مدرسة قطر للعلوم والتكنولوجيا الثانوية للبنين
Qatar Science and Technology Secondary School for Boys
STEM & AP Education

وزارة التربية والتعليم و التعليم العالي
Ministry of Education and Higher Education
State of Qatar · دولة قطر

المادة الدراسية للاختبارات Study list

نهاية الفصل الدراسي الأول 2026/2025 Semester 1- End-of-Term	الصف الثاني عشر Grade 12

الصفحات في الكتاب **Pages in the book**	الوحدات/الدروس Lessons /Units	المادة **Subject**
All the resources including Lesson Presentations, assessments & worksheets on the LMS	**1.1 Introduction to Algorithms, Programming, and Compilers** **1.2 Variables and Data Types** **1.3 Expressions and Output** **1.4 Assignment Statements and Input** **1.5 Casting and Range of Variables** **1.6 Compound Assignment Operators"** **1.7 Application Program Interface (API) and Libraries** **1.8 Documentation with Comments** **1.9 Method Signatures** **1.10-1.11 Math Class** **1.12 Objects: Instances of Classes** **1.13 Object Creation and Storage (Instantiation)** **1.14 Calling Instance Methods** **1.15 String Manipulation** **2.1 Algorithms with Selection and Repetition** **2.2 Boolean Expressions** **2.3 if Statements** **2.4 Nested if Statements** **2.5 Compound Boolean Expressions** **2.6 Comparing Boolean Expressions** **2.7 while Loops** **2.8 for Loops** **2.9 Implementing Selection and Iteration Algorithms** **2.10 Implementing String Algorithms** **2.11 Nested Iteration**	**Computer Science**

Vision : Entrepreneurial learner for sustainable development. | **Mission** : To establish a comprehensive and innovative educational environment that enhances values and morals and qualifies the learner with high skills. To prepare a conscious generation capable of building an advanced society and a prosperous economy

الرؤية : متعلم ريادي لتنمية مستدامة | **الرسالة** : نرسي بيئة تعليمية شاملة ومبتكرة تعزز القيم والأخلاق وتؤهل المتعلم بمهارات عالية؛ لإعداد جيل واع قادر على بناء مجتمع متقدم واقتصاد مزدهر
Tel: +974 40362888 | Email: qsst.boys@edu.gov.qa

	2.12 Informal Run-Time Analysis 4.3 Array Creation and Access 4.4 Array Traversals 4.5 Implementing Array Algorithms 4.7 Wrapper Classes		
AP Classroom Units 1-3	**Unit 1: Kinematics** • Scalars and Vectors • Displacement, Velocity, and Acceleration • Representing Motion (e.g., graphs and equations) • Reference Frames and Relative Motion • Motion in Two or Three Dimensions (including projectile motion) **Unit 2: Force and Translational Dynamics** • Systems and Center of Mass • Forces and Free-Body Diagrams • Newton's Three Laws of Motion (First, Second, and Third) • Gravitational Force • Kinetic and Static Friction • Spring Forces • Resistive Forces • Circular Motion **Unit 3: Work, Energy, and Power** • Translational Kinetic Energy • Work (including work done by varying forces using integration) • Potential Energy (Gravitational and Elastic) • Conservation of Energy • Power	**Physics**	
PPTs AP Classroom	**<u>Unit 5 Kinetics</u>** • Reaction rates • Introduction to Rate Law • Concentration Changes Over Time	**Chemistry**	

Vision : Entrepreneurial learner for sustainable development. | **Mission** : To establish a comprehensive and innovative educational environment that enhances values and morals and qualifies the learner with high skills. To prepare a conscious generation capable of building an advanced society and a prosperous economy

الـرؤيـة : متعلم ريادي لتنمية مستدامة | الـرسالة : نرسي بيئة تعليمية شاملة ومبتكرة تعزز القيم والأخلاق وتؤهل المتعلم بمهارات عالية؛ لإعداد جيل واع قادر على بناء مجتمع متقدم واقتصاد مزدهر
Tel: +974 40362888 | Email: qsst.boys@edu.gov.qa

مدرسـة قطـر للعلــوم والتكنــولــوجيــا الثانــويــة للبنين
Qatar Science and Technology Secondary School for Boys
STEM & AP Education

وزارة التربيــة والتعليــم و التعليــم العالــي
Ministry of Education and Higher Education
State of Qatar ● دولــة قطــر

| Booklets

Notebook

Quizzes and unit tests | • Elementary Reactions
• Collision Model
• Reaction Energy Profile
• Introduction to Reaction Mechanisms
• Reaction Mechanism and Rate Law
• Steady State Approximation
• Multistep Reaction Energy Profile
• Catalysis

