

2021 Annual Teaching Plans

NATURAL SCIENCES

Senior Phase



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Shuter & Shooter Publishers (Pty) Ltd
Shuters House, 110 CB Downes Road, Pietermaritzburg 3201, South Africa
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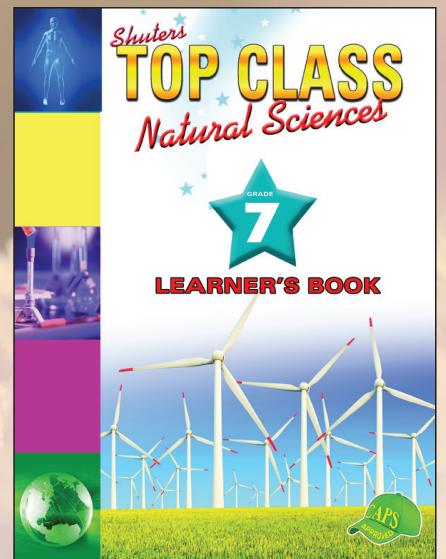
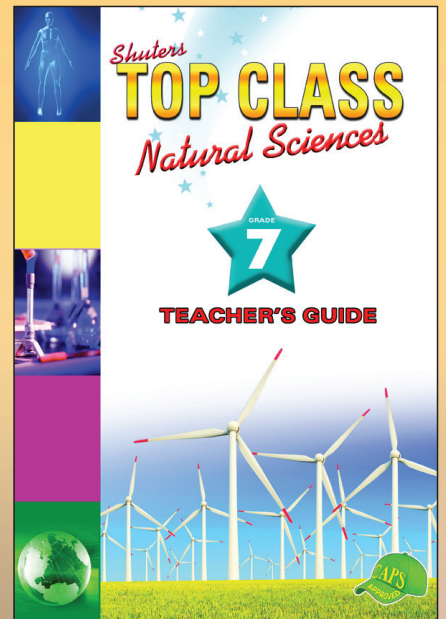
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- Improves learners' results
- Assess progress easily
- Reduce the administrative burden
- Helps save planning and preparation time
- Follows the CAPS precisely, making teaching easier
- Most of our titles are also available as e-Books

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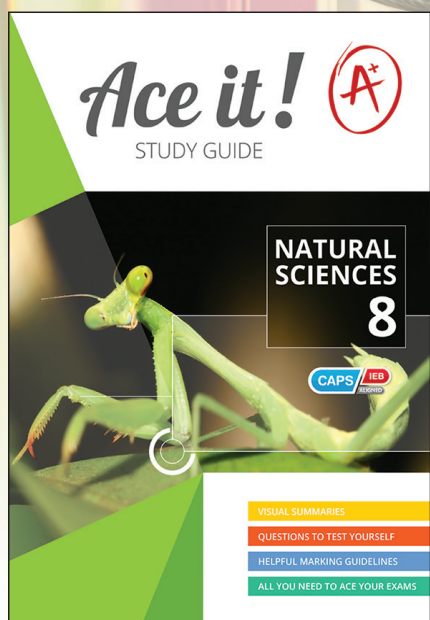
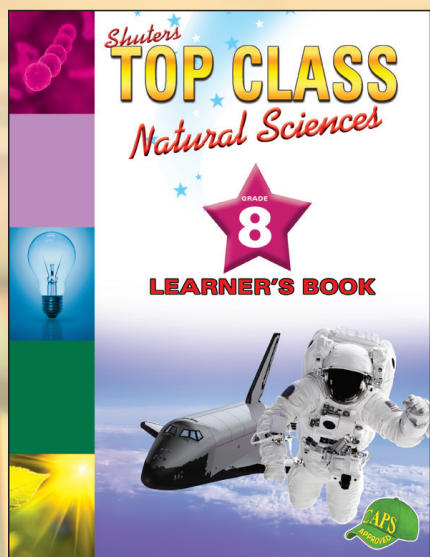
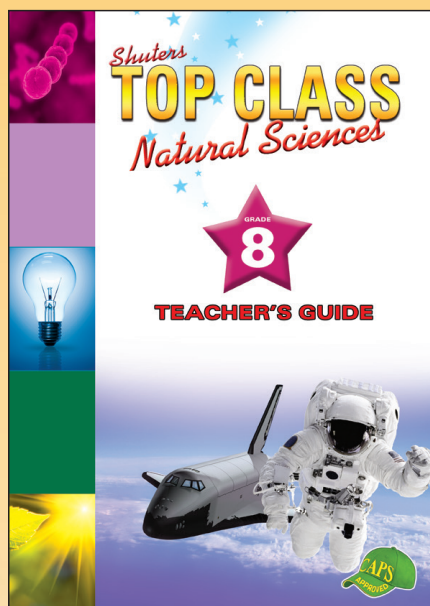
Topic	Content	Time allocation	Where to find it in Top Class Natural Sciences Grade 7		
			Unit	LB	TG
Life and Living					
The biosphere	- The concept of the biosphere - Requirements for sustaining life	Week 1	Unit 1: The biosphere	2–11	1–8
Biodiversity	- Classification of living things - Diversity of animals - Diversity of plants	Weeks 2–5	Unit 2: Biodiversity	12–33	9–24
Sexual reproduction	- Sexual reproduction in angiosperms - Human reproduction	Weeks 5–8	Unit 3: Sexual reproduction in angiosperms Unit 4: Sexual reproduction in humans	33–59	25–40
Variation	Variations exist within a species	Week 9	Unit 5: Variation	60–69	41–48

