



Republic of the Philippines
Department of Education
CARAGA REGION

TABLE OF SPECIFICATION

LEARNING COMPETENCY	No. of days based on LC Codes	%	No. of Items	Lower-order Thinking Skills		Moderate-order Thinking Skills		Higher-order Thinking Skills	
				Rem	Und	App	Ana	Eval	Cre
				Item Placement					
Give evidence for and describe the formation of heavier elements during star formation and evolution	2.5	4%	2	1				34	
Explain how the concept of atomic number led to the synthesis of new elements in the laboratory	2.5	4%	2		2***		39		
Determine if a molecule is polar or non-polar given its structure	2.5	4%	2		47	3			
Relate the polarity of molecule through its properties	2.5	4%	2	49			4***		
Describe the general types of intermolecular forces	2.5	4%	2			43		5	
Explain the effect of intermolecular forces on the properties of substances	2.5	2%	1	6					
Explain how the structures of biological macromolecules such as carbohydrates, lipids, nucleic acid, and proteins determine their properties and functions	5	6%	3		7	8		35	
Use simple collision theory to explain the effects of concentration, temperature, and particle size on the rate of reaction S11/12PS-III-f-23	2.5	4%	2	9			40		



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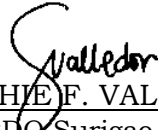
Define catalyst and describe how it affects reaction rate S11/12PS-III f24	2.5	4%	1		10				
Determine the limiting reactant in a reaction and calculate the amount of product formed S11/12PS-III h-27	5	4%	2			11	12*		
Describe how energy is harnessed from different sources: A. Fossil fuels B. Biogas C. Geothermal D. Hydrothermal E. Batteries F. Solar cells G. Biomass S11/12PS-III i-29	5	4%	2			44		13	
From product labels, identify the active ingredient(s) of cleaning products used at home S11/12PS -III i - j -31	2.5	4%	2	14			41		
Give the use of the other ingredients in cleaning agents S11/12PS -III i - j -32	2.5	2%	1		15				
Explain how the Greeks knew that the Earth is spherical S11/12PS-IVa-38	1.5	4%	1			16			
Cite examples of astronomical phenomena known to astronomers before the advent of telescopes S11/12PS-IVa-4	1.5	4%	1				17		
Explain how Brahe's innovations and extensive collection of data in observational astronomy paved the way for Kepler's discovery of his laws of planetary motion S11/12PS-IVb-44	2	2%	1					18	
Compare and contrast the Aristotelian and Galilean conceptions of vertical motion, horizontal motion, and projectile motion. S11/12PS-IVc-46	1.5	2%	1		19				
Explain how Galileo inferred that objects in vacuum fall with uniform acceleration, and	1.5	2%	1	20					

that force is not necessary to sustain horizontal motion. S11/12PS-IVc-47									
Explain the subtle distinction between Newton's 1st Law of Motion (or Law of Inertia) and Galileo's assertion that force is not necessary to sustain horizontal motion. S11/12PS-IVd-51	2	4%	1				21		
Describe how the propagation of light, reflection, and refraction are explained by the wave model and the particle model of light. S11/12PS-IVf-59	2.5	6%	3		22		42	38	
Explain how the photon concept and the fact that the energy of a photon is directly proportional to its frequency can be used to explain why red light is used in photographic dark rooms, why we get easily sunburned in ultraviolet light but not in visible light, and how we see colors, S11/12PS-IVf-61	2.5	4%	2	23		45			
Cite experimental evidence showing that electrons can behave like waves.S11/12PS-IVg-64	2.5	4%	2		48	24			
Differentiate dispersion, scattering, interference, and diffraction. S11/12PS-IVh-65	2.5	4%	2	50			25		
Explain various light phenomenon such as: A. your reflection on the concave and convex sides of a spoon looks different. B. Mirages C. Light from a red laser passes more easily though red cellophane than green cellophane.	2.5	4%	2			46		26	

D. Clothing of certain colors appear different in artificial light and in sunlight E. Haloes, sundogs, primary rainbows, secondary rainbows, and supernumerary bows F. Why clouds are usually white and rainclouds dark. G. Why the sky is blue and sunsets are reddish									
Describe how Hertz produces radio pulses.	2.5	2%	1	27					
Explain how special relativity resolved the conflict between Newtonian mechanics and Maxwell's electromagnetic theory	2.5	4%	1		28				
Explain the consequences of the postulates of Special Relativity (e.g., relativity of simultaneity, time dilation, length contraction, mass – energy equivalence, and cosmic speed limit).	2.5	2%	1			29***			
Explain the consequences of the postulates of Special Relativity (e.g., relativity of simultaneity, time dilation, length contraction, mass – energy equivalence, and cosmic speed limit).	2.5	2%	1				30		
Explain the consequences of postulates of General Relativity (e.g., correct predictions of shifts in the orbit of Mercury, gravitational bending of lights, and black holes).	2.5	2%	1					31	
Explain how the speeds and distances of far-off objects are estimated (e.g., doppler effect and cosmic distance ladder).	2.5	4%	2	32				36	
Explain how we know that we live in an expanding universe, which used to be hot and is approximately 14 billion years old.	2.5	4%	2		33			37	
Total	80	100 %	50						

Legend: *Problem Solving; **Information Literacy; ***Critical Thinking

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