Unit 6 Thermochemistry
• Endothermic and Exothermic Processes
• Energy Diagrams
• Heat Transfer and Thermal Equilibrium
• Heat Capacity and Calorimetry
• Energy of Phase Changes
• Introduction to Enthalpy of Reaction
• Bond Enthalpies
• Enthalpy of Formation
• Hess's Law
Unit 7 Equilibrium
• Introduction to Equilibrium
• Direction of Reversible Reactions
• Reaction Quotient and Equilibrium Constant
• Calculating the Equilibrium Constant
• Magnitude of the Equilibrium Constant
• Properties of the Equilibrium Constant | |
| PPTs
AP Classroom
Notebook
Quizzes and unit tests
Worksheets | **Unit 5 Hereditary**

5.1 Meiosis

5.2 Meiosis and Genetic Diversity

5.3 Mendelian Genetics

5.4 Non-Mendelian Genetics

5.5 Environmental Effects on Phenotype

5.6 Chromosomal Inheritance

Unit 6 Gene Expression and Regulation | **Biology** |

Vision : Entrepreneurial learner for sustainable development. | **Mission** : To establish a comprehensive and innovative educational environment that enhances values and morals and qualifies the learner with high skills. To prepare a conscious generation capable of building an advanced society and a prosperous economy

الـرؤية : متعلم ريادي لتنمية مستدامة | **الرسالة** : نرسي بيئة تعليمية شاملة ومبتكرة تعزز القيم والأخلاق وتؤهل المتعلم بمهارات عالية؛ لإعداد جيل واع قادر على بناء مجتمع متقدم واقتصاد مزدهر
Tel: +974 40362888 | Email: qsst.boys@edu.gov.qa

	6.1 DNA and RNA Structure 6.2 DNA Replication 6.3 Transcription and RNA Processing 6.4 Translation 6.5 Regulation of Gene Expression	
81 178 75-79 135-140 36-45 80-87 217-224 177-184 56-60 159-162 186-190 20-26 61-63 101-103	- **الحفظ**: غربة وحنين من البيت 1 إلى 7 صدى الحياة من البيت 1 إلى 10 **القضايا الأدبية**: مدرسة الإحياء المدرسة الرومانسية - **القراءة**: مسيرة وطن وحكمة قائد غربة وحنين الخبز المر صدى الحياة **الكلمة والجملة**: أفعال المقاربة والرجاء والشروع **أدوات الشرط الجازمة** **أدوات الشرط غير الجازمة** **البلاغة**: مراجعة التشبيه والاستعارة-المحسنات البديعية **الكتابة**: المقال نقاشي المقال تفسيري	**اللغة العربية**
18 – 21 18 – 21 22 – 25 26 – 36 37 – 46 60 – 69 72 – 80 82 – 88 96 – 98 114 – 124 126 – 133 136 - 144	أحكام النون الساكنة والتنوين أحكام الميم الساكنة حفظ سورة الحشر الآيات 1-10 تقوى الله تعالى والاعتصام بدينه سبحانه وتعالى (تفسير) إعجاز القرآن الكريم أثر العقيدة في بناء شخصية المسلم أحكام الجهاد أم المؤمنين السيدة أم سلمة رضي الله عنها المدود (الطبيعي- المتصل- المنفصل- اللازم) من طرق الخير – شرح وحفظ (الحديث ص 115 حفظ) مقاصد الشريعة الإسلامية فضل العفَّة وأثرها	**التربية الإسلامية**

مدرسة قطر للعلوم والتكنولوجيا الثانوية للبنين
Qatar Science and Technology Secondary School for Boys
STEM & AP Education

وزارة التربية والتعليم و التعليم العالي
Ministry of Education and Higher Education
State of Qatar ● دولة قطر

AP calculus AB *PPT *AP classroom * Khan academy	**UNIT 1,** 1.1 Introducing Calculus - Can Change Occur at an Instant? 1.2 Defining Limits and Using Limit Notation 1.3 Estimating Limit Values from Graphs 1.4 Estimating Limit Values from Tables 1.5 Determining Limits Using Algebraic Properties of Limits 1.6 Determining Limits Using Algebraic Manipulation 1.7 Selecting Procedures for Determining Limits 1.8 Determining Limits Using the Squeeze Theorem 1.9 Connecting Multiple Representations of Limits 1.10 Exploring Types of Discontinuities 1.11 Defining Continuity at a Point 1.12 Confirming Continuity over an Interval 1.13 Removing Discontinuities 1.14 Connecting Infinite Limits and Vertical Asymptotes 1.15 Connecting Limits at Infinity and Horizontal Asymptotes 1.16 Working with the Intermediate Value Theorem (IVT) **UNIT 2 ,** 2.1 Defining Average and Instantaneous Rates of Change at a Point 2.2 Defining the Derivative of a Function and Using Derivative Notation 2.3 Estimating Derivatives of a Function at a Point	**AP Calculus AB**