Solids, liquids and gases	Arrangements of particles	Week 1	From Top Class Natural Sciences and Technology Grade 6 Unit 6: Solids, liquids and gases	51–53	36–39
Properties of Materials	Boiling and melting points Electrical conductivity Heat conductivity	Weeks 1–2	Unit 6: Properties of materials	70–83	49–54
Solution as a special mixture	Solutions Soluble substances Insoluble substances	Week 3	From Top Class Natural Sciences and Technology Grade 6 Unit 8: Solutions as special mixtures	58–65	44–52
Dissolving	Rates of dissolving	Week 4	From Top Class Natural Sciences and Technology Grade 6 Unit 9: Dissolving	66–73	53–59
Separating mixtures	Mixtures Methods of physical separation Sorting and recycling materials	Weeks 5–6	Unit 7: Separating mixtures	84–95	55–63
Acids, bases and neutrals	Tastes of substances Properties of acids, bases and neutrals Acid-base indicators	Weeks 7–8	Unit 8: Acids, bases and neutrals	96–102	64–69

Topic	Content	Time allocation	Where to find it in <i>Top Class Natural Sciences Grade 7</i>		
			Unit	LB	TG
Energy and Change					
Sources of energy	Renewable and non-renewable sources of energy	Week 1	Unit 10: Sources of energy	111–115	75–76
Potential and Kinetic Energy	- Potential energy - Kinetic energy - Potential and kinetic energy in systems - Law of conservation of energy	Weeks 2–3	Unit 11: Potential and kinetic energy	116–129	77–81
Heat Transfer	- Heating as a transfer of energy - Conduction - Convection - Radiation	Weeks 4–5	Unit 12: Heat transfer	130–138	82–85
Electric circuits Electrical conductors and insulators	- A simple circuit - Circuit diagram - Conductors - Insulators	Week 6	From Top Class Natural Sciences and Technology Grade 6 Unit 12: Electric circuits and Unit 13: Electrical conductors and insulators	92–105	69–77
Insulation and energy saving	Using insulating materials	Weeks 7–8	Unit 13: Insulation and energy saving	139–136	86–90
Energy transfer to surroundings	Useful and 'wasted' energy	Week 9	Unit 14: Energy transfer to surroundings	147–150	91–93

