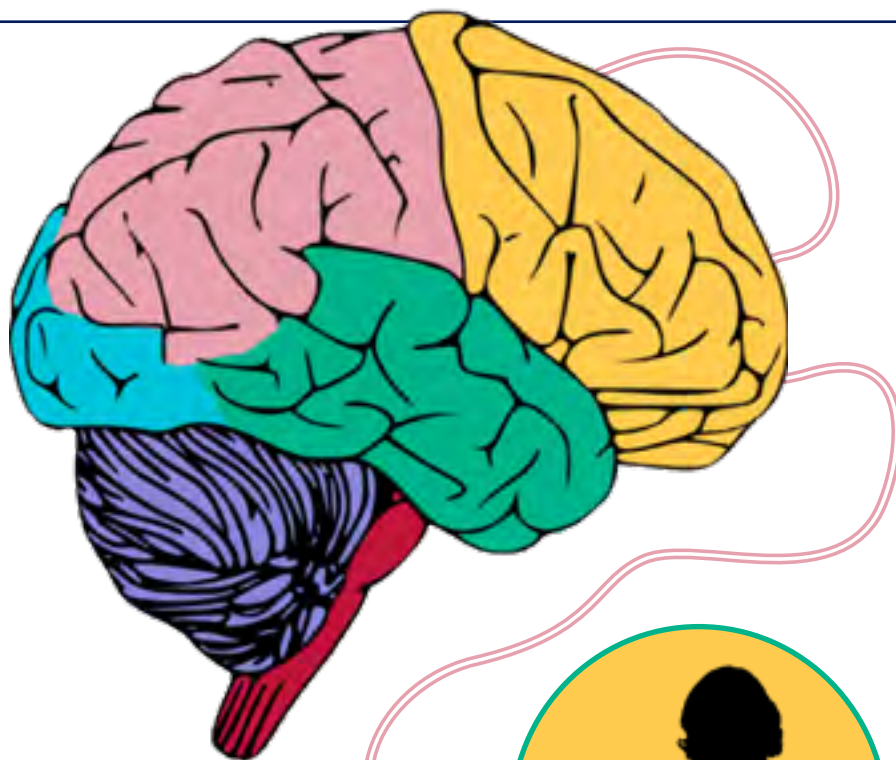
Strategic partners:

- Phoenix Special School
- Rachel Keeling Nursery School
- Bangabandhu Primary School
- Ben Jonson Primary School
- Chisenhale Primary School
- Clara Grant Primary School
- Globe Primary School
- Hermitage Primary School
- John Scurr Primary School
- Malmesbury Primary School
- Olga Primary School
- Redlands Primary School
- George Green's Secondary School
- Langdon Park Secondary School
- Stepney Green Secondary School

TEL TSA are very pleased to be running a two-year research led, cross-phase project on cognitive load.

This involves all of the schools in the alliance and was launched with the Cognitive Load Conference on a joint INSET day on October 28th 2019, involving all primary teachers and representatives from secondary schools.

This second edition of The Thread Newsletter, is a celebration of work happening within schools to support pupil learning through reducing cognitive overload.



What's next?

Dual Coding with Oliver Caviglioli

Where?

Morpeth School

When?

Thursday 19th March 2020, 4pm to 6pm


[illegible][illegible]

The collage features various Mexican folk art items. At the top, there are several sugar skulls (calaveras) in different colors and designs. In the center, there is a heart-shaped folk art piece with the word 'MEXICO' written inside. Below the art, there is a hierarchical diagram of Mexico's political structure. The diagram starts with 'Mexico' at the top, which branches into 'Federal District' and 'States'. 'Federal District' further branches into 'Mexico City' and 'Federal District'. 'States' branches into 'Coahuila de Zaragoza', 'Durango', 'Guanajuato', 'Hidalgo', 'Jalisco', 'Michoacán', 'Morelos', 'Nayarit', 'Oaxaca', 'Puebla', 'Quintana Roo', 'San Luis Potosí', 'Sinaloa', 'Sonora', 'Tabasco', 'Tlaxcala', 'Veracruz', and 'Yucatán'. Each state is further divided into its respective 'Municipios'.

