MATHEMATICS UNIT PLANNER

LEVEL: 3 TERM: 3 YEAR: 2013

CONTENT STRAND: Number and Algebra FOCUS: Money

AusVELS MATHEMATICS:

Proficiency Strands At This Level:

The proficiencies reinforce the significance of working mathematically within the content and describe how the content is explored or developed. They provide the language to build in the developmental aspects of the learning of mathematics.

Understanding includes connecting number representations with number sequences, partitioning and combining numbers flexibly, representing unit fractions, using appropriate language to communicate times, and identifying environmental symmetry.

Fluency includes recalling multiplication facts, using familiar metric units to order and compare objects, identifying and describing outcomes of chance experiments, interpreting maps and communicating positions.

Problem Solving includes formulating and modelling authentic situations involving planning methods of data collection and representation, making models of three-dimensional objects and using number properties to continue number patterns.

Reasoning includes using generalising from number properties and results of calculations, comparing angles, creating and interpreting variations in the results of data collections and data displays.

~ Money and Financial Mathematics Sub Strand ~	~ Elaborations ~
LEVEL 2- Count and order small collections of Australian coins and notes according to their value (ACMNA034)	• identifying equivalent values in collections of coins or notes, such as two five-cent coins having the same value as one 10-cent coin. • counting collections of coins or notes to make up a particular value, such as that shown on a price tag.
AusVELS Level 2 achievement standard: They associate collections of Australian coins with their value.	
LEVEL 3- Represent money values in multiple ways and count the change required for simple transactions to the nearest five cents (ACMNA059)	• Recognising the relationship between dollars and cents, and that not all countries use these denominations and divisions (for example Japanese Yen).
AusVELS Level 3 achievement standard: They represent money values in various ways. Students correctly count out change from financial transactions.	
LEVEL 4- Solve problems involving purchases and the calculation of change to the nearest five cents with and without digital technologies (ACMNA080)	• Recognising that not all countries use dollars and cents, e.g. India uses rupees. • Carrying out calculations in another currency as well as in dollars and cents, and identifying both as decimal systems.
VOCABULARY DEVELOPMENT: money, dollars, cents, more than, less than, change, difference, total, coins, notes, cash, amount, sell, round-up, round-down, add, subtract, decimal point, currency, denomination, make to, estimate, saving calculate, buy, shopping, transaction, cost, bargain, difference, cheap, expensive, dear, discount, total, amount, decimal places, spending COLLECT CATALOGUES AGAIN	EXPLICIT TEACHING: *Need to know coin and note denominations. *Order money denominations from smallest to largest (dollars/cents). *Be able to order money amounts. *Revise skills in addition and subtraction. *Start with Informal addition and subtraction of amounts of money. *Formal addition and subtraction algorithms of amounts of money. *Calculation of change from $10. AusVELS- international currency- perhaps students/teachers can bring in coins from other countries and discuss the difference in value when compared to the Australian dollar- link to post office currency rate board and nightly news.

COMMON ASSESSMENT TASKS (Including pre, during and post unit understandings)

Assessment FOR Learning	Assessment OF Learning	Assessment AS Learning
Pre Assessment Children order money amounts in dollars and cents from smallest to largest. e.g. $1.00, 0.50c, $4.00, $10.00, $3.50, $4.20 etc. Choose 4 items and add the total of them together. Give a list of items with prices. Students are told they have $10 to spend and MUST have change. What could they buy? How much change would they receive?	Post Assessment Activity Children order money amounts in dollars and cents from smallest to largest. e.g. $1.00, 0.50c, $4.00, $10.00, $3.50, $4.20 etc. Choose 4 items and add the total of them together. Give a list of items with prices. Students are told they have $10 to spend and MUST have change. What could they buy? How much change would they receive?	Anecdotal notes Observation while students are working Students ability to articulate during reflection

