

## LAB-AIDS CORRELATIONS FOR THE 2009 OREGON STATE SCIENCE STANDARDS

## GRADES 6-8

*With Assessment Guidelines information*

Materials from the Science Education for Public Understanding Program (SEPUP) are developed at the Lawrence Hall of Science, at the University of California, Berkeley, and distributed nationally by LAB-AIDS, Inc. SEPUP materials are supported by grants from the National Science Foundation. All other materials developed by LAB-AIDS. This correlation is intended to show selected locations in SEPUP programs that support the Oregon Science Standards. It is not an exhaustive list; other locations may exist that are not listed here.

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Note: *Standards in italics* may be assessed by the state-testing program.

**Key to Programs:**

SEPUP programs are available as full year courses, or separately, as units, which are listed below.

- **IAES = *Issues and Earth Science***
  - Studying Soils Scientifically, 1-11
  - Rocks and Minerals, 12-23
  - Erosion and Deposition, 24-35
  - Plate Tectonics, 36-49
  - Weather and Atmosphere, 50-70
  - The Earth in Space, 71-84
  - Earth and the Solar System, 85-98
  
- **IALS = *Issues and Life Science***
  - Experimental Design: Studying People Scientifically, 1-10
  - Body Works, 11-29
  - Cell Biology and Disease, 30-53
  - Genetics, 54-71
  - Ecology, 72-88
  - Evolution, 89-101
  - Bioengineering, 102-108
  
- **LAPS = *Issues and Physical Science***
  - Studying Materials Scientifically, 1-11
  - The Chemistry of Materials, 12-29

Water, 30 - 52  
Energy, 53-72  
Force and Motion, 73-88

*Supplementary programs for middle and high school*

Key to LAB-AIDS Kits

These LAB-AIDS kits and modules address one or more science standards not addressed in the core programs, as noted. This listing is primarily for the use of non-SEPUP customers, as most standards are addressed using core SEPUP programs; however, in a few cases, SEPUP customers may wish to supplement the SEPUP program with one or more LAB-AIDS kits.

19	QUALITATIVE INTRODUCTION TO WATER POLLUTION
20	POLLUTANT EFFECTS OF PHOSPHATES & NITRATES
33	SOIL ORGANISM STUDY
34	NEMATODE STUDY
35	DECOMPOSITION
37	BASIC OWL PELLET STUDY
38	MODELING AND COMPARING FOSSIL FUEL & BIOFUEL COMBUSTION
39S	BIOFUELS: INVESTIGATING ETHANOL PRODUCTION & COMBUSTION
61	PLANT CELL STUDY
62	THE STUDY OF THE STRUCTURE & FUNCTION OF MITOCHONDRIA
71	MOLECULAR MODEL OF DNA & ITS REPLICATION
72	DNA-RNA PROTEIN SYNTHESIS MODEL
77	HEREDITY & ENVIRONMENT
82	PROPERTIES OF ACIDS AND BASES EXPERIMENT
83	IDENTIFICATION OF SUBSTANCES
84	IDENTIFICATION OF CHEMICAL REACTIONS
85	DETERMINATION OF CHEMICAL FORMULAS
86S	INVESTIGATING THE CHEMISTRY OF CORROSION
87	CHANGING OF EQUILIBRIUM LE CHATELIER'S PRINCIPLE
88	INTRODUCTION TO OXIDATION & REDUCTION
91	NATURAL SELECTION EXPERIMENT
93	ORGANIC EVOLUTION THEORY
110R	FAMILIES OF ELEMENTS EXPERIMENT
111	FLAME TESTS AND EMISSION SPECTROSCOPY
113	SOLID ALCOHOL & ESTERIFICATION
120	DETERMINING DIMENSIONS OF A MOLECULE
121	SIZE OF MOLECULES EXPERIMENT
124-1	INDIVIDUAL ELEMENTARY MOLECULAR MODEL SET
125	INDIVIDUAL BASIC, STUDENT MOLECULAR MODEL SET
125-1	INDIVIDUALIZED ORGANIC STUDENT MOLECULAR MODEL
129	FIRST INTRODUCTION TO MOLECULAR MODELS
130	MOLECULAR MODEL
131	ORGANIC CHEMISTRY MOLECULAR MODEL
132	ORGANIC CHEMISTRY (FUNCTIONAL GROUPS) MODEL
133	ORGANIC CHEMISTRY (ISOMERS) MODEL
140	SUBLEVEL ORBITALS OF ATOM MODEL
206S	MEASURING ENERGY EFFICIENCY
318S	SOIL NUTRIENTS AND FERTILIZERS
351S	EXPLORING NEWTON'S FIRST LAW: INERTIA

