سلطنة عمان
وزارة التربية والتعليم
المديرية العامة للمدارس الخاصة
دائرة برامج ومناهج المدارس الخاصة

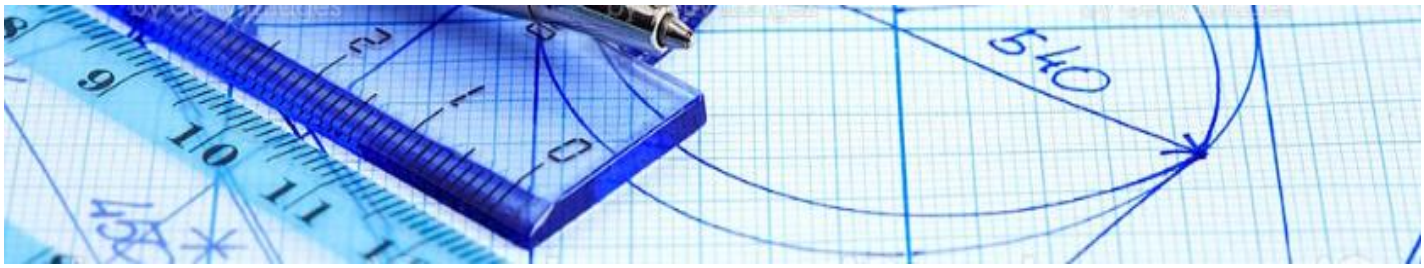
رؤية عمان 2040
نتقدم بثقة
Moving Forward with Confidence

المصادر التعليمية المعتمدة لمادة الرياضيات للمدارس الخاصة

البرنامج ثنائي اللغة – للصفوف (1–10)

Approved Mathematics Educational Resources for Private Schools

Bilingual Program - Grades (1-10)



2023/2024

الفهرس العام

General Index

الفصل الأول: الموجهات العامة

Section (1): General Guidelines

على جميع المدارس الخاصة المطبقة للبرنامج ثنائي اللغة الالتزام بجميع التعليمات الواردة في الجدول أدناه:

اختيار وتوفير السلاسل التعليمية والكتب الدراسية الأساسية	▪ اختيار أحد المصادر التعليمية الأساسية المعتمدة في هذه النشرة التوجيهية. ▪ توفير جميع المكونات الأساسية للمصادر التعليمية المختارة، بالنسبة لكل طالب ولكل معلم، والموضحة في الفصول القادمة من هذه النشرة التوجيهية. ▪ توفير نسخ كافية من الكتب وغيرها من المصادر التعليمية، لطلابها ومعلميها قبل وقت كاف من بداية العام الدراسي. ▪ توفير نسخ أصلية من المصادر التعليمية الأساسية التي تم اختيارها للتطبيق، ومراعاة حقوق الطبع والملكية الفكرية في جميع استخدامات المصادر المعتمدة في هذه النشرة. **ملاحظة هامة:** ▪ توجد مكونات إضافية غير إلزامية لبعض السلاسل المعتمدة في هذه النشرة، مثل كتب المراجعة، ومصادر داعمة للتقويم المستمر والتقويم الختامي، وكتب بناء المهارات لدى الطلاب، وكتب التحدي للطلبة المتميزين، ووسائل تعليمية رقمية وغيرها من المصادر الإثرائية للمنهج الدراسي، وللمدرسة الاطلاع عليها من خلال مواقع دور النشر، ولها الحرية في توفيرها للمعلمين ولأولياء الأمور وللطلبة، بشرط أن يتم الالتزام بالمعايير المعتمدة لاختيار المصادر الإثرائية، والتي تستخدم بغرض دعم تطبيق المنهج بشكل أفضل.
الأهداف	▪ المرحلة (1–8): تلتزم المدرسة بتحقيق الأهداف الواردة في السلاسل التعليمية المعتمدة، وذلك خلال الفصلين الدراسيين الأول والثاني في كل صف دراسي، بناءً على الوحدات المحددة في بند "توزيع المحتوى على الفصلين الدراسيين". برجاء مراجعة الفصلين الثاني والثالث من هذه النشرة التوجيهية. ▪ المرحلة (9–10): تلتزم المدرسة بتحقيق الأهداف الواردة في الفصل الرابع من هذه النشرة التوجيهية. **ملاحظة هامة:** ▪ عند تدريس الدروس المتعلقة بالنقود في الصفوف (1–6) بضرورة استبدال العملة الأجنبية بالعملة العمانية (باستخدام نماذج ورقية مغلفة حراريا للفئات النقدية العمانية المختلفة).

الوسائل التعليمية	▪ مرحلة (1–6): الالتزام بتوفير الوسائل التعليمية المذكورة في دليل المعلم للسلسلة الأساسية التي قامت المدرسة باختيارها . ▪ مرحلة (7–10): الالتزام بتوفير الوسائل التعليمية المذكورة في الفصلين الثالث والرابع من هذه النشرة التوجيهية . ▪ تلتزم المدرسة بتسهيل عملية نسخ أوراق العمل من قبل المعلمين، وذلك بتوفير المدرسة للأوراق وآلات التصوير وأجهزة الحاسب الآلي وأجهزة العرض وغيرها من المستلزمات، إذ أن السلاسل التعليمية المعتمدة تتطلب ذلك لتنفيذها بالصورة المطلوبة .
التدريب	▪ تدريب المعلمين والذي يتعلق باستخدام الكتب الدراسية والمصادر التعليمية المعتمدة، يجب أن يكون ضمن خطط المدارس الخاصة للإنماء المهني، والمدرسة معنية بالتنسيق مع دور النشر حول توفير البرامج التدريبية لمعلميها عن طريق التواصل المباشر مع الدار أو من خلال الموزعين المعتمدين .

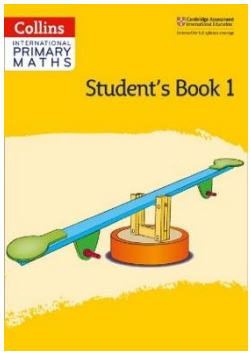
All schools implementing the bilingual program must follow all the instructions below:

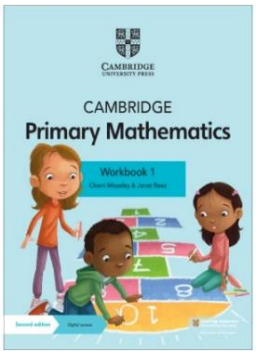
Series and books Selection and Provision	▪ Selecting and using essential resources from the approved titles in this newsletter. ▪ Providing all the essential components of resources for students and teachers. ▪ Ordering enough of the materials for teachers and students before the beginning of the academic year. Schools are responsible for any late delivery of their orders. ▪ Providing original copies of the selected resources and taking in consideration the copy rights and intellectual properties while using any approved resource in any aspect. **Important Note:** ▪ For some approved titles, there are additional materials available, such as revision guides, continuous assessment resources, skills builder booklets, challenging booklets, digital resource and more. It is recommended that all schools visit the publishing houses' websites to provide the extra resources for their students, teachers, and parents (taking to account the criteria which is approved from (MOE) to select supplementary materials).
Outcomes	• Grades (1-8): To implement the outcomes mentioned in the selected approved resources, and to distribute the content for two semesters according to the section "Content Distribution", in Chapters 2 and 3 in this newsletter. • Grades (9-10): To implement the outcomes mentioned in the section "Learning Outcomes Distribution" in Chapter 4 of this newsletter. Important Note: • When teaching the concept of currency and money, in grades (1-6) teachers should replace the foreign currency with Omani currency.

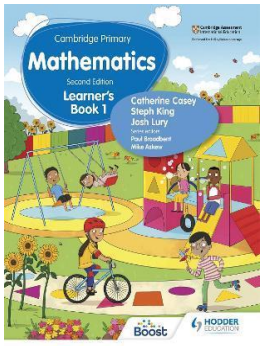
Teaching Aids	▪ Grades (1-6): To provide and implement the teaching aids and the ancillary materials which are prescribed within the chosen approved resources. ▪ Grades (7-10): To provide and implement the teaching aids which are specified in the "Teaching Aids" section at Chapters 3 and 4 within this newsletter. ▪ All grades: To provide paper, photocopiers, laptops, projectors, and other consumable materials that will be required in using the approved resources.
Training	▪ Teacher training related to the use of the selected coursebooks or learning resources should be part of all schools' commitment to the professional development of their teachers and should be made available to teachers by the schools by contacting the publishers or their concerned distributers.

