Lesson Plan 2

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| Learning Area: Algebra and Geometry | Year Level : 7 | Class Size: 4-5 students |
| Topic: History of Algebra and Geometry (Main Lesson) |
| Curriculum Connections: NSW Board of Studies Science Curriculum Year 7 - 10 |

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| Intended learning outcomes | The focus of the lesson will be to find out what the students know about algebra and geometry and to give them an outline of the Greek history of algebra and geometry. |
| Link to development | This lesson will give the students an opportunity to show what they think algebra is and to find out where it came from historically. |
| Assessment | I will know listening to the discussion within the group and looking at the rough draft essay on Greek mathematics that is to be set for homework that the outcomes have been achieved.  |
| Procedure | * I will ask the students “What do you think algebra is?”
* We will discuss this as a group. I will talk about the essence of algebra and how the Greeks didn’t have algebra, as we know it. It was developed in the Arab world in the 800’s.
* I will give an example of how algebra can be used to solve a difficult mathematics puzzle: a box with an open top is to be made from a square piece of cardboard of 30cm sides by cutting off four squares from the corners and then folding the sides. I will show them how calculus (Stage 6) can be used to find the solution of the dimensions of the box with the largest volume. The purpose is not to understand the algebra but to appreciate how it can be used to solve puzzles quite easily.
* I will give an outline of Greek mathematics: Thales who first came up with simple proofs, e.g. The Theorem of Thales. Pythagoras who developed a philosophy based upon mathematical relationships. Pythagorean Theorem (done towards the end of this main lesson). Euclid who gathered all the mathematics known in his time into the book *The Elements*, which was the only maths text, used for over 2,000 years. Archimedes who discovered many important mathematical theorems and principals in physics.
* The homework will be set for the students to draft a rough essay on Greek mathematics.
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| Resources | Small area with desks and chairs and a blackboard with chalk. |