352S	CLASSIFYING OBJECTS IN THE SOLAR SYSTEM
403S	CLASSIFYING SEDIMENTARY, METAMORPHIC & IGNEOUS ROCK
404S	THE ROCK CYCLE ACTIVITY
406S	EXAMINING FOSSILS
430	ROCK CYCLE: AN INTERACTIVE EXPLORATION THROUGH GEOLOGIC TIME
435	READING RIVER SEDIMENTS SIMULATED MINERAL EXPLORATION
436S	MODELING CONVECTION CURRENTS
438S	PLATE TECTONICS: PLATE BOUNDARY COMPUTER SIMULATION
439S	MAKING AND INTERPRETING TOPOGRAPHIC MAPS
440S	COPPER MINING AND EXTRACTION
441S	USING CHEMICAL REACTIONS TO REDUCE WASTE
442	MODELING STREAM EROSION AND DEPOSITION
443S	CORRELATING SEDIMENTARY STRATA
445S	PLATE TECTONICS: EXAMINING EVIDENCE FOR CONTINENTAL DRIFT
501	DIAMOND CRYSTAL MOLECULAR MODEL
502	GRAPHITE CRYSTAL MOLECULAR MODEL
505	MOLECULES OF LIFE
510	CHEMISTRY OF CARBOHYDRATES MODEL
511	CHEMISTRY OF FATS MODEL
512	CHEMISTRY OF PROTEINS MODEL
513	NUCLEIC ACID MOLECULAR STRUCTURE
520	MOLECULES OF METABOLISM: UNDERSTANDING DIGESTION & RESPIRATION
550S	CLASSIFYING ANIMALS
603S	INVESTIGATING AND APPLYING GENETICS
701A	CHEMILUMINESCENCE STUDENT ACTIVITY
706S	MAKING AND MODELING POLYMERS
904S	NATURAL SELECTION AND ANTIBIOTIC RESISTANT BACTERIA
1270	INVESTIGATING HUMAN HEREDITY
P110	INVESTIGATING LIGHT
P120	COLOR AND SPECTRUM
P130	REFLECTION AND REFRACTION
P210	FORCE AND MOTION
P610	DENSITY: UNDERSTANDING THROUGH EXPERIMENTAL DESIGN
DM-2	DECISION MAKING: PROBABILITY AND RISK TAKING
EHR-2	INVESTIGATING ENVIRONMENTAL HEALTH RISKS
EI-2	ENVIRONMENTAL IMPACT: COMPARING INDUSTRIES
ES-2	INVESTIGATING ENERGY FROM THE SUN
FS-2	INVESTIGATING FOOD SAFETY
FV-2	GROUNDWATER CONTAMINATION: TROUBLE IN FRUITVALE
HM-2	HAZARDOUS MATERIALS INVESTIGATION: THE BARREL MYSTERY
PL-2	LIVING WITH PLASTICS
SP-2	INVESTIGATING WASTEWATER: SOLUTIONS AND POLLUTION

