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| Session Content | In the provider led taught curriculum**,** trainees have “**learned** **that**…” and will develop this in a range of contexts. | Trainees have **learnt**, and should begin to demonstrate in“**how to …”:** | Examples of key questions/prompts for expert colleagues to ask trainees to help them reflect on and improve their practice and further **“learn how to…”:** | Links to support trainee/further reading shared with trainees |
| **Aims of the national curriculum** | * all children have an entitlement to the three aims of the NC – Fluency, Reasoning and Problem Solving * planning should aim to provide a balance of the three aims over the course of a unit | * **Strand C: Deliver a carefully sequenced and coherent curriculum** - plan opportunities for fluency, reasoning and problem solving for all children * **Strand C: Develop fluency** - plan for a balance of fluency, reason and problem solving over time e.g. over a whole unit of work * **Strand B: Stimulate pupil thinking and check for understanding** - use reasoning structures such as: odd one out, spot the error, what’s the same, what’s different etc. * **Strand B; Avoid overloading working memory** - plan for regular, built-in opportunities to solve problems * **Strand D: Check prior knowledge and understanding during lessons and provide high-quality feedback** - use targeted and differentiated questions and make positive/constructive responses to pupils’ contributions * **Strand B: Plan effective lessons** -show an awareness of scaffolding approaches to differentiation to allow all children to move on together. Provide opportunity for children to justify and prove by explaining their reasoning   **Strand B: Build on pupils’ prior knowledge** - adapt lesson plans from Unit plans/commercial schemes to meet pupil needs | * Can you explain which aspects of this lesson/unit promote fluency? * Which aspects of the lesson/unit promote reasoning and/or problem solving? * What support will you provide and why? * What challenge will you provide and why? * How can you differentiate the support and challenge to help all children move on together?   **Impact**   * Understand and apply sound knowledge of the Mathematics National Curriculum for England * Acquire secure subject and pedagogic knowledge and understanding of the key ideas that underpin primary mathematics; | * <https://www.ncetm.org.uk/teaching-for-mastery/mastery-explained/> * <https://www.youcubed.org/wp-content/uploads/2017/09/Fluency-Without-Fear-1.28.15.pdf> |
| **Concrete, Pictorial and Abstract approaches** | * concrete, pictorial and abstract approaches can be effective in teaching and learning primary mathematics * concrete, pictorial and abstract approaches can be effective in teaching and learning for all children regardless of ability | * **Strand B; Make good use of expositions -** regularly foster mental imagery using manipulatives and or diagrammatic approaches appropriate to the year group being taught * **Strand B: Model effectively -** show/model accurate use of mathematical language and notation (e.g. use of =) * uses targeted and differentiated questions at times utilising apparatus and pictorial representations * **Strand B: Model effectively -** give clear explanations through modelling, showing understanding of mathematical ideas with manipulatives and diagrams e.g. bar models * **Strand B: Help pupils apply knowledge and skills to other contexts** - give clear demonstration of mathematics using appropriate models: e.g. digit cards, base ten materials, tracks, lines, number squares PV charts etc. * **Strand D: Check prior knowledge and understanding during lessons and provide high-quality feedback -** offers constructive responses to pupils’ questions and can include concrete and/or diagrammatic to help children to ‘see’: e.g. 100 squares and number lines, Numicon, base 10, arrow cards, abacus * **Strand B: - Increase likelihood of material being retained -**make use of mathematics displays and/or working walls in teaching | * Which concrete apparatus are appropriate for which children? * How will you encourage children to ‘see’ what they are doing with pictorial representation? * What are your closed targeted questions and who is being targeted? * What are your open, probing questions and who is being targeted? * Will you link your questions to a C, P or A approach? * How can you incorporate working walls and encourage their use?   **Impact**   * demonstrate secure subject and pedagogic knowledge and understanding of the key ideas that underpin primary mathematics; * be confident in the use of appropriate classroom strategies and resources, including ICT, and understand the contribution that support staff make to the teaching and learning of primary mathematics; | * <https://educationendowmentfoundation.org.uk/education-evidence/guidance-reports/early-maths> * <https://www.ncetm.org.uk/teaching-for-mastery/mastery-explained/five-big-ideas-in-teaching-for-mastery/> * <https://www.ncetm.org.uk/features/representations-in-our-primary-video-lessons/> |