

Professional Learning Module
Unit 4: The ITE Partnership Curriculum Mathematics
(Unit 3 asynchronous session – material sent)
Mentor Development

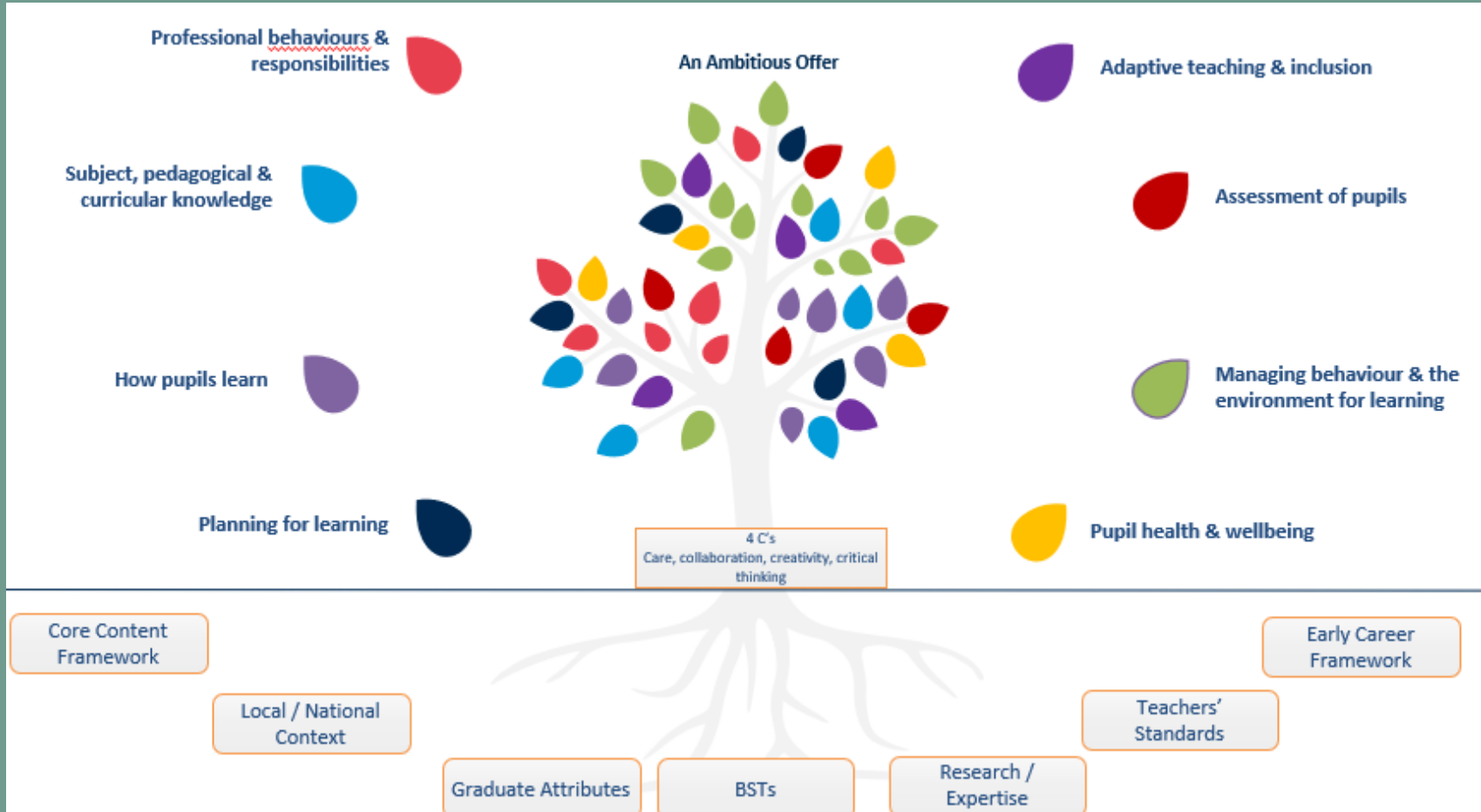
Session overview

1. An overview of your subject curriculum and how this complements/builds on the core curriculum.
2. An overview of any key research you would expect the BSTs to be using to inform their practice during placement.
3. Some 'brief' guidance on the weekly Mentor/BST meetings. What does effective mentoring look like.
4. A look at Section 3 in the CCF covering Subject and Curriculum. An overview of the **specific Subject Curriculum** including some of the key ideas BSTs will draw from to inform their practice during their placement.
5. Using the **Tracking Progress** document on pebblepad.

BUL Mentor Development 2024-25

Dates Placement 1	Professional Orientation module: Procedures and Practices	Dates	Professional Learning module: ITE Partnership Curriculum	Professional Development module: Mentoring Skills	Notes	
w/b 16.9.24 (P1)	<p>For new mentors</p> <p>Unit 1: Mentoring within our ITE Partnership</p> <p>Online asynchronous</p> <p>2 hours equivalent</p>	w/b 7.10.24	Unit 3: An understanding of the Curriculum Components and how to support your Student Teacher	<p>Online asynchronous</p> <p>2 hours equivalent</p>	<p>Self-evaluation against the Mentor Standards</p> <p>A selection of self-study modules from the NASBTT mentor development modules.</p> <p>Completed through the year whilst the mentor is in role.</p>	<p>All mentors</p> <p>LT visits: 3 hours across placement 1</p> <p>Units 1 and 2: 4 hours</p> <p>Units 3 and 4: 4 hours</p>
Monday 23.9.24 (P1) 4-5pm	Unit 2: Mentoring procedures and practices for Phases 1 and 2	<p>2 hours equivalent</p> <p>Online synchronous</p>	<p>Dates TBC to take place during w/b 14.10 and 21.10</p> <p>Unit 4: A deeper understanding of the Curriculum Components through a phase and subject lens</p> <p>Online synchronous/asynchronous</p> <p>2 hours equivalent</p>		<p>9 hours of the mentoring skills module can be completed to give an overall 20 hours, if the mentor is in role for placement one only. Sessions completed with other providers may also be recognised and hours accounted for accordingly.</p>	

ITE Partnership Curriculum



Phase 1 mathematics curriculum – being a maths mentor in the BUL ITE partnership

We really appreciate your thoughts, reflections and input on our curriculum.