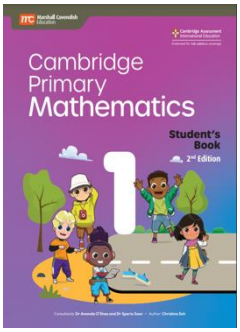
الفصل الثاني: الصفوف الدراسية (1–6)

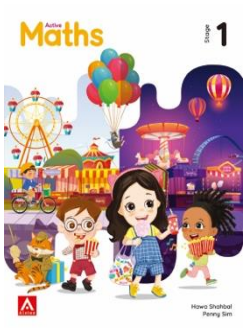
Section (2): Grades (1-6)











الفهرس

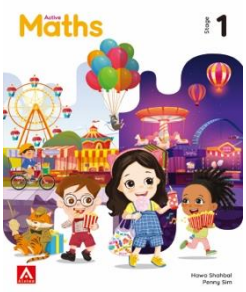
قائمة السلاسل التعليمية الأساسية المعتمدة لمادة الرياضيات ومكوناتها الالزامية – الصفوف (1–6)

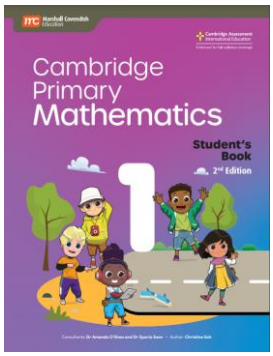
List of Approved Series and their Compulsory Components – Grades (1- 6)

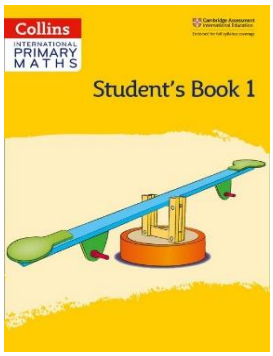
	Name of series	Edition	Publisher	Components	Comments
1	Active Math's	First Edition	Alston Education	Textbook Workbook Teacher's Guide	**New approval**
2	Cambridge Primary MATHS	Second Edition	Marshall Cavendish Education	Pupil's Book Activity Book Teacher's Guide	
3	Collins International Primary Math's	Second Edition	Collins	Student's Book Workbook Teacher's Guide	
4	Cambridge Primary Mathematics	Second Edition	Cambridge University Press	Learner's Book Teacher's Resource with (CD) Games Book	
5	Hodder Cambridge Primary Mathematics	Second edition	Hodder Education	Learner's Book Workbook Teacher's Pack	

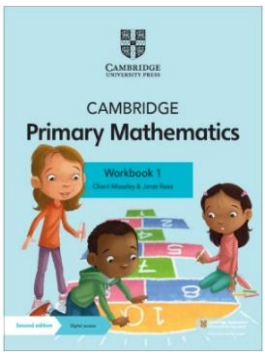
أرقام الـ(ISBNs)لمكونات السلاسل التعليمية الأساسية المعتمدة لمادة الرياضيات – الصفوف (1–6)

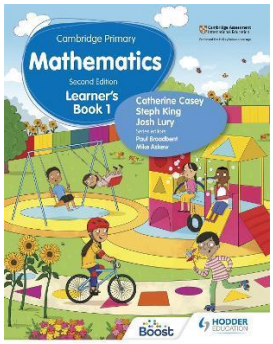
ISBNs of the Approved Series Components - Grades (1- 6)

1. Active Math's - Alston Education (First Edition):			
Grade	**Components**	**ISBN**	**Book Cover**
1	Textbook	978-981-3180-72-7	
	Workbook	978-981-3180-78-9	
	Teacher's Guide	978-981-3180-84-0	
2	Textbook	978-981-3180-73-4	
	Workbook	978-981-3180-79-6	
	Teacher's Guide	978-981-3180-85-7	
3	Textbook	978-981-3180-74-1	
	Workbook	978-981-3180-80-2	
	Teacher's Guide	978-981-3180-86-4	
4	Textbook	978-981-3180-75-8	
	Workbook	978-981-3180-81-9	
	Teacher's Guide	978-981-3180-87-1	
5	Textbook	978-981-3180-76-5	
	Workbook	978-981-3180-82-6	
	Teacher's Guide	978-981-3180-88-8	
6	Textbook	978-981-3180-77-2	
	Workbook	978-981-3180-83-3	
	Teacher's Guide	978-981-3180-97-0	

2. Cambridge Primary MATHS - Marshall Cavendish Education (Second Edition):			
Grade	**Components**	**ISBN**	**Book Cover**
1	Student's Book	9789814971096	
	Activity Book	9789814971157	
	Teacher's Guide	9789814971218	
2	Student's Book	9789814971102	
	Activity Book	9789814971164	
	Teacher's Guide	9789814971225	
3	Student's Book	9789814971119	
	Activity Book	9789814971171	
	Teacher's Guide	9789814971232	
4	Student's Book	9789814971126	
	Activity Book	9789814971188	
	Teacher's Guide	9789814971249	
5	Student's Book	9789814971133	
	Activity Book	9789814971195	
	Teacher's Guide	9789814971256	
6	Student's Book	9789814971140	
	Activity Book	9789814971201	
	Teacher's Guide	9789814971263	

3. International Primary Math's (Second Edition) - Collins:			
Grade	**Components**	**ISBN**	**Book Cover**
1	Student Book 1	9780008340896	
	Workbook 1	9780008369453	
	Teacher's Guide 1	9780008369514	
2	Student Book 2	9780008369408	
	Workbook 2	9780008369460	
	Teacher's Guide 2	9780008369521	
3	Student Book 3	9780008369415	
	Workbook 3	9780008369477	
	Teacher's Guide 3	9780008369538	
4	Student Book 4	9780008369422	
	Workbook 4	9780008369484	
	Teacher's Guide 4	9780008369545	
5	Student Book 5	9780008369439	
	Workbook 5	9780008369491	
	Teacher's Guide 5	9780008369552	
6	Student Book 6	9780008369446	
	Workbook 6	9780008369507	
	Teacher's Guide 6	9780008369569	

4. Cambridge Primary Mathematics (Second Edition) - Cambridge University Press:			
Grade	**Components**	**ISBN**	**Book Cover**
1	Learner's Book1	9781108746410	
	Teacher's Resource1	9781108771498	
	Work Book1	9781108746434	
2	Learner's Book2	9781108746441	
	Teacher's Resource2	9781108783873	
	Work Book2	9781108746465	
3	Learner's Book3	9781108746489	
	Teacher's Resource3	9781108783934	
	Work Book3	9781108746496	
4	Learner's Book4	9781108745291	
	Teacher's Resource4	9781108770675	
	Work Book4	9781108760027	
5	Learner's Book5	9781108760034	
	Teacher's Resource5	9781108771207	
	Work Book5	9781108746311	
6	Learner's Book6	9781108746328	
	Teacher's Resource6	9781108771368	
	Work Book6	9781108746335	

5. Cambridge Primary Mathematics (Second Edition) – Hodder Education:			
Grade	**Components**	**ISBN**	**Book Cover**
1	Learner's Book1	9781398300903	
	Workbook1	9781398300217	
	Teacher's Guide1	9781398300781	
2	Learner's Book2	9781398300941	
	Workbook2	9781398301177	
	Teacher's Guide2	9781398300798	
3	Learner's Book3	9781398300989	
	Workbook3	9781398301184	
	Teacher's Guide3	9781398300804	
4	Learner's Book4	9781398301023	
	Workbook4	9781398301207	
	Teacher's Guide4	9781398300811	
5	Learner's Book5	9781398301061	
	Workbook5	9781398301221	
	Teacher's Guide5	9781398300828	
6	Learner's Book6	9781398301108	
	Workbook6	9781398301245	
	Teacher's Guide6	9781398300835	

توزيع المحتوى على الفصلين الدراسيين – الصفوف (1–6)

Content Distribution – Grades (1- 6)