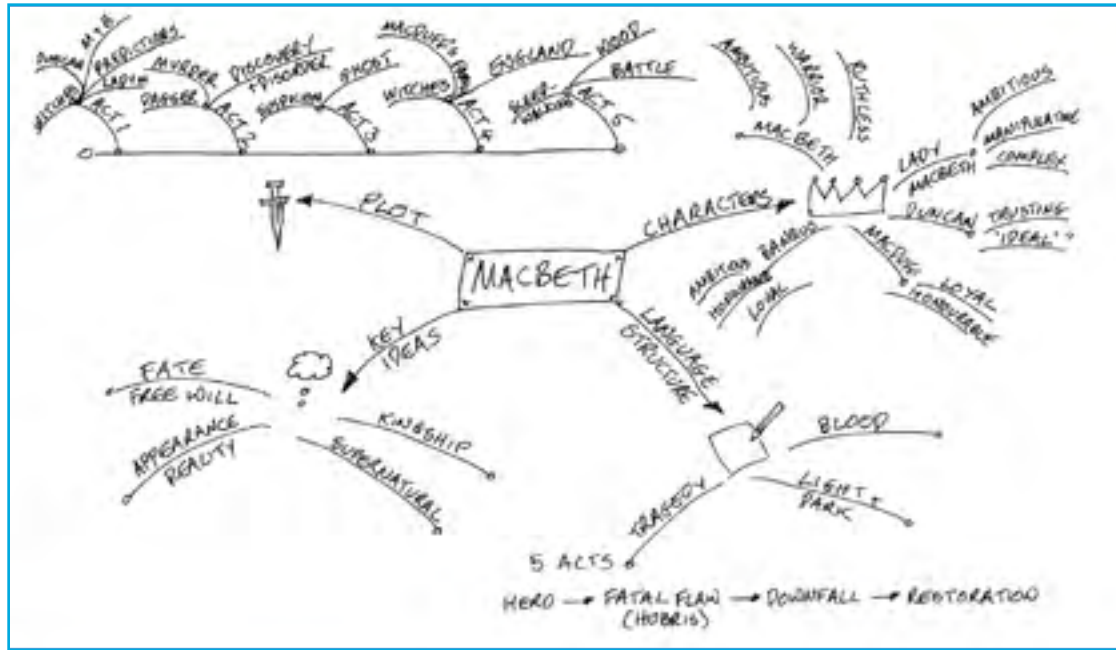
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graph TD
    NA[Neil Armstrong] --- A[Astronaut]
    NA --- C[Childhood]
    NA --- AL[Album]
    NA --- CA[Career]
    A --- O[Orbit, lunar orbit station]
    C --- AH[Alan's house]
    C --- I[Inventor]
    AL --- A11[Apollo 11]
    AL --- BA[Buzz Aldrin]
    AL --- MC[Michael Collins]
    CA --- P[Pilot]
    CA --- E[Eagle]
    CA --- G2[Gemini II]
    CA --- NASA[NASA]
    CA --- R[Retirement]
  
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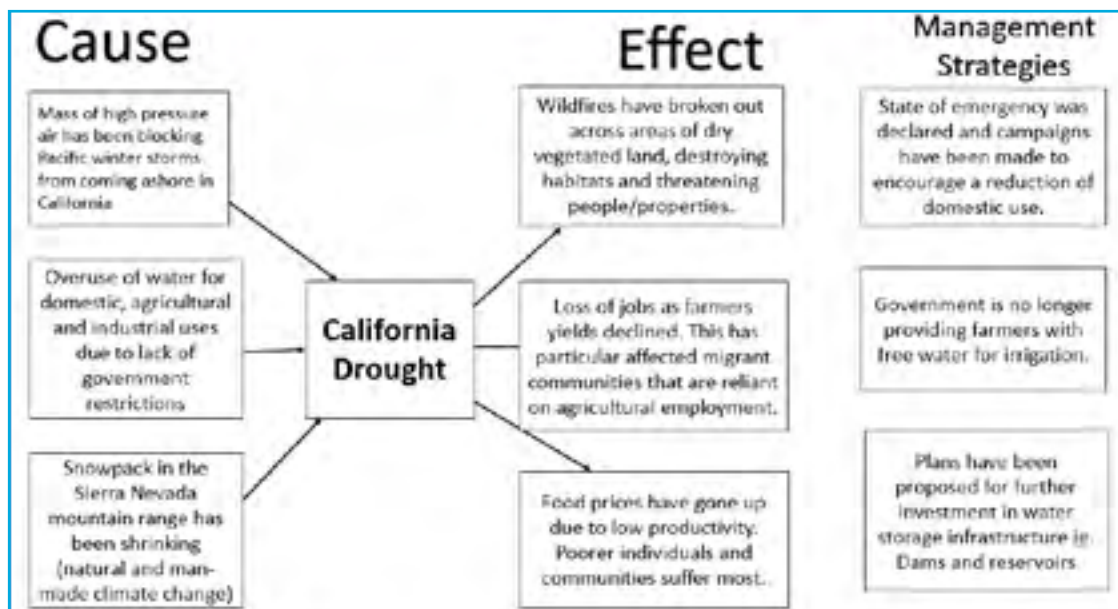
- To send Curriculum Leads to the Oliver Caviglioli training event and then disseminate knowledge to other staff and use CL to support our Curriculum
- To identify case studies and measure progress
- To collaborate with colleagues across TELSTA and share good practice.



We sent 8 colleagues to the Cognitive Load training day from different subject disciplines. After the training, we met as a group and planned a whole staff session so that we could pass on the key learning to other colleagues in the school. It was useful having examples of knowledge organisers, graphic organisers and dual coding that we had used within our own subject areas to share. The feedback we got was overwhelmingly positive, as Steve Garnett made it really clear how we could practically apply strategies to the classroom to reduce cognitive overload. We now want to establish a cognitive load teaching and learning group, which meets half termly to develop practice in this area and to support curriculum planning.



