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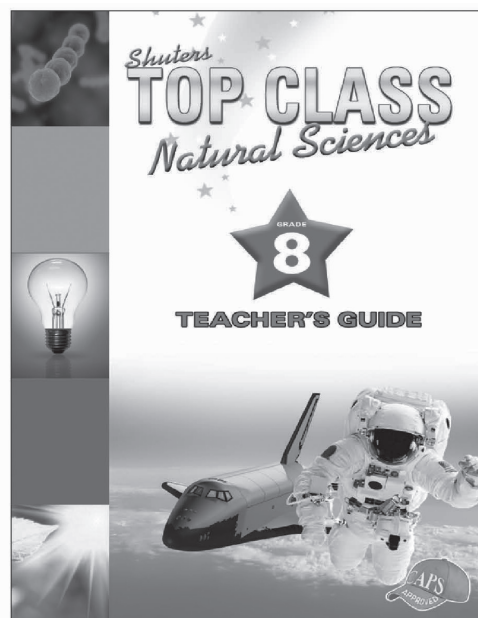
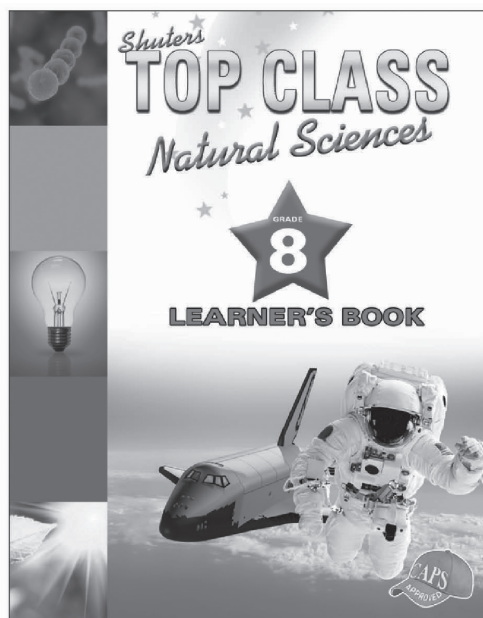
TOP CLASS

Natural Sciences



Grade

8



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TERM 1				
TIME	UNIT	PAGE	RECORDING	REFLECTION
2 weeks 6 hours	Unit 1: Photosynthesis and Respiration	TG p1-6 LB p2-10		
	• Photosynthesis	TG p1 LB p2		
	• Activity 1.1 Write about the requirements and products of photosynthesis	TG p2 LB p6		
	• Activity 1.2 Investigate whether green leaves make starch	TG p3 LB p6		
	• Respiration	TG p3 LB p7		
	• Activity 1.3 Write about the requirements for and the products of respiration	TG p4 LB p8		
	• Activity 1.4 Test for the presence of carbon dioxide in exhaled air	TG p4 LB p9		
5 weeks 15 hours	Unit 2: Interactions and interdependence within the environment	TG p7-22 LB p11-44		
	• Introduction to ecology	TG p8 LB p11		
	• Ecosystems	TG p8 LB p13		
	• Activity 2.1 List abiotic and biotic factors in an ecosystem	TG p9 LB p16		
	• Activity 2.2 Study an ecosystem	TG p9 LB p16		
	• Feeding relationships	TG p11 LB p19		
	• Activity 2.3 Classify organisms into their feeding groups	TG p11 LB p22		
	• Energy flow: Food chains and food webs	TG p12 LB p22		
	• Activity 2.4 Identify food chains and food webs	TG p13 LB p25		
	• Activity 2.5 Write and draw about food chains and food webs	TG p13 LB p26		
	• Balance in an ecosystem	TG p15 LB p28		
	• Activity 2.6 Evaluate the effect of factors on ecosystems	TG p15 LB p29		

TERM 1				
TIME	UNIT	PAGE	RECORDING	REFLECTION
	• Activity 2.7 Evaluate the effect of removing an organism from a food web	TG p16 LB p32		
	• Adaptations	TG p16 LB p32		
	• Activity 2.8 Draw and label a plant suited to its environment	TG p17 LB p37		
	• Activity 2.9 Read and write about adaptations of some animals	TG p18 LB p37		
	• Conservation of the ecosystem	TG p19 LB p38		
	• Activity 2.10 Write about the importance of biodiversity and sustainability	TG p19 LB p41		
	• Activity 2.11 Write about the effects of some irresponsible human behaviours on ecosystems and find solutions	TG p19 LB p42		
2 weeks 6 hours	Unit 3: Micro-organisms	TG p23-31 LB p45-66		
	• Types of micro-organisms	TG p24 LB p45		
	• Activity 3.1 Magnify some small objects	TG p24 LB p49		
	• Activity 3.2 Examine pictures of micro-organisms	TG p25 LB p50		
	• Harmful micro-organisms	TG p26 LB p50		
	• Activity 3.3 Research and write about one disease	TG p27 LB p58		
	• Activity 3.4 Discuss cultural and historical beliefs about diseases caused by micro-organisms	TG p28 LB p58		
	• Activity 3.5 Investigating the effect of different conditions on the growth of a micro-organism	TG p29 LB p60-62		
	• Useful micro-organisms	TG p30 LB p62		
	• Activity 3.6 Discuss careers based on the environment and micro-organisms	TG p30 LB p64		

