Pangea

In Pangea, children finish learning the times tables by recalling 11x11, 11x12, 12x12 and the corresponding division facts, since they should have mastered all other facts in the previous passports. Children extend their recall of doubles to include all whole numbers up to 100. In particular, children will need to focus on doubling numbers above 50 as these give answers above 100. From these facts, children also practise halving numbers, odd and even, up to 100. This target is 'layered', since some halves are more straightforward to calculate than others: half of 24, 48 or 86 is easier than half of 34, 58 and 96, which is easier than half of 79, 93 and 57. Similarly, when children practise doubling decimal numbers, answers require children to 'bridge' through the next boundary once, twice or not at all. For example, double 3.2 requires no bridging, double 7.4 requires bridging through the tens boundary whilst double 9.8 requires bridging through the ones and tens boundaries. Children often develop a misconception when doubling decimals, believing for example that double 3.6 is 3.12. This could be challenged with using money, where £3.60 is used to represent 3.6. In Pangea, children should be taught (using arrays, for example) why some numbers are square numbers and recall all square numbers up to 144 within three seconds. Finally, children should develop a range of methods, mental and written, to multiply three single digits together.

Target	Example Questions
I can recall all multiplication and division facts for all multiplication tables up to 12 x 12	What is 132 divided by 11? Multiply 8 by 12 Divide 121 by 11.
I can double any 2 digit number	Double 38 What is 79 x 2? What is 88 + 88?
I can halve any 2 digit number	Halve 97 What is half of 73? Divide 54 by 2
I can double any number with up to 1 decimal place	Double 3.4 What is 16.3 x 2? What is 37.8 + 37.8?
I know by heart all the squares of numbers between 1 and 12 and use the notation for squared (^{2})	What is 9 squared? 8 x 8 = 11^2
I can multiply 3 single digit numbers	What is 3 x 6 x 8? Multiply together 4, 7 and 9.

This includes recognising, for example, 2x9x5 = 2x5x9.