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Most Essential Learning Competencies (MELCs)



Grade Level: Grade 10

Subject: Science

Quarter	Content Standard	Performance Standard	Most Essential Learning Competencies	Duration	K to 12 CG Code
	<i>The learners demonstrate understanding of...</i>	<i>The learners should be able to...</i>			
1st	the relationship among the locations of volcanoes, earthquake epicenters, and mountain ranges	1. demonstrate ways to ensure disaster preparedness during earthquakes, tsunamis, and volcanic eruptions 2. suggest ways by which he/she can contribute to government efforts in reducing damage due to earthquakes, tsunamis, and volcanic eruptions	Describe and relate the distribution of active volcanoes, earthquake epicenters, and major mountain belts to Plate Tectonic Theory	Week 1-3	
			Describe the different types of plate boundaries	Week 4	S10ES –Ia-j-36.2
			Explain the different processes that occur along the plate boundaries	Week 5-6	S10ES –Ia-j-36.3
			Describe the possible causes of plate movement	Week 7	S10ES –Ia-j-36.5
			Enumerate the lines of evidence that support plate movement	Week 8	S9ES –Ia-j-36.6
2nd	the different regions of the electromagnetic spectrum		Compare the relative wavelengths of different forms of electromagnetic waves	Week 1-2	S10FE-IIa-b-47
			Cite examples of practical applications of the different regions of EM waves, such as the use of radio waves in telecommunications	Week 3-4	S10FE-IIc-d-48
			Explain the effects of EM radiation on living things and the environment	Week 5	S10FE-IIe-f-49
	the images formed by the different types of mirrors and lenses		Predict the qualitative characteristics (orientation, type, and magnification) of images formed by plane and curved mirrors and lenses	Week 6-7	S10FE-IIg-50
			Identify ways in which the properties of mirrors and lenses determine their use in	Week 8	S10FE-IIh-52

			optical instruments (e.g., cameras and binoculars)		
	the relationship between electricity and magnetism in electric motors and generators		Explain the operation of a simple electric motor and generator	Week 9	S10FE-IIj-54
3rd	1. organisms as having feedback mechanisms, which are coordinated by the nervous and endocrine systems 2. how these feedback mechanisms help the organism maintain homeostasis to reproduce and survive		Explain the role of hormones involved in the female and male reproductive systems	Week 1	S10LT-IIIb-34
			Describe the feedback mechanisms involved in regulating processes in the female reproductive system (e.g., menstrual cycle)	Week 2	S10LT-IIIc-35
			Describe how the nervous system coordinates and regulates these feedback mechanisms to maintain homeostasis	Week 3	S10LT-IIIc-36
	1. the information stored in DNA as being used to make proteins 2. how changes in a DNA molecule may cause changes in its product 3. mutations that occur in sex cells as being heritable		Explain how protein is made using information from DNA	Week 4	S10LT-IIId-37
			Explain how mutations may cause changes in the structure and function of a protein	Week 4	S10LT-IIIf-38
	how evolution through natural selection can result in biodiversity	write an essay on the importance of adaptation as a mechanism for the survival of a species	Explain how fossil records, comparative anatomy, and genetic information provide evidence for evolution	Week 5	S10LT-IIIf-39
			Explain the occurrence of evolution	Week 6	S10LT-IIIf-40
	1. the influence of biodiversity on the stability of ecosystems		Explain how species diversity increases the probability of adaptation and survival of organisms in changing environments	Week 7	S10LT-IIIf-41

	2. an ecosystem as being capable of supporting a limited number of organisms		Explain the relationship between population growth and carrying capacity	Week 7	S10LT-IIIi-42
4th	how gases behave based on the motion and relative distances between gas particles		Investigate the relationship between: 1 volume and pressure at constant temperature of a gas 2 volume and temperature at constant pressure of a gas 3 explains these relationships using the kinetic molecular theory	Week 1-2	S9MT-IIj-20
	the structure of biomolecules, which are made up mostly of a limited number of elements, such as carbon, hydrogen, oxygen, and nitrogen		Recognize the major categories of biomolecules such as carbohydrates, lipids, proteins, and nucleic acids	Week 3-4	S10MT-IVc-d-22
	the chemical reactions associated with biological and industrial processes affecting life and the environment	using any form of media, present chemical reactions involved in biological and industrial processes affecting life and the environment	Apply the principles of conservation of mass to chemical reactions	Week 5-6	S10MT-IVe-g-23
			Explain how the factors affecting rates of chemical reactions are applied in food preservation and materials production, control of fire, pollution, and corrosion	Week 7-8	S10MT-IVh-j-24