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

Newsletter	نشرة توجيهية
Subject: Sceince	المادة: العلوم
Educational Program: Bilingual program	البرنامج التعليمي: ثنائي اللغة
Grades: (1-8)	الصفوف: (1–8)
Academic Year: 2019/2020	العام الدراسي: 2020/2019

الفهرس العام

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الفصل الأول : التوجيهات العامة

Section (1): General Guidelines

النسخة العربية

Arabic Version

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

	التعليمات
اختيار وتوفير السلاسل التعليمية والكتب الدراسية الأساسية	▪ تلتزم باختيار أحد المصادر التعليمية الأساسية المعتمدة من قبل الدائرة في هذه النشرة التوجيهية . ▪ تلتزم بتوفير جميع المكونات الأساسية للمصادر التعليمية المختارة، بالنسبة لكل طالب ولكل معلم، والموضحة في الفصول القادمة من هذه النشرة التوجيهية . ▪ تلتزم بتوفير نسخ كافية من الكتب وغيرها من المصادر التعليمية، لطلابها ومعلميها قبل وقت كاف من بداية العام الدراسي . ▪ تلتزم بتوفير نسخ أصلية من المصادر التعليمية الأساسية التي تم اختيارها للتطبيق. **ملاحظة هامة:** ▪ بعض السلاسل التعليمية التي تم إصدارها **عام** ***2015*** **م** وما قبل سيكون **العام الدراسي** ***2019–2020*** **م** آخر عام لتطبيقها وسيتم استبدالها إما بالنسخ المحدثه منها إذا توفرت أو سيتم إستبدالها بسلاسل حديثة أخرى **للعام الدراسي** ***2020–2021*** **م** فيرجى عدم شراء نسخ زائدة منها . ▪ 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 لدعم تطبيق المناهج بشكل أفضل .
الأهداف	▪ تحقيق الأهداف والمخرجات الوارده في السلاسل المعتمدة للصفوف (1–6) مع التأكيد على ضرورة تحقيق أهداف الاستقصاء العلمي . ▪ تحقيق الأهداف والمخرجات المحدده للصفوف (7–8) والواردة في النشرة مع التأكيد على ضرورة تحقيق أهداف الاستقصاء العلمي . ▪ تنفيذ الأنشطة والتجارب العملية في المختبر للصفوف (5–8) وفق ما ورد في السلاسل المعتمدة .
الوسائل التعليمية	▪ مرحلة (1–6) : توفير الوسائل التعليمية المذكورة في دليل المعلم للسلسلة الأساسية التي قامت المدرسة باختيارها والنشرة التوجيهية . ▪ مرحلة (7–8) : توفير الوسائل التعليمية المذكورة في دليل المعلم للسلسلة الأساسية التي قامت المدرسة باختيارها . ▪ على جميع المدارس الخاصة أن تسهل عملية نسخ أوراق العمل، وذلك بتوفير المدرسة للأوراق وآلات التصوير وأجهزة الحاسب الآلي وأجهزة العرض وغيرها من المستلزمات، إذ أن السلاسل التعليمية المعتمدة تتطلب ذلك لتنفيذها بالصورة المطلوبة .
المساعدة	▪ "المصادر المساعدة للمعلم " ويعنى بها : السلاسل التعليمية والمصادر التي تدعم المعلم في تدريسه للمنهج، وهي حق لكل معلم، ويجب على المدرسة أن تقوم بتوفير نسخة واحدة على الأقل في المدرسة من المصادر المحددة في بند "السلاسل الداعمة للمعلم"، حيث تكمن أهمية هذه

	التعليمات
	المصادر في توفير أنشطة إضافية وأسئلة متنوعة، وأفكار تدريسية بديلة يمكن الاستعانة بها لتحقيق أهداف السلسلة الأساسية، وعند إعداد أوراق العمل الإضافية للطلاب، وعند إعداد مختلف أنواع الاختبارات، وغيرها من أوجه الاستفادة، مع الحرص على عدم نسخ محتوياتها إن لم تكن من المصادر المصممة للنسخ بدون الحصول على إذن رسمي من دار النشر المعنية بإنتاج هذه المصادر .
التدريب	▪ تدريب المعلمين والذي يتعلق باستخدام الكتب الدراسية والمصادر التعليمية المعتمدة، يجب أن يكون ضمن خطط المدارس الخاصة للإنماء المهني، والمدارس هي الجهات المعنية بالتنسيق حول توفير البرامج التدريبية لمعلميها حسب الحاجة، وذلك بالتنسيق مع دور النشر .
التغذية الراجعة	▪ يأمل المختصون في قسم برامج المدارس الخاصة أن تقوم المدارس الخاصة بإرسال أية ملاحظات حول ما تم ذكره في هذه النشرة التوجيهية أو حول محتوى المصادر التعليمية المعتمدة أو أية مقترحات تطويرية، وسواء كان ذلك من قبل المعلمين أو من الإدارات المدرسية، حتى يتسنى لأعضاء المناهج بالقسم المذكور الإلمام بها ، وعلاج أية إشكاليات تتعلق بهذا الجانب . ▪ للتواصل/ على البريد الإلكتروني: epc.ps@moe.om

النسخة الانجليزية
English Version

All schools implementing the Bilingual Program must follow all of the instructions below:

	Instructions
Series and books Selection and Provision	• To select and use one of the coursebooks mentioned in the approved list in this newsletter. • To provide all of the essential components of the resources for students and teachers. • To order sufficient quantities of the materials for teachers and students before the beginning of the academic year. Schools are responsible for any late delivery of their orders. • To provide original copies of the selected series of resources. **Important Note:** • Some main resources that were published **2015** and before are approved **only** for the coming academic year **2019/2020** and will not be allowed for implementation in the following year **2020/2021**. So please do not buy extra copies of these resources. • For some approved series, there are additional new 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 in order 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	• Teachers must achieve the learning outcomes of the chosen approved coursebooks for grades (1-6). • Teachers must achieve all the learning outcomes which are determined in this newsletter for grades (7-8). • Practical activities and experiments must be implemented for grades in labs (5-8) based on practical mentioned in the approved coursebooks.
Teaching Aids	• For grades (1-6): To provide and implement the teaching aids which are prescribed within the newsletter and the chosen approved series. • For grades (7-8): To provide and implement the teaching aids which are specified in the teacher's guide. • For all grades: To provide paper, photocopiers, laptops, projectors and other consumable materials that will be required in using these resources.

	Instructions
Teacher Support Resources	• "Support Resources for Teachers" are those materials developed for teacher use, which assist the teaching and learning process. Schools should provide their subject teachers with those resources in order to enhance students' extra-curricula activities, answer various questions and develop new teaching ideas. In addition, those resources can suport teachers in the implementation of the compulsory resource, preparing worksheets and writing exam papers (with the consideration of copyright).
Training	• Teacher training related to the use of the approved 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, as required.
Feedback	• The Curriculum Specialists at the Educational Programs and Curriculum Department encourage schools to send feedback regarding the newsletter, approved series, printing errors or any pertinent suggestions from teachers, as well as from administrators. Such feedback supports the department in future reforms and to better meet students and schools' needs. ❖ Please contact us at: E-mail: epc.ps@moe.om

الفصل الثاني: المرحلة الدراسية (1–6)

Section 2: Grades (1-6)

فهرس الفصل الثاني

المرحلة الدراسية (1–6)

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قائمة السلاسل التعليمية الأساسية المعتمدة لمادة العلوم – الصفوف (1–6)

The List of Approved Science Series – Grades (1- 6)

Name of series	Publisher	Year of Publication	Components
Hodder Cambradge Primary Science	Hodder Education	2017	Learner book
			Work book
			Teacher's pack
			Digital resource pack (Optional)
Intrernational primary science	Collins	2014	Workbook
			Student's book
			Teacher's Guide
Top Science	Alston Publishing House Pte Ltd	2014	Students Book
			Teacher's Resource with (CD)
			Student Workbook
Cambridge Primary Science	Cambridge University Press	2014	Learner's Book
			Activity Book
			Teacher's Resource with (CD)
Oxford International Primary Science	Oxford University Press	2014	Student Workbook
			Teacher's Guide
Heinemann Explore Science 2nd International Edition	Pearson	2012	Student Book
			Workbook
			Teacher's Guide
Marshall Cavendish Science	Marshall Cavendish Education	2017	Pupil's Book
			Activity Book
			Teacher's Guide
Max Science Primary	Macmillan Education International Curriculum	2019	Student's Book
			Work Book
			Teacher's Guide

* بعض السلاسل التعليمية التي تم إصدارها **عام *2015*** م وما قبل سيكون **العام الدراسي *2019–2020*** م آخر عام لتطبيقها وسيتم استبدالها إما بالنسخ المحدثة منها إذا توفرت أو سيتم إستبدالها بسلاسل حديثة أخرى للعام الدراسي *2020–2021* م فيرجى عدم شراء نسخ زائدة منها .

