**Primary Curriculum Map (Computing) School Based 2024-25**

***Level 4 Undergraduate***

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| **University Curriculum – School Based - Level 4** |
| **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** |
| **Seminar****Curriculum overview and rationale****2 hours****Primary computing: rationale, key concepts and digital literacy.***Creative approaches:**Practical activities – algorithms, tinkering, abstraction, decomposition, problem solving.* | * To know that computing has its own rationale and identity, and is compulsory through primary and into KS3 & KS4
* To understand that the primary computing curriculum is organised into three strands: computer science, digital literacy, and information technology.
* To understand the key elements of computational thinking: abstraction, decomposition, logical thinking, pattern recognition.
* To be able to encourage children’s natural curiosity for technology through a structured approach to digital literacy.
* To be able to consider the principles behind unplugged activities and how these may support hands-on use of technology.
 | 3.1, 3.2, 3.3, 3.54.95.4, 5.57.2, 7.78.6 | 1f3a, 3h, 3i, 3k5b, 5l | Raspberry Pi Foundation: The big book of computing pedagogy  WILLINGHAM, D., 2021. Why don’t students like school? A cognitive scientist answers questions about how the mind works and what it means for the classroom. 2nd ed. New Jersey, USA: Jossey-Bass    SENTANCE, S., WAITE, J. and KALLIA, M., 2019. *Teaching computer programming with PRIMM: a sociocultural perspective* Computer Science Education, v. 29 Doi: [10.1080/08993408.2019.1608781](http://doi.org/10.1080/08993408.2019.1608781)      Bagge, P and Grover, S. Chapter 22 Variables In: Grover, S. (ed), 2020, Computer science in K-12: an A to Z handbook on teaching programming. Edfinity: USA.    Franks, R., 2021. A journey into physical computing. *Hello World* <https://helloworld.raspberrypi.org/articles/hw15-a-journey-into-physical-computing>     Various articles in Hello World June 2022 Sustainability & Computing: How can technology be good for the planet? <https://helloworld.raspberrypi.org/issues/19>     Kalelioglu, F. and Sentance, S., 2019 “Teaching with Physical Computing in School: The Case of the Micro:bit,” *Education and Information Technologies*, 25(4), pp. 2577–2603. doi: 10.1007/s10639-019-10080-8.     Barefoot Computing resources:  1. Network Hunt
2. Modelling the Internet
3. Ranking Search Activity
4. Selecting Search Activity
 | Check your knowledge quiz  Interactive survey  Tutor led discussion   Group & Class discussion Regular discussion and feedback from mentor/ class teacher  |
| **Workshop** | * To gain experience of block-based programming environments.
* To describe and apply the concepts of sequence, selection and repetition and variables in a program.
 | 1.23.2, 3.47.4 8.9 | 7l8d, 8e | Ofsted Research review series – computing. | Check your knowledge quiz  |
| **Follow on task:**Explore the resources available through the NCCE Teach computing curriculum. Consider the pathways document and progression.*.**Consider these questions:**Research your school’s computing curriculum. How do skills develop over time. Is there a clear progression of skills, vocabulary, and knowledge?* | * To understand that knowledge builds sequentially.
* To know the importance of retrieval, repetition for remembering.
 | 1.23.2, 3.4 | 2d, 2g3b, 3e, 3h, 3i5b6f | Ofsted, 2023. Research review series: Computing. HMSO.  Elleman, A. M., Lindo, E. J., Morphy, P., & Compton, D. L. (2009) The Impact of Vocabulary Instruction on Passage-Level Comprehension of School-Age Children: A 36 Meta-Analysis. Journal of Research on Education al Effectiveness, 2(1), 1–44. Available at: <https://doi.org/10.1080/19345740802539200>  | Discussion and feedback with computing subject leader in school setting |

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| **School Based Curriculum – Level 4** |
| **Observing:** Observe how expert colleagues plan for the needs of all learners while maintaining high expectations, providing targeted support and promote an inclusive and equitable learning environment.**Observing:** Observe how expert colleagues use and deconstruct approaches, in this subject, in at least one lesson throughout school. **Planning:** Observe how expert colleagues break tasks down into constituent components, in this subject, for at least one lesson. **Teaching:** Rehearse and refine approaches in this subject for a group/whole class. Deliver group/whole class teaching. **Assessment**: Check prior knowledge and understanding during lessons. **Subject Knowledge:** Discuss and analyse subject specific components 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** |
| To know that a school’s computing curriculum provides a plan for delivering the knowledge, skills and values that its pupils will learn, encompassing the national curriculum within a coherent wider vision for successful learning (through discussion with a computing subject leader).To Understand that progression across the year groups should be across the three strands of computing (computer science, information technology and digital literacy)    To be able to use school’s medium-term plans (or schemes of work) to plan and **deliver a computing lesson** which builds on children’s prior knowledge, and takes into account working memory **OR** observe a computing lesson being taught with a focus on how the teacher sequences learning and content to avoid cognitive overload.To embed opportunities for children to learn and use **key computing vocabulary** through teaching **OR** observe a computing lesson in their own or another year group with a focus on how **vocabulary** is taught. | 2.3, 2.7, 2.8, 2.103.1, 3.24.4, 4.7 | 1b2a, 2b, 2e, 2f3a, 3p4e, 4m, 4n5b |  | Weekly Development Summary Lesson ObservationsLink Tutor Blue BookPebble PadReflective conversations with mentor |