Dual Coding Macbeth, Year 11



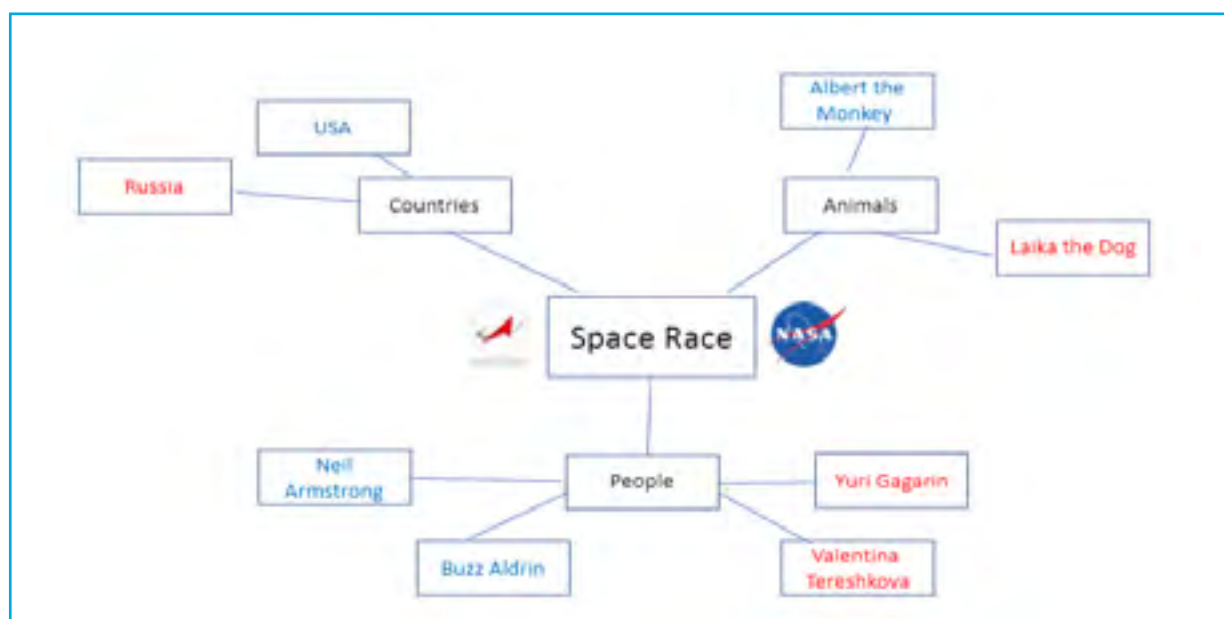
Dual Coding Macbeth, Year 11

Next Steps:

- Establish a cognitive load teaching and learning group within school
- Send reps to the Oliver Caviglioli training event to feedback to other teaching colleagues
- To do some work with primary colleagues on the development of knowledge at KS2 so as to better support progression at KS3.



All teachers from Globe Primary School attended the Cognitive Load Theory training in October. During the training, the staff agreed that we would like to focus on using a range of retrieval techniques within our practice, primarily quizzes and knowledge organisers. Following this, we held a staff meeting to retrieve our own understanding of CLT and to begin developing our own examples of retrieval techniques to use within our curriculum. Teachers then created and tested a range of knowledge organisers and quizzes within different subject areas. Subsequently, we had a further staff meeting to feedback our experiences. The general consensus was that not only were the retrieval techniques allowing teachers to assess children's retention of knowledge and therefore useful for future planning, but that the children loved the different quizzes and knowledge organisers used! In 2020, we are looking forward to continuing to develop our bank of retrieval resources and seeing the progress of the children's knowledge and understanding.



Key stage 1 Knowledge Organiser - The Space Race

When was the Stone Age?	What evidence is there about how people lived in Skara Brae?	Name 4 things you would find in an Iron Age village.	What theories are there about why Stonehenge was built?
Why did people stop being hunter-gathers?	When was the Iron Age?	Give two reasons we know the Iron Age was violent.	When was the Bronze Age?

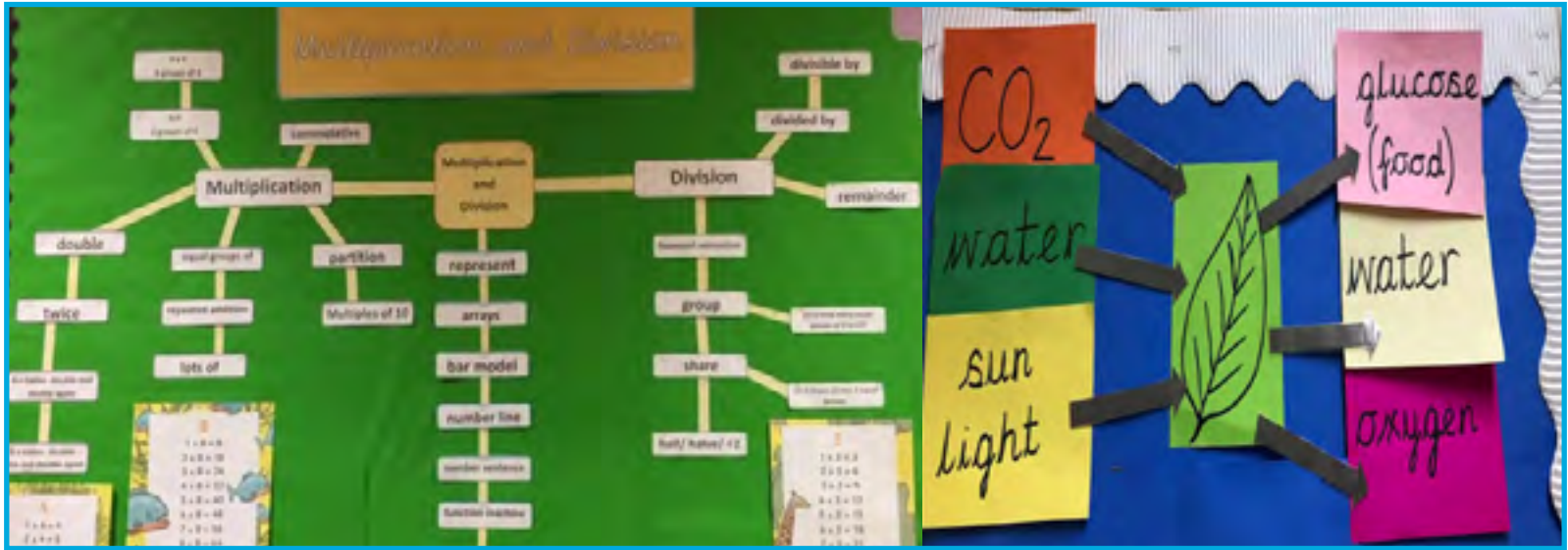
Key stage 1 Knowledge Organiser - The Space Race