1. Active Math's Alston Education (First Edition)		
Grade	**Semester 1**	**Semester 2**
One	Chapter1: Number to 20 Chapter2: More about numbers to 20 Chapter3: Time Chapter4: Shapes and Solids Chapter5: Addition	Chapter6: Double and halves Chapter7: Subtraction Chapter8: Position and Movement Chapter9: Measured Chapter10: Money Chapter11: Handling Data
Two	Chapter1: Numbers to 100 Chapter2: More about Numbers to 100 Chapter3: Time Chapter4: Shapes and Solids Chapter5: Addition and Subtraction Chapter6: Measurement Chapter7: Position and Movement	Chapter8: Multiplication Chapter9: Money Chapter10: Division Chapter11: Fractions Chapter12: Handling Data Chapter13: Chance
Three	Chapter1: Numbers to 1000 Chapter2: Time Chapter3: Addition and Subtraction Chapter4: Shapes and Solids Chapter5: Multiplication and Division Chapter6: Position and Movement	Chapter7: Perimeter and Area Chapter8: Mass and Capacity Chapter9: Money Chapter10: Fractions Chapter11: Handling Data Chapter12: Chance
Four	Chapter1: Number to 100 000 Chapter2: Time Chapter3: Addition and Solids Chapter4: Angles, Shapes and Solids Chapter5: Multiplication and Division	Chapter6: Perimeter and Area Chapter7: Position and Movement Chapter8: Fractions Chapter9: Percentage Chapter10: Handling Data Chapter11: Chance
Five	Chapter1: Number to 1000 000 Chapter2: Number Operations Chapter3: Angles, Shapes and Solids Chapter4: Perimeter and Area Chapter5: Fractions Chapter6: Decimals	Chapter7: Time Chapter8: Position and Movement Chapter9: Percentage Chapter10: Ratio and Proportion Chapter11: Handling Data Chapter12: Probability
Six	Chapter1: Number to 10 000 000 Chapter2: Number Operations Chapter3: Angles, Shapes and Solids Chapter4: Fractions Chapter5: Decimals	Chapter6: Position and Movement Chapter7: Percentage Chapter8: Ratio and Proportion Chapter9: Handling Data Chapter10: Probability

2. Cambridge Primary Math's Second Edition - Marshall Cavendish:		
Grade	**Semester 1**	**Semester 2**
One	Chapter1: Numbers 0 to 10 Chapter 2: Ordinal Numbers Chapter 3: Numbers Patterns Chapter 4: More about Numbers to 20 Chapter 5: 2D and 3D Shapes Chapter 6: Place, Direction and Movement Chapter 7: Making 10 and Doubles	Chapter 8: Addition within20 Chapter 9: Subtraction within 20 Chapter 10: Money Chapter 11: Length, Mass, Capacity and Temperature Chapter 12: Handling Information Chapter 13: Fractions: Making Halves Chapter 14: Time
Two	Chapter 1: Numbers to 100 Chapter 2: Place Value Chapter 3: Money Chapter 4: Ordinal Numbers Chapter 5: Addition and Subtraction within 100 Chapter 6: Patterns and Chance Chapter 7: 2D and 3D Shapes Chapter 8: Number Patterns	Chapter 9: Multiplication Chapter 10: Division Chapter 11: Data Representation Chapter 12: Investigation Chapter 13: Finding Halves and Quarters Chapter 14: Combining Fraction Chapter 15: Time Chapter 16: Turns, Movements and Reflections Chapter 17: Length, Mass and Capacity
Three	CHAPTER1: Number to 100 CHAPTER2: Place Value and Rounding CHAPTER3: Addition and Subtraction CHAPTER4: Time CHAPTER5: 2D and 3D Shapes CHAPTER6: Angles, Direction and Position CHAPTER7: Patterns with Numbers and Shapes CHAPTER8: Length, Mass, and Capacity	Chapter 9: Perimeter and Area Chapter10: Chance Chapter11: Multiplication Properties and Facts Chapter12: Multiplication and Division Chapter13: Fractions Chapter 14: Comparing Fractions Chapter15: Calculating with Fractions Chapter16: Data Handling
Four	Chapter1: Place Value and Rounding Larger Chapter2: Introducing Negative Numbers Chapter3: Factor and Multiples Chapter4: Time Chapter5: 2d Shapes Chapter6: 3d Shapes Chapter7: Area and Perimeter Chapter8: Addition and Subtraction	Chapter9: Multiplication and Division Chapter10: Patterns and Sequence with Numbers and Objects Chapter11: Data Representation Chapter12: Statistical Cycle Chapter13: Fractions Chapter14: Calculating with Fractions Chapter15: Angles, Position and Direction Chapter16: Probability
Five	Chapter1: Special Numbers Chapter2: Number Sequences Chapter3: Decimals Chapter4: Time Chapter5: Angles and Triangles Chapter6: Perimeter and Area Chapter7: 3d Shapes Chapter8: Probability and Chance Chapter9: Addition and Subtraction	Chapter10: Multiplication and Division Chapter11: Calculation Rules Chapter12: Fraction, Decimals and Percentages Chapter13: Operation on Fractions and Decimals Chapter14: Proportion and Ratio Chapter15: Data Handling and Representation Chapter16: Statistical Enquiry Chapter17: Coordinate Geometry Chapter18: Symmetry, Reflection and Translation
Six	Chapter1: Place Value Chapter2: The Number System Chapter3: Addition and Subtraction Chapter4: Multiplication and Division Chapter5: Number Patterns Chapter6: Fractions, Percentages and Decimals Chapter7: Calculations with Fractions	Chapter8: Ratio and Proportion Chapter9: 2d Shapes and Angles Chapter10: 3d Shapes, Volume and Capacity Chapter11: Data Handling and Statistical Inquiry Chapter12: The Coordinate Grid Chapter13: Reflection and Rotation Chapter14: Probability

3. Collins International Primary Math's Second Edition – Collins:		
Grade	**Semester 1**	**Semester 2**
One	Unit 1-4 Whole Numbers Unit 5: Addition as combining two sets. Unit 6: Addition as counting on Unit 10-11: Addition and Subtraction to 10A and B Unit 21: 2D Shapes Unit 22: 3D Shapes Unit 25: Position and Movement Unit 23: Length and Mass Unit 2: Whole Numbers 2 Unit 16: Place Value and Ordering to 10 Unit 17: Place Value and Ordering to 20	Unit 7: Subtraction as take away. Unit 8: Subtraction as counting back. Unit 9: Subtraction as difference Unit 12-13: Addition and Subtraction A and B Unit 15: Money Unit 14: Doubling Unit 18-19: Half A and B Unit 24: Capacity and Temperature Unit 20: Time Unit 26-27: Statistics and Probability
Two	Unit 1-3: Whole Numbers 1 Unit 4-6: Addition and subtraction Unit 7: Multiplication as repeated Addition Unit 9-1: Division1 Unit 20: 2D shapes, Symmetry and Angles Unit 21: 3D shape Unit 22: Length Unit 14: Money Unit 15-16: Place, Value, Ordering and Rounding Unit 9-11: Multiplication and Division2	Unit 12-13: Times Table A and B Unit 8: Multiplication as an Array Unit 23: Mass Unit 24: Capacity and Temperature Unit 19: Time Unit 17-18: Fraction A and B Unit 25: Position and Movement Unit 26: Statistics Unit 27: Statistics and Chance
Three	Unit 1: Whole Numbers 1 Unit 4: Addition and subtraction 1 Unit 8: Multiplication and division1 Unit 20: 2D shape Unit 21: 3D Shape Unit 22: Length Unit 23: Mass Unit 2: Whole Numbers 2 Unit 6: Addition and subtraction 2 Unit 9: Multiplication and division2	Unit 13: Money Unit 24: Capacity Unit 26-27: Handling data Unit 3: Whole numbers 3 Unit 16-18: Fractions Unit 7: Addition and subtraction 3 Unit 10: Multiplication and division 3 Unit 13: Position and movement Unit 19: Time
Four	Unit 1-3: Counting Sequences A and B Reading and Writing Unit 4-6: Addition and subtraction 1 Unit 7: Times Table Unit 8: Multiples, Factors and Divisibility Unit 9: Multiplication (A) Unit 22: Measuring Instruments Unit 18: Time Unit 26: Statistics Unit 13-14: Place Value, Ordering and Rounding Unit 10: Multiplication (B) Unit 11-12: Division A and B	Unit 13: 2D shape, including symmetry. Unit 19: 2D shape and Symmetry Unit 20:3D Shapes Unit 24-25: Position, Direction, Movement and Reflection Unit 23: Area and perimeter Unit 15-16: Fractions A and B Unit 17: Percentages Unit 21: Angles Unit 27: Statistics