The Solar System	• The sun, planets and asteroids • Moons	Week 1	From Top Class Natural Sciences and Technology Grade 6 Unit 16: The Solar System	122–128	88–91
Movements of the Earth and planets	• Rotation (Earth) • Revolution (Earth)	Week 2	From Top Class Natural Sciences and Technology Grade 6 Unit 17: Movements of the Earth and planets	129–132	92–95
Relationship of the sun to the Earth	• Solar energy and the Earth's seasons • Solar energy and life on Earth • Stored solar energy	Weeks 3–5	Unit 16: Relationship of the sun to the Earth	159–170	97–105
Movement of the moon	• Rotation (moon) • Revolution (moon)	Week 6	From Top Class Natural Sciences and Technology Grade 6 Unit 18: The movement of the moon	133–135	96–98
Relationship of the moon to the Earth	• Relative positions • Gravity • Tides	Weeks 7–8	Unit 17: Relationship to the moon to the Earth	171–181	106–111

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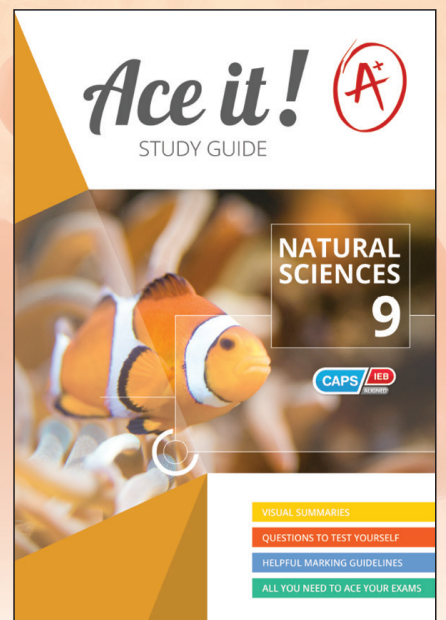
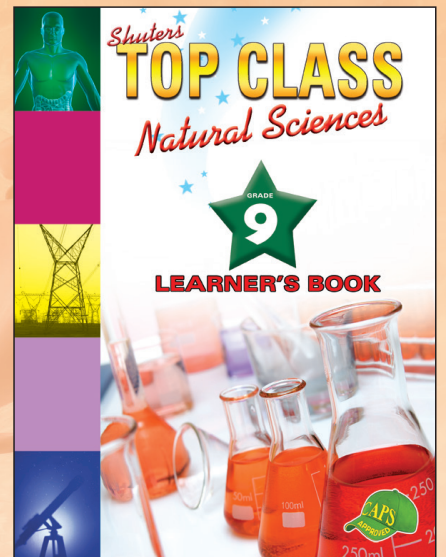
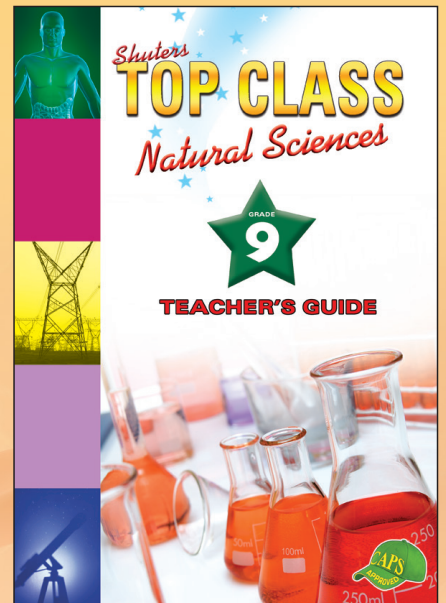
Topic	Content	Time allocation	Where to find it in <i>Top Class Natural Sciences Grade 8</i>		
			Unit	LB	TG
Life and Living					
Photosynthesis and respiration	• Photosynthesis • Respiration	Weeks 1–2	Unit 1: Photosynthesis and respiration	2–10	1–6
Interactions and interdependence within the environment	• Introduction to ecology • Ecosystems • Feeding relationships • Balance in an ecosystem • Adaptations • Conservation of the ecosystem	Weeks 3–7	Unit 2: Interactions and interdependence within the environment	11–44	7–22
Micro-organisms	• Types of micro-organisms • Harmful micro-organisms • Useful micro-organisms	Weeks 8–9	Unit 3: Micro-organisms	45–67	23–31

