

COVER SHEET

MATHS ASSIGNMENT THREE
Laurence Potter

MATHS UNIT:
Geometry:
Symmetry and Transformation:
Level 3

SCHOOL:
Tahuna Normal Intermediate School
Year 7/ Room 8
Associate Teacher: Mike Jenkinson

Part A: Knowing the Learners.

1. Pre-Assessment.

Having been given the unit I was to teach, 'Geometry – Transformation', I set about designing a pre-test. In terms of a sequence of events, I first researched the subject, looking at the expected curriculum level as indicated by my associate teacher. I drew up an initial draft unit plan, along the lines of what I thought I would have to teach, and from this constructed a pre-test assessment. I designed the format to follow the sequence of teaching as I envisaged it, and in line with the level 3 AO's taken from the NZ Curriculum Document (Min of Ed 2007).

The pre-test was also designed with the specific learning outcomes (SLO's) in mind, as outlined in the Unit Plan, a copy of which can be found in the Unit Folder. The only SLO that I did not target in the Pre-Test was that of 'Be able to recognise the relevance of transformation properties in their everyday lives.' It did not seem practical to test this within the constraints of the pre-test. However, with hindsight, this is something I would try to find a way to test if I was to carry out this unit again in the future.

A copy of the pre-test, including answers, can be found in Unit Folder (the folder I used during the teaching of the unit).

2. Analysis of Pre-Assessment.

A total of 25 students took the pre-test.

2.1 Group Structure:

These 25 students make up a syndicate maths class, from across three year 7 classrooms. This is one of two parallel maths classes within the syndicate (a top stream making up the third class within the syndicate), and as such there is a wide range of ability within the class I teach. Within this class, the students have been previously assessed and 'streamed', according to ability. For numeracy the streamed groups are Green, Blue and Red, with Green being top level, Blue middle and Red lower level ability students.

Two students at either end of the ability spectrum require further clarification:

- One student () from the top ability class has been placed in this parallel class for reasons unrelated to his maths ability, and as such is continually at the top of ability for this class. My expectation is to try to extend this student as much as I can, although there are underlying issues which mean that Matthew does not cope well in certain circumstances, and therefore, it is not a given that he will take easy to extension activities.
- A second student () did not take the test and is not expected to take part in the unit, his goals falling very much outside of the learning intentions of the rest of the class. Again there are underlying issues as to why this student is unable to function as the rest of the students within this group. My expectation for this student is that my AT will continue to work with him and he will largely fall outside the remit of my teaching.

The test results mirrored the above observations, X scoring highest for group, with a score of 20/30. X did not take part in the pre-test due to ongoing difficulties in being able to cope with the classroom program or structure.

2.2 Test Results:

A full breakdown of the test results can be found in Unit Folder. The results very much followed a classic bell shape pattern, with the majority of students scoring between 5 and 10 out of 30. The stand out areas were:

- Over 60% recognising the 4 examples of rotation, translation, enlargement and reflection.
- Only 14% of total possible marks were scored for successfully completing the plotting of given co-ordinates
- Reflection was the most successfully completed task, translation the least- (only 9% of total possible marks were scored for successfully translating a shape given a set of co-ordinates. (One individual student scoring just under 1/3 of these marks).

- **Test Results influence on Unit Planning:**

On the whole the results were along the lines “expected”, and largely justified the sequence, level for the unit as planned. The biggest surprise was the struggle with co-ordinates. Position and orientation is a separate AO within the curriculum, and yet the understanding of the co-ordinate system is fundamental to grasping the notion of translation, and so the need to recover this area was, I feel essential (this was an area that was covered earlier in the year within the statistics unit I was lead to believe). This is the one area of the planning I needed to readdress and add additional teaching for.

The results largely justify the teaching of the unit as a whole class activity. There are a number of students who scored low end that I will have to ensure are keeping up with the teaching, and a handful who will require extending at the top end. However my gut feeling after examining the pre-test was that many of the missed sections, or errors, were misunderstandings which would/ could quickly be rectified over the next 6-8 sessions, and that significant gains would be made by the majority of students.

As for interests of the students that could be used with the unit, whilst I wasn't able to pinpoint specific interests, what I tried to do throughout the unit is to vary the style of worksheet, problem given. I have, were possible tried to appeal to their interests, including cartoons, quizzes, as well as animated PowerPoints. Indeed the first teaching session, and accompanying power point looked at examples of the four types of transformations that we find in our dally lives. We also looked briefly at traditional Maori and Pacific patterns and symbols, for example, Kowhaiwhai, and the role translation, reflection and rotation play in creating these patterns.

Reflection on format of Pre-Test:

I feel the overall format was suited to the task in hand. ‘Next time’ I would make minor changes to the wording of some of the questions, possibly bridging that cross-over from previous mathematical language to Level 3 expectations, for example, include “move’ when talking about translation. I would also possibly reduce weighting of Question 3, the translation one. Rather than scoring every correct co-ordinate, possibly award a single point for a correct pair of co-ordinates. And I would look to include a way of assessing students understanding of the relevance of transformation in their lives. Perhaps by showing examples from their daily lives, and asking them to name the type of transformation taking place.