School Baden Powell Tarneit	**Year Group:** 7/8 TMQ	**Day** Thu	**Date** 24th March 2011
Topic [Money (4)] Decimal points – understanding and placement Adding and subtracting fractions	**Aims** Students will review the process of adding and subtracting fractions using the lowest common denominator. Students will explore decimals and understand the importance of correct placement		**VELS: Strands, Domain, Foci and Standards** Mathematics Level 4 – Students add, subtract, and multiply fractions and decimals (to two decimal places) and apply these operations in practical contexts, including the use of money
Location / Setting Classroom	**Organisation / Student Groups** Students in normal class groupings		**Classroom management strategy** Standard classroom practice
Key Vocabulary	**Materials, Resources and Equipment** Understanding the Point handout Dice for Greedy Pig game Adding and Subtracting Fractions handout		**References/Sources** http://www.math.usu.edu/~schneit/CTIS/GreedyPig/ Nelson Maths 7

INTRODUCTION **Connecting, Engaging and Modelling Inquiry**	**MAIN BODY** **Guiding Inquiry and Practise**	**CONCLUSION** **Sharing, Explaining and Reviewing Inquiry**
Warm up: NAPLAN review questions (10 to 15 minutes) Page 12, qs 1, 2 and 3 [Percentages are fractions where the denominator is always 100 – Text page 253] Warm up: Greedy Pig game (10 to 15 minutes) **Objective:** Roll a die to accumulate points. **To Play:** A game consists of 10 rounds by default. All players are 'standing' as each round begins. Players roll the die (take turns or have a specified 'roller', as desired). If a two, three, four, five, or six is rolled, all standing players add that number of points to their scores for the current round. A player can 'sit down' at any time. When a player sits, he or she safeguards all the points he or she has earned in the round, but is not able to earn more points until the next round. When a one is rolled, all 'standing' players lose the points they have accumulated in the current round. The player with the most points at the end of the game wins.	**Adding and subtracting fractions:** (40 minutes) Students will review adding and subtracting fractions. **Question:** What is your understanding of the LCD – lowest common denominator? **The LCD is the smallest number that all denominators divide into without leaving a remainder** Go through worked examples on the board Students are to practice a selection of exercises in class: **1 a, b, d, f** **3 a, b, d, f, h, k, m** **4 a, b, c, d** **Decimal points:** (40 minutes) **Refer Nelson Maths 7 page 116** Students will complete the task Understanding the Point **Question:** What is your understanding of decimal points and place value? Quick review of place value – draw an unlabelled chart on the board and invite the students to label it accurately with place holding values. Get the students to assist in listing the following on the chart correctly: **67.4**, **235.97**, **3.456** **Activity:** Understanding the Point Students to correctly place the decimal point within a story in order to make sense – complete the first couple of instances as a class as a guide, then students to	Sharing: (10 minutes) Fractions – As a class review the solutions to a few of the exercises, have students discuss their results and explain how they got to their solutions. Decimals – Go through the story and have the students share where they think the decimal points should be placed. If there is time read out one or two of the students' stories and have the class decide where the decimal points should be place.

	complete. Once complete students are to write a brief story of their own, then remove the decimal points. They will swap with another student and try to make sense of the stories by adding back the decimal point.	