TERM 2				
TIME	UNIT	PAGE	RECORDING	REFLECTION
2 weeks 6 hours	Unit 4: Atoms	TG p32-36 LB p68-77		
	• Atoms – building blocks of matter	TG p33 LB p68		
	• Sub-atomic particles	TG p33 LB p69		
	• Activity 4.1 Make a model or drawing of an atom	TG p33 LB p70		
	• Pure substances	TG p34 LB p70		
	• Elements	TG p34 LB p71		
	• Activity 4.2 Make models to show the atoms which make up molecules	TG p34 LB p72		
	• Compounds	TG p34 LB p72		
	• Activity 4.3 Observe how a compound can be broken down by electrolysis	TG p34 LB p73		
	• Activity 4.4 Decompose potassium permanganate by heating	TG p35 LB p74		
	• Mixtures of elements and compounds	TG p36 LB p76		
5 weeks 15 hours	Unit 5: Particle model of matter	TG 37-47 LB p78-94		
	• The concept of the particle model of matter	TG p39 LB p78		
	• Activity 5.1 Draw diagrams to represent the particles in a solid, liquid and gas	TG p39 LB p80		
	• Activity 5.2 Compare the particles of solids, liquids and gases	TG p40 LB p81		
	• Activity 5.3 Investigate and compare the rate of diffusion of a gas and a liquid	TG p41 LB p82		
	• Change of state	TG p42 LB p83		
	• Activity 5.4 Investigate change of state by heating	TG p42 LB p85		
	• Density, mass and volume	TG p43 LB p86		
	• Activity 5.5 Compare objects with the same volume but different masses	TG p43 LB p86		

TERM 2				
TIME	UNIT	PAGE	RECORDING	REFLECTION
	• Density and states of matter	TG p43 LB p87		
	• Density of different materials	TG p43 LB p87		
	• Activity 5.6 Compare the densities of different materials	TG p44 LB p88		
	• Activity 5.7 Mix oil and water	TG p44 LB p89		
	• Activity 5.8 Read about pollution of water by oil	TG p45 LB p89		
	• Expansion and contraction of materials	TG p45 LB p90		
	• Activity 5.9 Draw and explain how expansion and contraction take place	TG p45 LB p91		
	• Pressure	TG p45 LB p92		
	• Activity 5.10 Demonstrate what happens when you blow up a balloon or pump up a soccer ball or bicycle tyre	TG p46 LB p93		
1 week 3 hours	Unit 6: Chemical reactions	TG p48-52 LB p95-101		
	• Reactants and products	TG p49 LB p95		
	• Activity 6.1 Investigate the chemical reaction of an egg in white vinegar	TG p49 LB p96		
	• Activity 6.2 Investigate what happens when you blow through clear lime water	TG p50 LB p97		
	• Activity 6.3 Discuss and read about careers	TG p51 LB p99		

TERM 3				
TIME	UNIT	PAGE	RECORDING	REFLECTION
1 week 3 hours	Unit 7: Static electricity	TG p53-54 LB p103-106		
	• Friction and static electricity	TG p53 LB p103		
	• Activity 7.1 Rub a plastic ruler to make static electricity	TG p54 LB p106		
3 weeks 9 hours	Unit 8: Energy transfer in electrical systems	TG p55-62 LB p107-117		
	• Circuits and current electricity	TG p56 LB p107		
	• Components of a circuit	TG p56 LB p109		
	• Activity 8.1 Draw and interpret an electrical circuit diagram	TG p57 LB p112		
	• Effects of an electric current	TG p57 LB p112		
	• Activity 8.2 Read about fuses	TG p58 LB p115		
	• Activity 8.3 Investigate the heating effect of an electric current by using a resistance wire	TG p58 LB p115		
	• Activity 8.4 Investigate the magnetic effect of a current in a wire bent into a coil	TG p59 LB p115		
	• Activity 8.5 Investigate the electrolysis of copper (II) chloride solution	TG p59 LB p116		
2 weeks 6 hours	Unit 9: Series and parallel circuits	TG p63-68 LB p118-124		
	• Series circuits	TG p63 LB p118		
	• Activity 9.1 Investigate the effect of resistors on the current in a series circuit	TG p64 LB p119		
	• Parallel circuits	TG p64 LB p119		
	• Activity 9.2 Investigate a parallel circuit of two or more light bulbs (resistors)	TG p65 LB p120		
	• Activity 9.3 Compare the effects of resistors in series and in parallel	TG p65 LB p121		
	• Activity 9.4 Investigate how different metals conduct electricity differently in a series circuit	TG p66 LB p121		
	• Other output devices	TG p67 LB p122		
	• Activity 9.5 Research the history of electricity in South Africa and elsewhere	TG p67 LB p123		
	• Activity 9.6 Find out about different careers in the electrical field	TG p67 LB p123		

