



Pedagogical Sheet

Constructing the meaning of multiplication

Module Section/ E

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Level: CP - CE1 - CE2 (1st – 2nd – 3rd grades)

Field of study : Mathematics

Constructing the meaning of multiplication

Number of sessions:

5

End of cycle expected achievements

- ✓ Understanding the meaning of multiplication
- ✓ Solving multiplicative problems
- ✓ Knowing multiplication tables

Knowledge and associated skills:


Prerequisites

- ✓ Counting quantities (small or large)
- ✓ Coding quantities by using addition,
- ✓ Knowing tables of addition,
- ✓ Knowing operating techniques of addition.

It is important to wonder what is asked of our pupils' brains when they are said " $3 \times 4 = ?$ "

- They are asked, in coded language, to imagine 3 baskets placed on the ground, with 4 apples in each
- They are asked to understand that a number represents a quantity and that this quantity can be multiplied.
- They are asked to understand that an x is not a +. So basically, it's enough to rotate a sign one-eighth of a turn for an addition to become a multiplication (mix that with a bit of dyslexia, a hint of attention difficulties and some uproar in the class ...)
- They are told that it is easier to do 3×4 than $4 + 4 + 4$ whereas they started learning how to calculate with adding and that in fact, for them, adding is easier than multiplying.

In short, it is a rather complicated exercise for them because they must associate skills of reading, abstraction, arithmetic and mental representation.

Level: CP - CE1 - CE2 (1 st – 2 nd – 3 rd grades)		Constructing the meaning of multiplication		Session : 1/5
Field of study : Mathematics		Repeated addition		
Session	Overall objective	Achievements Guideline	Remediations Adaptations	
1	1-Preparing for multiplication: calculating iterated sums	<p>« You will have learned a new operation by the end of the session »</p> <p>A reminder of the 2 operations already learned: addition and subtraction</p> <ul style="list-style-type: none"> • Coding quantities while using addition <p>Material:</p> <ul style="list-style-type: none"> - Pencils, chocolate bars, etc...  <ul style="list-style-type: none"> - A blank sheet and a pen per group <p>Propose as many situations as there are groups to enable a good circulation in the classroom space.</p> <p>Instruction:</p> <ol style="list-style-type: none"> 1. You must find the right number of objects of each kind by writing an addition every time. 2. Be careful not to modify the bundles. <ul style="list-style-type: none"> • Talking and exchanging ideas about the results achieved Results are displayed on the board Pupils explain, observe, criticize, question, argue • Revealing the constraints, peculiarities and limits related to the addition in these situations <ul style="list-style-type: none"> o Length of calculations: it is easy to make mistakes o Long additions to write: numbers can be forgotten o The same number is found repeated 	<p>Presentation of the learning's objective Reminder of the addition and subtraction through questions</p> <ul style="list-style-type: none"> ✓ Support groups in difficulty by an example, through questions ✓ Recall that errors are important and don't matter ✓ Allow the use of the calculator: <i>the objective here is not to know if the pupil knows how to make an addition, then better avoid calculation errors. Moreover, authorizing the use of the calculator can cause additional motivation and reassure some.</i> ✓ Revive dialogue ✓ Value researching behaviour, tests ✓ Give everyone a voice 	
Adaptation according to the type of disability		<ul style="list-style-type: none"> ✓ For visually impaired pupils <ul style="list-style-type: none"> o Provide equipment that can be handled easily o Tutoring by a « fully sighted » pupil 		

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| | <ul style="list-style-type: none">✓ For pupils with dyspraxia<ul style="list-style-type: none">○ Non-slip surfaces to prevent objects from rolling or falling. (Anti-slide Dycem roll)○ Avoid round objects○ The AVS (Auxiliary of School Life) can write the number, the calculations dictated by the pupil on small papers
✓ For pupils with dyslexia, dysgraphia, dyscalculia, dysphasia<ul style="list-style-type: none">○ Display the numbers band of the board○ Provide number labels to limit writing: magnetic numbers suitable to the board |
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