**Some main resources that were published 2015 and before are approved only for the coming academic year 2019/2020 and will not be allowed for implementation in the following year 2020/2021. So please do not buy extra copies of these resources.*

مكونات السلاسل التعليمية الأساسية المعتمدة مع أرقام (ISBNs) لمادة العلوم – الصفوف (1–6)

Components of science series with ISBNs- Grades (1- 6)

1. Hodder Cambradge Primary Science : Main resources

Grade	Components	ISBN
1	Workbook stage 1	9781471883941
	learner's book stage 1	9781471883910
	Teacher's pack stage 1	9781471883965
2	Workbook stage 2	9781471883880
	learner's book stage 2	9781471883835
	Teacher's pack stage 2	9781471883866
3	Workbook stage 3	9781471884191
	learner's book stage 3	9781471883996
	Teacher's pack stage 3	9781471884115
4	Workbook stage 4	9781471884214
	learner's book stage 4	9781471884023
	Teacher's pack stage 4	9781471884139
5	Workbook stage 5	9781471884245
	learner's book stage 5	9781471884054
	Teacher's pack stage 5	9781471884153
6	Workbook stage 6	9781471884252
	learner's book stage 6	9781471884085
	Teacher's pack stage 6	9781471884177

2. Collins International Primary Science :

Grade	Components	ISBN
1	Workbook 1	9780007551484
	Student's book 1	9780007586097
	Teacher's guide 1	9780007586103
2	Workbook 2	9780007586110
	Student's book 2	9780007586134
	Teacher's guide 2	9780007586141
3	Workbook 3	9780007586189
	Student's book 3	9780007586165
	Teacher's guide 3	9780007586172
4	Workbook 4	9780007588640
	Student's book 4	9780007586202
	Teacher's guide 4	9780007586219
5	Workbook 5	9780007586257
	Student's book 5	9780007586233
	Teacher's guide 5	9780007586240
6	Workbook 6	9780007586295
	Student's book 6	9780007586271
	Teacher's guide 6	9780007586288

3. Top Science:

Grade	Components	ISBN
1	Teacher's Guide 1	9789814437639
	Textbook 1	9789814437516
	Workbook 1	9789814437578
2	Teacher's Guide 2	9789814437646
	Textbook 2	9789814437523
	Workbook 2	9789814437585
3	Teacher's Guide 3	9789814437653
	Textbook 3	9789814437530
	Workbook 3	9789814437592
4	Teacher's Guide 4	9789814437660
	Textbook 4	9789814437547
	Workbook 4	9789814437608
5	Teacher's Guide 5	9789814437677
	Textbook 5	9789814437554
	Workbook 5	9789814437615
6	Teacher's Guide 6	9789814437684
	Textbook 6	9789814437561
	Workbook 6	9789814437622

4. Cambridge Primary Science:

Grade	Components	ISBN
1	Stage 1 Teacher's Resource with CD-ROM	9781107611467
	Stage 1 Learner's Book	9781107611382
	Stage 1 Activity Book	9781107611429
2	Stage 2 Teacher's Resource with CD-ROM	9781107611481
	Stage 2 Learner's Book	9781107611399
	Stage 2 Activity Book	9781107611436
3	Stage 3 Teacher's Resource with CD-ROM	9781107611504
	Stage 3 Learner's Book	9781107611412
	Stage 3 Activity Book	9781107611450
4	Stage 4 Teacher's Resource with CD-ROM	9781107656659
	Stage 4 Learner's Book	9781107674509
	Stage 4 Activity Book	9781107661516
5	Stage 5 Teacher's Resource with CD-ROM	9781107676732
	Stage 5 Learner's Book	9781107663046
	Stage 5 Activity Book	9781107658974
6	Stage 6 Teacher's Resource with CD-ROM	9781107662025
	Stage 6 Learner's Book	9781107699809
	Stage 6 Activity Book	9781107643758

5. Oxford International Primary Science:

Grade	Components	ISBN
1	Stage1 Student Workbook 1	9780198394778
	Stage 1 Workbook 1	9780198376422
	Stage 1 Teacher's Guide1	9780198394839
2	Stage 2 Student Workbook 2	9780198394785
	Stage 2 Workbook 2	9780198376439
	Stage 2 Teacher's Guide 2	9780198394846
3	Stage 3 Student Workbook 3	9780198394792
	Stage 3 Workbook 3	9780198376446
	Stage 3 Teacher's Guide 3	9780198394853
4	Stage 4 Student Workbook 4	9780198394808
	Stage 4 Workbook 4	9780198376453
	Stage 4 Teacher's Guide 4	9780198394860
5	Stage5 Student Workbook 5	9780198394815
	Stage5 Workbook 5	9780198376460
	Stage 5 Teacher's Guide 5	9780198394877
6	Stage 6 Student Workbook 6	9780198394822
	Stage 6 Workbook 6	9780198376477
	Stage 6 Teacher's Guide 6	9780198394884

6. Heinemann Explore Science 2nd International Edition:

Grade	Components	ISBN
1	Teacher's Guide 1	9780435133627
	Student's Book 1	9780435133559
	Workbook 1	9780435133696
2	Teacher's Guide 2	9780435133634
	Student's Book 2	9780435133566
	Workbook 2	9780435133702
3	Teacher's Guide 3	9780435133641
	Student's Book 3	9780435133573
	Workbook 3	9780435133719
4	Teacher's Guide 4	9780435133665
	Student's Book 4	9780435133580
	Workbook 4	9780435133818
5	Teacher's Guide 5	9780435133672
	Student's Book 5	9780435133597
	Workbook 5	9780435133825
6	Teacher's Guide 6	9780435133689
	Student's Book 6	9780435133610
	Workbook 6	9780435134228

7. Marshall Cavendish Science:

Grade	Components	ISBN
1	Teacher's Guide	9789814736923
	Pupil's Book	9789814736763
	Activity Book	9789814736916
2	Teacher's Guide	9789814736879
	Pupil's Book	9789814736855
	Activity Book	9789814736831
3	Teacher's Guide	9789814736893
	Pupil's Book	9789814736886
	Activity Book	9789814736862
4	Teacher's Guide	9789813163836
	Pupil's Book	9789813163812
	Activity Book	9789813163829
5	Teacher's Guide	9789813163867
	Pupil's Book	9789813163843
	Activity Book	9789813163850
6	Teacher's Guide	9789813163898
	Pupil's Book	9789813163874
	Activity Book	9789813163881

8. Max Science primary:

Grade	Components	ISBN
1	Teacher's Guide	9781380021540
	Student's Book	9781380010155
	Work Book	9781380021526
2	Teacher's Guide	9781380021588
	Student's Book	9781380021557
	Work Book	9781380021564
3	Teacher's Guide	9781380021625
	Student's Book	9781380021595
	Work Book	9781380021601
4	Teacher's Guide	9781380021663
	Student's Book	9781380021632
	Work Book	9781380021649
5	Teacher's Guide	9781380021700
	Student's Book	9781380021670
	Work Book	9781380021687
6	Teacher's Guide	9781380021748
	Student's Book	9781380021717
	Work Book	9781380021724

