



8th Grade Mathematics

Willows Preparatory School 2019-20

Subject Aims

- Develop confidence, perseverance and independence in Mathematical thinking and problem solving.
- Communicate confidently and clearly in a variety of contexts.
- Appreciate the contribution of Mathematics in other areas.
- Reflect critically and constructively on your work and the work of others.
- Nurture the skills and knowledge required for students to take their studies in Mathematics beyond the MYP.

Keys to Class

- **OneNote** – A unit overview and the assignment sheets will be found in the **ADMIN** section. Specific assignments will be in the **Content Library** under **Problem Sets**.
- **Haese Mathematics 9 (MYP 4)** Most activities will come from the textbook. Individual tasks from other sources will be used to supplement. These will be handed out in hardcopy in class.
- When learning mathematics, it is inevitable that you will make mistakes. That is OK, as long as you learn from it.
- Mistakes must be analyzed and corrected in order to learn from them. You cannot ignore them.
- You know far more than you think. Always attempt a problem. Then, we can identify the weakness in your understanding.
- Communication is key for an IB Learner. Mathematics is the universal language. Show your work so that it can 'speak' to you.

Objective Criterion

Objective A: Knowing and Understanding	Do we have access to a selection methods, processes and techniques? Can we apply them to challenging and unfamiliar problems?
Objective B: Investigating Patterns	Can we generalize patterns and investigate their properties?
Objective C: Communicating	Can we link together the different forms of Maths to produce accurate, coherent solutions?
Objective D: Apply Mathematics in Context	How do we identify what is relevant? Can we justify our answers and reflect on the accuracy of our solutions?

Content Brief

Trimester 1	Trimester 2	Trimester 3
<ul style="list-style-type: none">• Indices and Surds• Quadratics (Factorizing, Forms, The Discriminant, Solving and Graphing)• Properties of Functions (linear, quadratic, cubic)• Non-Linear Simultaneous Equations• 3D Composite Volumes	<ul style="list-style-type: none">• Direct and Inverse Proportion• Rational, Exponential Functions (Growth and Decay)• Transformation of Functions• Trigonometry (Non-Right-Angled Triangles, Functions and Graphs)• Circle Theorems	<ul style="list-style-type: none">• 2D and 3D forms (Similarity, Congruency, Transformations)• Vector Arithmetic and Pathways• Measures of Center and Spread• Probability (Combined Events, Dependence and Independence, Sample Space, Expectation)