



JUNIOR HIGH

GRADE 7 SCIENCE

Cambridge Lower Secondary Science

Learner's Book 7 - Second Edition

2026-2027 FULL-YEAR SYLLABUS | AUGUST 31, 2026 - JUNE 18, 2027

A full-year Stage 7 science course integrating Biology, Chemistry, Physics, Earth & Space Science, and Thinking and Working Scientifically through practical enquiry, models, evidence, analysis and real-world scientific contexts.

Course	Grade 7 Science
School	The Darwin Institute
Level	Cambridge Lower Secondary / Stage 7
Primary Text	Cambridge Lower Secondary Science Learner's Book 7, Second Edition
School Year	August 31, 2026 - June 18, 2027

COURSE OVERVIEW

Students study nine major units from the Cambridge Stage 7 text. Practical investigation is embedded throughout the year: students ask testable questions, identify variables, select equipment, collect and represent data, evaluate evidence, use scientific models, communicate conclusions, and connect science to society and the environment.

COURSE OBJECTIVES

- Use microscopes, diagrams and models to describe plant and animal cells, specialised cells, tissues and organs.
- Explain particle models, states of matter, changes of state, the water cycle, atoms, elements, compounds and mixtures.
- Understand gravity, mass, weight, space movement, tides, energy stores and energy transfers.
- Classify organisms using observable characteristics, species concepts and identification keys.
- Compare metals and non-metals, separate mixtures, and use acids, alkalis, indicators and the pH scale safely.
- Explain sound, reflection of sound, Earth structure and change, and solar and lunar eclipses.
- Explain the roles of microorganisms in decay, ecosystems, food chains and food webs.
- Identify evidence of chemical reactions, investigate neutralisation, and distinguish physical and chemical change.
- Build and interpret electrical circuits, measure current, identify conductors and insulators, and predict effects of circuit changes.

- Design fair tests, handle data, evaluate methods, justify conclusions, and communicate scientific reasoning clearly.

THE DARWIN INSTITUTE - GENERAL GRADING RUBRIC

Tests	30%
Classwork	30%
Homework	15%
Projects	10%
Participation	10%
Presentation, Order & Attendance	5%
TOTAL	100%

CALENDAR & INSTRUCTIONAL NOTES

- No classes: Oct 5-9, Oct 30, Nov 2, Nov 16, Nov 23-27, Dec 18-Jan 6, Jan 25, Feb 1, Mar 15-Apr 2, May 5, and May 28.
- Testing periods are regular instructional days. Science instruction continues while students complete school assessments.
- Laboratory activities may be adjusted to available equipment, safety conditions, school events and student readiness.
- June 18, 2027 is treated as the final academic class day for this syllabus.

WEEK-BY-WEEK CURRICULUM MAP - SEMESTER 1

Week	Dates	Topic / Unit	Main Topics	Assessment / Notes
1	Aug 31-Sep 4	Unit 1 - Cells	1.1 Plant cells; microscope safety; cell structures and functions	Diagnostic science skills; classwork
2	Sep 7-11	Unit 1 - Cells	1.2 Animal cells; compare plant and animal cells; scientific drawings	Microscope practical / notebook
3	Sep 14-18	Unit 1 - Cells	1.3 Specialised cells; adaptations and structure-function relationships	Homework / cell model task
4	Sep 21-25	Unit 1 - Cells	1.4 Cells, tissues and organs; levels of organisation; unit review	Unit 1 Test
5	Sep 28-Oct 2	Unit 2 - Materials & Structure	2.1 Solids, liquids and gases; particle model	Classwork / particle model
	Oct 5-9	INTERSESSION - NO CLASSES		
6	Oct 12-16	Unit 2 - Materials & Structure	2.2 Changes of state; melting, boiling, freezing and condensation	Investigation / data table
7	Oct 19-23	Unit 2 - Materials & Structure	2.3 Explaining changes of state; particle explanations and temperature	Quiz / classwork
8	Oct 26-29	Unit 2 - Materials & Structure	2.4 Water cycle; evaporation, condensation and precipitation	Water-cycle model
	Oct 30	TEACHER CONFERENCES - NO CLASSES		
	Nov 2	HOLIDAY - NO CLASSES		
9	Nov 3-6	Unit 2 - Materials & Structure	2.5 Atoms, elements and the Periodic Table; testing period - instruction continues	Classwork / test-period pacing
10	Nov 9-13	Unit 2 - Materials & Structure	2.6 Compounds and formulae; models and representations	Homework / formula practice
	Nov 16	HOLIDAY - NO CLASSES		
11	Nov 17-20	Unit 2 - Materials & Structure	2.7 Compounds and mixtures; separation concepts; Unit 2 synthesis	Unit 2 Test
	Nov 23-27	INTERSESSION - NO CLASSES		
12	Nov 30-Dec 4	Unit 3 - Forces & Energy	3.1 Gravity, weight and mass; forces and measurement	Practical / calculations
13	Dec 7-11	Unit 3 - Forces & Energy	3.2 Formation of the Solar System; evidence and models	Research classwork
14	Dec 14-17	Unit 3 - Forces & Energy	3.3 Movement in space; orbits and gravitational effects	Semester check / classwork
	Dec 18-Jan 6	WINTER BREAK - NO CLASSES		