توزيع محتوى السلاسل الأساسية على الفصلين الدراسيين لمادة العلوم– الصفوف (1–6)

The science Annual scheme of work - Grades (1-6)

1. Hodder Cambradge Primary Science :

Grade	Semester 1	Semester 2
One	**Unit1:** Living and growing **Unit2:** Plants **Unit3:** Ourselves	**Unit4:** Materials properties **Unit5:** Forces **Unit6:** Sound
Two	**Unit1:** Living things in their environment **Unit2:** Material properties **Unit3:** Material changes	**Unit4:** Light and dark **Unit5:** Electricity **Unit6:** The Earth and beyond
Three	**Unit1:** Plants **Unit2:** Keeping Healthy **Unit3:** Life processes	**Unit4:** The senses **Unit5:** Material properties **Unit6:** Forces and motion
Four	**Unit1:** Humans and animals **Unit2:** Living things in their environments **Unit3:** States of matter	**Unit4:** Sound **Unit5:** Electricity **Unit6:** Magnetisem
Five	**Unit1:** Investigating plant growth **Unit2:** The life cycle of flowering plants **Unit3:** States of matter	**Unit4:** The way we see things **Unit5:** Shadows **Unit6:** The Earth and beyond
Six	**Unit1:** Humans and animals **Unit2:** Caring for the environment **Unit3:** Material changes	**Unit4:** Food chains **Unit5:** Forcese and motion **Unit6:** Electricity

2. Collins International Primary Science:

Grade	Semester 1	Semester 2
One	**Topic 1:** Humans and Animals **Topic 2:** Plants	**Topic 3:** Material and propereties **Topic 4:** Forces **Topic 5:** Sound
Two	**Topic 1:** Living Things in Their Environment **Topic 2:** Material Propereties **Topic 3:** Material Changes	**Topic 4:** Light and dark **Topic 5:** Electricity **Topic 6:** Earth and Beyond
Three	**Topic 1:** Plants **Topic 2:** Humans and Animals	**Topic 3:** Material Propereties **Topic 4:** Forces and Motion
Four	**Topic 1:** Humans and Animals **Topic 2:** Living Things in Their Environement **Topic 3:** States of Matter	**Topic 4:** Sound **Topic 5:** Electricity and Magnetism
Five	**Topic 1:** Plants **Topic 2:** States of Matter	**Topic 3:** Light **Topic 4:** The Earth and Beyond
Six	**Topic 1:** Humans and Animals **Topic 2:** Living Things in Their Environement **Topic 3:** Material Changes	**Topic 4:** Forces and Motion **Topic 5:** Electricity and Magnetism

3. Top science:

Grade	Semester 1	Semester 2
One	**Unit1:** My body **Unit2:** All About Senses? **Unit3**: Healthy eating **Unit 4:** Animals	**Unit 5:** Plants **Unit6:** Materials around us **Unit7:** Forces **Unit8:** Sound
Two	**Unit1:** Living Things and their environment **Unit2:** Rocks **Unit3:** Changing materials	**Unit4:** Light and Dark, Day and Night **Unit5:** Weather around us **Unit6:** Electricity
Three	**Unit1:** living things and their life processes **Unit2:** Sorting living things **Unit3:** Fit for life	**Unit4:** Introducing :Roots, leaves, stems and flowers **Unit5:** Material All around us **Unit6:** Pushes and pulls
Four	**Unit1:** Body system: Skeleton and Muscular **Unit 2:** Introducing Habitats **Unit3:** Solids, Liquids and Gases **Unit4:** States of Matter	**Unit5:** Sounds **Unit 6:** Electricity **Unit7:** Magnets
Five	**Unit1:** The life cycle of Plants **Unit2:** The life cycle of Animals **Unit3:** Heat and temperature	**Unit4:** States of matter: boiling **Unit5:** Light and shadows **Unit6:** Movement of the earth
Six	**Unit1:** Body systems **Unit2:** Our environment and us **Unit3:** Adaptations **Unit4:** Reversible and irreversible changes	**Unit 5:** Food chains **Unit6:** More about forces **Unit7:** Energy **Unit 8**: Electricity

4. Oxford international primary science :

Grade	Semester 1	Semester 2
One	**Unit1:** Living and growing **Unit3:** Growing plants **Unit6:** Ourselves	**Unit2:** What is it made of? **Unit4:** Pushes and Pulls **Unit5:** Making sounds
Two	**Unit1:** Plants and Animals **Unit2:** Looking at Rocks **Unit3:** Changing Materials	**Unit4:** Light and Dark **Unit5:** Electricity **Unit6:** Day and Night
Three	**Unit1:** Flowering Plants **Unit2:** Keeping Healthy **Unit3:** Life Processes	**Unit4:** The Senses **Unit5:** Materials **Unit6:** Introducing Forces
Four	**Unit1:** Skeleton and Muscles **Unit2:** Habitats **Unit3:** Solids, Liquids and Gases	**Unit4:** Sound **Unit5:** Making Circuits **Unit6:** How Magnets Work
Five	**Unit1:** Investigating Plant Growth **Unit2:** The Life Cycle of a Flowering Plant **Unit3:** Evaporation and Condensation	**Unit4:** The Way We See Things **Unit5:** Shadows **Unit6:** Earth's Movements
Six	**Unit1:** Human Organs and Systems **Unit2:** Caring for the Environment **Unit3:** Reversible and Irreversible Reactions	**Unit4:** Food Chains **Unit5:** Mass and Weight **Unit6:** Electrical Conductors and Insulators

5. Cambridge Primary Science:

Grade	Semester 1	Semester 2
One	**Unit1:** Being alive **Unit2:** Growing plants **Unit3:** Ourselves	**Unit4:** Materials in my world **Unit5:** Pushes and Pulls **Unit6:** Hearing sounds
Two	**Unit1:** Going outside **Unit2:** Looking at rocks **Unit3:** Changing materials	**Unit4:** Light and dark **Unit5:** Electricity **Unit6:** The Earth and the Sun
Three	**Unit1:** Looking after plants **Unit2:** Looking after ourselves **Unit3:** Living things	**Unit4:** Our five senses **Unit5:** Investigating materials **Unit6:** Forces and movement
Four	**Unit1:** Humans and animals **Unit2:** Living things and environments **Unit3:** Solids, Liquids and gases	**Unit4:** Sound **Unit5:** Electricity and magnetism
Five	**Unit1:** Investigating plant growth **Unit2:** The life cycle of flowering plants **Unit3:** States of matter	**Unit4:** The way we see things **Unit5:** Shadows **Unit6:** Earth's movements
Six	**Unit1:** Humans and animals **Unit2:** Living things in the environment **Unit3:** Material changes	**Unit4:** Forces and motion **Unit5:** Electrical conductors and insulators

6. Heinemann Explore Science 2nd International Edition:

Grade	Semester 1	Semester 2
One	**Unit1:** Ourselves and Other Animals **Unit2:** Growing Plants	**Unit3:** Sorting and Using Materials **Unit4:** Forces **Unit5:** Sound
Two	**Unit1:** Living Things in the Environment **Unit2:** Materials	**Unit3:** Light and Dark **Unit4:** Electricity **Unit5:** Earth and Beyond
Three	**Unit1:** Living and Growing **Unit2:** Helping Plants Grow Well **Unit3:** Rocks and Soil	**Unit4:** Characteristics of Materials **Unit5:** Magnets and Spring **Unit6:** Friction
Four	**Unit1:** Humans and Animals **Unit2:** Living Things in their Environment **Unit3:** Separating Solids and Liquids **Unit4:** Gases Around Us	**Unit5:** Keeping warm **Unit6:** Sound **Unit7:** Electricity
Five	**Unit1:** Microbes **Unit2:** Life cycles **Unit3:** Changing State	**Unit4:** Keeping Healthy **Unit5:** Lights **Unit6:** The Earth and Beyond
Six	**Unit1:** Humans **Unit 3:** Interdependence and Adaptation **Unit4:** Reversible and Irreversible Changes	**Unit 5:** More About Dissolving **Unit 6:** Forces in Action **Unit 7 :** Changing Circuit

