**Primary 5-11 Curriculum Map How Children Learn**

***Post Graduate Programme***

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| **University Curriculum** |
| **Session Sequence** | **Session Content Subject Specific Components/s** | **Learn That****(ITTECF reference in numerics e.g. 1.1)** | **Learn How****(ITTECF reference bullets alphabetically e.g. 1c)** | **Links to Research and Reading** | **Formative Assessment mode** |
| **Session 1****1 x 2 hour seminar** | **Memory, sequencing and curriculum design** An introduction to memory and an understanding that learning requires information to be committed to memory. Memory has limited capacity and be separated into working and long term.Know working memory and strategies to support attention and rehearsal.Planning, how structured planning, teaching modelling and breaking things down to smaller chunks and worked examples can reduce cognitive load. Sequence lessons to build on what the children already know within a unit.Design a retrieval task to use as a starter within the unit building on prior learning.Identify links in the curriculum through spacing to revisit ideas and strengthen recall and retrieval. Interleave cognitive science approaches into a curriculum design to support pupils’ progress and understanding. | 2.1, 2.2, 2.3, 2.4, 2.5, 2.7, 2.8, 2.9, 2.10 | 2a, 2b, 2c, 2d, 2e, 2f, 2g, 2h, 2i, 2j | Anon., n.d. Cognitive Science Approaches in The Classroom: A review of the evidence| Education Endowment Foundation | EEF [online]. [online]. Available from: https://educationendowmentfoundation.org.uk/education-evidence/evidence-reviews/meta cognition-and-self-regulation. BOYD, P., HYMER, B., and LOCKNEY, K., 2015. Learning teaching: becoming an inspirational teacher [online]. Northwich, United Kingdom: Critical Publishing. Available from: <https://ebookcentral.proquest.com/lib/edgehill/detail.action?docID=4067583>.BRUNER, J. S., 1977. The process of education. Cambridge, Massachusetts: Harvard University Press. Available from: https://edgehill.on.worldcat.org/oclc/501833811 <https://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=282866>. BUSCH, B., WATSON, E., & BOGATCHEK, L. (2023). Teaching & Learning Illuminated: The Big Ideas, Illustrated (1st ed.). Routledge. COWAN, N. 2008. What are the differences between long-term, short-term, and working memory? Progress in brain research, 169, 323-338.GARNETT, S. 2020. Cognitive Load Theory: A handbook for teachers. West Yorkshire: Charlesworth Press.GIBBONS, S. and LENNARD, E., 2023. Sequencing the primary curriculum. London: Sage. GLAZZARD, J. and GREEN, M., 2022. Learning to be a primary teacher : core knowledge and understanding. Second edition ed. St Albans: Critical Publishing. GLAZZARD, J. and STONES, S., 2020. Evidence Based Primary Teaching. Sage Publications.GLAZZARD, J. and STONES, S., 2021. Evidence based primary teaching. Los Angeles: Learning Matters. HOWARD-JONES, P.A., 2014. Neuroscience and education: myths and messages. Nature Reviews Neuroscience [online]. 15 (12), pp. 817–824. LOVELL, O. 2020. Sweller’s Cognitive Load Theory. Woodbridge: John Catt Publications. SHARMA, L., 2020. Curriculum to classroom : a handbook to prompt thinking around primary curriculum design and delivery. Ipswich: John Catt Educational Ltd. | Demonstrates understanding in taught sessions regarding how children learn:Discussions in sessions showing understanding of working memory and strategies to support working memory.Plan how to sequence lessons through chunking and worked examples to reduce cognitive load.In group sessions, discussion of lateral and vertical curriculum knowledge to build on prior learning. |
| **Session 2****1 x 1 hour lecture** | **Supporting varying working memory capacities, cognitive load and working memory strategies** Know the role the teacher plays to support learning and memory. Understand strategies including worked examples and modelling.Understand the importance of prior learning and that misconceptions can arise where prior learning is weak. Identify formative strategies to retrieval to identify understanding and areas of misconception.Understand that pupils have different working memory capacities, some pupils with SEND many have more limited working memory capacity than their peers.Introduction to cognitive overload theory (Sweller, 1988).Working memory and strategies to support attention and rehearsal. To know constructivist theorists which underpin how children learn.(Piaget, Vygotsky, Bruner and Rosenshine)To know the history of policy influence on curriculum design and how this has impacted how children learn.To know how curriculum design can plan for regular purposeful practice of what has previously been taught can help consolidate material and help pupils remember what they have learned. To know strategies for reducing cognitive load.To understand how possible misconceptions arise and how to plan to prevent these forming.  | 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10 | 2a, 2b, 2c, 2d, 2e, 2f, 2g, 2h, 2i, 2j, 2k | ALEXANDER, R., 2009. Introducing The Cambridge Primary Review. University of Cambridge: Routledge.Anon., n.d. Cognitive Science Approaches in The Classroom: A review of the evidence| Education Endowment Foundation | EEF [online]. [online]. Available from: https://educationendowmentfoundation.org.uk/education-evidence/evidence-reviews/meta cognition-and-self-regulation. BOYD, P., HYMER, B., and LOCKNEY, K., 2015. Learning teaching: becoming an inspirational teacher [online]. Northwich, United Kingdom: Critical Publishing. Available from: <https://ebookcentral.proquest.com/lib/edgehill/detail.action?docID=4067583>.BRUNER, J. S., 1977. The process of education. Cambridge, Massachusetts: Harvard University Press. Available from: https://edgehill.on.worldcat.org/oclc/501833811 <https://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=282866>. BUSCH, B., WATSON, E., & BOGATCHEK, L. (2023). Teaching & Learning Illuminated: The Big Ideas, Illustrated (1st ed.). Routledge. COWAN, N. 2008. What are the differences between long-term, short-term, and working memory? Progress in brain research, 169, 323-338.FRATER, G., 2023*. Primary curriculum design & delivery*. London: Corwin. Available from: <https://edgehill.on.worldcat.org/oclc/1370599892.>GARNETT, S. 2020. Cognitive Load Theory: A handbook for teachers. West Yorkshire: Charlesworth Press.GIBBONS, S. and LENNARD, E., 2023. Sequencing the primary curriculum. London: Sage. GLAZZARD, J. and GREEN, M., 2022. Learning to be a primary teacher : core knowledge and understanding. Second edition ed. St Albans: Critical Publishing. GLAZZARD, J. and STONES, S., 2020. Evidence Based Primary Teaching. Sage Publications.GLAZZARD, J. and STONES, S., 2021. Evidence based primary teaching. Los Angeles: Learning Matters. HOWARD-JONES, P.A., 2014. Neuroscience and education: myths and messages. Nature Reviews Neuroscience [online]. 15 (12), pp. 817–824. KOLB, D. 1984. Experiential Learning: Experience As The Source Of Learning And Development. Journal of Business Ethics. Vol 1. Available from: (PDF) Experiential Learning: Experience As The Source Of Learning And Development (researchgate.net)LOVELL, O. 2020. Sweller’s Cognitive Load Theory. Woodbridge: John Catt Publications. OGIER, S., 2022*. A broad and balanced curriculum in primary schools : educating the whole child*. 2nd edition ed. London: Learning Matters. Available from: <https://edgehill.on.worldcat.org/oclc/1295184156.>PIAGET, J. 1957. Construction of Reality in the Child. London: Routledge & Kegan Paul.ROSENSHINE, B. (2012) Principles of Instruction: Research-based strategies that all teachers should know. American Educator, 12–20. <https://doi.org/10.1111/j.1467-8535.2005.00507.x>.SHARMA, L., 2020. Curriculum to classroom : a handbook to prompt thinking around primary curriculum design and delivery. Ipswich: John Catt Educational Ltd.SWELLER, J., 2016. Working Memory, Long-term Memory, and Instructional Design. Journal of Applied Research in Memory and Cognition. 5 (4), pp. 360-367. VYGOTSKY, L. 1978. Mind in Society. The Development of Higher Physchological Processes. Cambridge, MA: Havard University Press. | Lessons observations and mentor and link tutor meetings showing understanding of sequencing and strategies to support working memory and cognitive overload. |

