PROBLEM SOLVING

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Lesson Plan:	Problem solving	Year 5

Aim: To choose and use appropriate strategies of calculating problems

TEACHING OBJECTIVES	COMPETENCES
1. Use all four operations to solve word problems involving numbers in "real life" situations, money and measures using one step calculation 2. Teaching specific strategies to solve particular types of problem.	**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

• Making decisions: choose and use appropriate number operations to solve problems
• Reasoning and generalising about numbers or shapes
• Considering different methods to solve problems and giving reasons
• Sequencing patterns and relationships
• Making up a word problem to reflect given statements
• Predicting patterns, sequences and outcomes
• Processing information from a problem
• Looking for innovative solutions when solving problems
• Finding more than one solution to problems
	• Make and justify decisions
	• Choose the appropriate operation(s) to solve word problems
	• Strategies for solving problems:
	  ✓ trial and improvement(estimation)
	  ✓ act it out
	  ✓ use a combination
	  ✓ look for patterns
	  ✓ read plan work and check
	• Represent a problem by identifying and recording the information or calculations needed to solve it
	• Use a calendar to calculate time intervals
		• 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

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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,*	• Reporting the strategies to use when solving a problem • Justifying methods used and decisions made when solving a problem • Explaining mental processes to solve problems • Interpreting patterns and relationships • Discussing how to solve problems • Answering questions by collecting, selecting and organising relevant data	• **Lang support** LS1, LS2, LS3, LS4, LS5, LS6, LS7, LS8 • **Classroom Language** Read the problem, order, listen, count, report, what is the main information? Is it addition, subtraction, multiplication or division? 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 out throughout the lessons

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	ACTIVITIES	
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*	**Teaching/ Learning**	**Assessment for learning**
	26. **Task: looking for a hotel** 27. **Maths through music** 28. **Music code** 31. **Task: the tour** 36. **Task on Geography: distance in maps** 38. **North-south-east-west** 40. **A journey into town**	9. **Amazing facts** 13. **Role-play: supermarket** 16. **Real life problems** 19. **Task: going on holidays** 21. **Balance** **Extension 31: Scottish family** 37. **Distances in my community**