7. Marshall Cavendish Science :

Grade	Semester 1	Semester 2
One	**Unit1:** Living and Growing **Unit2:** Growing plants **Unit3:** Ourselves	**Unit4:** What is it made of **Unit5:** Pushes and Pulls **Unit6:** Making Sounds
Two	**Unit1:** Living things and their Environments **Unit2:** Rocks and Other Materials **Unit3:** Changes	**Unit4:** Light and Dark **Unit5:** Electricity **Unit6:** Day and night
Three	**Unit1:** Flowering Plants **Unit2:** Keeping Healthy **Unit3:** Living things	**Unit4:** Our senses **Unit5:** Materials **Unit6:** Forces
Four	**Unit1:** Skeleton and Muscles **Unit2:** Habitats and Environments **Unit3:** Solid, Liquids and Gases	**Unit4:** Sound **Unit5:** Electric Circuits **Unit6:** How Magnets Work
Five	**Unit1:** Investigating Plant Growth **Unit2:** Reproduction in Flowering Plants **Unit3:** Changing States	**Unit4:** The Way We See Things **Unit5:** Shadows **Unit6:** The Earth and Beyond
Six	**Unit1:** Human Organs and Organ Systems **Unit2:** Caring for the Environment **Unit3:** More about Changes	**Unit 5:** Food Chains **Unit 6:** More about Forces **Unit 7:** More about Electricity

8. Max Science primary:

Grade	Semester 1	Semester 2
One	**Unit1:** Living and Growing **Unit2:** Growing plants **Unit3:** Ourselves	**Unit4:** What is it made of **Unit5:** Pushes and Pulls **Unit6:** Making sounds
Two	**Unit1:** Plants and Animals Around us **Unit2:** Looking at rocks **Unit3:** Changing materials	**Unit4:** Light and dark **Unit5:** Electricity **Unit6:** Day and Night
Three	**Unit1:** Flowering plants **Unit2:** Keeping Healthy **Unit3:** Live Processes	**Unit4:** The five senses **Unit5:** Materials **Unit6:** Introducing Forces
Four	**Unit1:** Skeleton and muscles **Unit2:** Habitats **Unit3:** Solids, Liquids and gases	**Unit4:** Sound **Unit5:** Making Circuits **Unit6:** How Magnets Work
Five	**Unit1:** Investigating plant growth **Unit2:** The life cycle of a flowering plants **Unit3:** Evaporation and Condensation	**Unit4:** The way we see things **Unit5:** Shadows **Unit6:** Earth's movements
Six	**Unit1:** Human organs and systems **Unit2:** Caring for the Environment **Unit3:** Reversible and Irreversible changes	**Unit4:** Food Chains **Unit5:** Mass and Weight **Unit6:** Electrical conductors and insulators

قائمة ومكونات المصادر التعليمية المساعدة للمعلم مع أرقام (ISBNs) في مادة العلوم – الصفوف (1–6)

The List & Components of Supplementary Resources for Teachers - Grades (1- 6)

Name of series	Publisher	Components
Ready to Go Lessons for Science	Hodder Education	Lesson Plans for Cambridge Primary

Grade	ISBN	Components
1	9781444177824	Ready to Go Lessons for Science: Stage 1
2	9781444177831	Ready to Go Lessons for Science: Stage 2
3	9781444177848	Ready to Go Lessons for Science: Stage 3
4	9781444177855	Ready to Go Lessons for Science: Stage 4
5	9781444177862	Ready to Go Lessons for Science: Stage 5
6	9781444177879	Ready to Go Lessons for Science: Stage 6

Hodder Cambradge Primary Science : Optional resources

Grade	Components	ISBN
1	Digital resource pack 1	9781471883989
2	Digital resource pack 2	9781471883903
3	Digital resource pack 3	9781471884276
4	Digital resource pack 4	9781471884283
5	Digital resource pack 5	9781471884290
6	Digital resource pack 6	9781471884306

قائمة المواد و الأدوات و الوسائل التعليمية لمادة العلوم – الصفوف (1–6)

The List of Required Instruments & Educational Aids in Science For Grades (1-6)

Grade	The list of ancillary materials and visual aids
One	Stopwatches , plastic bowls, cotton wool, adhesive tape, elastic bands, wires, scissors, spoons (plastic & metal) , wooden blocks, different type of fabric, dice, rubber gloves, rubber bands, cards of living and nonliving things, different pictures of animals & plants ,modelling clay, tennis balls, skipping ropes, toy cars, Wooden surfaces, wooden sticks, bubble liquid, recording of animal sounds, sunflower seeds, plastic cups, , hand lenses, wool, string, clear containers, small mirrors, balloons, meter ruler, straws
Two	Paper clips, elastic bands small mirrors, torches, batteries, wires, bulbs, crocodile clips, metal & plastic spoons, switches, card, buzzers, brass clips , modelling clay, colored tissue paper, glue, small weighs, wool cotton, plastic cups , rock samples (sandstone, mudstone, shale, limestone, marble, chalk, granite) , hand lenses, tape, filter funnels, beakers, variety of balls, thermometer, measuring cylinder, hand lenses, rock sample, Stopwatches.
Three	Picture cards of vertebrates & invertebrates, metal trays, marbles, meter ruler, been seeds, plastic cups, small bar magnets, different shapes of magnets, nails, wooden sticks, plastic cups, hand lenses, food dyes (blue, red, yellow), clear containers ,tennis balls, force meters, modelling clay, toy cars , ink pads or paint, sandpaper, measuring cylinder, filter papers, stopwatch, beakers, string
Four	Model of skeleton , pictures of different animals, transparent containers of different shapes, cups, measuring cylinder, plastic bowls, balloons, thin wires, funnels, baking soda, kettle, candles, modelling clay, test tubes, thermometers, heatproof gloves, wires, crocodile clips, different magnets, bar magnets, compass, steel paperclips, metal objects, plastic tubes, baking soda, white vinegar, wires, bulbs, batteries, crocodile clips, switches, brass, balls, tuning forks, cotton wool, plastic bottles. Tape measures, a tray, sticks, plastic gloves, funnels, filter paper, hand lenses , bicarbonate of soda, elastic bands, marbles, cotton thread, salt, hot plate, small mirrors, candles,, tongs, stopwatches, balloons, , glass bottle, food colouring, small block of wood, switches, paper clips, horseshoe magnets.
Five	Torches, small mirrors, angle measures or protractors, wooden sticks, plastic cups & pots , cotton, kettle, thermometers, heatproof beakers or cups , measuring cylinder, spoons, filter paper, filter funnels, a sieve, magnets, paper clips, top pan balance, different types of seeds, tape measures, modelling clay, hand lenses, plastic cups & bowls, cylinder, straws, candles, stopwatches, measuring tapes, microscope, tweezers, beakers, small squares of different fabric, plastic cups, paper clips, copper sulfate or potassium permanganate, salt , food colouring, elastic bands, hotplate, measuring spoons, torches, hand held mirror, metal spoons, plastic spoons, cubs of wood, aluminum foil, sheets of clear plastic, black paper, protractors ,coloured transparent plastic, sticks, magnetic compass, bulb, balls, strong flashlight, modelling clay, balloons.

