ACACIA SCIENCE VERTICAL ALIGNMENT

"i"= introducing, "d"= developing, "r"= revising, "m"= mastering

Topics	EY	K5	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AP
The Human Body													
Five Senses	i	d	d										
Vision - how the eye works					i				m				
Hearing - how the ear works					i				m				
Name and identify different body parts	i		d	d	d								
Taking care of your body	i	d	d	d	d	d		m					
Skeletal system			i		d			d					
Muscular system			i		d			d					
Digestive system			i	d				d	d		m		
Circulatory system			i			d		d	d		m		
Nervous system			i		d			d				m	
Cells			i	d	d		d	d			d		m
Cell division and genetics										d		d	m
Respiratory system			i			i		d	d		d		m
Changes in human adolescence							i	d	d			m	
Endocrine system				d				i				d	m
Reproductive system							i		d			m	
Lymphatic system								i			d		
Human nutrition and respiration				d					i		d		m
Human health				d					i	d	m		

Topics	EY	K5	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AP
Plants													
What plants need to grow	i	d	d					m					

Parts of a plant	i	d	d					m					
Classifying living things		i					d	d		d	m		
Structures and processes of cells							i	d			d		m
Structure: non-vascular and vascular plants							i	d			m		
Photosynthesis				i			d			d	d		m
Reproduction				i			d		d	d		m	
Cell division and genetics										d		m	m

Topics	EY	K5	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AP
Animals													
Animals and their needs	i	d	d										
Animal classification Herbivores, carnivores, omnivores, extinct animals		i	i					d		m			
Insects	i		d	d									
Classification of animals (cold blooded, warm blooded, vertebrates or invertebrates, different classes of vertebrates		i			d		d	d		d	m		
Structures and processes of cells				i			d	d		d	m		m
The life cycle and reproduction	i			d			d		d				
Sexual reproduction in Humans							i		d			m	
Cell division and genetics										d		d	m
Energy in animals: Respiration									i		d		m
Cell communication													i/d
chemistry of life									i			d	m
Evolution								i	d	d			m
Gene expression and Regulation													i/d
Evolution, adaptation and mutation								i	d	d		d	m
Natural selection								i	d	d		d	m
Extinction and Speciation								i	d	d			m

Topics	EY	K5	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AP
The Earth													
Conservation		i			d			d	d	d		m	
Recycling	i	d			d			d	d	m			
Pollution		i			d			d	d	d		m	
Habitats			i					d		d		d	m
Environmental change and habitat destruction			i					d		d		m	
Geographical features of the earth's surface			i					d					
Inside the earth			i			d		m					
Ecology: interdependence of organisms and their environment					i			d		d		d	m
Food chain					i			i		d		d	m
Ecosystems					i			i		d		d	m
The Earth's layers			i			d		d					
How mountains are formed			i			i		d					
Rocks						i		d					
Weathering and erosion						i		d					
Plate tectonics								i					
Oceans	i		i										
History of the Earth and Life Forms													

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Meteorology													
The four seasons	i	d	d	m									
Sun: Source of light and warmth		i	d	d									
Weather changes		i	d	d		m							
Seasonal Cycles				i									
Life Cycles				i			d						
The Water Cycle		i		d		d							

The Atmosphere						i							
Weather and Climate		i				d							

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Astronomy													
Sun			i		d		d						
Phases of the moon			i		m								
The eight planets			i		d		d						
The ‘big bang’ as one theory							d						
Galaxies					i								
Gravity and its effects					i								
Rockets and satellites					i								
Energy, Heat, and Energy Transfer													
Six forms of energy								i					
Heat								i		d			
Energy transfer								i		d			

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Physics													
Simple Machines				i						d			
General Physics													
Light and Optics					i				d			m	
Sound					i				d		m		
Motion								i			d		m

Forces				i				d			d		m
Length and Time								i			d	m	
Mass and Weight								i		d			
Density										i	d	m	
Momentum													m
Energy, Work and Power				i				i					m
Pressure										i			
Thermal Physics													
Simple kinetic molecular model of matter								i	d				
Thermal properties of temperature													
Thermal processes													
Ideal Gases													
Thermodynamics													
Properties of waves including light and sound								i			d	m	
General wave properties								i	d				
Light								i	d				
Electromagnetic spectrum								i	d		m		
Sound								i	d				
Superposition (waves)													
Topics	EY	K5	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AP
Electricity and Magnetism													
Classify materials according to whether or not they are magnetic		i	i	d		d		i	d			m	
Identify familiar uses of magnets		i		i									
Law of magnetic attraction				i				d	d			m	
Orienteering, use of magnetic needle				i									
Electricity			i			i				d		m	
Magnetism and electricity										d			
Simple phenomena of magnetism										d			