LESSON	**Warm Up Activity (5-15 min)**	**Teaching and Learning Opportunities Including Introduction (5-10 min) and Activity (20-35min)**		**Reflect and Share (5-10min)**
1 **Week 7**	Pre-test used as a warm-up to previous week's work in fractions.	**Focus:** Pre- Assessment **Learning Intention:** We are demonstrating all that we already know about Money. **Student Activity- PRE TEST-**Money Activity Students order money amounts, spend money amounts and work out the change from $10.00. Examine work samples to identify where students sit. Group students with like needs.		
2 **Monday** **Week 8**	**Celebrity Head:** With money amounts. Students ask interesting questions to ascertain their amount.	**Focus: Familiarisation with coins and their values.** **Introduction: Powerpoint-** team to find **Learning Intention:** We are investigating various currencies (coins & notes). What is the purpose of money? The history of money? What do they look like, who's on them? What are the values? Symbols, names. **Student Activity-** Complete coin rubbings on a blank sheet of paper for Maths Wall display.		After test, teacher will scaffold a discussion about Money. Students will contribute words and fact they know about Money. Record student observations in class dictionary. **Discussion–** I found out that... I really liked... I'm still unsure about… I want to learn more about...
		Below Coin rubbings in order from smallest to largest (with help if needed).	**At & Above** Coin rubbings, making up money amounts (e.g. 75c, $2.50, $7.95 etc.). Time permitting, students to carry-out money investigations and create posters to display.	

<table>
<tr>
<td>4
Tuesday</td>
<td>In My Pocket…
I have 75c in my pocket. What coins might I have?
List all possible combinations</td>
<td colspan="2">Focus: Using each coin denomination to add up to one dollar.
Learning Intention: We are adding money.
Introduction: How many 50c coins do you need to make a dollar? What about 20c, 10c and 5c? Teacher to model and clarify misconceptions/confusion with how to record money amounts- decimal point issues. Calculator use modelled also.

Student Activity- Making Money amounts
Teacher to model how to add money amounts

Below
We are using each coin type to add up to one dollar. Make with concrete materials and record by drawing in their books the dollar amounts with the same coin.

Make with concrete materials as a teacher focus group on poster paper to display in the class room.

At & Above

Students to work independently in Maths book to add

Grabbing handfuls of coins and notes.

Use a calculator to check, being mindful of how the decimal point is used.</td>
<td>Discussion–
What was the maths in today's session?
What did you learn or find out about?
What parts were difficult for you?
Share strategies for these areas of difficulty.</td>
</tr>
<tr>
<td>5
Wednesday</td>
<td>In My Pockets…
I have the same amount of money in both of my pockets. (Teacher to decide). They in different denominations.
What coins might I have?
List all possible combinations.</td>
<td colspan="2">Focus: Making Money Amounts (counting & adding)
Learning Intention: Introduction: Ask the students to recall the previous day's task. Then introduce today's task.
Student Activity-

Below
Use coins of <u>various</u> denomination to make up to one dollar.

We are using mixed coins to come up with as many combinations as we can that add up to one dollar.
Make with concrete materials first and then record by drawing the mixed coin sequences adding up to one dollar.

Make with concrete materials as a teacher focus group on poster paper to display in the class room.

At & Above

Teacher to work with this group.

E.g. $25.35- how can you show this in various ways.

Etc.</td>
<td>Rocket writing –
I found out that...
I really liked...
I'm still unsure about…
I want to learn more about...</td>
</tr>
<tr>
<td>6
Thursday</td>
<td>Counting Up</td>
<td colspan="2">Focus: Making Money Amounts (counting on & adding)
Learning Intention: We are learning to add on amounts of money
Introduction: Ask the students to recall the previous day's task. Then introduce today's task.
Student Activity- See at level work</td>
<td>Sit in a circle students show their amounts. Teachers and other students can ask clarifying questions.</td>
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<tr><td></td><td></td><td>Below
Students given a low amount e.g. 0.10c and they need to go and physically get money to make up to $1.00</td><td>At
Students given an amount e.g. $5.50 and they need to go and physically get money to make up to $10.00</td><td>Above