Next Steps:

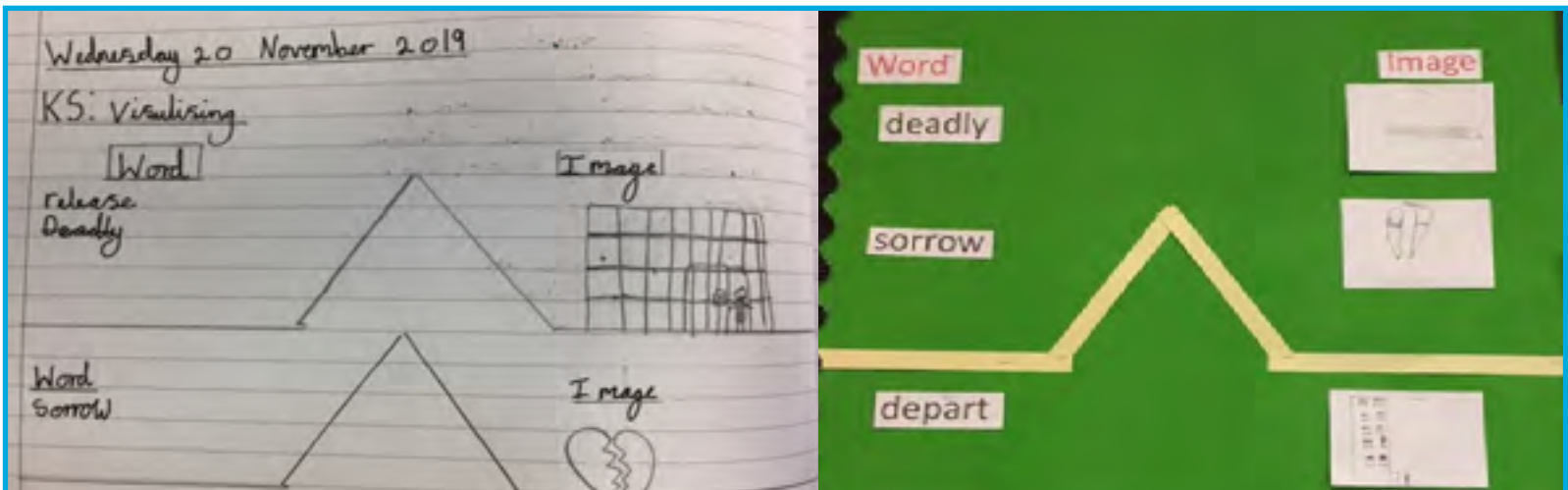
- Continue to develop a bank of retrieval resources within different subjects.
- Evaluate the effectiveness of implemented techniques on children's long term retrieval.
- Attend the Oliver Caviglioli training event to feedback understanding of dual coding techniques to other teaching colleagues.



Most teachers from John Scurr attended the Cognitive Load Theory training in October. The staff collectively agreed to develop the use of knowledge organisers, specifically in Science, in order to improve children's grasp of Tier 3 vocabulary. We also decided to experiment with retrieval techniques such as quizzes and with the diagrams associated with the modality effect (retitled as 'thinking diagrams' for our own use). In November we held a staff meeting to share examples of our own work. As CLT leaders, we were excited to see the good range of knowledge organisers. 'thinking diagrams' and retrieval techniques created by our teachers in Y1-6, for Science and for other curriculum areas such as Maths, History and Art. Knowledge organisers and other diagrams were by then beginning to feature in displays, while retrieval quizzes were being used with more frequency. Now, we are looking forward to developing this practice more consistently across the school, through building a bank of resources created so far.



Knowledge Organisers from KS1 and KS2 - Maths in Year 3 / Science in KS1



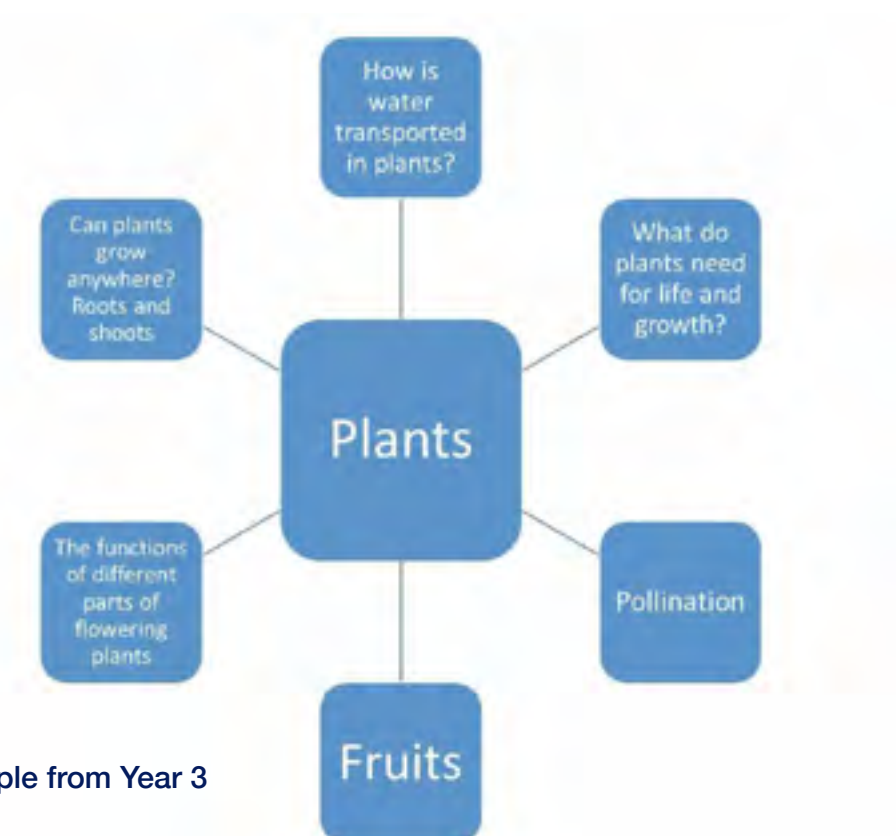
KS2 - A 'thinking diagram'(derived from the modality effect) to support children visualising vocabulary in Guided Reading. A corresponding display