Grade	The list of ancillary materials and visual aids
Six	Model of the human form showing the position of major organs, pictures of major organs, balloons, tape measures, stopwatches, hospital literature, candles, clear plastic bottles, strew, beakers, filter papers, filter funnels, hand lens, sieves(with large, medium and small holes), thermometers, scales, spoons, kettle, top pan balance, heater, batteries, wires, crocodile clips, bulbs, ammeter, nichrome wires, copper wires, switches, marbles, force meter ,small springs, 1 kg mass, weighing scales, elastic bands, magnets, paper clips, toy cars, 1 meter ramps made of wood, meter stick, protractors, pieces of fabric, Vinegar, calcium carbonate, sugar, rusting nails, salt ,stethoscope, balloons, string, straws, iodine solution, droppers, measuring cylinder, models, plant seeds, glass slides, microscope, hand lenses, cotton wool, rubber gloves, candles, bicarbonate of soda, metal spoon, plastic spoon, wooden spoons, plastic cups, bag of mixed beans, salt, sieve, magnets, plastic bowls, potassium permanganate or copper sulfate crystals, sodium hydroxide, tweezers, sodium hydroxide pellets, filter paper, hot plate, thermometers, tripods, salt crystals, weighing scales , elastic bands, iron nails, different sizes of balls, tennis balls, planks of wood, toy cars, electrical wire, 1.5 V batteries, 1.5 bulbs, aluminum foil , copper wire, switches, bells, motors, crocodile clips, iron or zinc coated galvanized nail, copper coin, light bulb

الفصل الثالث: المرحلة الدراسية (7-8)

Section (3) : Grades (7-8)

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قائمة السلاسل التعليمية الأساسية المعتمدة لمادة العلوم– الصفوف (7–8)

The List of Approved Science Series for Grades (7– 8)

Titles	Publisher	Components	Guidelines on Books providing for grades 7 & 8 students
Complete Science for Cambridge Secondary1 2016	Oxford University Press	Student book	• Schools which choose Oxford series should provide students with three students' books accompanied with their work books "Complete Physics, Complete Biology, and Complete Chemistry" and students will use these books for grades 7 & 8. • Any science teacher can teach this series with no need to assign teaching to subject streams' teachers (physics, biology and chemistry teachers).
		Work Book	
		Teacher Pack With (CD)	
Checkpoint Science 2011-2012	Hoder Education	Student book 1,2 & 3	School which choose Hodder series should provide: • Grade 7 students with the books (Checkpoint1&3) both student book & work book. • Grade 8 students with the books (checkpoint 2&3) both student book and work book
		work Book 1, 2 & 3	
		Teacher Resource 1,2 & 3	
Cambridge Checkpoint Science 2012-2013	Cambrige University Press	Course book7,8 & 9	School which choose Cambridge series should provide: • Grade7 students with the books (Check point 7&9) both course book and work book. • Grade8 students with the books (check point 8&9) both course book and work book.
		work Book7,8 & 9	
		Teacher's Resource7,8 & 9 (CD)	

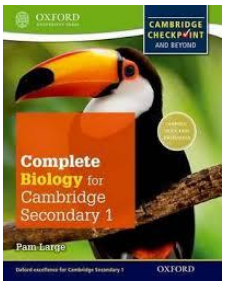
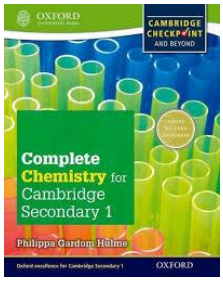
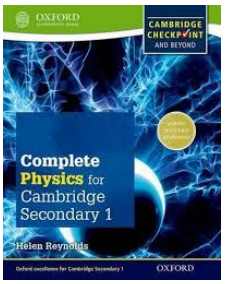
* بعض السلاسل التعليمية التي تم إصدارها **عام *2015*** م وما قبل سيكون **العام الدراسي *2019–2020*** م آخر عام لتطبيقها وسيتم استبدالها إما بالنسخ المحدثه منها إذا توفرت أو سيتم إستبدالها بسلاسل حديثة أخرى للعام الدراسي *2020–2021* م فيرجى عدم شراء نسخ زائدة منها .

**Some main resources that were published 2015 and before are approved only for the coming academic year 2019/2020 and will not be allowed for implementation in the following year 2020/2021. So please do not buy extra copies of these resources.*

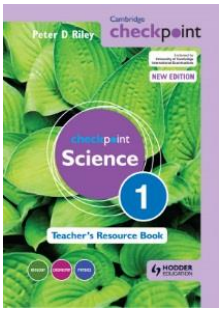
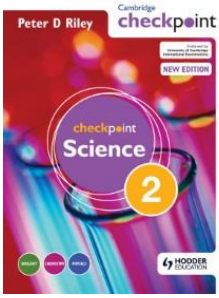
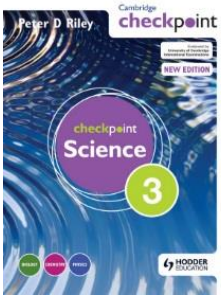
مكونات السلاسل التعليمية الأساسية المعتمدة وأرقام الـ (ISBNs) لمادة العلوم – الصفوف (7–8)

Components of Approved Science with ISBNs Series - Grades (7- 8)

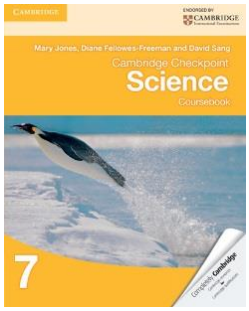
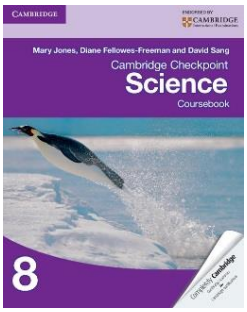
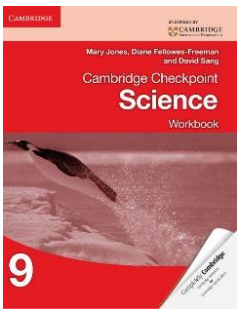
- **Complete Science for Cambridge Secondary 1**

Name of series	Grade	Components	(ISBN)	Book Cover
Complete Biology for Cambridge Secondary 1	7&8	Student book	97080198390213	
		Work Book	9780198390220	
		Teacher Pack With (CD)	9780198390237	
Complete Chemistry for Cambridge Secondary 1	7&8	Student book	9780198390183	
		Work Book	9780198390190	
		Teacher Pack With (CD)	9780198390206	
Complete Physics for Cambridge Secondary 1	7&8	Student book	9780198390244	
		Work Book	9780198390251	
		Teacher Pack With (CD)	9780198390268	

- **Hodder series (Checkpoint Science):**

Name of series	Edition	Components	(ISBN)	Book Cover
Checkpoint Science 1	7	Student book1	9781444126037	
		Work Book1	9781444183467	
		Teacher Resource1	9781444143805	
Checkpoint Science 2	8	Student book2	9781444143751	
		Work Book2	9781444183481	
		Teacher Resource2	9781444143812	
Checkpoint Science 3	7&8	Student book3	9781444143782	
		Work Book3	9781444183504	
		Teacher Resource3	9781444143829	

- **Cambridge Checkpoint Science**

Name of series	Grade	Components	(ISBN)	Book Cover
Cambridge Checkpoint Science7	7	Course Book 7	9781107613331	
		Workbook 7	9781107622852	
		Teacher's Resource 7 (CD)	9781107694583	
Cambridge Checkpoint Science 8	8	Course Book 8	9781107659353	
		Workbook 8	9781107679610	
		Teacher's Resource 8 (CD)	9781107625051	
Cambridge Checkpoint Science 9	7 & 8	Course Book 9	9781107626065	
		Workbook 9	9781107695740	
		Teacher's Resource 9 (CD)	9781107696495	

توزيع محتوى السلاسل التعليمية الأساسية على الفصلين الدراسيين لمادة العلوم – الصفوف (7–8)

The Science Yearly Scheme of Work for grades (7 & 8)

- **Complete Science for Cambridge Secondary1: Oxford Universiyt Press**

Grade 7		
Semester	**Chapters**	**Main Resource**
Semester 1	Unit1: Plants Unit 2: Humans Unit 3: Cells and organisms Unit 4:Living things in the environment Unit5: Variation and classification	"Complete Biology for Cambridge Secondary 1"
	Unit 1: Forces Unit 8: Forces Unit 3: The earth and beyond	" Complete Physics for Cambridge Secondary 1"
Semester 2	Unit 2: Energy Unit 10: Energy	
	Unit1: States of matter Unit 2: Material properties Unit 3: Material changes Unit 4: The earth	" Complete Chemistry for Cambridge Secondary 1"