WEEK-BY-WEEK CURRICULUM MAP - SEMESTER 2

Week	Dates	Topic / Unit	Main Topics	Assessment / Notes
15	Jan 7-8	Unit 3 - Forces & Energy	3.4 Tides; gravitational interactions and Earth-Moon system	Class discussion / model
16	Jan 11-15	Unit 3 - Forces & Energy	3.5 Energy; energy stores and useful terminology	Classwork / energy audit
17	Jan 18-22	Unit 3 - Forces & Energy	3.6 Changes in energy; energy transfers and pathways	Investigation / graphing
	Jan 25	TEACHER CONFERENCES - NO CLASSES		
18	Jan 26-29	Unit 3 - Forces & Energy	3.7 Where does energy go? Dissipation, conservation ideas; unit synthesis	Unit 3 Test
	Feb 1	HOLIDAY - NO CLASSES		
19	Feb 2-5	Unit 4 - Grouping Organisms	4.1 Characteristics of living organisms; classification criteria	Classwork / observation
20	Feb 8-12	Unit 4 - Grouping Organisms	4.2 Viruses; living/non-living debate; evidence and scientific models	Short writing / discussion
21	Feb 15-19	Unit 4 - Grouping Organisms	4.3 What is a species? Variation and classification	Homework / concept check
22	Feb 22-26	Unit 4 - Grouping Organisms	4.4 Using keys; dichotomous keys and identification	Practical classification
23	Mar 1-5	Unit 4 - Grouping Organisms	4.5 Constructing keys; testing period - instruction continues	Unit 4 Project / key design
24	Mar 8-12	Unit 5 - Properties of Materials	5.1 Metals and non-metals; observable and measurable properties	Practical / table of evidence
	Mar 15-Apr 2	INTERSESSION / SPRING BREAK - NO CLASSES		
25	Apr 5-9	Unit 5 - Properties of Materials	5.2 Comparing metals and non-metals; patterns in properties	Classwork / quiz
26	Apr 12-16	Unit 5 - Properties of Materials	5.3 Metal mixtures; alloys and material choice	Homework / application task
27	Apr 19-23	Unit 5 - Properties of Materials	5.4 Separating mixtures using material properties	Separation practical
28	Apr 26-30	Unit 5 - Properties of Materials	5.5 Acids and alkalis; safe handling and reactions	Lab classwork
29	May 3-4 & 6-7	Unit 5 - Properties of Materials	5.6 Indicators and pH scale; May 5 holiday	Unit 5 Test / pH practical
	May 5	HOLIDAY - NO CLASSES		
30	May 10-14	Unit 6 - Earth Physics	6.1 Sound waves; vibration, medium, frequency and amplitude	Sound investigation
31	May 17-21	Unit 6 - Earth Physics	6.2 Reflections of sound; echoes and applications	Classwork / design task
32	May 24-27	Unit 6 - Earth Physics	6.3 Structure of the Earth; layers and evidence	Model / notebook
	May 28	TEACHER CONFERENCES - NO CLASSES		
33	May 31-Jun 4	Unit 6 - Earth Physics	6.4 Changes in the Earth; tectonic change, hazards and evidence	Quiz / research response
34	Jun 7-11	Units 6-7 - Earth & Life Science	6.5 Solar/lunar eclipses; 7.1 Microorganisms; introduction to ecological roles	Model + microscopy/observation
35	Jun 14-18	Units 7-9 - Year-End Integration	Testing period with instruction: food chains/webs, decay, chemical reactions, neutralisation, circuits, conductors and current; cumulative synthesis and transition activities	Final Test / cumulative classwork

