Notes for Unit 2: Fluency

Purpose of this unit: • Explore interpretations of 'fluency' • Examine what it means to be fluent with multiplication facts • Share transferable strategies for developing children's mathematical fluency.	**Materials in this unit:** • PowerPoint presentation • Handout 1: What does it mean to be fluent? • Handout 2: 6.4 x 35 examples • Handout 3: Espresso (2016) Learning and assessing times tables • Handout 4: Representations of 7 x 5.
Approximate time to complete the unit: • Two and a half hours.	**Resources needed during the session:** • Post-it notes (2+ per trainee) • Scissors (1 for every pair of trainees).

Suggested timings		Overview of the session for the leader
Mins	Slides	
5	1-4	Introductory section.
20-30	5-13	**Part 1: What does it mean to be 'fluent'?** This section is designed to think about definitions of fluency. Please have a copy of **Handout 1** for all trainees. Please have a copy of **Handout 2** for each group of trainees along with Post-it notes and scissors.
15-20	14-19	**Part 2: Why do children need to learn their times tables?** This section is focused on the expectations for what will be learned and the bigger picture of why we learn these facts.
30-40	20-25	**Part 3: Learning multiplication tables** This section is designed so that we can discuss what it means to be fluent with knowing times table facts. Please set up the YouTube video of Jill Mansergh. You will need sound.

15-20	26-47	**Part 4: Testing multiplication tables** This section is particularly a response to the Year 4 Multiplication Tables Check (MTC). It is worth rehearsing this as a slideshow so you can follow how the animation works. Please have a copy of **Handout 3** for all trainees.
20-30	48-53	**Part 5: Developing fluency with multiplication tables** This section is a chance to experience and reflect on the practicalities of embedding fluency in the classroom. Please have a copy of **Handout 4** for each group of trainees, along with Post-it notes and scissors.
10-15	54-56	Reflections and close.
	57-59	Articles and links.
	60-68	Some additional ideas/tasks/resources for developing fluency.

Suggested post-session reading or tasks:

Read Meli, R. and North, M. (2018) 'Using maths talks to develop fluency and conceptual understanding.' *Mathematics Teaching*, (261), April, pp. 28-31.

Read Petch, L. (2016) 'Is there a place for rote learning multiplication tables in English primary schools?' *LINK,* 2 (1), [Online] [Accessed on 6 April 2020] www.herts.ac.uk/link/volume-2,-issue-1/is-there-a-place-for-rote-learning-multiplication-tables-in-english-primary-schools

Watch the follow up video by Jill Mansergh: www.youtube.com/watch?v=G94gW8cnu9s