What opportunities have you had as a mentor to discuss what BSTs have learned in relation to the curriculum components?

Curriculum Component	University Mathematics Session	A brief summary of what BSTs have learned
Professional behaviours	Introduction to the Secondary Mathematics PGCE	BSTs have reflected on their personal vision and values for mathematics education, and on how their values in mathematics impact their pedagogical approaches. They have developed reflection and target setting skills and explored tools for subject knowledge development.
Subject, pedagogical and curriculum Knowledge	Mathematics Education and the National Curriculum for Mathematics	BSTs have gained an understanding of the development of the national curriculum for mathematics up to its present form. They have reviewed the development of mathematics education and understand the place of formal assessment in England.
	Developing subject pedagogy	This session includes a focus on anticipating common misconceptions, and making good use of expositions, by discussing and analysing with expert colleagues how to use concrete representation of abstract ideas (e.g. making use of analogies, metaphors, examples and non-examples).
How pupils learn	Situated Learning and Peer Microteach	BSTs learn that teachers approach lessons in a variety of ways in order to develop innovative approaches to pupils' learning, and how to take risks when planning and delivering lessons in order to engage fully and creatively with the learning process. They have learned how to demonstrate conscious methods to encourage pupils' intellectual curiosity, recognising the importance of modelling work in the classroom.
	Communicating in mathematics	BSTs have gained and understand of the importance of speaking, listening and diverse communications skills in the mathematics classroom including a strong focus on questioning the use of specialist IT, e.g. <u>Geogebra</u> .
Planning for learning	Planning a sequence of learning in mathematics	BSTs have reflected on what progress in mathematics looks like in a single lesson, a series of lessons and a longer period of time. They have engaged in lesson planning and delivery both with their peers and in groups in one-off school experiences. BSTs have considered different models of teaching including direct instruction, structured problem solving and teaching for mastery.

