

STANDARD	OBJECTIVES (What it looks like in the classroom) The learner will í	# OF DAYS NEED ED FOR MAST ERY	DATE S TAUG HT	DATE ASSESSSED	ASSESSMENT TYPE (classroom, STAR, objective, subjective, project, etc.)	RESOURCES (Materials, web sites, auto-visual, print)	LEARNING ACTIVITIES
12.1.1a	Formulate a testable hypothesis supported by prior knowledge to guide an investigation	20	Week 1- Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab Equipment Computers Lab Books	Co
12.1.1b	Design and conduct logical and sequential scientific investigations with repeated trials and apply findings to new investigation	20	Week 1- Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.1c	Identify and manage variables and constraint	20	Week 1- Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.1.d	Select and use lab equipment and technology appropriately and accurately	20	Week 1- Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.1.e	Use tools and	20	Week 1-	Week 6	Formative and	Lab	

	technology to make detailed qualitative and quantitative observations		Week5		Summative Assessment Rubrics on Projects, Lab Rubric Grade	equipment, Computers, Lab Books	Co
12.1.1.f	Represent and review collected data in a systematic, accurate, and objective manner	20	Week 1-Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.1.g	Analyze and interpret data, synthesize ideas, formulate and evaluate models, and clarify concepts and explanation	20	Week 1-Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.1.h	Use results to verify or refute a hypothesis	20	Week 1-Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.1.i	Propose and/or evaluate possible revisions and alternate explanations	20	Week 1-Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.1.j	Share information, procedures, results, conclusions, and defend findings to a scientific	20	Week 1-Week5	Week 6	Formative and Summative Assessment Rubrics on	Lab equipment, Computers, Lab Books	Co

	community (peers, science fair audience, policy makers)				Projects, Lab Rubric Grade		
12.1.1.k	Evaluate scientific investigations and offer revisions and new ideas as appropriate	20	Week 1-Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.1.l	Use appropriate mathematics in all aspects of scientific inquiry	20	Week 1-Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.2.a	Recognize that scientific explanations must be open to questions, possible modifications, and must be based upon historical and current scientific knowledge	20	Week 1-Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co
12.1.2.b	Describe how society influences the work of scientists and how science, technology, and current scientific discoveries influence and change	20	Week 1-Week5	Week6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co

	society						
12.1.2.c	Recognize that the work of science results in incremental advances, almost always building on prior knowledge, in our understanding of the world	20	Week 1- Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co U
12.1.2.d	Research and describe the difficulties experienced by scientific innovators who had to overcome commonly held beliefs of their times to reach conclusions that we now take for granted	20	Week 1- Week5	Week 6	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab equipment, Computers, Lab Books	Co U
12.2.1a	Recognize that bonding occurs when outer electrons are transferred	10	Week 19	Week 21	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	Pa
12.2.1.b	Describe the transfer of energy associated with phase changes between solids, liquids, and gases	10	Week 31	Week 33	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	I

12.2.1.c	Describe the three normal states of matter (solid, liquid, gas) in terms of energy, particle arrangement, particle motion, and strength of bond between molecules	10	Week 31	Week 33	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	I
12.2.1.d	Recognize a large number of chemical reactions involve the transfer of either electrons (oxidation/reduction) or hydrogen ions (acid/base) between reacting ions, molecules, or atoms	15	Week 25	Week 27	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	Fi S R
12.2.1.e	Identify factors affecting rates of chemical reactions (temperature, particle size, surface area)	10	Week 26	Week 28	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	R K
12.2.1.f	Recognize the charges and relative locations of subatomic particles	15	Week 11	Week 13	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	G
12.2.1.g	Describe the properties of atoms, ions, and isotopes	15	Week 12	Week 14	Formative and Summative Assessment	Lab, Internet Computers, Smartboard,	C

					Rubrics on Projects, Lab Rubric Grade	Clickers, Gizmos, Google, Angel	
12.2.3.a	Describe mechanical waves properties (speed, wavelength, frequency, amplitude) and how waves travel through a medium	10	Week 14	Week 16	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	W
12.2.3.b	Recognize that the energy in the waves can be changed in other forms of energy	10	Week 14	Week 16	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	W
12.2.3.d	Distinguish between temperature (a measure of the average kinetic energy of atomic or molecular motion) and heat (the quantity of thermal energy that transfers due to a change in temperature)	10	Week 31	Week 33	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	I
12.2.3.g	Compare and contrast segments of the electromagnetic spectrum (radio, micro, infrared, visible, ultraviolet, x-rays,	10	Week 15	Week 17	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google,	W

	gamma) based on frequency and wavelength					Angel	
12.2.3.h	Recognize that nuclear reactions (fission, fusion, and radioactive decay) convert a fraction of the mass of interacting particles into energy, and this amount of energy is much greater than the energy in chemical interactions	10	Week 13	Week 15	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	Sp P
12.2.3.k	Identify endothermic and exothermic reactions	10	Week 25	Week 27	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	I
12.3.3.b	Recognize that atoms and molecules cycle among living and nonliving components of the biosphere	10	Week 9	Week 11	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	C
12.4.1.a	Recognize atoms and molecules cycle among living and nonliving components of the biosphere	10	Week 9	Week 11	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	C

12.4.1.b	Recognize that stars, like the Sun, transform matter into energy by nuclear reactions which leads to the formation of other elements	15	Week 14	Week 16	Formative and Summative Assessment Rubrics on Projects, Lab Rubric Grade	Lab, Internet Computers, Smartboard, Clickers, Gizmos, Google, Angel	W
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