$10.00 +</td><td></td></tr>
<tr><td>7
Friday</td><td>Heads and Hips
(Questions Greater/Less Than $1.00, $10.00, $100.00).
e.g.
The cost of:
• Paddle-pop
• Wooden ruler
• Cheese Burger Meal
• School Jumper
• X-box game
• Teacher’s Christmas Present</td><td colspan="3">Focus: Using a Shopping Wallet of School Money!
Learning Intention: We are spending school money to buy classroom items.
Introduction: Ask the students what is needed before you shop e.g. Money. Talk about the importance of only spending money you have. Does everybody have the same amount of money in their purse/wallet? Why? Sit in a circle & dump a clump of random notes and coins and ask students to count it. Repeat as needed.

Student Activity- Put prices on classroom items (e.g. books, textas, whiteboard, chair, dictionary, computers etc. Find the labels document in the money resources folder). Each student given a plastic/brown paper bag of coins and notes based on their ability level. Students need to determine how much they have in their bag and then find and record items they could buy. They need to record as they go.

Below
Some students will need to continue to have some experiences where they make amounts of money (counting and adding focus)
e.g. $6.50

At
e.g. $10.50

Above
e.g. $27.90</td><td>Quality Questioning:
What strategies did you use to work out how much money you had in your bag?

What is the best way to count a sum of money?

Scaffold the discussion around:
~ sorting/counting the largest denominations first;
~ making up to a dollar;
~ using paper/pencil to keep track if required.

What operations can you use to work out the problem?

etc……</td></tr>
<tr><td>8
Monday
Week 9</td><td>Celebrity Head with Money</td><td colspan="3">Focus: Making Money Amounts (Count back & Subtract)
Learning Intention: We are learning to count back to subtract amounts of money.
Introduction: If you have an interactive whiteboard. Try the counting up with coins- double check by counting back. Link subtraction and addition equations.
Student Activity-
Teacher will have items listed on the board with their costs for each differentiated group. Students will have hands-on experiences, draw coins, record the algorithms on paper and use calculators to check their working out.

Below
Teacher group
Start with $1.00 and then try other simple amounts $2.00, $5.00, etc.

At
$10.00 or $20.00

Above
$50.00 or $100.00</td><td></td></tr>
<tr><td>9
Tuesday</td><td>Heads and Hips:
More than, or less than</td><td colspan="3">Focus: Shopping at the School Canteen
Learning Intention: We are using the canteen list to make a lunch order.</td><td>What was the total of your order? Share with a</td></tr>
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<tr><td></td><td>$10.00 focus with addition & subtraction.

Give two amounts to add or subtract, if more than $10.00, hands on heads, if less than $10.00, hands on hips
e.g.
• $7.95 + $2.35 =
• $27.90- $7.90 =</td><td colspan="3">Introduction: Teachers to copy a Canteen Price List for one between two students to look at or scan in and put up on interactive whiteboard.
Student Activity- Open-ended Task-
Students are given canteen price list and asked to make a lunch order that is totally their choice. Students will complete their working out and check with a calculator.

Below
$10.00

At & Above
$20.00</td><td>friend. Whose is more expensive?

What coins could you use to pay for your order?

How much change would you have from $10.00/$20.00</td></tr>
<tr><td>10
Wednesday</td><td>Problems…
I bought something & paid with 3 coins. What might it have been & what was the cost?

I bought something at 7-11 and got 5c change. What was it & how much did it cost? What money did I give? List students' combinations.</td><td colspan="3">Focus: Spending Money at the Shops- Grocery Catalogues
Learning Intention: We are learning to keep track of our spending as we shop for groceries.
Introduction: Teachers and students are to bring in shopping catalogues from home.
Students have an at level money amount to spend, what could they buy? Vary the amount to suit the needs of the students. Don't need to physically give the money to at/above students.
Student Activity- Open-ended Task-
Students need to cut out the item and paste it in their maths book, adding the total as they go. Estimate by rounding off first. Check with the calculator. What notes and coins could you use to pay for your shopping?

Below
$10.00

At
$ 20.00

Above
$ 50.00</td><td>Now I know...

