

**PGCE Primary Mathematics
Pathway Programme 2022-23**

Welcome to the Mathematics pathway element of your Primary PGCE course at Exeter University.

I am looking forward to you joining me in September for what I hope will prove to be an exciting and rewarding year. On the first day you will be given a Mathematics Pathway Study Guide and find out more about the content of the course. In the meantime you might like to do some preparatory reading.

Within this pack you will also have received information about the curriculum studies mathematics programme that all students undertake and the required preparation for this. As a mathematics pathway trainee you should spend time preparing in more depth and start to consider questions such as: 'What is mathematics?', 'How do we learn mathematics?', 'What are the common difficulties children experience in mathematics?' Do start from the new National Curriculum descriptions: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/239129/PRIMARY_national_curriculum_-_Mathematics.pdf and Mathematics guidance: key stages 1 and 2 Non-statutory guidance for the national curriculum in England (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/897806/Maths_guidance_KS_1_and_2.pdf).

Also, my personal views of the teaching and learning of mathematics can be found from: Fujita, T., & Hyde, R. (2013). Approaches to learning mathematics. *Mentoring in Mathematics Education: Supporting and Inspiring Pre-service and Newly Qualified Teachers*, 42-58. <https://books.google.co.uk/books?hl=ja&lr=&id=TUn7AAAAQBAJ&oi=fnd&pg=PA42&dq=Fujita+Hyde+learning+mathematics&ots=DAqdRa77ad&sig=uDIFabzrPsKwr-ZErUxnIUVGKs8#v=onepage&q&f=false>

There are a wide range of suitable books - here are a few suggestions to get you started on this.

Acheson, D. (2002) *1089 and all that: A journey into mathematics* ISBN 9780198516231

Barmby, P. et al (2014) *Understanding and enriching problem solving in primary mathematics*. Critical Publishing. ISBN 978-1-909330-69-6

Enzensberger, H.M & Heim, M.H. (2006) *The Number Devil: A mathematical adventure* ISBN 1862078289

Hansen, A. (2020) *Children's Errors in Mathematics: Understanding Common Misconceptions in Primary Schools 5th Edition*

Paulos, J.A (2001) *Innumeracy: Mathematical illiteracy and its consequences* ISBN 0809058405

Do not feel you have to read them all. Choose one or two that appeal, or suitable alternatives. The most important thing is to refresh your view of mathematics and enjoy your reading. The Hansen text, or a similar title focusing on misconceptions, will be valuable throughout your years in teaching.

You will find it useful to begin to research current ideas and issues in relation to primary mathematics education. You are asked to register with the National Centre for Excellence in Teaching Mathematics www.ncetm.org.uk and look at the Maths mastery page (<https://www.ncetm.org.uk/teaching-for-mastery/>). Also watch videos of maths lessons available from this website (e.g. <https://www.ncetm.org.uk/classroom-resources/lv-video-material-to-support-the-implementation-of-the-national-curriculum/>). Ofsted published a report 'Mathematics made to measure'. We will critique this during the course and you are encouraged to read this in advance – see https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/417446/Mathematics_made_to_measure.pdf.

Finally you are encouraged to browse the Nrich website <http://nrich.maths.org/public/index.php>. This website contains a wealth of problem solving activities for all ages. Please select and explore an activity for pupils in Stage 1, 2 or 3 that interests you. You might also start reading articles such as: <https://nrich.maths.org/10865>. Bring this along to the first maths pathway session to share in small groups.

With very best wishes

Dr Taro Fujita
PGCE Mathematics Pathway Leader