3. Collins International Primary Math's Second Edition – Collins:		
Grade	**Semester 1**	**Semester 2**
Five	Unit 1: Whole numbers 1 Unit 2-3: Addition and subtraction 1 Unit 4: Multiples, Factors, Divisibility, Primes and Squares. Unit 6-7: Multiplication Whole numbers A and B Unit 20: 2D shapes and Symmetry Unit 21: 3D shape Unit 17: Coordinates, Translation and Reflection Unit 19: Time	Unit 26-27: Statistics and Probability Unit 8-9: Division Whole Numbers A and B Unit 10-11: Place, Value and Decimals Unit 12-13: Fractions A and B Unit 15-16: Fractions Unit 14 and 17: Percentages, Fractions, and Decimals Unit 22: Angles Unit 23: Area and perimeter Unit 15: Addition and subtraction of Decimals Unit 16: Multiplication of Decimals Unit 18: Ratio and proportion
Six	Unit 1: Whole numbers 1 Unit 8: Addition and subtraction 1 Unit 1: Multiplication and division1 Unit 22: Area and perimeter Unit 18: Length Unit 14: 2D shape Unit 15: 3D shape Unit 17: Position and movement Unit 2: Whole numbers 2 Unit 3: Decimals 1 Unit 9: Addition and subtraction 2 Unit12: Multiplication and division2	Unit 19: Mass Unit 20: Capacity Unit 23: Handling data Unit 4: Decimals 2 Unit 5: Fractions Unit 6: Percentages Unit 7: Ratio and proportion Unit 10: Addition and subtraction 3 Unit 13: Multiplication and division 3 Unit 21: Time Unit 16: Angles

4. Cambridge Primary Mathematics Second Edition - Cambridge University Press:		
Grade	**Semester 1**	**Semester 2**
One	Unit 1: Numbers to 10 1.1 Counting and Comparing numbers 1.2 Read and write numbers and spelling to 10. Unit 2: Geometry 1 2.1 2D and 3D Shapes Unit 3: Fraction 1 3.1 Making half of shapes. Unit 4: Measures 1 4.1 Length Unit 5: working with Numbers to 10 1.1 Addition and subtraction Unit 6: Position 6.1 Ordinal numbers Unit 7: Statistics 1 7.1 Sets and Venn diagram Unit 8: Time 1	Unit 9: Numbers to 20 9.1 Counting to 20 9.2 Comparing and ordering numbers and numbers pattern. Unit 10: Geometry 2 10.1 2D and 3D shapes Unit 11: Fractions 2 11.1 making half of numbers. Unit 12: Measures 2 12.1 Mass and Capacity Unit 13: Working with numbers to 20. 13.1 Addition and Subtraction using number line. Unit 14: Statistics 2 14.1 Carroll diagram, pictograms, and block graph Unit 15: Time 2 15.1 Days of the week and months of the year Unit 16: Position, direction, and patterns
Two	Unit1: Numbers to 100 1.1 Read and write up to 100, 1.2 Counting and Comparing numbers Unit2: Geometry 1 2.1 2D and 3D Shapes 2.2 Fractions of shapes Unit 3: Measures 1 3.1 Length Unit 4: Statistics 1 4.1 Carroll diagram and tally chart Unit 5: Working with numbers to 100. 1.2 Addition and subtraction 1.3 Multiplication and division Unit 6: Money Unit 7: Time 7.1 Units of time and the calendar	Unit 8: Numbers to 100 8.1 Numbers in words 8.2 Fractions of numbers Unit 9: Statistics 2 9.1 Venn diagram, pictograms, and block graphs Unit 10: Calculating 10.1 Addition and Subtraction (2-digit) 10.2 Multiplication and division Unit 11: Geometry 2 11.1 Angles and turns. Unit 12: Telling the time. Unit 13: Measures 2 13.1 Mass 13.2 Capacity Unit 14: Pattern and Probability Unit 15: Symmetry, Position and Movement
Three	Unit1: Numbers to 1000 1.1 Place Values 1.2 Comparing and Ordering 1.3 Estimation Unit2: Statistics: Tally charts and frequency Tables Unit 3: Addition, Subtraction and Money Unit 4: 3D Shapes Unit 5: Multiplication and division Unit 6: Measurement, area, and Perimeter Unit 7: Fractions of Shapes Unit 8: Time Unit 9: More addition and Subtraction 9.1 Addition and subtraction with regrouping tens	Unit 10: Graphs 10.1 Pictograms and bar charts 10.2 Venn and Carroll diagram Unit 11: More Multiplication and division Unit 12: More Fractions 12.1 Ordering and comparing numbers. 12.2 Calculating Fractions Unit 13: Measure 13.1 Mass 13.2 Capacity and Temperature Unit 14: Time 2 14.1 Time and Timetables Unit 15: Angles and Movement 15.1 Angles, direction, position, and movement Unit 16: Chance Unit 17: Pattern and Symmetry

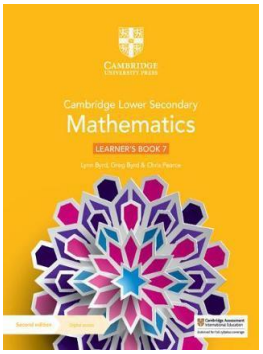
4. Cambridge Primary Mathematics Second Edition - Cambridge University Press:		
Grade	**Semester 1**	**Semester 2**
Four	Unit1: Numbers and the number system Unit2: Time and Timetables Unit 3: Addition, Subtraction of whole numbers Unit 4: Probability Unit 5: Multiplication, multiples, and factors Unit 6: 2D Shapes Unit 7: Fractions 7.1 Understanding Fractions 7.2 Fractions as Operators Unit 8: Angles 8.1 Comparing angles. 8.2 Acute and Obtuse 8.3 Estimating angles. Unit 9: Comparing, rounding, and dividing. 9.1 Rounding, ordering, and comparing whole numbers. 9.2 Division of 2-digit numbers	Unit 10: Collecting and Recording Data Unit 11: Fractions and Percentages 11.1 Equivalence, Ordering and comparing fractions. 11.2 Percentage Unit 12: Investigating 3D Shapes and nets. Unit 13: Addition and Subtraction 13.1 Adding and subtracting efficiently. 13.2 Adding and subtracting fractions with same denominator. Unit 14: Area and Perimeter 14.1 Estimating and measuring area and perimeter. Unit 15: Special Numbers 15.1 Ordering and comparing Numbers. 15.2 Test of divisibility Unit 16: Data display and interpretation Unit 17: Multiplication and Division 17.1 Using an efficient column method for multiplication. Unit 18: Position, direction, and movement
Five	Unit1: The Number system 1.1 Understanding Place Value 1.2 Rounding Decimals Numbers Unit2: 2D Shapes and Patterns (Triangles and symmetry) Unit 3: Number and Sequences 3.1 Square and triangular numbers 3.2 Prime and composite numbers Unit 4: Averages 4.1 Mode and Median Unit 5: Addition and Subtraction 5.1 Addition and Subtraction including decimals and negative numbers. Unit 6: 3D Shapes 6.1 Net of cubes and drawing 3D Shapes Unit 7: Fractions, decimals, and percentages 7.1 Understanding Fractions 7.2 Percentages, decimals, and fractions Unit 8: Probability 8.1 Experiments and simulation Unit 9: Addition and Subtraction of Fractions	Unit 10: Angles Unit 11: Multiplication and Division Unit 12: Data 12.1 Representing and interpreting data. 12.2 Frequency diagram and line graphs Unit 13: Ratio and Proportion Unit 14: Area and Perimeter Unit 15: Multiplying and dividing fractions and decimals. 15.1 Multiplying and dividing fractions. 15.2 Multiplying a decimal and a whole number. Unit 16: Time 16.1 Time Intervals and time zones Unit 17: Number and the laws of arithmetic Unit 18: Position and direction

