

# MULTIPLICATION

BY CL TAM

## RATIONALE OF THE DESIGN

NCS students' needs/characteristics:

NCS students' have diverse computation skills. But they are ready to participate in exploratory activities. Also, teachers in Hong Kong and NCS students have no common first language. They are forced to communicate in their second, or even third, language. Some strategies are therefore needed to bridge these gaps.

Considering the abovementioned limitations, it is suggested that

- More visual elements should be applied
- Visual tools like **ten-frame** could be used to support the discovery of multiplication concepts

## LEARNING TARGETS

1. Grasp the meaning of the times symbol  $\times$
2. Learn the multiplication table
3. Master the multiplication table of 9 via exploration

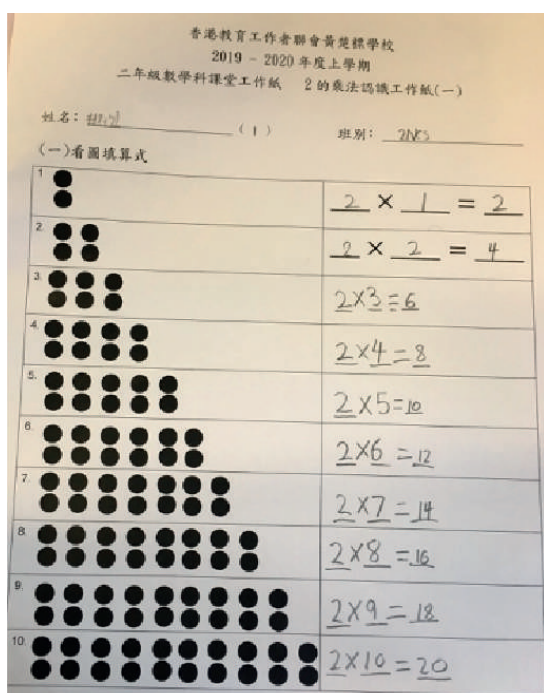
## LEARNING AND TEACHING STRATEGIES

Introduce the times symbol  $\times$  via daily life examples.

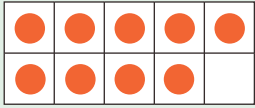
- Each hand has 5 fingers. 4 hands have ... fingers.  $5 \times 4 =$
- A bicycle has 2 wheels. 3 bicycles have ... wheels.  $2 \times 3 =$
- Remarks: *While teaching P2 students who are less proficient in Chinese, teachers may need to be more alert to the use of different quantifiers. For example, 四「對」手有二十「隻」手指 and 三「架」單車有六「個」車輪 could be challenging to some students. In English, such problem may not exist.*
- It is suggested to introduce the symbol with diagrams, gestures and symbolic linkage.



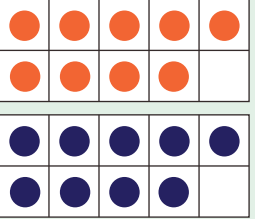
For the multiplication table of each number from 2 to 9, rows of dots could be used as graphical support so that language barrier could be reduced.



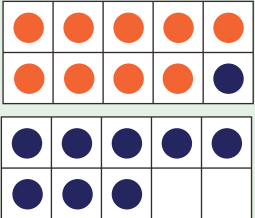
It is suggested that the multiplication table of 9 could be introduced using ten-frame. Students are allowed to observe and guess so that they may be able to grasp the quick method for the multiplication table of 9.



**$9 \times 1 = 9$**

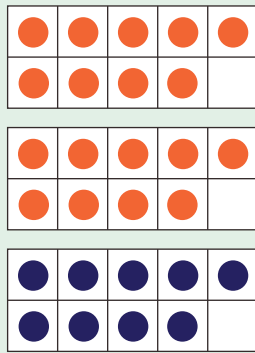


**$9 \times 2 = ?$**

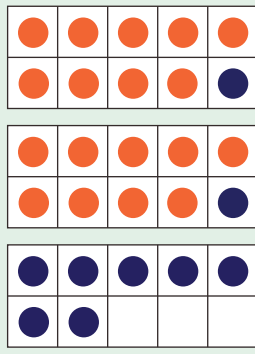


**$9 \times 2 = 18$**

Teacher moves a blue dot to illustrate the product. (Or ask students to try)



**$9 \times 3 = ?$**



**$9 \times 3 = 27$**

Teacher moves a blue dot to illustrate the product. (Or ask students to try)

A special multiplication table is introduced to help students memorise the multiplication table.

1	2	3	2 × 2	5	2 × 3	7	2 × 4	3 × 3	2 × 5
11	2 × 6 3 × 4	13	2 × 7	3 × 5	4 × 4 2 × 8	17	2 × 9 3 × 6	19	2 × 10 4 × 5
3 × 7	22	23	3 × 8 4 × 6	5 × 5	26	3 × 9	4 × 7	29	5 × 6 3 × 10
31	4 × 8	33	34	5 × 7	4 × 9 6 × 6	37	38	39	5 × 8 4 × 10
41	6 × 7	43	44	5 × 9	46	47	6 × 8	7 × 7	5 × 10
51	52	53	6 × 9	55	7 × 8	57	58	59	6 × 10
61	62	7 × 9	8 × 8	65	66	67	68	69	7 × 10
71	8 × 9	73	74	75	76	77	78	79	8 × 10
9 × 9	82	83	84	85	86	87	88	89	9 × 10
91	92	93	94	95	96	97	98	99	10 × 10

## ASSESSMENT TOOLS

Students should give the product quickly when any two numbers are given. Any IT tools that can improve such skill may be used.

<https://m.geogebra.hk/?id=AwdfCcPy&lang=2>



It is good to show rows of dots for students to identify the total.