**MATHEMATICS STAGE 3**

**TEACHING AND LEARNING OVERVIEW**

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| TERM: | WEEK: 5 and 6 | STRAND: Number and Algebra | **SUB-STRAND:** Addition and Subtraction 2 | **WORKING MATHEMATICALLY:** |
| OUTCOMES: | | **›** describes and represents mathematical situations in a variety of ways using mathematical terminology and some conventions MA3-1WM  › selects and applies appropriate problem-solving strategies, including the use of digital technologies, in undertaking investigations MA3-2WM  › gives a valid reason for supporting one possible solution over another MA3-3WM  › selects and applies appropriate strategies for addition and subtraction with counting numbers of any size MA3-5NA | | |
| **CONTENT:** | | * + - Solve addition and subtraction word problems involving whole numbers of any size, including problems that require more than one operation.     - Record the strategy used to solve addition and subtraction word problems. | | |
| ASSESSMENT FOR LEARNING (PRE-ASSESSMENT) | | Students attempt to answer the following question.   * I saved $12500 for an overseas holiday. The flights cost $2543.67 and the travel insurance cost $1234.98. If I wanted to keep $5000 for spending money, how much money could I spend accommodation? | | |
| WARM UP / DRILL | | **Darts.**  Draw a dart board on the whiteboard and write numbers in the space up to 10 000. Pretend to throw three darts and make a mark where they land. Students quickly add them up and share their answers. (Repeat) | | |
| TENS ACTIVITYNEWMAN’S PROBLEMINVESTIGATION | | Cards: Using a deck cards lay 12 cards out on the classroom floor and ask child to make three numbers from them and place them in a written algorithm form. Ask students to solve it without using pen and paper. Repeat as many times as you like. Modify it to suit the needs of your students. | | |
| QUALITY TEACHING ELEMENTS | | **INTELLECTUAL QUALITY** | **QUALITY LEARNING ENVIRONMENT** | **SIGNIFICANCE** |
| * Deep knowledge * Deep understanding * Problematic knowledge * Higher-order thinking * Metalanguage * Substantive communication | * Explicit quality criteria * Engagement * High expectations * Social support * Students’ self-regulation * Student direction | * Background knowledge * Cultural knowledge * Knowledge integration * Inclusivity * Connectedness * Narrative |
| RESOURCES | | Appendix A, Year 6 Formal Budget Stencil, <http://www.penrithpartyhire.com.au/?gclid=CIfXjpTEucACFUJ8vQodFBwARA>,  <http://www.partykingdom.com.au/?gclid=CMrmzKvEucACFcmXvQodYK8AKA>, <http://www.aussieweb.com.au/directory/party+decorations/nsw/penrith/2750/>,  <http://www.jukeboxking.com.au/>, <http://www.cateringforanyfunction.com/>, Camping Budget Stencil, Appendixes B-K. | | |

**TEACHING AND LEARNING EXPERIENCES**

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| WHOLE CLASS INSTRUCTION MODELLED ACTIVITIES | GUIDED & INDEPENDENT ACTIVITIES | |
| *1****)( Review)****Write the following problem on the board.*  *I saved $12500 for an overseas holiday. The flights cost $2543.67 and the travel insurance cost $1234.98. If I wanted to keep $5000 for spending money, how much money could I spend accommodation?*  Work problem out as whole class or break the students into small groups and ask them to think about the following questions before answering the problem.  What do you have to find out? What information do you have? Do you need all of the information in the problem? Have you highlighted the key information? What kind of sum will you make? Why do you think that? Will you set your sum in columns? Which numbers will be in the tens column? Which numbers will be in the ones column? Etc  Students complete the problem in their groups and then bring the groups back together and share their findings.  *2 )*Tell the students that they have $5000 dollars to decorate their bedroom. Allocate specific dollars for a number of things that they could use to redecorate their room. E.g painting-$345, skirting boards 678, study desk 789, New bed and linen- $2450, Lighting/fan-$567, art and decoration- $1490, New built-in cupboards- $1789, bookcase- $268, etc.  As a class decide what they would like to use and as a whole calculate the total and the balance. Discuss what operations did we use to solve it and was that the most efficient way of solving the problem?  *3*) Using the interactive board show the students explicitly how to create a spread sheet for the above lesson, showing theirlimit, expenditures, total cost and balance. Explicitly show them how to auto sum the amounts.  4) Ask the students to create a difficult class problem that would involve addition and subtraction. Walk through the problem step by step and discuss the most efficient way of obtaining the answer. | *LEARNING SEQUENCE**Remediation**S2* |  |
| *LEARNING SEQUENCE**S3* | *Lesson 1 School Budget*  Tell the students that they’re going to plan a school budget for next year. On the board write down the schools income. You will need to include the school grant, parent funding raising, student fundraising, school fees, computer grant, Carry-over-funds, etc. Discuss with them that they’ll need to break the expenditure into three areas being curriculum, administration, and subsidies. Brainstorm the break down in each area. Once they have allocated the money to each area they will need to calculate the sub-total of each one. Add the final total and work out the balance. Students may choose to represent data as a PowerPoint or on excel spread sheet. Appendix A  *Lesson 2 Year 6 Formal Budget*  Break students into small groups and tell the students that they’re going to plan their Year 6 Formal. Firstly brainstorm for ideas and make a general list of things for their formal. Give the students a reasonable budget to wok from and tell them that they will need to discuss what they are going to collect, how they’re going to collect to collect it, how they will use the data to solve the problem, and how they will present it. Suggest to them that could present their data using PowerPoint and using excel spread sheet. Show the students some sites that they could visit to spend their budget. Make sure you tell them that they will need to itemise each item, calculate the total and show their balance. Year 6 Formal Budget Stencil.  <http://www.penrithpartyhire.com.au/?gclid=CIfXjpTEucACFUJ8vQodFBwARA>, <http://www.partykingdom.com.au/?gclid=CMrmzKvEucACFcmXvQodYK8AKA>  <http://www.aussieweb.com.au/directory/party+decorations/nsw/penrith/2750/>  <http://www.jukeboxking.com.au/>  <http://www.cateringforanyfunction.com/>  *Lesson 3 Camping Budget*  Tell the students that in small groups they’re to plan a camping trip either down the south coast or the north coast. As a class search for some suitable places to camp at. Give them a budget and tell that they will need to make a list of the things that they will need to purchase for their camping trip. They will need to search online for the cost for equipment, cost for camping venue, fuel costing, etc. In groups they will need to discuss what they are going to collect, how they’re going to collect to collect it, how they will use the data to solve the problem, and how they will present it. Suggest to them that could present their data using PowerPoint and using excel spread sheet. Show the students some sites that they could visit to spend their budget. Make sure you tell them that they will need to itemise each item, calculate the total and their balance. Camping Budget Stencil.  *Lesson 4 Problem Stencils*  Give the students a variety of stencils throughout the six week program. Allow students to use calculators with some of the stencils. In conclusion of each stencil discuss how they obtained their answers and what operations they used. Have discussions around the most efficient way of solving each problem. Appendixes B-K |
| *LEARNING SEQUENCE**Extension* *S4* |  |
| ***EVALUATION & REFLECTION*** | *Student’s samples, teacher observations, Students Excel Spread sheets, School Budget, Year 6 Formal Budget Plans, Appendix (assessment for school budget). Any of Appendixes from B-k could be used as assessments.* |

* *All assessment tasks should be written in* ***red*** *and planning should be based around developing the skills to complete that task.*
* *Assessment rubri*cs or marking scale should be considered.,