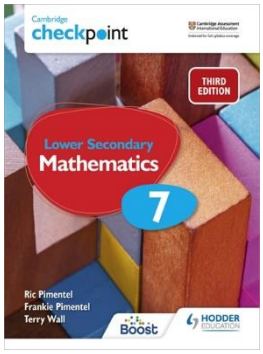
4. Cambridge Primary Mathematics Second Edition - Cambridge University Press:		
Grade	**Semester 1**	**Semester 2**
Six	Unit1: The Number system 1.1 Understanding Place Value 1.2 Rounding Decimals Numbers Unit2: Numbers and Sequences 2.1 Special numbers 2.2 Common multiples and factors Unit 3: Averages 3.1 Mode, median, mean and range. Unit 4: Addition and Subtraction 1 4.1 Positive and negative numbers 4.2 Using letters to represent numbers. Unit 5: 2D Shapes 5.1 Quadrilaterals and circles 5.2 Rotational Symmetry Unit 6: Fractions and percentages 6.1 Understanding Fractions 6.2 Percentages 6.3 Equivalence and comparison Unit 7: Exploring Measures 7.1 Rectangles and triangles 7.2 Time Unit 8: Addition and Subtraction 2 8.1 Adding and subtracting decimals numbers and fractions. Unit 9: Probability	Unit 10: Multiplication and Division 1 Unit 11: 3D Shapes 11.1 Shapes and Nets 1.2 Capacity and volume Unit 12: Ratio and Proportion Unit 13: Angles 13.1 Measuring and drawing angles. 13.2 Angles in a triangle Unit 14: Multiplication and Division 2 14.1 Multiplying and dividing fractions. 14.2 Multiplying and dividing decimals. Unit 15: Data 15.1 Bar charts, dot plots, waffle diagram and pie charts 15.2 Frequency diagrams, line graphs and scatter graphs Unit 16: The laws of arithmetic Unit 17: Transformations 17.1 Coordinates and transformations 17.2 Reflections and Rotations

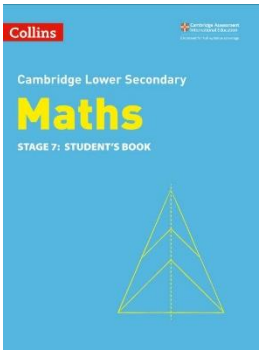
5. Hodder Cambridge Primary Mathematics Second Edition - Hodder Education:		
Grade	**Semester 1**	**Semester 2**
One	Unit 1: Numbers to 20 Unit 2: Addition and Subtraction Unit 3: Shapes, Direction and Movement Unit 4: Statistical methods Unit 5: Numbers to 20 Unit 6: Time and Measurement Unit 7: Statistical methods Unit 8: Shapes, Direction and Movement Unit 9: Numbers to 20	Unit 10: Time and Measurement Unit11: Addition and Subtraction Unit 12: Fraction Unit 13: Numbers to 20 Unit 14: Addition and Subtraction Unit 15: Shapes, Direction and Movement Unit 16: Statistical methods Unit 17: Fraction Unit 18: Time and Measurement
Two	Unit 1: Number to 100 Unit 2: Addition and Subtraction1 Unit 3: Shapes, Direction and Movement 1 Unit 4: Statistical Methods and Chance 1 Unit 5: Multiplication and Division 1 Unit 6: Time and Measurement 1 Unit 7: Addition and Subtraction2 Unit 8: Money Unit 9: Number patterns and place Value 1	Unit 10: Time and Measurement 2 Unit 11: Shapes, Direction and Movement 2 Unit 12: Fractions 1 Unit 13: Statistical Methods and Chance 2 Unit 14: Number patterns and place Value 2 Unit 15: Addition and Subtraction 2 Unit 16: Multiplication and Division 2 Unit 17: Fractions 2 Unit 18: Time and Measurement 3
Three	Unit 1: Numbers to 1000 Unit 2: Addition and Subtraction1 Unit 3: Shapes and Angles 1 Unit 4: Statistical Methods and Chance1 Unit 5: Multiplication and Division 1 Unit 6: Time and Measurement 1 Unit 7: Addition and Subtraction 2 Unit 8: Patterns, Place Value and Division	Unit 9: Multiplication and Division 2 Unit 10: Time and Measurement 2 Unit 11: Shapes and Angles 2 Unit 12: Fractions 1 Unit 13: Patterns, Place Value and Rounding Unit 14: Addition and Subtraction 2 Unit 15: Time and Measurement 2 Unit 16: Multiplication and Division 2 Unit 17: Fractions 2 Unit 18: Statistical Methods and Chance2
Four	Unit 1: Number Unit 2: 2D Shapes Unit 3: Calculation 1 Unit 4: Time 1 Unit 5: Statistical Methods Unit 6: Fractions 1 Unit 7: Calculation 2 Unit 8: Probability Unit 9: Number 2	Unit 9: Number 2 Unit 10: 2D and 3D Shapes Unit 11: Fractions 2 Unit 12: Angles, Position and Direction 1 Unit 13: Number 3 Unit 14: Statistical Methods 2 Unit 15: Calculation 3 Unit 16: Time 2 Unit 17: Fractions and Percentages Unit 18: Angles, Position and Direction2
Five	Unit 1: Number Unit 2: Angles and Shapes Unit 3: Calculation 1 Unit 4: Time 1 Unit 5: Statistical Methods 1 Unit 6: Fraction, Decimals, Percentages and Proportion Unit 7: Number 2 Unit 8: Probability Unit 9: Calculation Unit 10: Location and Movement	Unit 11: Fraction, Decimals, Percentages and Proportion Unit 12: Angles and Shapes Unit 13: Number 2 Unit 14: Location and Movement Unit 15: Calculation Unit 16: Statistical Methods 2 Unit 17: Fraction, Decimals, Percentages and Proportion Unit 18: Time 2
Six	Unit 1: Number 1 Unit 2: 2D and 3D Shapes 1 Unit 3: Calculation 1 Unit 4: Statistical Methods 1 Unit 5: Fraction, Decimals, Ratio Percentages and Proportion Unit 6: Probability Unit 7: Number 2 Unit 8: The coordinate gird 1 Unit 9: Calculation 2	Unit 10: Probability Unit 11: Fraction, Decimals, Ratio Percentages and Proportion Unit 12: 2D and 3D Shapes 2 Unit 13: Number 3 Unit 14: The coordinate gird 2 Unit 15: Calculation 3 Unit 16: 2D and 3D Shapes 3 Unit 17: Fraction, Decimals, Ratio Percentages and Proportion Unit 18: Statistical Methods 2

الفصل الثالث: الصفوف الدراسية (7–8)

Section (3): Grades (7-8)







الفهرس

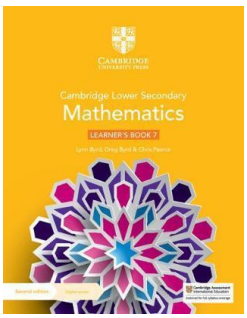
قائمة السلاسل التعليمية الأساسية المعتمدة ومكوناتها الإلزامية لمادة الرياضيات – الصفوف (7–8)

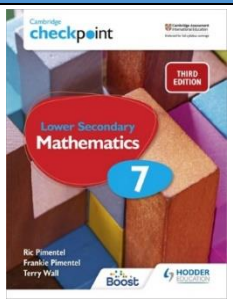
List of Approved Series and their Compulsory Components – Grades (7- 8)

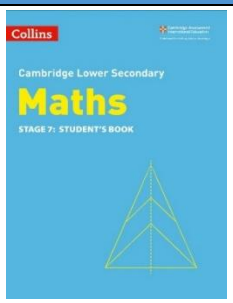
	Titles	Publisher	Components	Grade	Comments
1	Cambridge Lower Secondary Mathematics 2nd Edition	Cambridge University Press	Learner's Book7	7	
			Workbook 7		
			Teacher's Resource 7		
			Learner's Book 8	7 & 8	
			Workbook 8		
			Teacher's Resource 8		
			Learner's Book 9	8	
			Workbook 9		
			Teacher's Resource 9		
2	Cambridge Checkpoint Lower Secondary Math's 3rd Edition	Hodder Education	Student's Book 7	7	
			Workbook 7		
			Teacher's Guide 7		
			Student's Book8	7 & 8	
			Workbook 8		
			Teacher's Guide 8		
			Student's Book 9	8	
			Workbook 9		
			Teacher's Guide 9		
3	Cambridge Lower Secondary Math's 2nd Edition	Collins	Student Book 7	7	
			Workbook 7		
			Teacher's Guide 7		
			Student Book 8	7 & 8	
			Workbook 8		
			Teacher's Guide 8		
			Student Book 9	8	
			Workbook 9		
			Teacher's Guide 9		

أرقام الـ ISBNs لمكونات السلاسل التعليمية الأساسية المعتمدة لمادة الرياضيات – الصفوف (7–8)

ISBNs of the Approved Series Components - Grades (7- 8)