Grade 8		
Semester	**Chapters**	**Main Resource**
Semester 1	Unit 6: Plants Unit 13: Plants Unit 7: Diet Unit 8: Digestion Unit 9: Circulation Unit 10: Respiration and breathing Unit 11: Reproduction and fetal development Unit 12: Drugs and disease	"Complete Biology for Cambridge Secondary 1"
	Unit 4: Forces Unit 5: Sound Unit 6: Light	" Complete Physics for Cambridge Secondary 1"
Semester 2	Unit 9: Electricity Unit 7 : Magnetism	
	Unit 6: Material properties Unit 8 : Material properties Unit 7 : Material changes	" Complete Chemistry for Cambridge Secondary 1"

- **Cambridge checkpoint Science: Hodder Education**

Grade 7		
Semester	**Chapters**	**Main Resource**
Semester 1	Chapter 1: Plants Chapter 2: Major organ system Chapter 3: Cells Chapter 4: Microorganism Chapter 5: Living things in their environment Chapter 6: People and the plant Chapter 7: Classification and variation	" Cambridge Checkpoint Science 1"
	Chapter 13: Measurements Chapter 14: Forces and motion Chapter 17: The earth and beyond	" Cambridge Checkpoint Science 1"
	Chapter 13: Density Chapter 14: Pressure	" Cambridge Checkpoint Science 3"
Semester 2	Chapter 15: Energy	" Cambridge Checkpoint Science 1"
	Chapter 18: Heat energy transfers	" Cambridge Checkpoint Science 3"
	Chapter 8: The states of matter Chapter 9: Properties of matter and materials Chapter 10: Acids and alkalis Chapter 11: Rocks and soil Chapter 12: Finding the age of the earth	" Cambridge Checkpoint Science 1"

Grade 8		
Semester	**Chapters**	**Main Resource**
Semester 1	Chapter 1: How Plants Grow	Cambridge Checkpoint Science 2"
	Chapter 1: Photosynthesis Chapter 2: Reproductive in Flowering Plants	Cambridge Checkpoint Science 3"
	Chapter 2: The Healthy Diet Chapter 3: Digestion Chapter 4: The Circulatory System Chapter 5: The Respiration System Chapter 6: Reproduction in Humans Chapter 7: Diet, Drugs and Disease	Cambridge Checkpoint Science 2"
	Chapter 13: Speed Chapter 14: Sound Chapter 15: Light	" Cambridge Checkpoint Science 2"
Semester 2	Chapter 16: Electrostatics Chapter 17: Electricity	" Cambridge Checkpoint Science 3"
	Chapter 16: Magnetism	"Cambridge Checkpoint Science 2" " Cambridge Checkpoint Science 2"
	Chapter 9: Elements and Atoms Chapter 10: Elements, Compounds and Mixtures Chapter 11: Metals and Non- Metals Chapter 12: Chemistry in Everyday Life	
	Chapter 7: The Structure of Atom Chapter 8: The Periodic Table	" Cambridge Checkpoint Science 3"

- **Cambridge Checkpoint Science: Cambridge University Press**

Grade 7		
Semester	**Chapters**	**Main Resource**
Semester 1	Unit1: Plants and Humans as Organisms Unit 2: Cells and organisms Unit 3 :Living things in their environment Unit4: Variation and classification Unit 9: Forces and motion Unit 11: The earth and beyond	" Cambridge Checkpoint Science 7
	Unit 9: Forces in Action	" Cambridge Checkpoint Science 9
Semester 2	Unit 10: Energy	" Cambridge Checkpoint Science 7
	Unit 11: Energy	" Cambridge Checkpoint Science 9
	Unit 5: States of Matter Unit 6: Material Properties Unit 7: Material Changes Unit 8: The Earth	" Cambridge Checkpoint Science 7

Grade 8		
Semester	**Chapters**	**Main Resource**
Semester 1	Unit 1: Plants	" Cambridge Checkpoint Science 8
	Unit 1: Plants	" Cambridge Checkpoint Science 9
	Unit 2: Food and Digestion Unit 3: The Circulatory System Unit 4: Respiration Unit 5: Reproduction and Development	" Cambridge Checkpoint Science 8
	Unit 10: Measuring Motion Unit 11: Sound Unit 12: Light	" Cambridge Checkpoint Science 8
Semester 2	Unit 10: Electricity	" Cambridge Checkpoint Science 9
	Unit 13 : Magnetism	" Cambridge Checkpoint Science 8
	Unit 7: Elements and Compound Unit 8: Mixtures Unit 7: Material Changes	" Cambridge Checkpoint Science 8
	Unit 4: Materials Properties	" Cambridge Checkpoint Science 9

الإطار المنهجي العام لمادة العلوم – الصفوف (7–8)

General Science Framework for Grades (7 & 8)

- Most of the learning outcomes for grades 7 and 8 are in the text books of the same grade in the series, but there are some outcomes to be found and covered in grade 9 textbook of the same series.
- Teachers have to achieve the learning outcomes of scientific enquiry and must not skip or neglect them.

Scientific Enquiry Outcomes:

Scientific Enquiry (grades 7 & 8)	
Topic	**Learning outcomes**
Question, Ideas and Evidence	• Recognize scientific questions. • Understand the importance of questions, evidence and explanations. • Describe how explanations are developed. • Try to answer questions by collecting evidence through observation. • Be able to develop a scientific question that can be investigated. • Explain why some explanations are accepted and others are not • Understand that explanations change as new observations are made. • Understand how scientists worked in the past and how they work now.
Plan Investigative Work	• Understand that scientists make predictions and check whether their evidence matches these predictions • Understand how to plan an investigation to test an idea in science. • Recognize that there are lots of ways to find out the answers to questions in science. • Make predictions. • Decide what to do to try to answer a science question. • Work out which variables must be changed, controlled, and measured. • Explain what is meant by continuous variables.
Obtain and Present Evidence	• Explore and observe in order to collect evidence and measurements. • Use tools and equipment and technology laboratory in appropriate, safe and accurate manner when implementing the scientific surveys. • Describe how to present results in tables • Describe how to draw line graphs. • Record stages in work. • Talk about risks and how to avoid them.
Consider Evidences and Approach	• Make comparisons between their results and others results. • Compare what happened with predictions. • Review and explain what happened. • Model and communicate ideas in order to share, explain and develop.

Grade 7: Biology

Topic	Learning Outcomes
Plants and Humans as Organisms	
Plant Organs	• Recognize plant parts. • Describe the function of each part of a plant.
Human Organ Systems	• List the names of the human organ systems. • Identifying different organs in our organ systems.
The Human Skeleton	• Describe the role of a skeleton in terms of support and protection. • State that a skeleton holds your body together in the right shape. • Identify some delicate organs, their location in the human body and bones that are protect them. Movement: • Define *joint* as two bones meet. • Explain two main kinds of joints and their importance in relation to movement. explain why joints are needed.
Muscles and Movement	• Explain how the muscle movements control the movements of bones, joints and ligaments. • Describe the different types of muscles. • Explain what is meant by voluntary and involuntary muscles and their actions.
Studying the Human Body	• Understand the necessity of studying the human body. • Describe the use of specific equipment and technology to study the human body. • Identify the main parts of a microscope. • Find the size of microscopic specimen. (simple calculation).
Cells and Organisms	
Characteristics of Living Organisms	• Identify the seven characteristics of living things. • Recognize these characteristics in familiar and unfamiliar organisms.
Plant and Animal cells	• Compare plant and animal cells. • Identify different cell organelles and their specific functions.
Specialized Cells	• Identify the different types of specialized cells such as red blood cells, muscle cells, nerve cells, leaf cells, root hair cells, and xylem and phloem cells. • Relate the structure of cells to their functions.
Cells, Tissues and Organs	• Define tissue as the collection of similar cells that work together. • Describe how different tissues form an organ. • Describe how different organs form an organ system.
Micro- organism	• Understand the necessity of microorganisms in human welfare. • Describe the harmful and useful microbes and their applications. • Describe the role of microbes in food decay. • Recognize the process of fermentation and its uses. • Understand what is meant by an 'infectious disease. • Give some examples of diseases caused by micro-organisms.