Topic	Content	Time allocation	Where to find it in <i>Top Class Natural Sciences Grade 8</i>		
			Unit	LB	TG
Introduction to the periodic table of elements	• Arrangement of elements on the periodic table • Some properties of metals, semi-metals and non-metals	Week 1	From Top Class Natural Sciences Grade 7 Unit 9: Introduction to the Periodic Table of Elements	103–110	70–74
Atoms	• Atoms – building blocks of matter • Sub-atomic particles • The concept of the particle model of matter	Weeks 2–3	Unit 4: Atoms	68–77	30–36
Particle model of matter	• Pure substances • Elements • Compounds • The concept of the particle model of matter • Change of state • Density, mass and volume • Density and states of matter • Density of different materials • Expansion and contraction of materials • Pressure	Weeks 4–8	Unit 5: Particle model of matter	78–94	37–47

Potential and kinetic energy	• Potential energy • Kinetic energy • Potential energy and kinetic energy in systems • Law of conservation of energy	Week 1	From Top Class Natural Sciences and Technology Grade 7 Unit 11: Potential and kinetic energy	116–129	77–81
Static electricity	• Friction and static electricity	Week 2	Unit 7: Static electricity	103–106	53–54
Energy transfer in electrical systems	• Circuits and current electricity • Components of a circuit • Effects of an electric current	Weeks 3–5	Unit 8: Energy transfer in electrical systems	107–117	55–62
Series and parallel circuits	• Series circuits • Parallel circuits	Week 6	Unit 9: Series and parallel circuits	118–124	63–68
Visible light	• Radiation of light • Spectrum of visible light • Opaque and transparent substances • Absorption of light • Reflection of light • Seeing light • Refraction of light	Weeks 7–9	Unit 10: Visible light	125–139	69–77

Topic	Content	Time allocation	Where to find it in Top Class Natural Sciences Grade 8		
			Unit	LB	TG
Planet Earth and Beyond					
The Solar System	• The sun • Objects around the sun • Earth's position in the solar system	Weeks 1–3	Unit 11: The Solar System	140–146	78–82
Beyond the solar system	• The Milky Way Galaxy • Our nearest star • Light years, light hours and light minutes • Beyond the Milky Way Galaxy	Weeks 4–6	Unit 12: Beyond the solar system	147–151	83–85
Looking into space	• Early viewing of space • Telescopes	Weeks 7–8	Unit 13: Looking into space	152–161	86–90

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NATURAL SCIENCES Term 1

Topic	Content	Time allocation	Where to find it in <i>Top Class Natural Sciences Grade 9</i>		
			Unit	LB	TG
Life and Living					
Cells as basic units of life	- Cell structure - Differences between plant and animal cells - Draw and label a generalised plant and animal cell - Cells in tissues, organs and systems	Weeks 1–2	Unit 1: Cells as the basic unit of	2–15	1–9
	Human Reproductive System Overview AND detail: - Purpose - Components - Processes - Health issues - Purpose and puberty - Reproductive organs - Stages of reproduction - Label the reproduction system	Weeks 3–4	Unit 3: Human reproduction life	48–59	17–23
Systems in the human body	Circulatory and Respiratory System Overview AND detail: - Purpose - Components - Processes - Health issues - Breathing, gaseous exchange, circulation and respiration - Label the respiratory system	Weeks 5–6	Unit 2: Systems in the human body	60–71	24–31
	Digestive system Overview AND detail: - Purpose - Components - Processes - Health issues - Healthy diet - The alimentary canal and digestion - Label the digestive system	Weeks 7–8	Unit 5: The digestive system	72–84	32–38