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| **School Based Curriculum – Introductory Phase** |
| **Observing:** Observe how expert colleagues use strategies to support memory and deeper learning. How to reduce distractions that take attention away from what is being taught.**Planning:** Observe how expert colleagues break tasks down into constituent components, to support working memory. Through effective mentoring know how to take into account pupil’s prior knowledge and when planning how much new information to introduce. How to sequence lessons so that pupils secure foundational knowledge before encountering more complex knowledge. **Teaching:** Consider strategies to support and reduce cognitive load and support working memory, including breaking complex materials into smaller steps.**Assessment:** Check prior knowledge and understanding during lessons.**Subject Knowledge:** Encourage pupils to share emerging understanding and points of confusion so that misconceptions can be addressed.Explaining how new content builds on what is already known.Discuss and analyse strategies with expert colleagues.  |
| **Subject Specific Components/s (know, understand, can do)** | **Learn That****(ITTECF reference in numerics e.g. 1.1)** | **Learn How****(ITTECF reference bullets alphabetically e.g. 1c)** | **Links to Research and Reading** | **Formative Assessment** |
| Understand the role the teacher plays in supporting memory and effective learning.Understand the interconnectedness of learning. | 2.1,2.2,2.3,2.4,2.5 | 2a,2b, 2c, 2e, 2f | Anon., n.d. Cognitive Science Approaches in The Classroom: A review of the evidence| Education Endowment Foundation | EEF [online]. [online]. Available from: https://educationendowmentfoundation.org.uk/education-evidence/evidence-reviews/meta cognition-and-self-regulation. GLAZZARD, J. and GREEN, M., 2022. Learning to be a primary teacher : core knowledge and understanding. Second edition ed. St Albans: Critical Publishing.  | Child profile- focus on scaffolding, accommodation and assimilation  |