Topic	Learning Outcomes
	• Suggest how to avoid infections.
Living Things in their Environment	
Habitats and Adaptation	• Define the terms habitat and ecosystem. • Explain the terms adaptation and survival of the fittest. • Describe the different types of adaptations in plants and animals found in different environments.
Food Chains	• Define the term food chain. • Draw and model simple food chains. • Explain how energy is transferred through the various trophic levels of a food chain. • Explain the terms producer, consumer and decomposer, and their role in the ecosystem. • Explain the terms herbivores, carnivores and omnivores with examples.
Pollution	• Describe the human activities that harm the food chain and Ecosystem. • Explain the cause and effects of pollution to the environment. • Describe the different types of pollution. • Explain how pollution is depleting the ozone layer
Variation and Classification	
Species	• Define term species • Describe the binomial system of naming.
Variation	• Define the term Variation and how it helps in the formation of new species. • Explain variation within a species in terms of the development of special features within the species that help an organism to survive. • Describe continuous and discontinuous variation with examples. • Describe the term mutation. • Identify and analyze the data pertaining to variations within the same species.
Classifying Plants	• State the necessity of classification of the plant kingdom. • Classify plants as spore-bearing and seed-bearing with characteristics and examples.
Classifying Animals	• State the necessity of classifying animals. • Classification of vertebrates and invertebrates with their special features. • Describe the rules of classification. • Describe the binomial system of nomenclature.

Grade 7: Physics

Topic	Learning Outcomes
Forces and Motion	
Introduction to Forces	• Describe different types of forces. • Understand the effects of forces on moving objects. • Describe how to measure forces.
Balanced Force	• Explain the difference between balanced and unbalanced forces. • Describe the effect of balanced forces. • Describe the effect of unbalanced forces.
Friction	• Describe the effect of friction on moving objects. • Understand how to reduce friction. • Describe how friction can be useful.
Gravity	• Explain the link between gravity, mass, and weight. • Describe how your weight can be different on different planets.
Air Resistance	• Explain what affects air resistance. • Describe what is meant by terminal velocity.
Tension and Up thrust	• Describe what happens when you stretch a spring. • Explain what is meant by tension. • Explain the elastic limit. • Explain why things float or sink.
Forces in Action *(some outcomes are from Cource Book 9)*	
Pressure	• Explain the difference between weight and pressure. • Calculate the pressure. • Apply ideas of pressure to a range of situations.
Pressure in Gases and Liquids	• Explain what is meant by liquid pressure. • Describe what determines the pressure in a liquid. • Explain how hydraulic machines work. • Describe some uses of hydraulic machines. • Explain what is meant by gas pressure. • Explain the link between pressure and volume.
Density	• Explain what is meant by density. • Describe how to measure the density of solids, liquids, and gases. • Explain why solids are denser than liquids or gases. • Explain why objects float or sink.

The Earth and Beyond	
The Night Sky	• Know the types of objects that can be seen in the night sky. • Understand how we see different types of objects.
Day and Night	• Explain why the Sun appears to move across the sky. • Explain why we have day and night.
Seasons	• Describe the how the height of the Sun in the sky changes over the year. • Explain why there are seasons in different parts of the world.
Stars	• Explain why the stars appear to move in circles during the night. • Describe how the night sky changes over the year.
The Solar System	• Describe the planets in our Solar System. • Know the order of the planets, and where the asteroid belt is.
The Moon	• Describe the phases of the Moon. • Explain why we see phases of the Moon and eclipses.
Energy	
Introduction to Energy	• Describe where we get our energy from. • Know the unit of energy. • Understand why the energy in food comes from the Sun. • Describe some methods of generating electricity using the sun's energy.
Energy Type	• Name the different types of energy. • Give examples of processes that involve the different types of energy.
Energy Transfer	• Understand how energy transfers are shown in diagrams. • Construct energy transfer diagrams.
Conservation of Energy	• State the law of conservation of energy. • Explain how the law applies to different situations.
Gravitational Potential Energy and Kinetic Energy	• Explain what is meant by gravitational potential energy. • Explain what is meant by kinetic energy. • Describe situations which involve gravitational potential energy and kinetic energy. • Explain how the store of elastic potential energy can change. • Describe situations where the store of elastic potential energy increases or decreases.
Thermal Energy & Energy Resources *(some outcomes are from Course Book 9)*	
Introduction to Thermal Energy	• Explain the difference between temperature and thermal energy. • Describe what happens to particles in solids, liquids, and gases when you heat them.
Thermal Energy Transfer	• State the names of some conductors and insulators. • Explain why some materials feel warmer than others. • Describe what happens in convection. • Explain how convection currents are formed.

	• Recognize some sources of infrared radiation and the similarities between light and infrared. • Describe how infrared is transmitted, absorbed, and reflected. • Explain what is meant by the greenhouse effect.
Energy in The World	• Explain the difference between primary and secondary energy sources. • Describe how the world's energy needs have changed and are likely to change in the future.
Fossil Fuels	• Describe how fossil fuels were formed. • Explain how a fossil fuel fired power station works.
Renewable and Non- renewables Energy Resources	• Describe how the energy from the sun can be used. • Explain how energy from the Earth can be used to generate electricity. • Describe how wind, waves, tides, and water behind dams can be used to generate electricity. • Describe some of the issues in providing energy for the future.
The Earth	
The Structure of The Earth	• Describe a model for the structure of the Earth. • Explain how we know about the Earth's structure.
Rocks	• Observe and classify different types of rocks and soils. • State properties of igneous, sedimentary and metamorphic rock and how each different type of rock is formed. • Relate properties of each type of rock to its formation.
Soil	• Observe and classify different types and soils. • List soil components • Name soil types. • Describe soil properties.
Fossil	• State what a fossil is. • Describe how fossils form. • Give examples showing what we can learn from the fossil record. • Describe how scientists have estimated the age of the Earth.

Grade7: Chemistry

Topic	Learning Outcomes
States of Matter	
Particle Theory	• State the three states of water: solid (ice), liquid (water) and gas (steam). • Use ideas about particles to explain the behavior of substances in the solid, liquid, and gas states.
Changing of State	• Name the changes of state involving solids, liquids and gases. • Observe the changes of water in different states of matter (with reference to boiling point, melting point and freezing point). • Explain changes of state using ideas about particles. • Describe how melting points help identify substances. • State the difference between evaporation and boiling in terms of temperature.
Materials Properties	
Everyday Materials and their Properties	• Describe everyday materials and their physical properties. • Explain what an element is. • Identify metals and non-metals from the periodic table.
Metals and Non-metals	• Identify typical metal properties • Link the properties of two metals to their uses. • Identify typical non-metal properties. • Link the properties of non-metals to their uses.
Material Changes	
Acids and Alkalis	• Give examples of acids and alkalis • Compare the properties of acids and alkalis
The pH Scale and Indicator	• Explain the use of the pH scale. • Use indicators to distinguish acid and alkaline solutions. • Know the pH of acidic, alkaline, and neutral solutions. • Use indicators to measure pH. • Understand concentrated and dilute acids /alkali.
Neutralization	• Define neutralization. • State the word equation for neutralization. • Give examples of applications of neutralization.