TERM 3				
TIME	UNIT	PAGE	RECORDING	REFLECTION
3 weeks 9 hours	Unit 10: Visible light	TG p69-77 LB p125-138		
	• Radiation of light	TG p70 LB p125		
	• Activity 10.1 Draw a ray diagram to explain an inverted image	TG p70 LB p126		
	• Spectrum of visible light	TG p70 LB p126		
	• Activity 10.2 Observe and record the sequence of colours when light is shone through a triangular prism	TG p71 LB p127		
	• Opaque and transparent substances	TG p71 LB p127		
	• Activity 10.3 Draw diagrams of shadows cast by opaque objects	TG p71 LB p128		
	• Activity 10.4 Predict the effect of moving an opaque object closer or further away from the light source	TG p72 LB p128		
	• Absorption of light	TG p72 LB p128		
	• Reflection of light	TG p72 LB p129		
	• Activity 10.5 Draw a ray diagram to show the change in direction of light rays at a smooth reflector	TG p73 LB p131		
	• Activity 10.6 Draw a ray diagram to show the changes in direction of light rays reflected off a rough surface	TG p74 LB p132		
	• Seeing light	TG p74 LB p133		
	• Activity 10.7 Explain why we see specific colours	TG p74 LB p133		
	• Refraction of light	TG p74 LB p134		
	• Activity 10.8 Demonstrate the change of direction of a light ray through a parallel sided prism	TG p75 LB p135		
	• Activity 10.9 Observe the apparent change in position of a pencil in a glass of water	TG p75 LB p135		
	• Activity 10.10 • Part A: Draw a ray diagram showing the dispersion of light through a triangular prism • Part B: Draw a ray diagram to show focusing of light through a magnifying glass	TG p75 LB p136		
	• Activity 10.11 Discuss careers in optics, physics and fibre optics	TG p76 LB p136		

TERM 4				
TIME	UNIT	PAGE	RECORDING	REFLECTION
3 weeks 9 hours	Unit 11: The Solar System	TG p78-82 LB p140-146		
	• The Sun	TG p79 LB p140		
	• Objects around the Sun	TG p79 LB p141		
	• Activity 11.1 Interpret facts about the Solar System	TG p79 LB p143		
	• Activity 11.2 Construct a model of the Solar System	TG p80 LB p144		
	• Activity 11.3 Compare conditions and special features of other planets in our Solar System	TG p80 LB p145		
	• Earth's position in the Solar System	TG p81 LB p145		
	• Activity 11.4 Why conditions on Earth are ideal for life	TG p81 LB p146		
3 weeks 9 hours	Unit 12: Beyond the Solar System	TG p83-85 LB p147-151		
	• The Milky Way Galaxy	TG p83 LB p147		
	• Activity 12.1 Demonstrate the spiral shape of the Milky Way Galaxy	TG p84 LB p148		
	• Activity 12.2 Draw the spiral arms of the Milky Way Galaxy to show the position of our Solar System	TG p84 LB p148		
	• Our nearest star	TG p84 LB p149		
	• Light years, light hours and light minutes	TG p84 LB p149		
	• Beyond the Milky Way Galaxy	TG p85 LB p150		
2 weeks 6 hours	• Unit 13: Looking into space	TG p 86-90 LB p152-161		
	• Early viewing of space	TG p86 LB p152		
	• Activity 13.1A Identify a few easily recognisable constellations on star maps	TG p87 LB p154		
	• Activity 13.1B Observe, record and compare the appearance of the Southern Cross over a specific time period	TG p87 LB p155		
	• Telescopes	TG p88 LB p155		
	• Activity 13.2 Explain how a telescope works by using a drawing	TG p88 LB p160		
	• Activity 13.3 Present an information poster on a telescope	TG p89 LB p160		
	• Activity 13.4 Discuss the many opportunities for a career in astronomy	TG p89 LB p160		