Compounds	- The Periodic Table - Names of compounds	Week 1	Unit 6: Compounds	85–90	39–42
Chemical Reactions	Reactants and products	Week 2	From Top Class Natural Sciences and Technology Grade 8 Unit 6: Chemical reactions	95–102	48–52
Chemical Reactions	- Chemical equations to represent reactions - Balanced equations	Week 3	Unit 7: Chemical reactions	91–95	43–46
Reaction of Metals + O ₂	- The general reaction of metals with oxygen - Reaction of iron with oxygen - Reaction of magnesium with oxygen - Formation of rust - Ways to prevent rusting	Weeks 4–5	Unit 8: Reactions of metals with oxygen	96–101	47–50
Reactions of non-metals + O ₂	- The general reaction of non-metals with oxygen - Reaction of carbon with oxygen - Reaction of sulfur with oxygen	Weeks 5–6	Unit 9: Reactions of non-metals with oxygen	102–105	51–54
Acids and bases, and pH value	The concept of pH value	Weeks 6–7	Unit 10: Acids and bases and pH value	106–111	55–58
Reactions of acids with bases: Part I	Neutralisation and pH	Week 7	Unit 11: Reactions of acids with bases: Parts I, II and III	112–124	59–65
Reactions of acids with bases: Part II	- The general reaction of an acid with a metal oxide (base) - Applications	Week 8			

Topic	Content	Time allocation	Where to find it in <i>Top Class Natural Sciences Grade 9</i>		
			Unit	LB	TG
Energy and Change					
Forces	• Types of forces • Contact forces • Field forces (non-contact forces) • Gravitation force • Magnetic force • Electrostatic force	Weeks 1–3	Unit 13: Forces	132–149	70–78
Electric cells as energy systems	• Electric cells	Week 4	Unit 14: Electric cells as energy systems	150–153	79–80
Resistance	• Use of resistors • Factors that affect resistance in a circuit	Weeks 4–5	Unit 15: Resistance	154–158	81–84
Series and parallel circuits	• Series circuits • Parallel circuits	Weeks 5–7	Unit 16: Series and parallel circuits	159–171	85–90
Safety with electricity	• Safety practices	Week 7	Unit 17: Safety with electricity	172–179	91–93
Energy and the national electricity grid	• Electricity generation • Nuclear power in South Africa • National electricity grid	Week 8	Unit 18: Energy and the national electricity grid	180–186	94–99
Cost of electrical power	• The cost of power consumption	Week 9	Unit 19: Cost of electrical power	187–196	100–103

The Earth as a system	Spheres of Earth	Week 1	Unit 20: The Earth as a system	197–200	104–106
Lithosphere	- Lithosphere - The rock cycle	Weeks 2–3	Unit 21: Lithosphere	201–210	107–111
Atmosphere	- Atmosphere - Troposphere - Stratosphere - Mesosphere - Thermosphere - The greenhouse effect	Week 4–5	Unit 23: Atmosphere	223–235	119–124
Mining of mineral resources	- Extracting ores - Refining minerals - Mining in South Africa	Weeks 6–7	Unit 22: Mining of mineral resources	211–222	112–118
Birth, life and death of a star	- The birth of a star - Life of a star - Death of a star	Week 8	Unit 24: Birth, life and death of stars	236–241	125–129

PROGRAMME OF ASSESSMENT

Grade 7		
Term	Assessment task	Page references
1	Practical task/Investigation	LB page 37 TG page 27
	Test	TG page 146
2	Practical task/Investigation	LB page 101 TG page 67
	Test	TG page 148
3	Project	LB page 115 TG page 76
	Test	TG page 150
4	Test	LB page 193 TG page 161

Grade 8		
Term	Assessment task	Page references
1	Practical Task	LB page 6 TG page 3
	Test	TG page 110
2	Practical Task	LB page 82 TG page 41
	Test	TG page 111
3	Project	LB page 131 TG page 73
	Test	TG page 113
4	Test	LB page 167 TG page 123

Grade 9		
Term	Assessment task	Page references
1	Practical Task/Investigation	LB page 70 TG page 29
	Test	TG page 150
2	Practical Task/Investigation	LB page 110 TG page 57
	Test	TG page 152
3	Project	LB page 142 TG page 74
	Test	TG page 153
4	Test	LB page 246 TG page 166