IMPORTANT PACING NOTE

The Cambridge text contains nine units. Units 7-9 are introduced and assessed through integrated late-year lessons and cumulative work after the core sequence. Teachers may begin these units earlier whenever class pace allows. The goal is to complete all listed subtopics by June 18 while preserving sufficient time for practical investigations and mastery.

COMPLETE TEXTBOOK CONTENT & PACING CHECKLIST

Unit	Required Coverage
Unit 1 - Cells	1.1 Plant cells; 1.2 Animal cells; 1.3 Specialised cells; 1.4 Cells, tissues and organs
Unit 2 - Materials and their structure	2.1 Solids, liquids and gases; 2.2 Changes of state; 2.3 Explaining changes of state; 2.4 Water cycle; 2.5 Atoms, elements and Periodic Table; 2.6 Compounds and formulae; 2.7 Compounds and mixtures
Unit 3 - Forces and energy	3.1 Gravity, weight and mass; 3.2 Formation of the Solar System; 3.3 Movement in space; 3.4 Tides; 3.5 Energy; 3.6 Changes in energy; 3.7 Where does energy go?
Unit 4 - Grouping and identifying organisms	4.1 Characteristics of living organisms; 4.2 Viruses; 4.3 What is a species?; 4.4 Using keys; 4.5 Constructing keys
Unit 5 - Properties of materials	5.1 Metals and non-metals; 5.2 Comparing metals and non-metals; 5.3 Metal mixtures; 5.4 Separating mixtures; 5.5 Acids and alkalis; 5.6 Indicators and pH scale
Unit 6 - Earth physics	6.1 Sound waves; 6.2 Reflections of sound; 6.3 Structure of the Earth; 6.4 Changes in the Earth; 6.5 Solar and lunar eclipses
Unit 7 - Microorganisms in the environment	7.1 Microorganisms; 7.2 Food chains and webs; 7.3 Microorganisms and decay; 7.4 Microorganisms in food webs
Unit 8 - Changes to materials	8.1 Simple chemical reactions; 8.2 Neutralisation; 8.3 Investigating acids and alkalis; 8.4 Detecting chemical reactions
Unit 9 - Electricity	9.1 Flow of electricity; 9.2 Electrical circuits; 9.3 Measuring the flow of current; 9.4 Conductors and insulators; 9.5 Adding or removing components

THINKING AND WORKING SCIENTIFICALLY - YEAR-LONG EXPECTATIONS

- Ask scientific questions and turn them into testable enquiries when appropriate.
- Identify independent, dependent and control variables and select suitable equipment and measurement ranges.
- Follow laboratory safety expectations, recognise hazards and use equipment responsibly.
- Record observations and measurements systematically using appropriate units, tables, diagrams and graphs.
- Identify patterns, anomalies and sources of uncertainty; distinguish observation from inference.
- Use evidence to support conclusions and evaluate whether a method and dataset are sufficient.
- Create, use and critique models and representations, recognising that models have strengths and limitations.
- Explain how scientific knowledge develops through evidence, collaboration, scrutiny and revision.
- Connect scientific understanding to industry, technology, environmental issues and responsible decision-making.

SUGGESTED ASSESSMENT EVIDENCE

Category	Examples	Rubric Weight
Tests	Unit tests, cumulative tests, practical-data interpretation tests	30%
Classwork	Laboratory records, guided practice, scientific diagrams, data analysis, notebooks	30%
Homework	Review questions, research, vocabulary, analysis and preparation tasks	15%
Projects	Models, investigations, classification key, environmental or engineering applications	10%
Participation	Discussion, collaboration, practical engagement, questioning and peer feedback	10%
Presentation, Order & Attendance	Scientific communication, notebook organisation, materials readiness, attendance	5%

THE DARWIN INSTITUTE

EVOLVE THROUGH KNOWLEDGE