Reflection	**Mentor Feedback**
Did not use NAPLAN questions as a warm up as there was some confusion as to which questions had been done previously. Several of the students complained vociferously about having to play Greedy Pig, and then again when the version of the game was different to the one they had played before. I went through one practice round with the class, and then let them play in table groups, and they generally did engage and have some fun with it, despite the complaints. There were a couple of table that had some friction, but overall it went well. On the whole the lesson on fractions did not go well. Almost all of the students made some comment about how they remembered doing this before, but there were only a few that actually could do any of the addition or subtraction when the fractions had different denominators. It seemed that most of the students did not understand the equivalence of fractions like ½ and 3/6 and 2/4 – moving forward I would start much simpler, do some ground work on equivalent fractions before trying to move on to addition and subtraction. None of the students seemed able to grasp the concept of the lowest common denominator. A few of the students who did understand moved forward with the exercises while I went over a couple more examples with the class and again this worked quite well. Need to consider this as an ongoing plan, always have some kind of worksheet that students can go on with if they are done with the material in the lesson. As the fraction part of the lesson ran longer than anticipated I skipped the reviewing of place value that had been planned and moved straight onto the decimal point activity. Because the class was quite fractured I decided to complete the whole of the exercise as a group and tried to involve the students who were distracting others. I think it was quite a good exercise and one to keep in mind for another time. Did not have time for students to develop their own stories.	**Students will always try to confuse you about what they have done – it helps pass the time of day, and then they don't do half of what we want them to do.** **You are developing a good sense of what is a necessary sequence of activities to suit this group of students. Your planning is reflecting this as is your teaching.** **Your personal reflection is always honest and you think about productive changes you can make to your practice – an excellent activity to continue.**

Exercise 8.06 Adding and subtracting

WE1 WE2

1 Work out these fraction addition and subtraction calculations mentally.

a $\frac{1}{2} + \frac{1}{2}$ **b** $\frac{7}{10} - \frac{1}{10}$ **c** $\frac{2}{3} + \frac{1}{3}$

d $\frac{5}{7} - \frac{3}{7}$ **e** $\frac{20}{50} - \frac{17}{50}$ **f** $\frac{1}{4} + \frac{1}{4} + \frac{2}{4}$

Using computers 8.06a

Using computers 8.06b

Click on the icons to learn how to add and subtract fractions using diagrams.

WE3 WE4

2 Draw diagrams to show the following.

a $\frac{1}{2} + \frac{1}{3}$ **b** $\frac{1}{2} - \frac{1}{3}$ **c** $\frac{1}{6} + \frac{1}{4}$

d $\frac{5}{8} - \frac{1}{4}$ **e** $\frac{1}{3} + \frac{3}{5}$ **f** $\frac{2}{3} - \frac{1}{10}$

Use the fraction strips you made before to help you with finding the LCD.

WE3 WE4

3 Work out these additions and subtractions.

a $\frac{1}{2} + \frac{1}{3}$ **b** $\frac{1}{4} + \frac{3}{8}$ **c** $\frac{3}{4} - \frac{1}{2}$

d $\frac{2}{3} - \frac{1}{12}$ **e** $\frac{3}{4} - \frac{1}{3}$ **f** $\frac{1}{2} + \frac{1}{3} + \frac{1}{6}$

g $\frac{4}{5} - \frac{3}{10}$ **h** $\frac{2}{3} + \frac{5}{8}$ **i** $\frac{1}{2} + \frac{4}{5}$

j $\frac{2}{3} + \frac{3}{4}$ **k** $\frac{1}{3} + \frac{4}{5}$ **l** $\frac{7}{8} + \frac{1}{3}$

m $\frac{7}{10} - \frac{1}{3}$ **n** $\frac{4}{5} - \frac{1}{2}$ **o** $\frac{3}{4} - \frac{2}{3}$

WE5 WE6

4 Work out each of the following.

a $2\frac{3}{5} + 1\frac{1}{5}$ **b** $4\frac{5}{6} - 2\frac{1}{6}$ **c** $2\frac{4}{5} - \frac{3}{10}$

d $1\frac{1}{2} + 2\frac{1}{4}$ **e** $3\frac{1}{4} - 2\frac{1}{2}$ **f** $1\frac{3}{5} + 7\frac{2}{10}$

g $3\frac{7}{8} - 1\frac{2}{5}$ **h** $1\frac{1}{2} + 2\frac{1}{2}$ **i** $2\frac{3}{4} + 3\frac{3}{4}$

j $2\frac{3}{5} - 1\frac{2}{5}$ **k** $3\frac{7}{8} + 1\frac{3}{8}$ **l** $4\frac{7}{10} - 2\frac{3}{10}$

m $1\frac{9}{10} + 3\frac{1}{2}$ **n** $2\frac{1}{2} + 1\frac{3}{4}$ **o** $2\frac{3}{5} - 1\frac{2}{3}$

p $3\frac{2}{3} + 2\frac{2}{5}$ **q** $6\frac{2}{5} - 4\frac{7}{8}$ **r** $2\frac{3}{5} - 1\frac{4}{5}$

Using computers

Using computers 8.06c

5 Some number patterns include fractions. Click on the icon and see whether you can use your knowledge of fractions to continue patterns.