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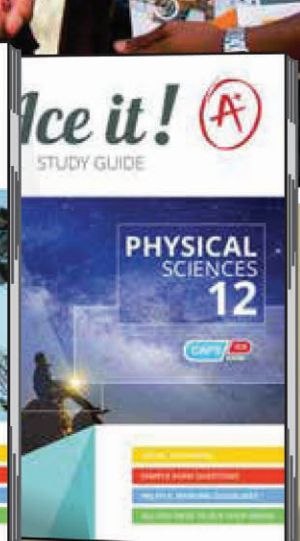
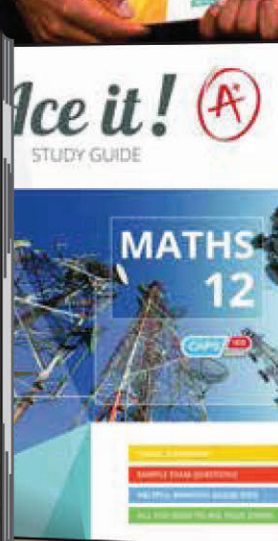
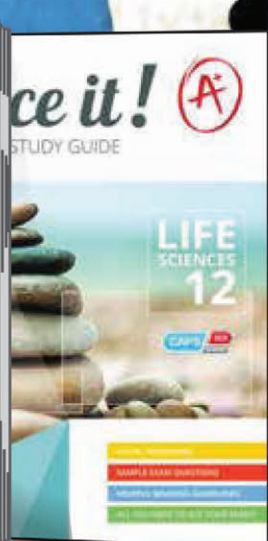
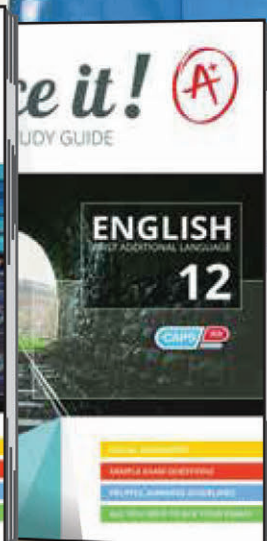
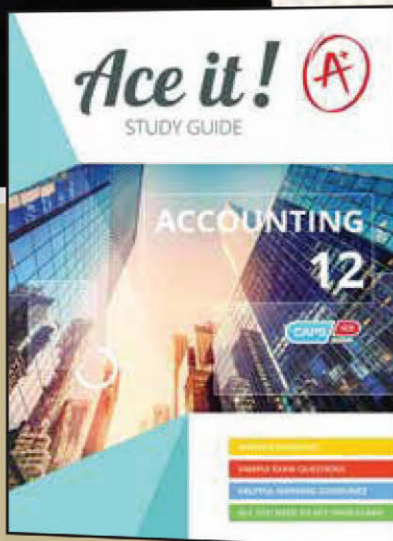
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SALES CONTACTS

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KwaZulu-Natal	Khanyo Cele	083 281 0849	khanyo@shuters.com
Limpopo	Dimagatso Makhurane	083 215 6835	dimagatso@shuters.com
Mpumalanga	Sharmlla Naik	083 287 6883	sharmlla@shuter.co.za
Northern Cape	Colette van der Merwe	071 851 1814	colette@shuters.com
North West	Phemelo Maiphehlo	083 378 8725	phemelo@shuters.com
Western Cape	Colette van der Merwe	071 851 1814	colette@shuters.com
Teacher Training	Vickesh Thandray	060 545 2264	vickesh@shuters.com

CUSTOMER SERVICES:

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Thandeka Ngcobo	+27 (0) 33 846 8724	thandeka@shuter.co.za
Zandile Mthethwa	+27 (0) 33 846 8721	zandilem@shuter.co.za
Mbali Kunene	+27 (0) 33 846 8722	mbali@shuter.co.za

HEAD OFFICE

Tel: +27 (0) 33 846 8721 / 22 / 23 / 24
 Fax: +27 (0) 33 846 8701

Pietermaritzburg · Johannesburg · Cape Town · East London



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