1. Cambridge Checkpoint Mathematics 2nd Edition - Cambridge University Press:				
Component	**Grade**	**ISBN**	**Note**	**Book Cover**
Learner's Book7	7	9781108771436	For student	
Workbook 7		9781108746366	For student	
Teacher's Resource 7		9781108771405	For teacher	
Learner's Book 8	7 & 8	9781108771528	For student	
Workbook 8		9781108746403	For student	
Teacher's Resource 8		9781108771450	For teacher	
Learner's Book 9	8	97811087837747	For student	
Workbook 9		9781108746502	For student	
Teacher's Resource 9		9781108783897	For teacher	

2. Cambridge Checkpoint Math's 3rd Edition - Hodder Education:				
Component	**Grade**	**ISBN**	**Note**	**Book Cover**
Student's Book 7	7	9781398301948	For student	
Workbook 7		9781398301269	For student	
Teacher's Guide 7		9781398300729	For teacher	
Student's Book8	7 – 8	9781398302044	For student	
Workbook 8		9781398301306	For student	
Teacher's Guide 8		9781398300743	For teacher	
Student's Book 9	8	9781398301993	For student	
Workbook 9		9781398301283	For student	
Teacher's Guide 9		9781398300736	For teacher	

3. Cambridge Lower Secondary Mathematics – Collins:				
Component	**Grade**	**ISBN**	**Note**	**Book Cover**
Student Book 7	7	9780008340858	For student	
Workbook 7		9780008378561	For student	
Teacher's Guide 7		9780008378592	For teacher	
Student Book 8	7 – 8	9780008378547	For student	
Workbook 8		9780008378578	For student	
Teacher's Guide 8		9780008378608	For teacher	
Student Book 9	8	9780008378554	For student	
Workbook 9		9780008378585	For student	
Teacher's Guide 9		9780008378615	For teacher	

الوسائل التعليمية – الصفوف (7–8)

Teaching Aids - Grades (7- 8)

على المدارس توفير الوسائل التعليمية الآتية:

1. أدوات هندسية بحجم كبير لاستخدام المعلم على السبورة: المثلث الثلاثيني الستيني والمثلث متساوي الساقين، منقلة، مسطرة، فرجار.
2. مجموعة أدوات القياس لكل مما يلي: الأوزان، الأطوال، المسافات، السعة.
3. سبورة الرسم البياني (بالإضافة للسبورة العادية في الفصل).
4. مجموعة من أحجار النرد متنوعة في عدد الأوجه.
5. جهاز حاسوب لكل معلم.
6. أجهزة عرض.
7. شبكة إنترنت متاحة.

Schools must provide the following teaching aids:

1. Master Mathematical Instruments (for teacher use): Two set squares, a 180° protractor, a ruler, a compass.
2. A range of measurement tools for: Weight, length, distances, and capacity.
3. Grid whiteboard (In addition to the normal whiteboard).
4. Different sets of dices with different number of sides.
5. A laptop for each teacher.
6. Projectors.
7. Internet connection.

توزيع المحتوى على الفصلين الدراسيين – الصفوف (7–8)

Content Distribution - Grades (7- 8)

1. Cambridge Checkpoint Mathematics 2nd Edition - Cambridge University Press:		
Grade 7		
Semester	**Chapters**	**Main Resource**
1st Semester	Unit 1: Integers Unit 2: Expressions, formulae, and equations Unit 3: Place value, ordering and rounding. Unit 4: Decimals Unit 5: Angles and constructions Unit 6: Collecting data. Unit 7: Fraction Unit 8: Shapes and symmetry Unit 9: Sequences and Functions Unit 10 : Percentages Unit 11 : Graphs Unit 12 : Ratio and proportion	Workbook 7: From page 7 to page 161
2nd Semester	Unit 13: Probability Unit 14: Position and movement Unit 15: Shapes, Area, and volume Unit 16: Interpreting and discussing results	Workbook 7: From page 164 to page 247
	Unit 1: Integers Unit 2: Sequences, expressions, and formulae Unit 3: Place value, ordering and rounding. Unit 4: Decimals Unit 5: Angles and constructions Unit 6: Collecting data. Unit 7: Fraction Unit 8: Shapes and symmetry	Workbook 8: From page 7 to page 105
Grade 8		
1st Semester	Unit 9: Sequences and functions Unit 10: Percentages Unit 11: Graphs Unit 12: Ratio and proportion Unit 13: Probability Unit 14 Position and transformation Unit 15: Distance, area, and volume Unit 16: Interpreting and discussing results	WorkBook8: From page 112 to page 232
	Unit 1: Number and calculation Unit 2: Expressions and formulae Unit 3: Decimals, percentages and rounding. Unit 4: Equations and inequalities	WorkBook9: From page 7 to page63

1. Cambridge Checkpoint Mathematics 2nd Edition - Cambridge University Press:		
2nd Semester	Unit 5: Angles Unit 6: Statistical investigations Unit 7: Shapes and measurements Unit 8: Fractions Unit 9: Sequences and functions Unit 10: Graphs Unit 11: Ratio and proportion Unit 12: Probability Unit 13: Position and transformation Unit 14: Volume, surface area and symmetry Unit 15: Interpreting and discussing results	Workbook 9: From page 66 to page 203

2. Cambridge Checkpoint Math's 2nd Edition - Hodder Education:		
Grade 7		
Semester	**Chapters**	**Main Resource**
1st Semester	Unit 1: Addition, subtraction, Multiplication and Division Unit 2: Properties of two-dimensional shapes Unit 3: Data collection and sampling Unit 4: Area of triangle Unit 5: Order of operations Unit 6: Algebra beginning- using letters for unknown numbers. Unit 7: Organizing and presenting. Unit 8: Properties of three- dimensional shapes Unit 9: Multiples and factors Unit 10: Probability and the likelihood of events Unit 11: Rounding and estimation – calculations with decimals. Unit 12: Mode, mean, median, and range. Unit 13: Transformations of two-dimensional shapes Unit 14: Manipulating algebraic expressions. Unit 15: Fractions, decimals, and percentages Unit 16: Probability and outcomes Unit 17: Angle properties Unit 18: Algebraic expressions and formulae Unit 19: Probability experiments Unit 20: Introduction to equations and inequalities Unit 21: Sequences Unit 22: Percentages of whole numbers Unit 23: Coordinates	Student's Book 7: From page 1 to page 185
2nd Semester	Unit 24: Introduction to functions Unit 25: Coordinates and two – dimensional shapes Unit 26: Squares, square roots, cubes, and cube roots Unit 27: Linear functions Unit 28: Converting units and scale drawings. Unit 29: Ratio Unit 30: Graphs and rates of change	Student's Book 7: From page 192 to page 247

2. Cambridge Checkpoint Math's 2nd Edition - Hodder Education:		
	Unit 1: Multiplication and division Unit 2: Hierarchy of quadrilaterals Unit 3: Data collection and sampling methods Unit 4: Parallelograms, trapezia, and circles Unit 5: Order of operations Unit 6: Expressions, formulae, and equations Unit 7: Recording, organizing, and representing data. Unit 8: Properties of three – dimensional shapes Unit 9 : Factors and multiples Unit 10 : Complementary Unit 11 : Decimals and place value Unit 12: Comparing and interpreting. Unit 13: Transformation of 2D shapes Unit 14: Fractions and decimals Unit 15: Manipulating algebraic expressions.	Student's Book 8: From page 1 to page 127
Grade 8		
Semester	**Chapters**	**Main Resource**
1st Semester	Unit 16: Combined events Unit 17: Constructions, lines, and angles Unit18: Algebraic expressions and formulae Unit 19: Probability experiments Unit 20: Equations and inequalities Unit 21: Describing sequences. Unit 22: Percentage increases and decreases. Unit 23: 2D representations of 2D shapes Unit 24: Functions Unit 25: Geometry and translations Unit 26: Squares, square roots, cubes, and cube roots Unit 27: Graphs and equations of straight lines Unit 28: Distances and bearings Unit 29: Ratio Unit 30: Reading and interpreting graphs	Student's Book8: From page 148 to page 261
	Unit 1: Indices and standard form Unit 2: Pythagoras' theorem Unit 3: Data collection and sampling Unit 4: Area and circumference of a circle Unit 5: Order of operations with algebra Unit 6: Large and small units Unit 7: Record, organize and represent data. Unit 8: Surface area and volume of prisms	Student's Book 9: From page 1 to page 55