Vision : Entrepreneurial learner for sustainable development. | **Mission** : To establish a comprehensive and innovative educational environment that enhances values and morals and qualifies the learner with high skills. To prepare a conscious generation capable of building an advanced society and a prosperous economy

الرؤية : متعلم ريادي لتنمية مستدامة | الرسالة : نرسي بيئة تعليمية شاملة ومبتكرة تعزز القيم والأخلاق وتؤهل المتعلم بمهارات عالية؛ لإعداد جيل واع قادر على بناء مجتمع متقدم واقتصاد مزدهر
Tel : +974 40362888 | Email : qsst.boys@edu.gov.qa

مدرسة قطر للعلوم والتكنولوجيا الثانوية للبنين
Qatar Science and Technology Secondary School for Boys
STEM & AP Education

وزارة التربية والتعليم و التعليم العالي
Ministry of Education and Higher Education
State of Qatar ● دولة قطر

2.4 Connecting Differentiability and Continuity - Determining When Derivatives Do and Do Not Exist

2.5 Applying the Power Rule

2.6 Derivative Rules - Constant, Sum, Difference, and Constant Multiple

2.7 Derivatives of cos x, sin x, ex, and ln x

2.8 The Product Rule

2.9 The Quotient Rule

2.10 Finding the Derivatives of Tangent, Cotangent, Secant, and/or Cosecant Functions

UNIT 3,

3.1 The Chain Rule

3.2 Implicit Differentiation

3.3 Differentiating Inverse Functions

3.4 Differentiating Inverse Trigonometric Functions

3.5 Selecting Procedures for Calculating Derivatives

3.6 Calculating Higher-Order Derivatives

UNIT 4,

4.1 Interpreting the Meaning of the Derivative in Context

4.2 Straight-Line Motion - Connecting Position, Velocity, and Acceleration

4.3 Rates of Change in Other Applied Contexts (Non motion Problems)

4.4 Introduction to Related Rates

4.5 Solving Related Rates Problems

4.6 Approximating Values of a Function Using Local Linearity and Linearization

4.7 Using L'Hôpital's Rule for Finding Limits of Indeterminate Forms

Vision : Entrepreneurial learner for sustainable development. | **Mission** : To establish a comprehensive and innovative educational environment that enhances values and morals and qualifies the learner with high skills. To prepare a conscious generation capable of building an advanced society and a prosperous economy

الرؤية : متعلم ريادي لتنمية مستدامة | **الرسالة** : نرسي بيئة تعليمية شاملة ومبتكرة تعزز القيم والأخلاق وتؤهل المتعلم بمهارات عالية؛ لإعداد جيل واع قادر على بناء مجتمع متقدم واقتصاد مزدهر
Tel: +974 40362888 | Email : qsst.boys@edu.gov.qa

مدرسـة قطـر للعلـوم والتكنـولـوجيـا الثانـويـة للبنين
Qatar Science and Technology Secondary School for Boys
STEM & AP Education

وزارة التربيــة والتعليــم و التعليــم العالــي
Ministry of Education and Higher Education
State of Qatar ● دولــة قطــر

Great Writing Chapter 1-4 Pages 1-95	-Vocabulary: Words to Know (Units 1-4); SAT Vocab (Lesson 1-3) -Critical Thinking: causes and effects (explanations and details, examples) -Reading comprehension: main ideas, details, true or false, sequence/ordering, inferences, identify evidence, cause-effect, pro/con, problem-solution, compare/contrast -Language Skills: Sentence fragments, run-on sentences, sentence types (simple, compound, complex, compound-complex), sub-verb agreement, thesis statements, confusing words, phrases and clauses -Writing Skills: introductory, body, & concluding paragraphs -introductions (hook, background info, thesis) -body paragraphs (TEEL method) -conclusion (summary statement, final thought – suggestion, opinion, prediction)	**English**

مع تمنياتنا لأبنائنا الطلبة بالتوفيق والنجاح

Vision : Entrepreneurial learner for sustainable development. | **Mission** : To establish a comprehensive and innovative educational environment that enhances values and morals and qualifies the learner with high skills. To prepare a conscious generation capable of building an advanced society and a prosperous economy

الـرؤيـة : متعلم ريادي لتنمية مستدامة | **الـرسالة** : نرسي بيئة تعليمية شاملة ومبتكرة تعزز القيم والأخلاق وتؤهل المتعلم بمهارات عالية؛ لإعداد جيل واع قادر على بناء مجتمع متقدم واقتصاد مزدهر

Tel: +974 40362888 | Email: qsst.boys@edu.gov.qa