*NEW KITS FOR 2009*

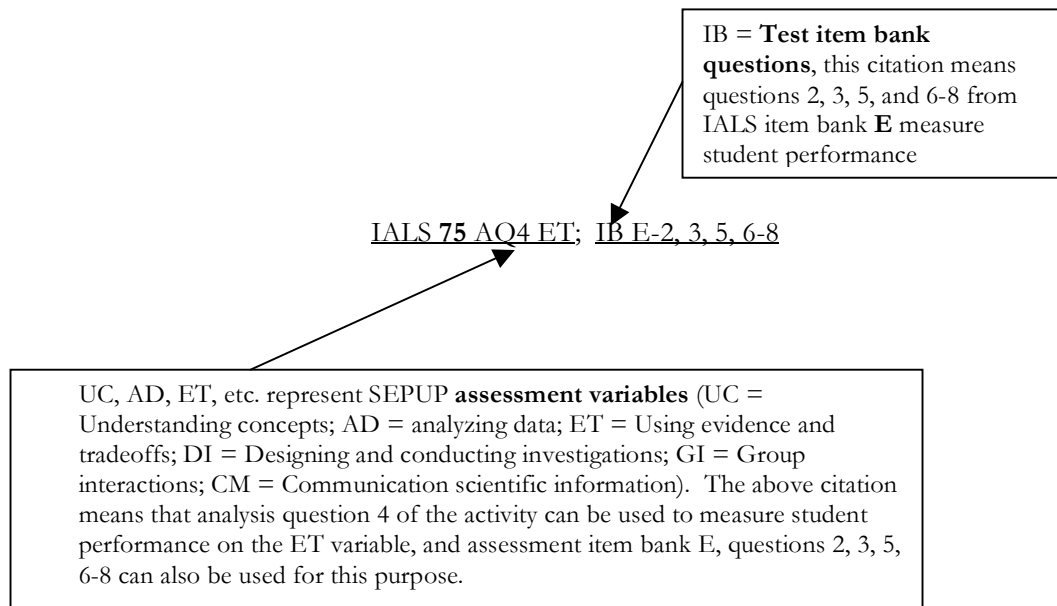
[31]	PHOTOSYNTHESIS, PLANTS, AND FOOD
[211]	WAVES, SOUND AND LIGHT
[212]	ENERGY TRANSFER: MOTION OF A PENDULUM
[213]	ELECTRIC MOTORS AND GENERATORS
[215]	ELECTRICAL CONDUCTIVITY AND CIRCUITRY
[216]	MAGNETIC FIELDS AND ELECTROMAGNETS
[905]	SELECTIVE BREEDING

## Recommended Scope and Sequence

<i>Grade 6</i>	<i>Grade 7</i>	<i>Grade 8</i>
Studying People Scientifically	Force and Motion	Studying Materials Scientifically
Energy	Genetics	Earth In Space
Weather and Atmosphere	Ecology	Plate Tectonics
Earth and the Solar System	Erosion and Deposition	The Chemistry of Materials
Body Works	Bioengineering	Evolution

### Key to assessment terms

The SEPUP assessment system uses analysis questions (AQ) in the student book activities, short answer or brief constructed response (BCR) to prompts in the student book activities, and item bank test questions in the Teacher’s Guide (TG), most of which are selected-response (SR) type. The following key can be used to interpret how the program works for the following citation: IALS 75 AQ4 ET; IB E-2, 3, 5, 6-8



For more information, consult the Teacher’s Guides.

