MATHEMATICS – MYP 3 (YEAR 9) , TERM 2
AL JAZEERA ACADEMY
MIDDLE YEARS PROGRAMME, 2009-2010

TOPICS	OBJECTIVES	AREAS OF INTERACTION	ASSESSMENT CRITERIA
Topic 9: Radicals and Pythagoras ± 2 Weeks **Unit Question:** How important is Pythagoras of Samos' discovery really? **Key Questions** ✓ What is an irrational number? ✓ What are the rules for square roots? ✓ How do I write radicals in simplest form? ✓ How do I solve equations of the form $x^2 = k$? ✓ Who is Pythagoras and what is the Pythagoras Theorem? ✓ How do we find lengths of sides in a right angled triangle by using Pythagoras' Theorem? ✓ What is the converse of Pythagoras' Theorem? ✓ How can I determine whether a triangle is right angled by using the converse of Pythagoras' theorem? ✓ What are Pythagorean Triples? ✓ How can I use Pythagoras' theorem to solve real life problems? ✓ How can Pythagoras' Theorem be used to solve 3D problems?(Extension) ✓ How can I find cube roots of numbers?	**Students should have knowledge of / be able to:** **A – Knowledge and Understanding** ⇨ Calculate square roots of numbers and identify irrational numbers. ⇨ Know the rules for square roots. ⇨ Know how to solve equations of the form $x^2 = k$. ⇨ Know Pythagoras' Theorem. ⇨ Know the Converse of Pythagoras' Theorem. ⇨ Calculate cube roots of numbers. **B- Investigating Patterns** ⇨ Identify Pythagorean Triples. **C - Communication in Mathematics** ⇨ Write radicals in simplest form. ⇨ Use Pythagoras' Theorem to calculate the lengths of sides in right angled triangles. ⇨ Use the converse of Pythagoras' Theorem to determine whether a triangle is right angled. ⇨ Use Pythagoras' Theorem to solve 3D problems. (Extension) **D - Reflection in Mathematics** ⇨ Justify why a solution does or does not make sense in the given context when using Pythagoras' theorem to solve real life problems.	**Approaches to learning:** • Be organised, equipped and ready for work. • Use of appropriate vocabulary. • Assess and evaluate own work. • Use scientific calculator. • Listening and questioning. **Human Ingenuity:** • Discover the use of Pythagoras' Theorem engineering, construction, surveying. • Investigate and make Pyramids. (Extension)	**A: Knowledge and Understanding (8)** **B: Investigating Patterns (8)** **C: Communication (6)** **D: Reflection and Evaluation (6)** **TOTAL: 28** **Assessments:** ❑ **Mental Arithmetic Test (A).** ❑ **Formal Test:** Indices, Radicals and Pythagoras. **(A, C)**