Next Steps:

- Most teachers to attend the Oliver Caviglioli training event to collect a develop range of dual coding techniques.
- Continue to build a resource bank with examples from across the school.
- To begin to assess the impact of knowledge organisers on the children's use of Tier 3 vocabulary.



In October, staff from school attended training on cognitive load. This was followed by school staff meeting where a brief recap of the theory was undertaken. Staff were then asked to focus on science and prepare resources that enable children to see 'the bigger picture' and understand the relationships in their learning. This is displayed on walls in the classroom and a smaller copy is placed on desks so that access to this is immediate. The wall display will be annotated using pictures so that the children can reference easily what they have learnt. On completion of the topics, the children will undertake 3 retrieval activities. One will be done immediately, one a week later and the third 3 weeks later.



An example from Year 3

States of matter

Tell me what you can about:

Solids Liquids Gases

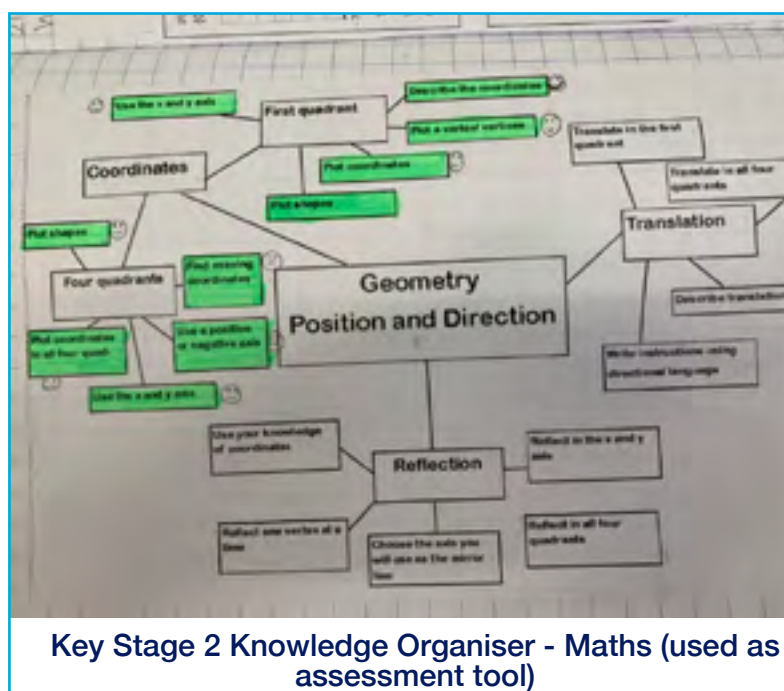
A Year 4 retrieval task

Next Steps:

- Monitor displays and photograph for evidence.
- Staff to feedback in staff meeting.
- Extend to other curriculum areas.



The teachers at Olga Primary School attended the cognitive load theory training in October at Morpeth and came back feeling excited to try out all that we had learned. We made the decision as a staff to focus on using graphic organisers across the school and curriculum. Once back at school, we created templates of each of the organisers introduced and we spent a staff meeting delving further into how these could be used in practise within our curriculum. We agreed to all try out at least one of the organisers over the next half term and to use a feedback pro-forma to evaluate their impact in order to inform how we take the project forward. During our INSET in January, we gave staff a chance to make knowledge organisers for their science topic for the term, these were shared with the children either on working walls or in their science books – this was a result of seeing examples of cognitive load working walls used successfully in our steering group meetings. Three members of staff also attended the inspiring dual coding course with Oliver Caviglioli and are considering ways to roll out some of the ideas across school over the next term.



Next Steps:

- Share the feedback from the pro-formas in the next Cognitive Load PDM.
- Continue to build a bank of resources to use across the school.
- Decide what direction to take the project in, after consultation with the rest of the staff.
- Roll out some of the techniques learned at the Oliver Caviglioli dual coding training after the rest of the staff have attended the training at the end of January.