Grade 8: Biology

Topic	Learning Outcomes
Plants *(some outcomes are from Course Book 9)*	
Photosynthesis	• Describe the importance of plants to life in earth. • Describe the process of photosynthesis with word equation. • Explain the importance of (carbon dioxide, chlorophyll and sun light) for photosynthesis. • Investigate photosynthesis (oxygen bubbles correlated with light). • Explain Biomass and its uses.
Water and Minerals	• Describe how water and minerals are absorbed by roots and transported to leaves. • Explain the importance of water and minerals to plant growth.
Plant Reproduction *(some outcomes are from Course Book 9)*	
Investigation Flowers	• Identify the parts of a flower. • Describe the function of each part of a flower. • Recognize male and female parts of a flower.
Pollination	• Define pollination . • Identify different types of pollination. • Identify insect and wind pollinated flowers in relation to the types of pollination that they undergo. • Explain the importance of pollination in flowering plants.
Fertilization	• Define the terms *zygote*, *gametes* and *fertilization*. • Describe the formation of a pollen tube and the process of fertilization.
Fruits and Seeds	• Describe the process of seed formation and a fruit's development. • Explain seed dispersal and its importance in the survival of a species. • Types of fruits: dry and succulent fruits.
Food and Digestion	
Nutrient and Balanced Diet	• List the nutrients in food • Explain why each nutrient is needed • Describe what a balanced diet is • Recall some of the main roles of specific vitamins and minerals. • Explain some deficiency diseases, such as scurvy, obesity, anemia and rickets with their causes.
Human Digestive System	• Describe the human digestive system and its major organs that are involved in the digestion of food. • Identify different types of enzymes and their role in digestion in the various organs of the alimentary canal. • Explain the process of absorption and assimilation of food in our body.
Teeth	• Identify the different types of teeth. • Describe the structure and function of human teeth • Explain the importance of oral hygiene and preventing tooth and gum decay.

Topic	Learning Outcomes
The Circulatory System	
Human Circulatory System	• List the components of the circulatory system. • Describe the function of each component. • Describe the structure and function of the heart as a pump organ. • Explain how the blood circulates throughout our body. • Explain the necessity of blood supplying nutrients and oxygen to the body tissues.
Blood	• List the components of blood. • Describe the function of each component. • Describe the function and structure of veins and arteries.
Reproduction and Development	
Reproduction	• Describe in brief the human reproductive organs and their functions (for male & female). • Identify female and male gametes. • Describe what happens during fertilization.
Fetal Development	• Describe fetal development.
Growth and Development	• Identify the main stages of person's development. • Describe the changes from zygote to adult in terms of growth and development. • Explain how growth involves the cell division and increasing in body size.
Adolescence	• Recognize the changes caused by puberty. • Explain why girls have periods.
Lifestyle and Health	• Explain how our lifestyle determines our health. • Explain the sedentary lifestyle and health-related problems. • Identify the various lifestyle disorders. • Identify how to create awareness about negative effects of drugs.
Respiration	
Human Respiratory System	• Understand the organs and their particular job to form respiratory system. • Explain the structure of lungs. • Explain the difference between breathing and respiration. • Explain the process of respiration (word equation). • Explain aerobic and anaerobic respiration using the word equations. • Investigate an aerobic respiration of yeast.
Smoking and Health	• Describe the effects of smoking. • Name some harmful substances in cigarette smoke. • Recognize how to create awareness about negative effects of smoking.
Keeping Fit	• Explain the relationship between exercise and fitness in terms of energy for muscles, this include: - Exercise and respiration - Exercise and the action of the heart. • Explain the relationship between diet and fitness, this includes: - Obesity, blocked tubes and heart attack and strokes • Investigate pulse rate and heart beat (data analysis).

Grade 8: Physics

Topic	Learning Outcomes
Force and Motion	
Speed	• Calculate the speed of an object. • Explain what is meant by average speed.
Distance Time Graph	• Describe how a distance–time graph tells a story.
Acceleration and Speed – Time graph	• Describe how to calculate acceleration. • Explain what is meant by deceleration. • Explain how speed-time graphs tell a story.
Sound	
Properties of Sound Waves	• Describe how sound waves are produced. • Explain how sound waves travel. • Describe how to measure sound intensity or loudness. • Describe some of the risks of loud sounds and how to reduce the risks. • State the properties of waves. • Explain what affects the loudness of a sound. • Interpret waveforms shown on an oscilloscope. • Describe the link between pitch and frequency. • State the range of hearing in humans. • Describe differences between the range of hearing in humans and in animals. • Explain why musical instruments are distinct.
Speed of Sound	• Make calculations involving the speed of sound.
Detecting Sounds	• Describe how the ear detects sound. • Explain how your hearing can be damaged. • Describe how a microphone works.
Echoes	• Describe how echoes are formed. • Explain how echoes can be used.
Light	
Light	• Describe what light is. • Explain how shadows form. • Describe how a camera works.
Seeing Things	• Describe what happens when light travels from a source. • Explain how we see things.
The Speed of Light	• Describe how fast light travels. • Explain how astronomers use the speed of light to describe distances.
Reflection	• Describe how an image in a plane mirror is formed. • Describe the differences between you and your image. • Explain why you see your image only in certain situations.

Topic	Learning Outcomes
	• State the law of reflection. • Use the law of reflection. • Describe how to make accurate measurements.
Refraction	• Explain what we see when light is refracted. • Explain why light is refracted. • Use scientific knowledge to explain predictions. • Describe what happens when light goes through a glass block. • Explain total internal reflection.
Dispersion	• Explain how a spectrum of light is produced • Explain why we see rainbows. • Explain what happens when you mix light of different colors together. • Explain how filters work. • Explain why colored objects look colored in white light. • Explain why colored objects look different colors in different colors of light. • Describe how to present conclusions in appropriate ways.
Electricity *(some outcomes are from Course Book 9)*	
Electrostatic	• Stat the types of charge. • Explain why things become charged. • Explain the difference between conductors and insulators. • Describe how electrostatics can be dangerous. • Describe how touchscreens and digital cameras work.
Electric Circuits	• Describe how to draw components in circuit's diagrams. • Explain how to test whether something conducts electricity. • Describe what is meant by a series circuit. • Describe the differences between series and parallel circuits.
Electric Current and Voltage	• Describe what an electric current is and how we measure it. • Describe what is meant by voltage.
Magnetism	
Properties of Magnets	• Describe the properties of magnets. • Know what magnetic materials are. • Know what a magnetic field is. • Explain why compasses point north. • Describe how you can find the shape of a magnetic field around a bar magnet.
Electromagnets	• Describe how to make an electromagnet. • Describe how to change the strength of an electromagnet.
Using of Electromagnets	• Describe some uses of electromagnets. • Explain why electromagnets are used instead of permanent magnets.

Grade 8: Chemistry

Elements and Compounds	
Topic	**Learning Outcomes**
Elements	• Explain what is meant by an element. • State the chemical symbols of the first twenty elements of the periodic table. • Explain why scientists use chemical symbols for elements.
Compounds	• Differentiate between an atom and a molecule. • Distinguish between element and compound. • Give examples of compounds and state how their properties are different from the properties of their elements.
Naming Compound and Writing Formula	• Name organic compounds. • Write and interpret formulae.
Mixtures	• Understand the differences between elements, mixtures, and compounds. • State the properties of mixtures. • Discuss how evaporation and distillation separate liquids and solids from solutions. • Describe the physical properties of solutions. • Explain what is meant by solubility. • Describe how to separate elements from some compounds. • Demonstrate how chromatography separates a mixture. • Give examples of uses of chromatography.
Material Properties *(some outcomes are from Course Book 9)*	
Atomic Structure	• Name the three sub-atomic particles, and describe their properties. • Describe the structure of an atom.
The Periodic Table	• Draw the structures of atoms of the first twenty elements • Describe patterns in the structures of these atoms • Recognize Groups and Periods in the periodic table.
Trends in Group 1,2 & 7	• Describe trends in periods of the periodic table. • Describe trends in properties of the Group 1 elements. • Describe trends in the properties of the Group 2 elements. • Describe trends in the properties of Group 7 elements.
Chemical Reactions	
Chemical Reactions	• Know what chemical reactions are. • Recognize different types of chemical reactions.
Writing Word Equations	• Write word equations to represent chemical reactions.
Corrosion Reactions	• Explain what corrosion is. • Understand the steps to prevent iron corroding.
Energy Changes	• Explain the difference between exothermic and endothermic reactions. • Recognize typical examples of energy changes in reactions as in combustion, respiration.

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End of the Newsletter