Phase 1 mathematics curriculum – being a maths mentor in the BUL ITE partnership

Curriculum Component	University Mathematics Session	A brief summary of what BSTs have learned
Adaptive Teaching	Adaptive teaching in Mathematics	Key pedagogies related to adaptive teaching, inclusion and differentiation have been explored, including strategies to support the spectrum of learners. Strategies explored include: scaffolding, use of manipulative and representations, stretch and challenge, questioning and modelling.
Assessment of Pupils	Assessment in Mathematics	BSTs are familiar with the difference between formative and summative assessment in mathematics and when these may be more or less appropriate. BSTs have practiced assessing Key Stage 3 and GCSE responses using mark schemes across exam boards. BSTs are also familiar with Growth Mindset theory and how to apply this to student feedback.
Managing Pupils' Behaviour	Positive classroom management in mathematics	BSTs are familiar with positive classroom management and a range of behaviour management systems. We have discussed ways they can engage and motivate learners in mathematics.
Pupils physical and mental health	Developing mathematical resilience	BSTs have been made aware of the prevalence of mathematics anxiety and the impact this can have in the classroom. We have explore ways to develop mathematical resilience to combat this.

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Research underpinning the Mathematics curriculum

- We are influenced by the work of the following authors, all of whose work is based on extensive research across many schools and decades.
- Jo Boaler (Stanford) – Number Sense (YouCubed), Setting and Gender in the maths classroom;
- Dave Hewitt (Loughborough)– The Arbitrary and Necessary in the maths classroom;
- Paul Ernest (Exeter) – Philosophy and Values of Mathematics Education;
- John Mason (Oxford/Open University) – Thinking Mathematically;
- Sue Johnston-Wilder and Claire Lee (Warwick and Open) – Developing Mathematical Resilience.
- Craig Barton/NCETM – Variation Theory, Representations/Bar Modelling, Diagnostic Questioning, Mastery (less research informed, but being pushed by the DfE).

Do you have any feedback, suggestions or questions about our curriculum?



Developing Subject Knowledge (Core Content Framework)

Subject and Curriculum (Standard 3 – ‘Demonstrate good subject and curriculum knowledge’)

Learn that...	Learn how to...
<ol style="list-style-type: none"> 1. A school's curriculum enables it to set out its vision for the knowledge, skills and values that its pupils will learn, encompassing the national curriculum within a coherent wider vision for successful learning. 2. Secure subject knowledge helps teachers to motivate pupils and teach effectively. 3. Ensuring pupils master foundational concepts and knowledge before moving on is likely to build pupils' confidence and help them succeed. 4. Anticipating common misconceptions within particular subjects is also an important aspect of curricular knowledge; working closely with colleagues to develop an understanding of likely misconceptions is valuable. 5. Explicitly teaching pupils the knowledge and skills they need to succeed within particular subject areas is beneficial. 6. In order for pupils to think critically, they must have a secure understanding of knowledge 	<p>Deliver a carefully sequenced and coherent curriculum, by:</p> <ul style="list-style-type: none"> • <i>Receiving clear, consistent and effective mentoring in how to identify essential concepts, knowledge, skills and principles of the subject.</i> • <i>Observing how expert colleagues ensure pupils' thinking is focused on key ideas within the subject and deconstructing this approach.</i> • <i>Discussing and analysing with expert colleagues the rationale for curriculum choices, the process for arriving at current curriculum choices and how the school's curriculum materials inform lesson preparation.</i> <p>And - following expert input - by taking opportunities to practise, receive feedback and improve at:</p> <ul style="list-style-type: none"> • <i>Providing opportunity for all pupils to learn and master essential concepts, knowledge, skills and principles of the subject.</i> • <i>Working with expert colleagues to accumulate and refine a collection of powerful analogies, illustrations, examples, explanations and demonstrations.</i> • <i>Using resources and materials aligned with the school curriculum (e.g. textbooks or shared resources designed by expert colleagues that carefully sequence content).</i> • <i>Being aware of common misconceptions and discussing with expert colleagues how to help pupils master important concepts.</i> <p>Support pupils to build increasingly complex mental models, by:</p>