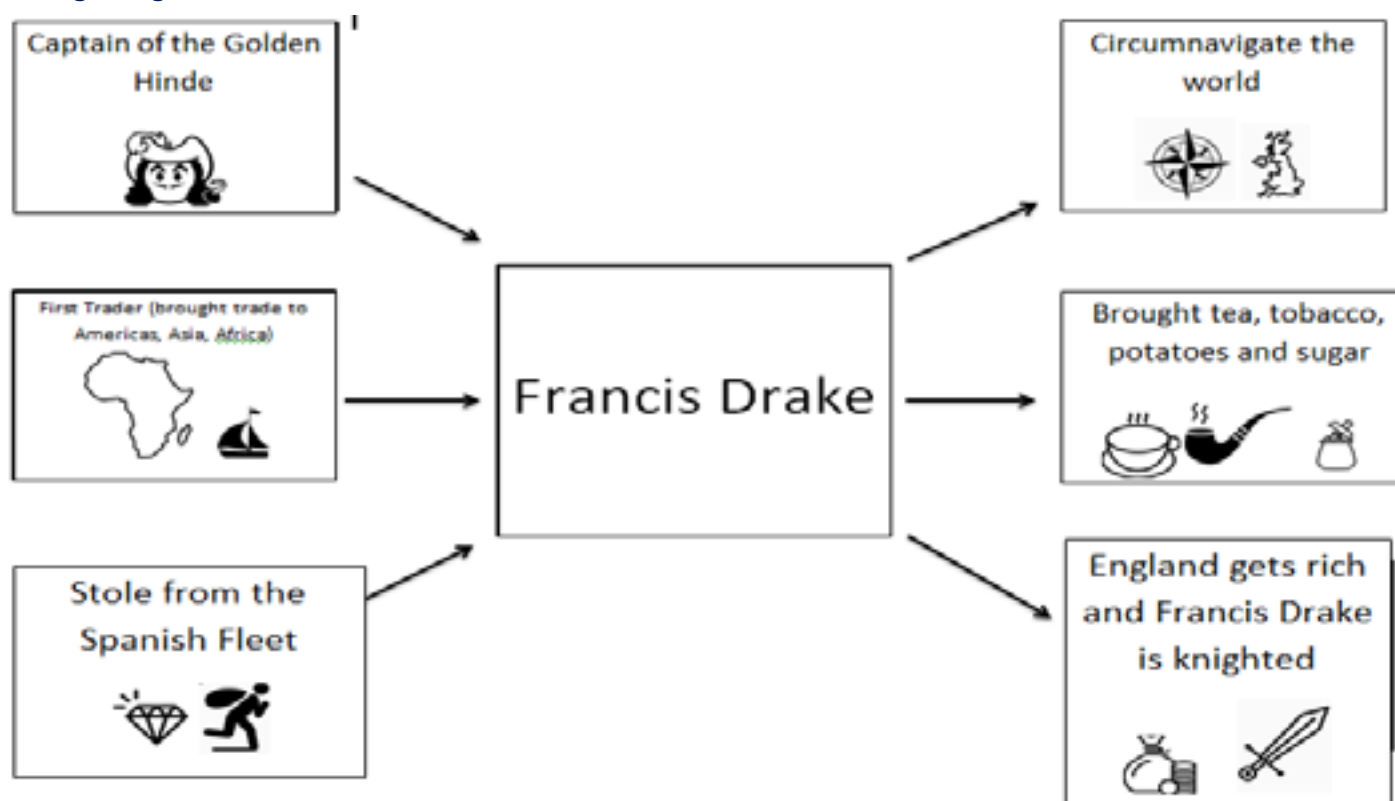
All KS1 and KS2 teachers from Hermitage Primary School attended the Cognitive Load Theory training in October. During the training, the staff agreed that we would like to focus on using the cause and effect knowledge organiser and to create and use retrieval quizzes to use within our practice, particularly within the Topic subject area. Following this, we have used staff meetings to discuss and ensure continuity when making knowledge organisers, focussing on Oliver Caviglioli's graphic design 'rules' (see table below). Teachers then created and tested a range of knowledge organisers and quizzes. We have found using visuals from the 'nounproject.co.uk' has been of particular influence when making these.

All staff are planning to attend the Oliver Caviglioli's training in March, where we hope to further our understanding of dual coding and we are looking forward to continuing to develop our bank of knowledge organisers and seeing the progress of the children's knowledge and understanding.

Graphic Design Rules

DO	DON'T
Simplify- clear, concise	Too busy, 3 colours or more
Use visuals- Less is more	Use too many different font types or sizes
Organise- information into relationships/patterns/themes/sequences	Too much text
Dual coding-create your own visual for what you hear	Dictate information or confuse with dual coding
Remember- communication is the key	Just copy from the board
	Think about artistic talent

KS1 Knowledge Organiser - Sir Francis Drake



Next Steps:

- Continue to develop a bank of retrieval resources within different subjects.
- Track focus children's development in order to evaluate how effective the techniques have been so far.
- Attend the Oliver Caviglioli training event to further our understanding of dual coding techniques and feedback to other teaching colleagues.





We sent all our teaching staff to the Cognitive Load Theory inset in October. After the training, we met as a group and shared which elements of the session we would like to take forward. The knowledge organisers and the modality templates were the most popular ideas from the training. We have since had a staff meeting where we shared all of the templates and allowed the staff time to create knowledge organisers for our Topic lessons, which ended up being a useful planning tool. The staff are going to display these knowledge organisers on all of their smartboards and on their topic working walls. We are already feeling some benefits during lessons with children remembering and using technical vocabulary more easily. We are also going to experiment with using the modality diagrams in our science lessons.



