ARAB UNITY SCHOOL

CURRICULUM OVERVIEW

YEAR 7

2019 – 2020

A guide for Parents and Students

SUBJECT: Mathematics

Overview of the year:

The curriculum for Mathematics aims to ensure what a teacher may expect to teach and what a student may expect to experience and learn. These aims suggest how the student may be changed by the learning experience.

The aims of curriculum are to encourage and enable students to:

- enjoy mathematics, develop curiosity and begin to appreciate its elegance and power
- develop an understanding of the principles and nature of mathematics
- communicate clearly and confidently in a variety of contexts
- develop logical, critical and creative thinking
- develop confidence, perseverance, and independence in mathematical thinking and problem-solving
- develop powers of generalization and abstraction
- apply and transfer skills to a wide range of real-life situations, other areas of knowledge and future developments
- appreciate how developments in technology and mathematics have influenced each other
- appreciate the moral, social and ethical implications arising from the work of mathematicians and the applications of mathematics
- appreciate the international dimension in mathematics through an awareness of the universality of mathematics and its multicultural and historical perspectives
- appreciate the contribution of mathematics to other areas of knowledge
- develop the knowledge, skills and attitudes necessary to pursue further studies in mathematics
- develop the ability to reflect critically upon their own work and the work of others

The curriculum prepares the students to achieve the National Agenda Targets 2021 for PISA and TIMSS

TERM ONE Main topic, skills and content:	**Numbers** ➢ Use number line to order positive and negative numbers including decimal numbers. ➢ Carry out operations (addition, subtraction, multiplication, division) involving integers. ➢ Calculate squares, square root, cubes and cube root of numbers up to 15 ➢ Round numbers to an appropriate degree of accuracy (to a number of decimal places, significant figures) ➢ Express numbers in standard form ➢ Use the conventions of BIDMAS to carry out calculation. ➢ Carryout multiplication and divisions involving decimals **Fractions** ➢ Calculate fraction of a quantity	**LEARNING SKILL: SECRET** **Numbers** **Rounding grocery bill:** Students on their own collect the grocery bill and round numbers to an appropriate degree of accuracy. Poster making on the topic round numbers to an appropriate degree of accuracy. **Learning outcome** Students will be able to apply rounding decimal numbers in real life. **Fraction** **BYOD** https://www.khanacademy.org › math › arithmetic › fraction-arithmetic	**ASSESSMENT 1:** **Numbers** Mental Maths Test 1 **ASSESSMENT 2** **Fractions and Probability**

	➢ Add and subtract unlike fractions (Proper, improper, mixed) ➢ Multiply and divide unlike fractions (Proper, improper, mixed)	**Research: Independent research** How many years ago did people start writing fractions? What information do you need to start answering this question? (Group activity) Each group will come and do the presentation of their research work (PPT or any other resources) **Learning Outcome** Students will be able to write fractions and convert mixed fraction to improper and vice versa.	
	Probability ➢ Understand the terminology related to probability ➢ Use sample space diagrams to work out the probability of a single event	**Probability** https://revisionmaths.com › gcse-maths-revision › statistics-handling-data **Group Discussion** How many possible outcomes will there be if the dice is a 4-sided dice? What if the dice is an 8-sided dice? **Learning Outcome** Students will be able to draw sample space diagram for any event.	
	Construction ➢ Construct triangle (SAS, SSS, RHS)	**Construction** **BYOD** **Project: Wheel of Theodorus Project**	

		https://www.geogebra.org › BwKQyu69 Students in a group create a Wheel of Theodorus spiral using RHS construction. **Learning Outcome** Students will be able to apply angle construction in real life (architect, engineering etc)	
TERM TWO Main topic, skills and content:	**Percentage** ➢ Understand the equivalence between a fraction, a decimal and a percentage ➢ Understand and use percentage greater than 100% ➢ Calculate percentage of a quantity ➢ Solve problems involving percentage change (percentage increase and decrease, profit percentage and loss percentage)	**Percentage** **Project** Students on their own collect broachers from different shops, then find new price and percentage increase or decrease. **Learning Outcome** Students will be able to understand how to find percentage increase or decrease	Mental Maths Test 1 **ASSESSMENT 1: Percentage**

	Ratio and Proportion ➢ Use ratio notation, including reduction to simplest form Use ratios to find totals or missing quantity **Algebra** ➢ Construct simple expressions and set up simple equations. ➢ Simplify algebraic expressions by collecting like terms ➢ Substitute numerical values into formulae and expressions ➢ Solve linear equations in one variable	**Ratio and Proportion** **Project: Food Analysis:** Group work: Finding the proportion of vitamins and mineral content in an egg or any food item. **Learning Outcome** Students will be able to identify the proportion of nutrients present in each food item. **Algebra** https://www.khanacademy.org › math › alg-basics-algebraic-expressions **Research (Group research)** Write the expression for the taxi fare in UAE per km similar situations will be found out by students. **Learning Outcome :** Students will be able to write the expression for any situation.	
TERM THREE Main topic, skills and content:	**Angles** Understand and use relationship between angles in parallel lines ➢ Understand and use angle sum property of triangle ➢ Understand and use angle sum property of quadrilaterals	**Angles** **Research (Independent research)** Find some examples of where you might find quadrilaterals in real life. Draw the objects and make a creative poster. **Learning Outcome** Students will be able to identify and name any type of quadrilaterals. **Graphs**	**Mental Maths Test 1** **ASSESSMENT 1:** **Angles and Graphs**

	➢ Understand and use the properties of triangle and quadrilaterals **Graphs** ➢ Understand and work with coordinates in all four quadrants ➢ Recognise and draw graphs of linear function. **Statistics** ➢ Construct and interpret pie charts. ➢ Calculate mean, median, mode and range for the given data.	**Investigation (Independent investigation)** What is the same in the equations of two line that are parallel? What is different? **Learning Outcome** If lines are parallel then their coefficient of x is equal. **Statistics** **Project BYOD** Students on their own construct a pie chat of their daily activities using sing any app in computer [sleeping , swimming, studying etc] **Learning Outcome** Students will be able to construct a pie chart any activities.	