## GRADE 6

SCIENCE STANDARD	CORE SEPUP PROGRAMS		LAB-AIDS KITS
	Location	Assessment	
<b>6.1 Structure and Function: Living and non-living systems are organized groups of related parts that function together and have characteristic properties.</b>			
6.1P.1 Describe the physical and chemical properties of matter and how they can be measured.	IAPS 14, 18	<b>14</b> [IB] B4-6 <b>18</b> AQ3 AD, [IB] B19-21	82, 83, 84, 85, 110R, 111, HM-2
6.1P.2 Compare and contrast the characteristic properties of forms of energy.	IAPS 55, 56, 58	<b>55</b> AQ1 UC [IB] D1 <b>58</b> AQ2 UC, [IB] D4-5, D8	38, 206S, ES-2, [31, 211, 212]
6.1L.1 Compare and contrast the types and components of cells. Describe the functions and relative complexity of cells, tissues, organs, and organ systems	IALS 42, 82	<b>42</b> [IB] D3, D7, D16-10, C23 <b>82</b> [IB] E5, E13-14, E17	61, 62, 63, 64
6.1E.1 Describe the properties and composition of the layers of Earth.	IAES 38	<b>38</b> AQ5 UC; [IB] D1, D15	436S, 443S, 445S
6.1E.2 Describe the properties of objects in the solar system. Describe the position of the sun within the solar system, galaxy, and universe.	IAES 88, 90, 92	<b>88</b> AQ2 UC, [IB] G3, G13, G17 <b>90</b> [IB] G9, 16, 18 <b>92</b> [IB] G2, G11	
<b>6.2 Interaction and Change: The related parts within a system change.</b>			
6.2P.1 Describe types and properties of waves and explain how they interact with matter.	N/C		P110, P120, P130, 1150, [211]
6.2P.2 Describe the relationships between: electricity and magnetism, static and current electricity, and series and parallel electrical circuits.	IAPS 66	<b>66</b> Proc DI; [IB] D16	[213] [215] [216]
6.2L.1 Describe the relationships and interactions between and among cells, tissues, organs, and organ systems.	IALS 12, 42	<b>12</b> [IB] B12, B15 <b>42</b> [IB] D3, D7, D16-10, C23	
6.2L.2 Explain how individual organisms and populations in an ecosystem interact and how changes in populations are related to resources.	IALS 72, 77, 84	<b>72</b> AQ5 UC, [IB] E2, 3, E5, E13-14 <b>77</b> AQ4 DCI, AQ7 DCI <b>84</b> [IB] E19-20,	37(-A), 91

SCIENCE STANDARD	CORE SEPUP PROGRAMS		LAB-AIDS KITS
	Location	Assessment	
		E26-27, E34	
6.2E.1 Explain the water cycle and the relationship to landforms and weather.	IAES 63, 64	<b>63</b> AQ4 UC; [IB] E4 <b>64</b> [IB] E5	
<b>6.3 Scientific Inquiry: Scientific Inquiry includes the investigation of hypotheses based on observation and prior science knowledge, the collection, analysis, and interpretation of accurate and relevant data and the production of justifiable evidence-based explanations about the natural world.</b>			
6.3S.1 Based on observation and science principles propose questions or hypotheses that can be examined through scientific investigation. Design and conduct an investigation that uses appropriate tools and techniques to collect relevant data.	IAPS 3, 10, 38, 39, 51, 54, 65, 66, 68, 74, 77 IALS 7, 9, 14, 17, 48, 62, 64, 70, 77, 96 IAES 16, 55, 67, 72	IAPS <b>3</b> Proc DI; [IB] A16 <b>10</b> AQ1 AD, Proc DI; [IB] A10-12 <b>38</b> AQ 1-3 AD [IB] C2 IALS <b>7</b> AQ5 DCI & CM, [IB] A4-6 <b>9</b> Act DCI & GI, [IB] A4-6, A8-10, A15-16 <b>14</b> [IB] B16 IAES <b>16</b> AQ3 RE; [IB] B7-10 <b>55</b> Proc DI <b>67</b> Proc DI	
6.3S.2 Organize and display relevant data, construct an evidence-based explanation of the results of an investigation, and communicate the conclusions.	IAPS 3, 10, 38, 39, 51, 54, 65, 66, 68, 74, 77 IALS 7, 9, 14, 17, 48, 62, 64, 70, 77, 96 IAES 16, 55, 67, 72	IAPS <b>3</b> Proc DI; [IB] A16 <b>10</b> AQ1 AD, Proc DI; [IB] A10-12 <b>38</b> AQ 1-3 AD [IB] C2 IALS <b>7</b> AQ5 DCI & CM, [IB] A4-6 <b>9</b> Act DCI & GI, [IB] A4-6, A8-10, A15-16 <b>14</b> [IB] B16 IAES <b>16</b> AQ3 RE; [IB] B7-10 <b>55</b> Proc DI <b>67</b> Proc DI	