Knowledge Organiser Year 5

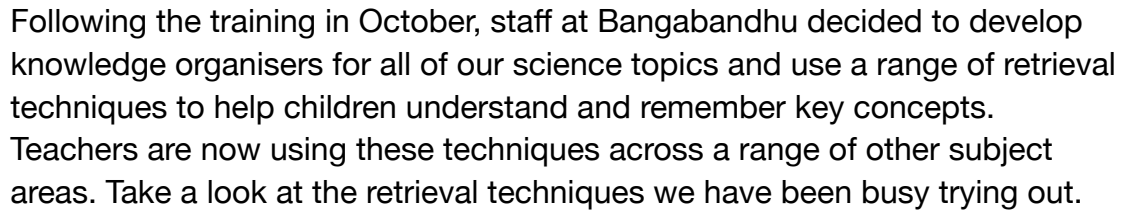


Process modality diagram Year 2


Next Steps:

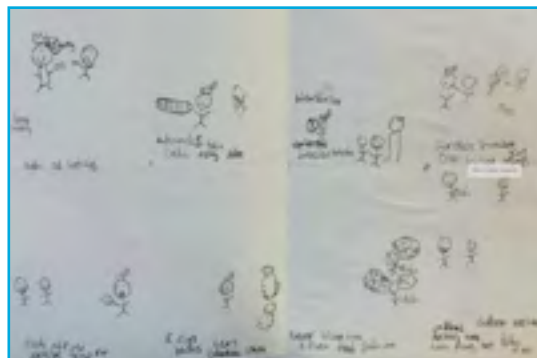
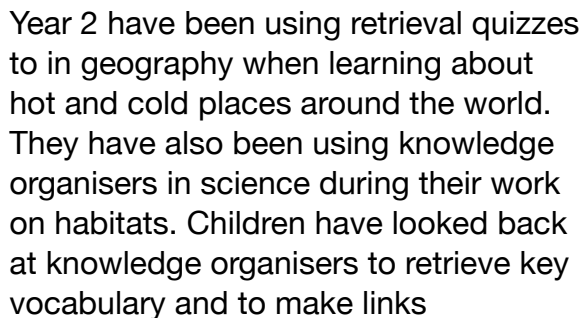
- Send reps to the Oliver Caviglioli training event to feedback to other teaching colleagues.
- Continue to attend the steering group meetings and share good practise with other schools.
- Ask the staff how effective the knowledge organisers and modality diagrams have been.
- Share practise amongst year groups at Chisenhale.





Children have been reading the story 'Where's my teddy?' At the end of the week's unit, children recalled events from the story using multiple-choice questions to remember key events from the story.

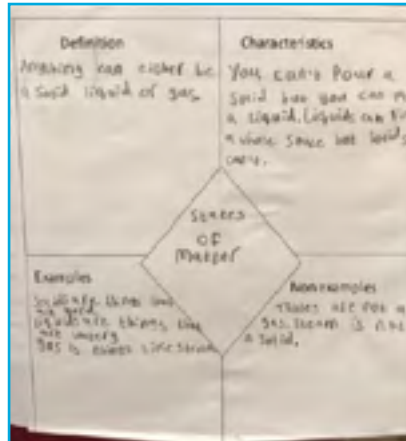
Definition Toys from the past.	Characteristics  wooden boat
Examples Hand Made Wooden brick or old rusty	Non examples Old machine factory not made from plastic rubbery toys.



Bangabandhu Primary School

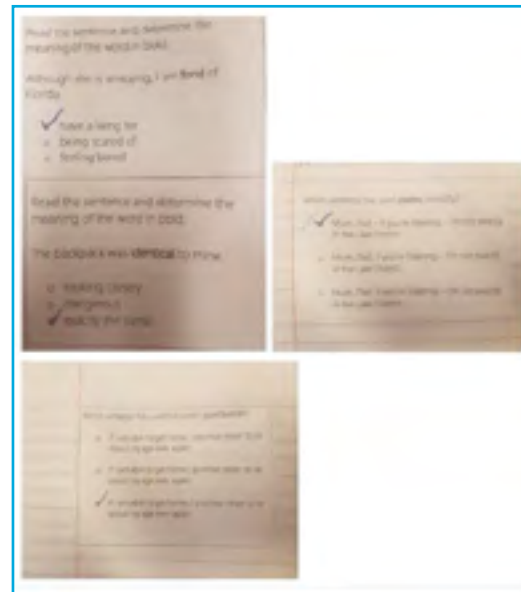
Year 4

Year 4 have been using knowledge organisers and have introduced the frayer model in their science topic of Sound. The children are now starting to complete these more independently in their learning using their knowledge of the topic using the key words and vocabulary.



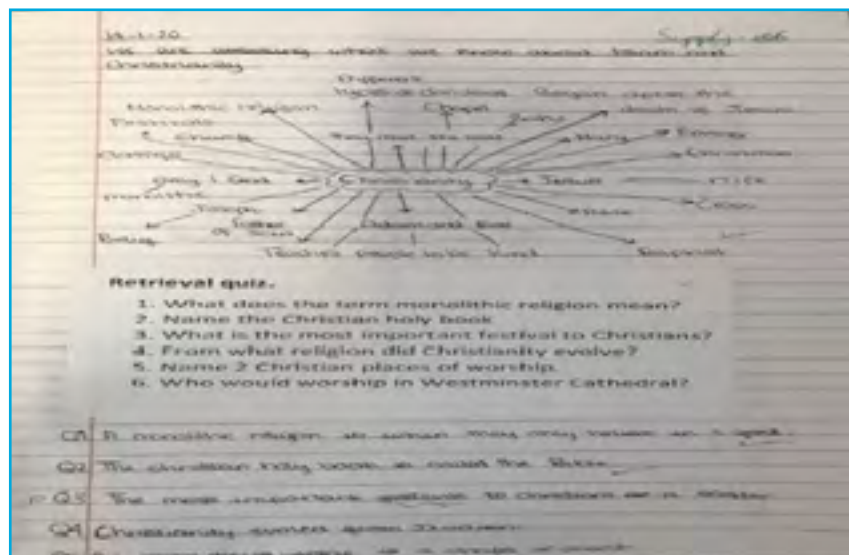
Year 5

Year 5 have been using multiple-choice questions during English, maths and geography. The children enjoy explaining why they know an answer is correct or incorrect using what they have learnt previously during the unit. It has also helped teachers address misconceptions and develop vocabulary. Year



