MENTAL MATHS

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October-December 2009

Lesson Plan: **Mental maths** **Year 5**

Aim: to learn key skills for mental arithmetic operations

TEACHING OBJECTIVES	COMPETENCES
1. To improve understanding of place value and ordering numbers 2. To recognise and extend number sequences formed by counting on and back in steps of any size 3. To add or subtract the nearest multiple of 10 or 100 and then adjust 4. To add and subtract by changing the order of the numbers to make multiples of 10 5. To understand the operation of addition, subtraction, multiplication and division and the associated vocabulary 6. To multiply and divide any natural and decimal number by 10, 100 and 1000	**Linguistic and audio-visual:** -can relate observations, explanations, thoughts and opinions **Mathematical:** -Can use and relate the tools and the forms of expression of mathematical thought and to reason mathematically -Can interpret and put into practice processes of mathematical reasoning leading to solving problems and questions in everyday situations **Autonomy, initiative and decision taking:** -Can initiate, develop and assess individual or collective activities

LEARNING OUTCOMES children will be able to

COGNITIVE	CONTENT	CULTURE
• Understanding instructions and apply them. • Identifying the value of each digit in a number and different mental strategies • Checking results of calculations • Analysing the use of number lines when representing numbers • Classifying different mental strategies • Predicting outcomes and imagining the weight of solids • Inferring when filling numbers in sequences • Deducing the rule which follows the sequences • Recognising inverse operations • Matching the operation with the correct method • Interpreting information • Sequencing mental processes	• The mathematical names of numbers and symbols • Place value • Rules in sequences • Order of numbers • Rapid recall of addition subtraction and multiplication facts • Multiples • Mental calculation strategies (+, -, ×, ÷): ✓ Inverse operations ✓ Reordering ✓ Complement number ✓ Adjusting ✓ × / ÷ 10, 100, 1000	• Interest in discovering the patterns in sequences of numbers • Respect others' conclusions when discussing • English culture: use of dots instead of comas when using decimals. • Awareness of others perspectives when working in pairs or group

COMMUNICATION			
LANGUAGE OF LEARNING	**LANGUAGE FOR LEARNING**		**LANG THROUGH LEARNING**
• **Vocabulary of the topic** *Add, double, subtract, even, odd, digit, term, square number, linear sequence, halve, highest/ lowest, lower than/ highest than, between, ascending, descending, units, tens, hundreds, thousand, ten thousand, million, place value, plus, minus, equal, number line, chart, abacus, first, second, third, fourth, fifth…More, add, sum, total, altogether, increase, equals, sign, inverse, take away, subtract, how many are left, how much less, difference between, how much more, how many more to take, decrease , split, multiplied by, altogether, row, column, equal groups of, recombine, remainder, divisor, share into groups, twice, doubling, product, inverse, need, each, per person, divided by, divisible by, producer, lots of, times table,*	• Making decisions • Reporting the strategies to use when comparing numbers • Describing numbers, mental strategies and sequences • Comparing numbers • Asking for prizes and • Suggesting • Explaining mental processes to solve problems • Locating communities and cities in Spain	• **Lang support** LS1, LS2, LS3, LS4, LS5, LS6, LS7, LS8 • **Classroom Language** What's the value of the units/ tens? Can you read this number? order, listen, count, report, which number is missing? what's next? Is it addition or subtraction? the rule/ pattern is… Respond (rapidly) quickly, explain the strategy used, work out mentally, add/subtract mentally, count up/ down, report, what can you see?, how many will you need? how much does it cost? How much do they cost?	• Dictionary skills • Questions that come across throughout the lessons

share equally • **Structures for communication** *(Numbers)* *It is an / a (odd/ even number)* *Number (…) is bigger/smaller than (…)* *Number (…) is the biggest/smallest* *First/ second number (…) because the units/ hundreds are bigger/smaller* *The (units) are equal, but the (thousands) are smaller/ bigger* *I think you add on/ subtract (…) to get the next number* *(…) groups of/ times (…) equals/makes…* *If we share (…) into (…)groups it will be…* *I can see (groups of)…* *We can put (…) together because…* *We will need (…) groups of (…) to make…* *We will have(…) each/ per person*	**ACTIVITIES** **Teaching/ Learning** **1. Bounding numbers** **2. Patterns everywhere!** **3. What comes next?** **5. Domino number bonds** **6. Digit cards** **7. Divide and multiply by 10/100** **10. Help Molly!** **11. Bonds Wheel** **14. Adjusting** **15. Number chain** **17. Inverse operation** **18. Reordering numbers** **24. Partitioning** **25. Do it before it disappears** **28. Three in a row** **30. Sequences through geometry** **33. Crack the code** **39. Coordinates** **Assessment for learning** **Lesson 3: recall ×/÷ 10/100 (bbc web)** **8. Do it in one minute** **12. Throw the dice** **20. Beehive** **23. ×/÷ 10, 100 Domino** **32. What is a multiple?** **34. Guess the sequence** **35. Say examples of sequences & mental strategies**