**Gulf English School Term 1 IG2 Mathematics**

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| TOPICS: Graphs, Linear Programming, Sequences, indices |

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| Themes: Using graphs to illustrate connections and investigating these connections (optimizing solutions), Use algebra to represent real life processes. | Level: IG2 |
| Objectives: To construct/use: various mathematical graphs, informative, linear and nonlinear. To calculate the gradient of a curve using tangents.  To graph inequalities and define regions in linear programming.  To find/use the nth term of a linear sequence and apply the laws of indices. | |

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| Focussing Questions | Key Words | |
| **1. Real life graphs**   * IGCSE Chapter 14. Ex 14a – 14c, * What does the steepness of the line tell us in a   distance-time/speed-time graph?   * + Assessment: Topic Test   **2. Straight line graphs**   * Chapter 15, Ex 15a – 15d * Are the lines y = 3 + 2x, y – 2x = 7 and 8 + y – 2x = 0 parallel to each other? * Show me a point on a line (e.g. y = 2x + 1).   + Assessment: Topic Test   **3. Graphs of functions**   * Chapter 16 Ex 16a - 16d * What is the same and what is different: y = x, y = x2, y = x3 and y=1/x ?   + Assessment: Topic Test   **4. Linear Programming**   * Chapter 20 Ex 20a – 20c * Convince me that the set of inequalities x ≥ 0, y > 0 and x + 2y < 6 has 6 pairs of positive integer solutions.   + Assessment: Topic Test   **5. Sequences**   * Chapter 17 Ex 17a – 17d * Always/ Sometimes /Never: The 10th term of a linear sequence is double the 5th term of the linear sequence   + Assessment: Topic Test   **6. Indices**   * IGCSE Chapter 18 Ex 18a – 18c * How can we simplify 58 ÷ 53? * Always/ Sometimes /Never: A number to the power zero is 1?   + Assessment: Topic Test   Assessment: Cumulative half term test | Axes,  Gradient, Steepness, Parallel, Perpendicular, Reciprocal,  Y-intercept,  Function, Quadratic, Tangent,  Rate of Change,  Table of values,  Inequality,  Optimize,  Test point,  Feasible region,  nth term,  Linear sequence,  Arithmetic progression,  Common difference,  Exponential, Power, Base | Explaining words  My rationale for … is…  The definition of … states that… so…  Therefore...  Hence…  The un-shaded region represents the solution set of… |

**TEXT BOOK: COLLINS CAMBRIDGE IGCSE**