<p>within the subject area they are being asked to think critically about.</p> <ol style="list-style-type: none"> 7. In all subject areas, pupils learn new ideas by linking those ideas to existing knowledge, organising this knowledge into increasingly complex mental models (or "schemata"); carefully sequencing teaching to facilitate this process is important. 8. Pupils are likely to struggle to transfer what has 	<ul style="list-style-type: none"> • <i>Discussing and analysing with expert colleagues how to revisit the big ideas of the subject over time and teach key concepts through a range of examples.</i> • <i>Discussing and analysing with expert colleagues how they balance exposition, repetition, practice of critical skills and knowledge.</i> <p>And - following expert input - by taking opportunities to practise, receive feedback and improve at:</p> <ul style="list-style-type: none"> • <i>Drawing explicit links between new content and the core concepts and principles in the subject.</i>
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How are you in your role as a mentor ensuring the 'learn that' and 'learn how to' is taking place?

Progressing against the ITE Curriculum

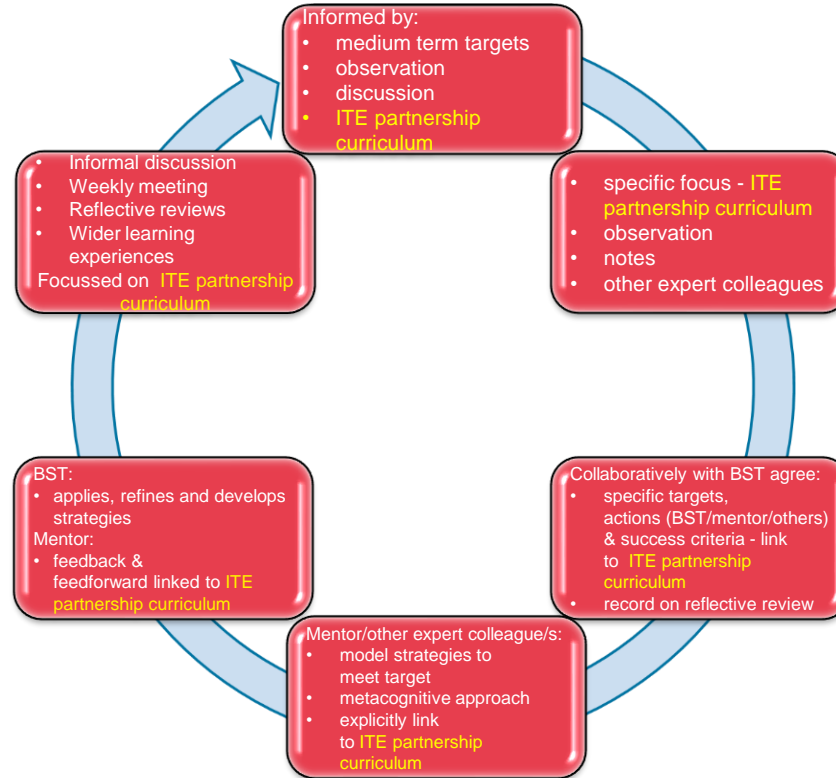
Cluster A: Professional behaviours and responsibilities, Managing behaviour and the learning environment

