Teacher: CORE Science Grade 7	Year: 2010-11
Course: Science Grade 7	Month: All Months

September

LAB SKILLS/INSTRUMENTS *

Essential Questions	Content	Skills	Vocabulary	Assessments	Lessons	Resources
	Scientific Method: Experimental Design	Formulate in writing a hypothesis given a testable question. Identify in writing the independent and dependent vartiables. Identify in writing the contol group in a controlled experiment. Identify in writing the controlled factors (constants) in a controlled experiment. Generate an inference in writing given a set of observations	Variables Independent Variable Dependent Variable Constants, Hypothesis Controlled Experiment Theory Data Conclusions Observations Inferences Predictions			http://www.sciencebuddies.org/scienc This site shows examples with questio http://sciencecourseware.org/BLOL/ Good resource, perhaps over the kids' http://docs.google.com/viewer?a=v&q jQmN-RdBV4ZBjwCez7xQUg26RbC Hypothesis game

			. Compare and contrast in writing observation and inference. Construct a graph in writing with properly labled axes, title, uinits and plotted points.				

October

MEASUREMENT *

Essential Questions	Content	Skills
	Metric Prefixes: Metric Value Conversions Measurement: Length, Volume and Mass Density: Density Formula Calculations	Convert in writing between metric prefixes. Identify in writing the difference between a meter, centimeter and a millimeter on a metric ruler. Identify in writing the base of length, mass and volume. Measure in writing the length of a object using a metric ruler to the nearest tenth of a centimeter. Measure in writing volume of substance using a graduated cylinder. Calculate volume of a regularly shaped object in writing using a metric ruler. Calculate the mass of an object in writingr using a triple beam

			balance. Calculate the density of an object in writing using the proper formula. Calculate volume of an irregularly shaped object in writing using the water displacement method. Calculate boyancy of an object on paper given density.
November	LAB SKILLS/ INSTRUMENTS*		
	Essential Questions	Content	Skills
		Microscope: Compound	Identify through labeling the p the microscope and their funct Calculate microscope magnific in writing on a compound microscope. Focus and center an object und microscope under various magnifications. Identify orientation of an objec under a microscope through dr an image rotated 180 degrees. to d or n to u) Demonstrate during a practical proper technique of creating a mount slide. Demonstrate through a practic proper staining technique of a mount slide. Measure under the magnificati a microscope the length of an

			using millimeter grid slides. (i. insect)
D e c e m b e r	CHARACTERISTICS OF LIFE FUNCTIONS*		
	Essential Questions	Content	Skills
		Cells:Parts, Functions and Types	Identify the three major p cell theory when given bo and incorrect choices. Identify in writing a cell i stages of cell division. Identify in writing the sou for the cell processes. Compare and contrast in v differences between Prok Eukaryotic Cells. Identify in writing organe only in plant cells. Identify in writing organe only in animal cells. Identify in writing the stru all cells have in common. Label a diagram showing and multicellular organisr
		Body Systems: Circulatory, Respiratory, Digestive, Excretory, Immune, Nervous/Endocrine,Muscular/Skeletal	Organize in writing the 6 multicellular organizatio Identify in writing and la similar organs that many cellular organisms all po Identify in writing the va structures used to classif organisms. Identify in writing how t systems of the body inter

			other. Compare the human bod using an analogy to dem understanding of the inte between cells and the org that provide nutrients an wastes. Compare and contrast m chemical digestion of foo Identify in writing the pr respiration in the cell. Identify in writing and la diagram the gases that ar during breathing. Identify in writing the re circulatory system when levels increase. Identify in writing the re body to a fight or flight s pertains to the nervous sy muscular system, and the system. Identify in writing the ro nervous and endocrine sy regulation of a multicellu Categorize various disea microbial or environmen Identify in writing and or the specialized cells prod immune system that prot combat infectious diseas Identify in writing the sy relationship between hum microbes living in the di

		Photosynthesis:Plant Nutrition	Identify in writing and la structure and funtion of t chloroplasts as it pertains photosynthesis. Label the parts to the Ca when presented with a di
J a n u a r y	CHARACTERISTICS OF LIFE FUNCTIONS *		
	Essential Questions	Content	Skills
		Genetics: Mendelian Genetics and Punnett Squares	Manipulate uppercase an letters within a Punnett S demonstrate parent to off passing.