Electrical quantities			i							d			
Electric circuits			i			d				d		m	
Digital electronics												i	
Dangers of electricity			i			d				d		m	
Electromagnetic effects												i	
DC Circuits												i	
Atomic Physics													
The nuclear atom			i										
Radioactivity												i	
Atoms			i			d	d	d	d	d	m		
Nuclear physics												i	
Quantum physics												i	
Space Physics												d	
Kinematics													i/d
Dynamics													i/d
Work, Energy, Power													i/d
Linear momentum													i/d
Torque													i/d
Energy and Momentum of Rotating Systems													i/d
Oscillations													i/d
Fluids													i
Topic	EY	K5	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AP
Chemistry													
Three states of matter: Solid, liquid, gas			i			d		d	d		m		
Properties of matter: Measurement			i			d		d	d				

Elements						i	d	d	d	d	m		
Solutions						i	d	d	d	d	m		
Chemical and Physical change							i	d	d	d	d		m
Separating substances								d	d		m		
Atomic Structure						i		d	d		d		m
Atomic bonding									i		d		m
Start of modern chemistry									i				
Chemical Reactions and equations								i	d	d	d	d	m
The Periodic Table -						i		d	d	d	d		
The Periodic Table - Group 2											i	d	
The Periodic Table - Group 17											i	d	
The Periodic Table - Transition metals											i	d	
Non-metals and their compounds								i	d	d		m	
Metals and the Reactivity Series									i		d	m	
Electrochemistry												i/d	m
Acids, Bases and Salts								i		d	d	d	m
Air and Water												i/d	
Using the Mole											i	d	m
Reaction rates												i	d/m
Enthalpy changes												i	d/m
Equilibrium												i	d/m
Organic Chemistry - hydrocarbons												id	
Organic Chemistry - halogen compounds												id	
Organic Chemistry - hydroxy compounds												id	
Organic Chemistry - nitrogen compounds												i	
Organic Chemistry - Carbonyl compounds													
Organic Chemistry - Polymers												i	
Organic Chemistry -Organic synthesis												i	
Analytical Chemistry											i	dm	

Science Biographies	EY	K5	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AP
George Washington Carver (botanist/discovered ways to keep soil rich)		i/d											
Jane Goodall (studied chimpanzees) Wilbur and Orville Wright (made first airplane)		i/d											
Rachel Carson (got people to stop using DDT)			i/d										
Thomas Edison (invented an electric light bulb)			i/d										
Edward Jenner (found a way to stop smallpox)			i/d										
Louis Pasteur (made milk safe to drink)			i/d										
Anton van Leeuwenhoek (invented the microscope)				i/d									
Elijah McCoy (invented the automatic lubricator/the real McCoy)				i/d									
Florence Nightingale (helped the wounded in the Crimean War/made hospitals more sanitary)				i/d									
Daniel Hale Williams (performed the first open-chest surgery)				i/d									
Alexander Graham Bell (invented the telephone)					i/d								
Copernicus (had new sun-centered idea about the solar system)				i/d	d								
Mae Jemison (astronaut and medical pioneer)					i/d								
John Muir (conservationist who helped create many national parks)					i/d								
Benjamin Banneker (published almanac; reproduced plans to build Washington, D.C. entirely from memory)						i/d							
Elizabeth Blackwell (first female to graduate from medical school in the United States)						i/d							
Charles Drew (pioneered work in blood research, blood transfusions, and the development of blood banks)						i/d							
Michael Faraday (chemist and physicist whose work led to the development of the electric						i/d							

motor and electric generator)													
Science Biographies	EY	K5	G1	G2	G3	G4	G5	G6	G7	G8	G9	G10	AP
Galileo ("Father of modern science" who provided scientific support for Copernicus's sun-centered universe)				i			i/d						
Percy Lavon Julian (biologist and inventor who developed synthetic cortisone to treat arthritis pain)							i/d						
Ernest Just (biologist and medical pioneer who specialized in studying cells and reproduction in marine animals)							i/d						
Carl Linnaeus (botanist and "Father of taxonomy" who standardized the classification system)							i/d						