I still need to know...

This task relates to my everyday life because…</td></tr>
<tr><td>11
Thursday</td><td>A Problem…

Put these dollar amounts in order from smallest to largest. Give students a range.</td><td colspan="3">Focus: Working out the change- Think board style
Learning Intention: We are solving problems (addition/subtraction) involving money.
Introduction: Teachers and students will use pretend money to act out giving change.
Student Activity- Open-ended Task-
Students will solve problems using pictures, numbers and words to show different ways to give change from an at level appropriate amount.

Below
$3 for an item that costs $2.75.

At
$10 for an item that costs $7.35.

Above
$25 for an item that costs $13.65</td><td>3, 2, 1
3 Facts
2 Questions
1 Feeling</td></tr>
<tr><td>12
Friday</td><td>A Problem…

Round to the nearest dollar. Discuss the formula 5 and higher round up, 4 or lower round down.
Give students a range of prices to round up or down.</td><td colspan="3">Focus: Rounding Money (Up or Down)
Learning Intention: We are deciding to round money amounts up or down.
Introduction: Teachers will demonstrate how to complete the day's focus. Stimulus may come from shopping catalogues to place a real-life application on the activity.
Student Activity-
Students draw a table in books and are given money amounts; placing the amount in middle; then, record if the amount is rounded up or down and nearest dollar it is rounded to in the correct column.

<table><tr><th>Round Down</th><th>Amount</th><th>Round Up</th></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>
Below
Up to $5.00 or ICT Task??

At
Around $10.00

Above
From $20.00+</td><td>Discussion–

I found out that...
I really liked...
I'm still unsure about…
I want to learn more about...</td></tr>
</table>

<table>
<tr>
<td>13
Monday
Week 10</td>
<td>Word Football:
cl, dr, ph, bl
Students come up with the longest word possible to match the lettering to score goals and points for the quarter, half, 3/4 and full time. Scored in fraction form.</td>
<td colspan="2">Focus: Rounding
Learning Intention: We are finding unrounded amounts in catalogues and identifying how much the items really costs a customer.
Introduction: Teachers will demonstrate how to find prices of items in a catalogue that cost anything ending in a 1, 2, 3, 4, 6, 7, 8 or 9 cents.
Student Activity- Students paste prices/items into their books and record the price when rounded to the nearest 5 cents, thus reflecting a knowledge of Australia’s currency.</td>
<td rowspan="2">Use sentence starters to promote oral and/or written reflection.
This reminds me of…
Some people think…but I think….
I wonder why…
I feel confident when I…because…
I don’t know…</td>
</tr>
<tr>
<td></td>
<td>Below
Ensure these students have had enough opportunity to count up random handfuls of coins and notes, making up to a dollar, etc. or ICT Task??</td>
<td>At and Above
Students could complete this task in a mixed ability pair.</td>
</tr>
<tr>
<td>14
Tuesday</td>
<td>A Problem…

I received 20c change. Make a subtraction number sentence to fit the answer.</td>
<td colspan="2">Focus: Post-Test
Learning Intention: We are showing all that we have learnt about money.

Teachers to consider putting more counting up for change and subtraction.</td>
<td>Now I know...

I still need to know...</td>
</tr>
</table>

Integrating ICT (include a class computer rotating timetable. ICT sessions, Net Book Days):

Students play a range of interactive games around the concept of money.

http://www.studyladder.com.au/resources/teacher/financial-literacy/activity/20671?retUrl=%2Fresources%2Fteacher%2Ffinancial-literacy%23sg-8142
http://www.studyladder.com.au/learn/mathematics/topic/money-455?lc_set=
http://www.mathsisfun.com/money/money-master.html
http://www.woodlands-junior.kent.sch.uk/maths/measures/money.html#Money
http://www.funbrain.com/cashreg/

Don’t forget to also set the students on the Mathletics Money Activities

Issues noted from pre-test :

Change from 10 and adding a variety of different coins, confusion with how to record money amounts- decimal point issues