Applications and problem solving

6 When Penny walks at her quickest rate to school, she takes half an hour. If she walks at her normal pace, she takes an extra one-third of an hour. How long does Penny take when walking to school at her normal pace?

Hint: Draw a diagram.

7 James used some leftover scrap material to make some board shorts. The torn and damaged pieces were trimmed off each end of the scrap material so that one-tenth of the material was lost from each end. What fraction of the scrap material remained for James to work with?

5.01 Understanding the point

The weather presenter read that:

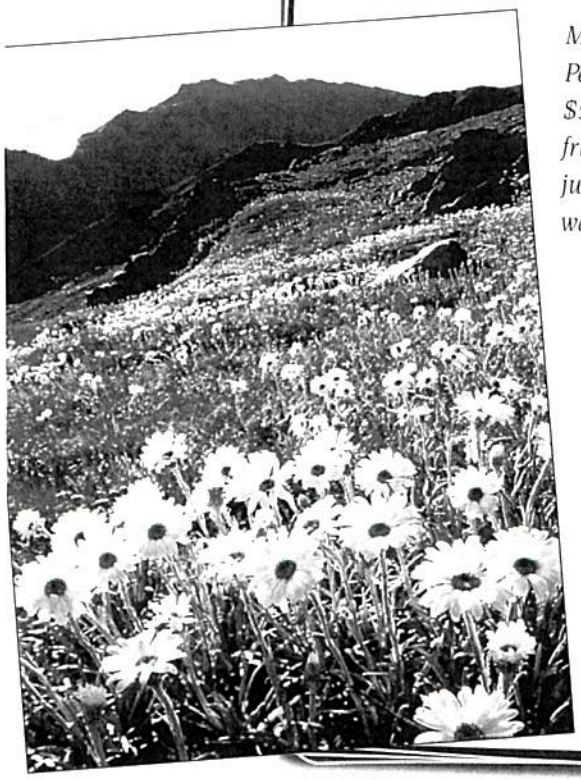
'Tomorrow will be fine and warm with a maximum temperature of 245°C.'

Wow that's some heat wave! After lots of calls were received at the station the following explanation was posted on the website.

'Channel 99 apologises for the error in today's weather report. Unfortunately, the decimal point was missed out when the weather report was written. The maximum temperature is expected to be 24.5°C.'

Activity: Making sense of numbers

The editor has left out all the decimal points in this story. Read it carefully and place a decimal point in the of the numbers so that the story makes sense. If you can't decide where the decimal point should go, discuss it with a friend and come to a decision.



*Maria filled her car, which was half-empty, with **436** litres of petrol. Petrol was listed at **1097** cents per litre, so she handed the attendant a $**5000** note. After she had received her change of $**217**, she picked up her friend Fred, a tall man **188** metres in height. Into the back of the car jumped his dog Charlie. The dog, weighing **140** kilograms, was happily wagging his **150**-centimetre tail and looking forward to the journey.*

*After they had driven for several hours, averaging **850** kilometres per hour, they were within sight of Mt Kosciuszko, the highest mountain in Australia at **22 280** metres above sea level. They enjoyed seeing the wildflowers and the beautiful alpine snow gums—small eucalyptus trees about **30** metres high. They also saw a kangaroo, which jumped about **972** metres. After a pleasant walk of **130** km they arrived back at their campsite. They slept soundly and next morning drove the **4800** kilometres home in about **550** hours.*

Now, it's your turn. Write a story that contains at least 10 numbers with decimal points. Take out the decimal points, then ask a friend to put the decimal points back in to make sense of the story.