Phase 1: <i>I have</i>	Phase 2: <i>I have</i>	Phase 3: <i>I have</i>	Phase 4: <i>I have</i>
Carefully reflected in writing on my professional identity	Continued to develop my own personal teaching values and identity, drawing on academic research.	Actively involved parents and carers to support outcomes for pupils.	A strong professional identity and have actively contributed to the whole school ethos and/or school improvement.
Understood school expectations regarding punctuality, attendance, and dress-code, as well as meeting deadlines for both University work and work for school.	Applied strategies to establish effective relationships with students that supports their motivation, wellbeing, and learning.	Engaged with whole-school sustainability initiatives to support statutory net zero targets.	Contributed to wider networks to support behaviour across the school as well as in my own classroom.
Recognised that I am a role	Used explicit strategies to establish and	Contributed to whole-school priorities, including extra-curricular activities.	Developed effective strategies for

Secondary tracking progress on the website [here](#)

End of Phase 1 assessment is due on 29th November. Where is your BST in relation to the phased expectations above? (Full version on the website, link above).

Mentoring Framework



How mentors can support BSTs in school

- Help BSTs to develop strategies to engage learners in mathematics, either by modelling, suggesting observation of other teachers, or developing the BSTs own ideas.
- Reinforce the message that real mathematics learning is about developing habits of mathematical behaviour in the learners, rather than only “covering content”.
- When covering new content, to ensure that BSTs have, and are developing more, strategies to assess pupil understanding, including starting points.
- Help BSTs to develop the ability to adapt their teaching to the needs of their learners, taking emotional responses to mathematics into account
- Explore with the BST how to balance substantive and disciplinary knowledge in mathematics learning within a lesson.
- Discuss and analyse how the big ideas in mathematics are revisited by using a range of examples to teach key concepts, modelling how they balance exposition, repetition, practice of critical skills and knowledge
- Help BSTs with planning both content delivery and high quality assessment for learning opportunities.
- Enabling BSTs to develop independence in all aspects of their practice, including planning, exploring pedagogical mathematical knowledge, and reflective teacher behaviours in the classroom.

Weekly Mentor Meetings

Remember to:

- Focus on what the BST needs to achieve – use the Mentor Cycle to help you.
- Use/refer to the Tracking progress document in your meetings.
- Encourage dialogue between you and your BST and avoid a situation where one of you dominates and the other does not speak.
- Support and encourage the BST – remember they're not the finished product – they are an adult learner.

Try to avoid:

- Setting too many targets.
- Assuming what worked for you, will work for your BST.
- Acting on behalf of the BST unless you jointly agree that this is the best course of action.
- Assuming you know what the problem and/or the answer – explore this together and encourage your BST to work through it.

Teacher characteristics

The Transmissive Teacher

- The teacher is the expert in their subject
- Expects to impart knowledge to students.
- Teacher talk is a means by which s/he imparts information, or asks questions to check what students know.
- Regards knowledge as an aim.
- Students are 'vessels' to be filled with knowledge.
- Asks students questions to which s/he already knows the answer.
- Teacher talk dominates.
- Classroom dialogue is almost always teacher-pupil-teacher.
- Decides who shall speak, when they shall speak and the value of what is spoken.

The Interpretation Teacher

- The teacher is the facilitator of learning, understanding their subject but seeing learning as having limitless possibilities.
- Knowledge is a construct; it has different forms and people construct it differently.
- Regards talk as an important process of learning; ideas are discussed, clarified and opinions changed/challenged.
- Regards knowledge as an outcome.
- Students are an essential resource in learning.
- Ask student open questions that are problematic, with many or no answers.
- Sets activities where students are encouraged to talk. In fieldwork, students research data and discuss them.
- Operates a variety of dialogues – many of which may be pupil-pupil-pupil.
- Manage who speaks by using ground rules for discussion; students give feedback from fieldwork are valued.

Questions...?

Thank you!

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