		DNA: Genetic Traits	Identify in writing and la structure and function of Identify in writing and la chromosome and a DNA Compare DNA in our ce dictionary or a phoneboo demonstrating that all inf present, but not used by a Compare and contrast us Diagram the similarities differences between the c resulting from sexual and reproduction as they com eachother. Compare and contrast us Diagram the similarities differences between the c resulting from sexual and reproduction as they com parents.
F e b r u a r y	CHARACTERISTICS OF LIFE FUNCTIONS*		
	Essential Questions	Content	Skills
		Reproduction: Sexual and Asexual	Locate on a diagram the production on the male a Classify in writing organ reproduce sexually, asex Categorize sexually repr organisms in writing by fertilization and develop Describe in writing the jo gametes during sexual re Explain in writing how th information from an egg the genetic information f

			to get a fertilized egg co genetic information from Describe in writing how cellular organisms use ce means of asexual reprodu Compare and contrast th mitosis and meiosis in te presence of hereditary m Label on a diagram the c (both before and after) th identical copies of thems get ready to pass their ge information onto the dau
		Genetic Diseases: Chromosomes Aberrations	Compare in writing norm abnormal cell division as cancers.
M a r c h	CHARACTERISTICS OF LIFE FUNCTIONS*		
	Essential Questions	Content	Skills
		Asexual Reproduction: Binary Fission, Budding, Vegetative Propagation	Categorize in writing the types of asexual reproduc

	Human Embryonic Development: Development of the embryo Development: Development from Post Embryonic to Maturity	Explain in writing the proce division that takes place aft fertilization has occurred in multicellular organisms. Explain in writing how a fe egg divides and differentiat relates to the levels of orga Identify various organisms possess body structures tha through their life cycles (ie. caterpillars and polliwogs). Compare and contrast varic grouping young organisms and do not resemble the adu
	Internal and External: Fertilization and Development	Classify organisms accor internal or external fertil Identify using a diagram stages of development fr fertilization to birth.

ECOLOGY *

Essential Questions	Content	Skills	Vocabular

		Classification: Living Things	Classify various organisms using the details of their internal and external structures from to kingdom to species.	

LAB SKILLS/ INSTRUMENTS*

Essential Questions	Content	Skills
	Dichotomous Key	Establish a question that wou organisms based on an obser structure. Identify various objects such rocks, minerals, ficticious or realistic organisms using the identification keys provided.

April

ADAPTATIONS *

Essential Questions	Content	Skills
	Evolution: Natural Selection	Predict the possible change take place from sexual repr and mutations. Select traits that would be advantageous for certain li conditions given an enviro pressure. Express in writing how adv adaptations are passed fron offspring over several gene explaining how organisms different in appearance fro ancestors. Identify resources in the en that various organisms wou

				for. (limiting factors) Identify various environme changes that could have lea extinctions of various spec Identify the age of rock bas orientation and position rel other layers above and belo Identify reproductive quali organism that affect the rat evolution, for example leng reproductive cycle and life

M a y	CHARACTERISTICS OF LIFE FUNCTIONS *			
	Essential Questions	Content	Skills	Vocabulary
	This unit is a holistic review of all the topics covered throughout the year.		Compare and Contrast plant and animals cells, focusing on their similarities and	R-Reproductio R-Respiration R-Regulation (

	Methods and Skills will vary from teacher to teacher.		differences in contents and functions. Sequentially describe using a diagram the pathway the food travels through the digestive system, the pathway blood takes as it moves through the circulatory system. Identify the locations with which mechanical and chemical digestion occur. Some locations will exihibit one, while others have both. Identify the main organelle that is at work during cellular respiration and list ways to speed up and slow down this process. Identify the various parts of the excretory system and label them on a diagram. Identify the glands in the body and declare which hormones each one produces in order to assist in homeostasis. Compare and contrast the Nervous and Endocrine Systems. Identify the locations on a diagram where the egg and sperm are produced and explain what could happen if the two types of cells are in contact with one another. Compare and contrast sexual and asexual reproduction from a genetics standpoint. Identify the two factors (sexual reproduction and mutations) that lead to diversity within a given species. Construct a Venn Diagram style of picture that	external and in E-Excretion G-Growth N-Nutrition (in photosynthesis T-Transport (e internal) S-Synthesis (pr synthesis and photosynthesis

			demonstrates organisms that reproduce sexually, asexually or both. When given a diagram, identify sperm cells, egg cells, stem cells, the process of differentiation, and an organism. When given a list of foods, trace the path back to the sun showing the direction of energy transfer. When given a list of organisms, students will identify which ones are producers, primary consumers, and secondary consumers.	

Recurring Themes

Essential Questions	Content	Skills

June	7th Grade Final Exam ~ 7th Grade Final Exam		
	Essential Questions	Content	Skills