Year 3: Pre/Post-Assessment Task: Teacher Talk

The purpose of this pre-assessment is to find out what students know about the concept of multiplication- in particular:

-meaning of the x sign

-concept of what multiplication is

-understanding of arrays: do they think about multiplication in terms of 'arrays' or still as 'groups of' (less sophisticated)

-when drawing arrays, do they draw correctly- 3 x 4 is '3 rows of 4' or '3 rows with 4 in each'

-when answering 4 x 5 can they explain their thinking? We want more than 'I just know it!', e.g. ' I know 2 fives are 10, so 4 fives are 20' or a diagram of an array showing 4 rows of 5 etc.

-9 x 6 is a challenge question for Year 3- can anyone answer it without drawing out an array and counting? Was it skip counting by 6s? (good strategy) Was it thinking 10 x 6 then taking away one 6? (better strategy).

To gain the best insight from this task, it is vital to rove around. Ask your students questions. Students will often not be able to record/explain in writing what they are thinking. By roving around, observing and questioning, you will quickly see the various levels of understanding.

Year 3: Pre/Post-Assessment Task: Marking Guide

*Use as a marking *guide only*- this is a 'rich' task, where teacher discretion and interpretation is required. The main aim is for teachers to gain an insight on their students' thinking.

Question	Marking Guide- (points per question)
1	*We **do not** require the answer or product for Question 1. We are first aiming to assess if the student understands the meaning of the x sign and the concept of multiplication.* **0-** No evidence of understanding that this is a *multiplication equation* or the *multiplication concept* is. E.g. no response, or confuses multiplication with addition etc. **1-** Shows some understanding that this is a *multiplication equation* and some understanding of the *multiplication concept- e.g. student writes 'this means '3 times 4' or draws a 'groups of' diagram but may draw 4 groups of 3 instead of 3 groups of 4. Or writes some explanation of the equation but does not draw a diagram.* **2-**Understands the equation is multiplication, explains this using terms such as *'times, groups of, multiplied by'* and draws a suitable diagram *(either 'groups of' or an array, correctly)* e.g. *student writes 'this means 3 groups of 4 or 3 times 4' and student draws 3 groups of 4 or 3 rows of 4 correctly.*
2	**0-** No evidence of understanding that this diagram relates to the multiplication concept. E.g. the student counts the dots by 1s. Correct answer may still be given, but efficient strategy is not used (counted by 1s). **1-**Counts the dots by using groups- either counts by groups of 5s or 4s to arrive at 20 (not by 1s). **2-**Understands that the array represents a multiplication equation and records the equation, i.e. 4 x 5 = 20 and explains this array is *4 groups of 5 or 4 rows of 5.* Must have the equation written the correct way around (**not** 5 x 4, which means *5 rows of 4*).

3	**0-**No evidence or incorrect answer **1-** Student imagines the dots under the cover and counts by 1s to arrive at 15 OR counts by 3s to arrive at 15 (less efficient than counting by 5s). **2-** Counts by 5s or calculates 3 x 5 (3 rows of 5) to arrive at 15 or uses known fact that 3 x 5 = 15 and records that.
4	**0-** Incorrect answer. **1-** Correct answer (18) with limited or no explanation. **2**- Correct answer (18) explained in words and/or diagram, showing the multiplication concepts- *6 groups of 3* or *6 rows of 3* or *counting by 3s* to get 18. **3-** Correct answer (18) explained in words or diagram, showing the multiplication concepts- but student has turned the equation around to be 3 x 6, which is more efficient- and explained their answer using *3 groups of 6* or *3 rows of 6* or *added 3 lots of 6 together or counted by 6s* to get 18.
5	**0-** Incorrect answer. **1-** Correct answer (54) with limited or no explanation. **2-** Correct answer (54) explained in words and/or diagram, showing the multiplication concepts- *9 groups of 6* or *9 rows of 6* or *counting by 6s OR by 9s* to get 54. **3-** Correct answer (54) explained by use of an *efficient strategy* - such as *multiply by 10 (10 x 6 = 60), then take away one group (60 - 6 = 54)*, or using a known fact to derive this fact *(e.g. I know 6 x 6 = 36, so add an extra 3 x 6 = 18, 36 + 18 is 54).*
6	**0-**No evidence of understanding or no relevant attempt. **1-**Incorrect answer but some evidence of an appropriate strategy, *e.g. counted by 4s, 16 times (inefficient but shows understanding).* 2-Incorrect answer but there is evidence of an efficient strategy, such as *using distributive property- 10 x 4 and 4 x 4 or formal algorithm* - but error in calculations. **3-** Correct answer (56) and suitable strategy, *such as distributive property- 10 x 4 and 4 x 4 or formal algorithm*
7 & 8	For ***student reflection*** and ***teacher insight***. Get a gauge on how your students feel about learning their multiplication facts.