**Strategies for helping students grasp the concepts of fraction, multiplication and money**

At the start of each term, students complete their Maths pre-tests. I collate the results and create groups based on the results.

Before explicit teaching, I ask the students to mark the maths goals board or goals sheet in their maths books with pink highlighter to indicate their current level of understanding of that particular concept and in green to indicate where they would like to be – their goal.

After explicit teaching, I organise practice tasks for the students. These are always based on the current level of ability to start with. I then take anecdotal notes, thumbs up/down tallies or 2 stars and a wish feedback to understand where the needs or misconceptions. Then, I design lesson plans around this to help them improve. ([levels task example](differentiate1.jpg))

At first, I group the students with similar misunderstandings and teach micro lessons while others are working on set tasks. After teaching, I set tasks for these students and we work on them together – guided maths lesson. During this time, I show them how to use concrete materials, visual representations, think-boards and calculators (if applicable). At times I model the use of visuals and concrete materials a few times until students have a good understanding of how to use them. ([image 1](interactive%20maths.jpg), [image 2](concrete%20materials.jpg), [image 3](fractions%20visual%20represenatation.jpg))

Then I set tasks to practice on which they do in small groups or with elbow partners. During this time, students are encouraged to ask each other how they worked out the question, conference with one another on strategies and methods. ([image 4](group%20work.jpg), [image 5](Student%20development5c.jpg)) Students also use strategies exchange station: maths wall to post or take strategies.

The following lesson they start by revising what they learned and complete one task in a small group or with a partner but are encouraged to attempt on their own too. Once students have practiced the new skill for a few lessons (number depends on the concept and how difficult students may find it), they apply their new knowledge to problem situations like word problems, challenges and investigations. ([image 6](differentiate3.jpg), [image 7](Student%20development6a.jpg), [image 8](Student%20development6e.jpg), [image 9](fractions%20model%20with%20pie.jpg))

For multiplication, students sometimes play a game like Super Snake or Multiplication Dash where, to move on, a student must be able to work out the sum either mentally or by using a strategy like grouping for example. Other times, students use write and swipe boards and counters to practice grouping, arrays and division strategies. ([image 10](Student%20development7.jpg), [image 11](differentiate%202.jpg))

I have also set interactive tasks on StudyLadder and Brain Pop to supplement their learning. These interactives consist of videos, tutorials and questions that develop from basic to multi step problems.

In financial Maths, students had an opportunity to develop saving and spending plans. We had a ‘Classroom Store’ activity where students had to estimate then calculate the amount needed for the items they wanted to buy. Extension group had a currency exchange task whereby they had to log onto Google currency calculator, chose the first five countries shown and calculate in which of these countries would they be able to buy the most items for Australian $50.

To help the below level group with understanding the concept of fractions, I organised a fruit salad maths lesson. We cut up apples and bananas and separated mandarins into segments. Then we looked at these fractional amounts individually to explore mixed number, equivalent and unit fractions. For example, one mandarin had 11 segments. Therefore, one segment is one eleventh. This particular activity helped a few students understand the concept of a fraction.

Extension students are normally grouped and they usually work on investigations or multi step problems. These are mostly based on real life scenarios. Students are not only asked to solve the problems but to discuss the following:

* was the strategy they used the best one?
* is there a more efficient one – what is it?
* can a combination of strategies be used?
* If you were confused, how did you figure out what to do or where the problem was?
* Find the mistake tasks
* instead of adding, would subtraction be more efficient? (area calculation question for the new garden development), and similar.

Extension questions of similar type are also asked to the ‘at level’ and ‘below level’ groups but they are adjusted to suit tasks and abilities. Strategic partners/groups mixing is also used during practice times as an opportunity for students to learn from each other.

‘Number Talks’ poster is also used to guide mathematical discussions. With the use of this, students can independently carry out their discussions and remain on task which allows me to work with others at the same time.