2. Cambridge Checkpoint Math's 2nd Edition - Hodder Education:		
2nd Semester	Unit 9: Rational and irrational number Unit 10: Mutually exclusive events Unit 11: Rounding and estimating numbers. Unit 12: Further data interpretation Unit 13: Further transformations Unit 14: Further fractions and decimals Unit 15: Manipulating algebraic expressions. Unit 16: Combined events Unit 17: Further constructions, polygons, and angles Unit 18: Further algebraic expressions and formulae Unit 19: Probability – expected and relative frequency Unit 20: Further algebraic equations and inequalities Unit 21: Linear and quadratic sequences Unit 22: Compound percentages Unit 23: Scale and area factors of enlargement Unit 24: Function and their representation Unit 25: Coordinates and straight-line segments Unit 26: Estimating surds. Unit 27: Linear functions and solving Simultaneous linear equations. Unit 28: Bearings and scale drawings Unit 29: Direct and inverse proportion Unit 30: Compound measures and graphs	Student's Book 9: From page 61 to page 240

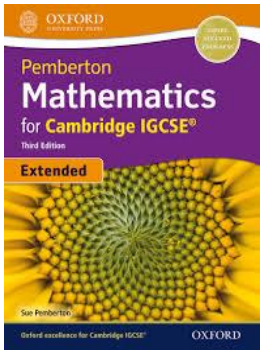
3. Cambridge Lower Secondary Mathematics – Collins:		
Grade 7		
Semester	**Chapters**	**Main Resource**
1st Semester	Chapter 1: Factors Chapter 2: 2D and 3D Shapes Chapter 3: Collecting Data Chapter 4: Negative numbers and indices Chapter 5: Expressions Chapter 6: Symmetry Chapter 7: Rounding and Decimals Chapter 8: Presenting and interpreting data 1. Chapter 9: Fractions Chapter 10: Manipulating expressions. Chapter 11: Angles Chapter 12: Measures of average and spread. Chapter 13: Calculations Chapter 14: Functions and formulae Chapter 15: Area and volume Chapter 16: Fractions, decimals, and percentages Chapter 17: Probability 1 Chapter 18: Transformations Chapter 19: Percentages Chapter 20: Presenting and interpreting data 2	Student's Book 7: From page 2 to page 229

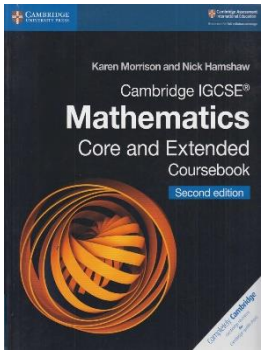
3. Cambridge Lower Secondary Mathematics – Collins:		
2nd Semester	Chapter 21: Equations and inequalities Chapter 22: Ratio and proportion Chapter 23: Probability Chapter 24: Sequences Chapter 25: Accurate drawing Chapter 26: Thinking statistically. Chapter 27: Relationships and graphs	Student's Book 7: From page 223 to page 318
	Chapter 1: Negative numbers, indices, and roots Chapter 2: 2D and 3D Shapes Chapter 3: Collecting Data Chapter 4: Factors and rational numbers Chapter 5: Expressions Chapter 6: Angles Chapter 7: Place value, rounding and decimals. Chapter 8: Presenting and interpreting data 1. Chapter 9: Functions and formulae Chapter 10: Fractions Chapter 11: Length, area, and volume Chapter 12: Probability 1 Chapter 13: Calculations	Student's Book 8: From page 2 to page 165
Grade 8		
Semester	**Chapters**	**Main Resource**
1st Semester	Chapter 14: Equations and inequalities Chapter 15: Midpoints Chapter 16: Fractions, decimals, and percentages Chapter 17: Presenting and interpreting data 2 Chapter 18: Transformations Chapter 19: Percentages Chapter 20: Sequences Chapter 21: Probability 2 Chapter 22: Ratio and proportion Chapter 23: Relationships and graphs Chapter 24: Thinking statistically. Chapter 25: Accurate drawing	Student's Book 8: From page 164 to page 331

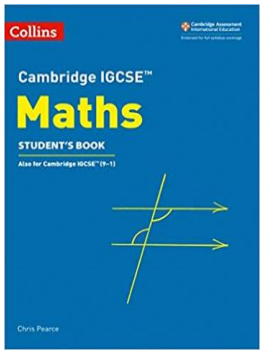
3. Cambridge Lower Secondary Mathematics – Collins:		
	Chapter 1: Indices, roots, and rational numbers Chapter 2: Angles Chapter 3: Collecting and organizing Data. Chapter 4: Standard form Chapter 5: Expressions Chapter 6: Transformations Chapter 7: Presenting and interpreting data 1	Student's Book 9: From page 2 to page 85
2nd Semester	Chapter 8: Rounding and decimals. Chapter 9: Functions and formulae Chapter 10: Accurate drawing Chapter 11: Fractions Chapter 12: Probability 1 Chapter 13: Equations and inequalities Chapter 14: Calculations Chapter 15: Pythagoras's theorem Chapter 16: Measures of averages and spread. Chapter 17: Percentages Chapter 18: Sequences Chapter 19: Aera and measures Chapter 20: Presenting and interpreting data1. Chapter 21: Ratio and proportion Chapter 22: Relationships and graphs Chapter 23: Probability 2 Chapter 24: 3D Shapes Chapter 25: Simultaneous equations Chapter 26: Thinking statistically	Student's Book 9: From page 101 to page 333

الفصل الرابع: المرحلة الدراسية (9–10)

Section (4): Grades (9-10)







الفهرس

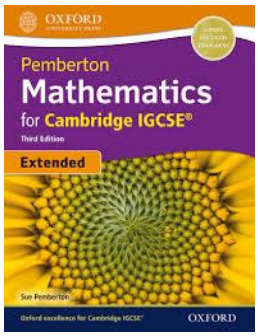
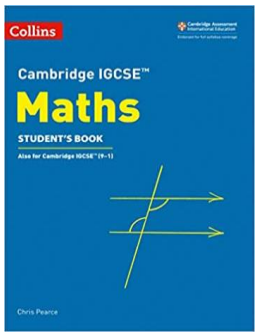
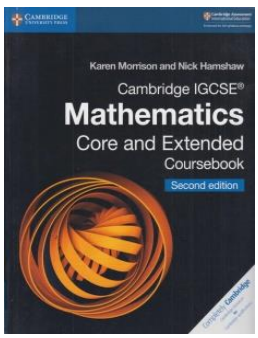
قائمة المصادر التعليمية الأساسية المعتمدة لمادة الرياضيات – الصفوف (9–10)

List of Approved Essential Resources – Math – Grades (9- 10)

	Titles	Publisher	Components
1	Pemberton Mathematics for Cambridge IGCSE - Extended (Third Edition)	Oxford University Press	Coursebook
			Teacher Resource Pack
3	Cambridge IGCSE Math's	Collins	Student Book
			Teacher Guide
4	Cambridge IGCSE Mathematics Core and Extended	Cambridge University Press	Coursebook
			Practice Book
			Teacher's Resource

مكونات السلاسل التعليمية الأساسية المعتمدة مع أرقام (ISBNs) لمادة الرياضيات – الصفوف (9–10)

Components of Math Resources with their ISBNs- Grades (9- 10)

	Components	Publisher	ISBN	Book Cover
1	Pemberton Mathematics for Cambridge IGCSE - Extended (Third Edition)	Oxford University Press	9780198428402	
	Pemberton Mathematics for Cambridge IGCSE Teacher Resource Pack – Extended (Third Edition)		9780198428473	
2	Cambridge IGCSE math's - Student book	Collins	9780008257798	
	Cambridge IGCSE math's - Teacher Guide		9780008257804	
3	Cambridge IGCSE Mathematics Core and Extended - Coursebook (Second Edition)	Cambridge University Press	9781108437189	
	Cambridge IGCSE Mathematics Extended - Practice Book (Second Edition)		9781108437219	
	Cambridge IGCSE Mathematics - Teacher's Resource (Second Edition)		9781108437271 online	

الوسائل التعليمية لمادة الرياضيات – الصفوف (9–10)

Teaching Aids - Math - Grades (9- 10)

على المدارس توفير الوسائل التعليمية الآتية:

1. أدوات هندسية بحجم كبير لاستخدام المعلم على السبورة: المثلث الثلاثيني الستيني والمثلث متساوي الساقين، منقلة، مسطرة، فرجار.
2. سبورة الرسم البياني (بالإضافة للسبورة العادية في الفصل).
3. جهاز حاسوب لكل معلم.
4. جهاز عرض.
5. شبكة إنترنت متاحة.