Year 6

Year 6 have been using a range of retrieval tasks to improve and develop children's working and long-term memory. They have used regular retrieval quizzes to recap and revisit work. The children have completed regular retrieval quizzes in English, which required them to summarise a recently read chapter from a class text. In RE quizzes have been used to retrieve key facts from a unit on Christianity. This technique has supported language and vocabulary development.



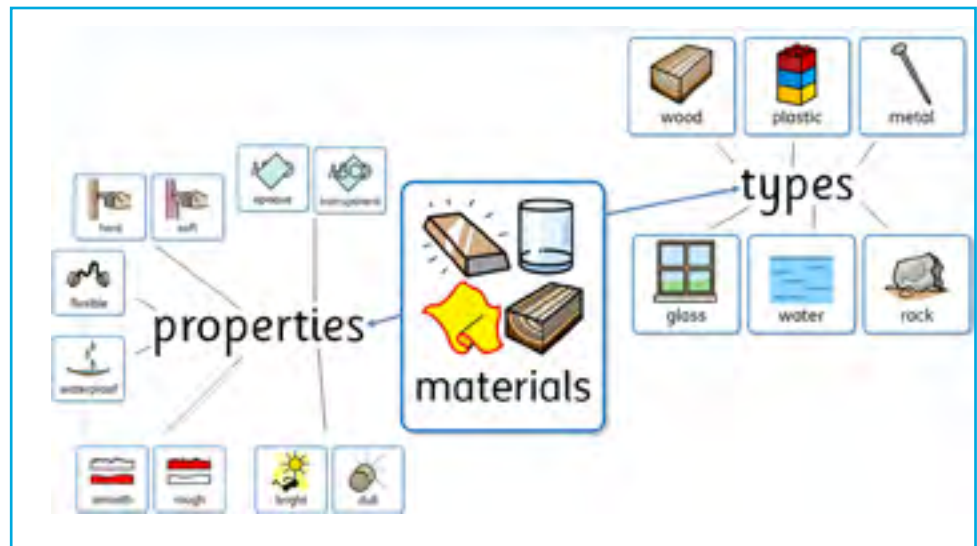
Next steps:

- Continue to develop a range of retrieval techniques across the curriculum consistently.
- Evaluate the effectiveness of current practice on long term memory; have the techniques help 'make it stick?'
- Hold further staff meetings on retrieval to develop confidence in planning for retrieval and share good practice from across the school and the alliance.

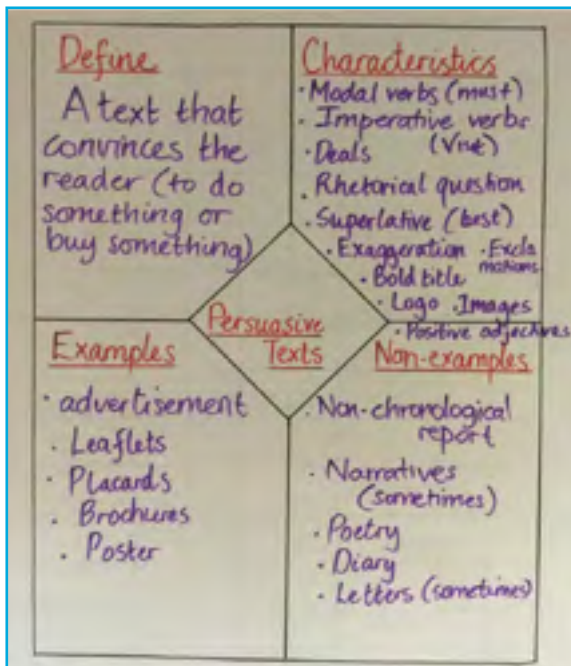




As a school we have been exploring strategies to reduce cognitive load in the classroom. In a recent staff meeting all year groups came together to share examples of the strategies being trialled in their class-rooms. The outcome was positive and it was pleasing to see all members of staff enjoying the opportunity to share their own examples of knowledge organisers and retrieval techniques. We all agreed that retrieval techniques in the form of a quiz or puzzle were not only useful as a tool to assess childrens' retention of key information, but were very popular amongst all groups of learners and considered lots of fun. In 2020 we are looking forward to trailing more strategies within our curriculum and further developing our bank of retrieval resources. Here are a few successful examples from Ben Jonson that are currently being used to support children in their learning.



Key Stage 1 - Knowledge organisers displayed as a working wall in Science



Key Stage 2 - A Frayer Model used to retrieve understanding about persuasive texts.

Next Steps:

- Continue to trial cognitive friendly strategies across all areas of the curriculum
- Develop a bank of retrieval resources including templates for knowledge organisers and 'thinking' diagrams
- Attend the Oliver Caviglioli training event to develop understanding of dual coding