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| **School Based Curriculum – Development Phase** |
| **Observing:** Observe how expert colleagues use distributed and spaced learning in at least 4 lessons throughout school.Observe how expert practitioners use motivation and build self-esteem of all learners.Observe how expert colleagues identify and implement reasonable adjustments for children with identified Special Educational Needs.**Planning:** Discuss with expert practitioners how they embed adaptive approaches into planning.With the support of expert practitioners, capture and incorporate the voice of the child for example through a one-page profile.Work closely with other teachers, SENco and members of the staff team to implement reasonable adjustments within and beyond the classroom.Plan for children who may need adaptations beyond the classroom to support their social inclusion.**Teaching:** Rehearse and refine chunking, scaffolding, and fading in lesson planning over a sequence of lessons. Plan, teach and evaluate a series of lessons incorporating adaptive approaches to enable all children to access a rich curriculum.Observe and implement reasonable adjustments for children with identified special Educational Needs and Disability. **Assessment:** Use peer and self-assessment to aid and support independent learning.**Subject Knowledge:** Discuss and analyse with expert practitioners how to implement and review flexible groupings and use groupings to support learning and promote inclusion. |
| **Subject Specific Components/s (know, understand, can do)** | **Learn That****(CCF reference in numerics e.g. 1.1)** | **Learn How****(CCF reference bullets alphabetically e.g. 1c)** | **Links to Research and Reading** | **Formative Assessment** |
| Know the role the teacher plays to support learning and memory. Understand strategies including worked examples and modelling The impact of targeted questioning on pupils’ retrieval and recall  | 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10  | 2a, 2b, 2c, 2d, 2e, 2f, 2g, 2h, 2i, 2j, 2k |  Anon., n.d. Cognitive Science Approaches in The Classroom: A review of the evidence| Education Endowment Foundation | EEF [online]. [online]. Available from: https://educationendowmentfoundation.org.uk/education-evidence/evidence-reviews/meta cognition-and-self-regulation. GIBBONS, S. and LENNARD, E., 2023. Sequencing the primary curriculum. London: Sage. GLAZZARD, J. and STONES, S., 2021. Evidence based primary teaching. Los Angeles: Learning Matters. HOWARD-JONES, P.A., 2014. Neuroscience and education: myths and messages. Nature Reviews Neuroscience [online]. 15 (12), pp. 817–824. ROSENSHINE, B. (2012) Principles of Instruction: Research-based strategies that all teachers should know. American Educator, 12–20. https://doi.org/10.1111/j.1467-8535.2005.00507.x.SHARMA, L., 2020. Curriculum to classroom : a handbook to prompt thinking around primary curriculum design and delivery. Ipswich: John Catt Educational Ltd. | Child profile:Scaffolding - what scaffolding has the teacher provided to support the child’s engagement and understanding of the subject matter?Fading – how has the teacher gradually withdrawn support to encourage the child to work and think more independently.Working memory – what strategies do they observe to support working memory |

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| **School Based Curriculum – Consolidation Phase** |
| **Observing:** Observe how expert colleagues make links to prior learning across the lateral and vertical curriculum.Observe how expert colleagues identify and implement reasonable adjustments for children with identified Special Educational Needs. **Planning:** Plan for lateral and vertical curriculum links to build on prior learning.Through curriculum design, balance exposition, repetition, practice and retrieval of critical knowledge and skills. Through curriculum design, increase challenge with practice and retrieval as knowledge becomes more secure.Plan for children who may need adaptations beyond the classroom to support their social inclusion.**Teaching:** Plan, teach and evaluate a series of lessons incorporating prior learning as a foundation to enhance long term memory knowledge.Through curriculum design, balance exposition, repetition, practice and retrieval of critical knowledge and skills. Through curriculum design, increase challenge with practice and retrieval as knowledge becomes more secure.**Assessment:** Discuss with expert colleagues’ summative assessment, reporting and how data is used.Draw conclusions about what pupils have learnt by looking at patterns of performance over a number of assessments with support and scaffolding from expert colleagues and use this information to feed into curriculum design.**Subject Knowledge:** Through curriculum design, rehearse and refine sequencing lessons. How to identify possible misconceptions and plan how to prevent these from forming. Linking what pupils already know to what is being taught.  |
| **Subject Specific Components/s (know, understand, can do)** | **Learn That****(CCF reference in numerics e.g. 1.1)** | **Learn How****(CCF reference bullets alphabetically e.g. 1c)** | **Links to Research and Reading** | **Formative Assessment** |
| Understand the role of curriculum design with consideration to how children learn.The impact of targeted questioning on pupils’ retrieval and recall  | 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 2.10 | 2a, 2b, 2c, 2d, 2e, 2f, 2g, 2h, 2i, 2j, 2k,  | Anon., n.d. Cognitive Science Approaches in The Classroom: A review of the evidence| Education Endowment Foundation | EEF [online]. [online]. Available from: https://educationendowmentfoundation.org.uk/education-evidence/evidence-reviews/meta cognition-and-self-regulation. SHARMA, L., 2020. Curriculum to classroom : a handbook to prompt thinking around primary curriculum design and delivery. Ipswich: John Catt Educational Ltd.GIBBONS, S. and LENNARD, E., 2023. Sequencing the primary curriculum. London: Sage.  | Child profile – Consideration of curriculum design with a focus on one child |