Schools must provide the following teaching aids:

1. Master Mathematical Instruments (for teachers use): Two set squares, a 180° protractor, a ruler, a compass.
2. Grid whiteboard (In addition to the normal whiteboard).
3. A laptop for each teacher.
4. Projectors.
5. Internet connection.

توزيع المخرجات التعليمية على الفصلين الدراسيين لمادة الرياضيات – الصفوف (9–10)

Learning Outcomes Distribution - Math - Grades (9- 10)

Grade (9)

First Semester

1) Number

Indices

- Understand the meaning and rules of indices.
- Use the standard form $A \times 10^n$ where n is a positive or negative integer, and $1 \leq A < 10$

Real Numbers

- Identify and use real numbers (Which includes rational & irrational numbers)
- Convert recurring decimals to fractions (And opposite)

Proportion

- Increase and decrease a quantity by a given ratio.
- Use common measures of rate.
- Calculate average speed.

Percentages

- Calculate a given percentage of a quantity.
- Express one quantity as a percentage of another
- Calculate percentage increase or decrease.
- Carry out calculations involving reverse percentages

2) Algebra

Algebraic Manipulation

- Construct and transform complicated formulae and equations.
- Manipulate directed numbers.
- Use brackets and extract common factors.
- Expand products of algebraic expressions
- Factorize where possible expressions of the form:

  $ax + bx + kay + kby$
  $a^2x^2 - b^2y^2$
  $a^2 + 2ab + b^2$
  $ax^2 + bx + c$

- Manipulate algebraic fractions.
- Factorize and simplify rational expressions

3) Co-ordinate Geometry

Straight Line Graphs

- Find the gradient of a straight line.
- Calculate the gradient of a straight line from the co-ordinates of two points on it.
- Calculate the length and the co-ordinates of the midpoint of a straight line from the co-ordinates of its end points.
- Interpret and obtain the equation of a straight-line graph in the form $y = mx + c$
- Determine the equation of a straight line parallel to a given line.
- Find the gradient of parallel and perpendicular lines

4) Mensuration

Arc Length and Sector Area of the Circle

- Solve problems involving the arc length and sector area as fractions of the circumference and area of a circle.

Surface Area and Volume of 3D Shapes

- Carry out calculations involving the volume of a cuboid, prism and cylinder and the surface area of a cuboid and a cylinder.
- Carry out calculations involving the surface area and volume of a sphere, pyramid, and cone.

Areas and Volumes of Compound Shapes

- Carry out calculations involving the areas and volumes of compound shapes

Grade (9)
Second Semester
1) Number **Sets** • Use language, notation and Vann diagrams to describe sets and represent relationships between sets. Note: Including shaded parts • Define sets in different ways
2) Algebra **Linear Equations and Inequalities** • Solve simple linear equations in one unknown. • Solve simple linear inequalities. **Variation** • Express direct and inverse variation in algebraic terms and use this form of expression to find unknown quantities
3) Geometry **scale drawings** • Read and make scale drawings. **Symmetry** • Recognize rotational and line symmetry (including order of rotational symmetry) in two dimensions. • Recognize symmetry properties of the prism (including cylinder) and the pyramid (including cone) • Use the following symmetry properties of circles: • equal chords are equidistant from the center • the perpendicular bisector of a chord passes through the center • tangents from an external point are equal in length **Angle Properties** • Calculate unknown angles using the following geometrical properties: • angles at a point • angles at a point on a straight line and intersecting straight lines • angles formed within parallel lines • angle properties of triangles and quadrilaterals • angle properties of regular polygons • angle in a semi-circle • angle between tangent and radius of a circle. • angle properties of irregular polygons • angle at the center of a circle is twice the angle at the circumference • angles in the same segment are equal • angles in opposite segments are supplementary; cyclic quadrilaterals
4) Trigonometry **Bearings** • Interpret and use three-figure bearings. **Trigonometry** • Apply Pythagoras' theorem and the sine, cosine, and tangent ratios for acute angles to the calculation of a side or of an angle of a right-angled triangle. • Solve trigonometrical problems in two dimensions involving angles of elevation and depression. • Extend sine and cosine values to angles between 90° and 180°
5) Statistics **Reading and Displaying Data** • Construct and read histograms with equal and unequal intervals and scatter diagrams. • Understand what is meant by positive, negative and zero correlation with reference to a scatter diagram. • Draw a straight line of best fit by eye. **Mean, Median, Mode and Range** • Calculate the mean, median, mode and range for individual and discrete data and distinguish between the purposes for which they are used. • Calculate an estimate of the mean for grouped and continuous data. • Identify the modal class from a grouped frequency distribution

Grade (10)
First Semester
1) Algebra **Algebraic indices** • Use and interpret positive, negative and zero indices. • Use and interpret fractional indices. • Use the rules of indices. **Solving Equations** • Solve simultaneous linear equations in two unknowns. • Solve quadratic equations by factorization, completing the square or by use of the formula. **Linear Programming** • Represent inequalities graphically and use this representation in the solution of simple linear programming problems. **Sequences** • Continue a given number sequence. • Recognize patterns in sequences and relationships between different sequences. • Find the nth term of sequences
2) Number **Accuracy** • Give appropriate upper and lower bounds for data given to a specified accuracy. • Obtain appropriate upper and lower bounds to solutions of simple problems given data to a specified accuracy. **Money and Finance** • Use given data to solve problems on personal and small business finance involving earnings, simple interest and compound interest, discount, profit, and loss. • Extract data from tables and charts **Exponential Growth and Decay** • Use exponential growth and decay in relation to population and finance
3) Geometry **Similarity** • Calculate lengths of similar figures • Use the relationships between areas of similar triangles, with corresponding results for similar figures and extension to volumes and surface areas of similar solids.
4) Vectors **Vectors** • Describe a translation by using a vector represented by e.g. $\begin{pmatrix} x \\ y \end{pmatrix}$, $\overrightarrow{AB}$ or **a**. • Add and subtract vectors. • Multiply a vector by a scalar. • Calculate the magnitude of a vector $\begin{pmatrix} x \\ y \end{pmatrix}$ as $\sqrt{x^2 + y^2}$ • Represent vectors by directed line segments. • Use the sum and difference of two vectors to express given vectors in terms of two coplanar vectors. • Use position vectors
5) Statistics **Cumulative Frequency** • Construct and use cumulative frequency diagrams. • Estimate and interpret the median, percentiles, quartiles and inter-quartile range

Grade (10)
Second Semester
1) Algebra **Graphs in Practical Situations** • Interpret and use graphs in practical situations including travel graphs and conversion graphs. • Draw graphs from given data. • Apply the idea of rate of change to easy kinematics involving distance-time and speed-time graphs, acceleration, and deceleration. • Calculate distance travelled as area under a linear speed-time graph. **Graphs of Functions** • Construct tables of values and draw graphs for functions of the form ax^n, where a is a rational constant, and n = –2, –1, 0, 1, 2, 3, and simple sums of not more than three of these and for functions of the form a^x, where a is a positive integer • Solve associated equations approximately by graphical methods. • Draw and interpret graphs representing exponential growth and decay problems. • Estimate gradients of curves by drawing tangents **Functions** • Use function notation, e.g., f(x) = 3x – 5, f: x → 3x – 5, to describe simple functions • Find inverse functions $f^{-1}(x)$ • Form composite functions as defined by gf(x) = g(f(x))
2) Trigonometry **Trigonometry** • Solve problems using the sine and cosine rules for any triangle and the formula area of triangle = 1/2 ab sin C • Solve simple trigonometrical problems in three dimensions including angle between a line and a plane
3) Matrices and transformation **Transformations** • Reflect simple plane figures in horizontal or vertical lines. • Rotate simple plane figures about the origin, vertices or midpoints of edges of the figures, through multiples of 90° • Construct given translations and enlargements of simple plane figures. • Recognize and describe reflections, rotations, translations, and enlargements. • Use the following transformations of the plane: reflection (M), rotation (R), translation (T), enlargement (E) • Identify and give precise descriptions of transformations connecting given figures. • Describe transformations using co-ordinates and matrices (singular matrices are excluded)
4) Probability **Probability of Single Events** • Calculate the probability of a single event as either a fraction, decimal, or percentage. • Understand and use the probability scale from 0 to 1. • Understand that the probability of an event occurring = 1 – the probability of the event not occurring • Understand relative frequency as an estimate of probability. **Probability of Combined Events** • Calculate the probability of simple combined events, using possibility diagrams and tree diagrams where appropriate

نهاية النشرة

End of the Newsletter