SCIENCE STANDARD	CORE SEPUP PROGRAMS		LAB-AIDS KITS
	Location	Assessment	
6.3S.3 Explain why if more than one variable changes at the same time in an investigation, the outcome of the investigation may not be clearly attributable to any one variable.	IAPS 3, 10, 38, 39, 51, 54, 65, 66, 68, 74, 77 IALS 7, 9, 14, 17, 48, 62, 64, 70, 77, 96 IAES 16, 55, 67, 72	IAPS <b>3</b> Proc DI; [IB] A16 <b>10</b> AQ1 AD, Proc DI; [IB] A10-12 <b>38</b> AQ 1-3 AD [IB] C2 IALS <b>7</b> AQ5 DCI & CM, [IB] A4-6 <b>9</b> Act DCI & GI, [IB] A4-6, A8-10, A15-16 <b>14</b> [IB] B16 IAES <b>16</b> AQ3 RE; [IB] B7-10 <b>55</b> Proc DI <b>67</b> Proc DI	
<b>6.4 Engineering Design: Engineering Design includes the definition of practical problems and evaluation of proposed solutions.</b>			
6.4D.1 Define a problem that addresses a need and identify science principles that may be related to possible solutions.	IAES 93 IALS 104, 105, 106 IAPS 71, 72	<b>IALS 93</b> [IB] G5 IAPS <b>71</b> AQ1 UC <b>72</b> AQ1 ET, [IB] D17	
6.4D.2 Design, construct, and test a possible solution to a defined problem using appropriate tools and materials. Evaluate proposed engineering design solutions to the defined problem.	IAES 93 IALS 104, 105 IAPS 71, 72	<b>IALS 93</b> [IB] G5 IAPS <b>71</b> AQ1 UC <b>72</b> AQ1 ET, [IB] D17	
6.4D.3 Describe examples of how engineers have created inventions that address human needs and aspirations.	IALS 107, 108		

**GRADE 7**

SCIENCE STANDARD	CORE SEPUP PROGRAMS		LAB-AIDS KITS
	Location	Assessment	
<b>7.1 <u>Structure and Function</u>: Living and non-living systems are composed of fundamental parts which are responsible for the defining characteristics and traits of the system.</b>			
7.1P.1 Explain that all matter is made of atoms, elements are composed of a single kind of atom, and compounds are composed of two or more elements.	IAPS 15, 16, 17	<b>15</b> AQ5 UC [IB] B7-11 <b>16</b> [IB] B7-11 <b>17</b> AQ6 UC	110R, 111, 124-130
7.1L.1 Compare and contrast sexual and asexual reproduction. Explain why reproduction is essential to the continuation of every species.	IALS 57, 63	<b>63</b> [IB] D1, D2-5, D8-11, D18, D22-24	
7.1L.2 Distinguish between inherited and learned traits, explain how inherited traits are passed from generation to generation, and describe the relationships among phenotype, genotype, chromosomes, and genes.	IALS 54, 59, 60, 66	<b>54</b> Act DCI, [IB] D2 <b>59</b> AQ5 UC, [IB] D2 <b>60</b> AQ1 DCI [IB] D2 <b>66</b> [IB] D7, D21, D25	7, 70, 77, 78, 603S, [905]
<b>7.2 <u>Interaction and Change</u>: The fundamental parts and processes within a system interact.</b>			
7.1.P1. Identify and describe types of motion and forces and relate forces qualitatively to the laws of motion and gravitation.	IAPS 74, 75, 79, 80 IAES 95	<b>74</b> Proc DI; [IB] E1-2, 5-6 <b>75</b> AQ2 UC, [IB] E2, 4-6, 7, 14 <b>79</b> [IB] E10 <b>80</b> AQ2; [IB] E2, 3, 11, 20 <b>95</b> AQ4 AD; [IB] G10, 12	
7.2L.1 Explain how organelles within a cell perform cellular processes and how cells obtain the raw materials for those processes.	IALS 42, 82	<b>42</b> [IB] D3, D7, D16-10, C23 <b>82</b> [IB] E5, E13-14, E17	22, [31]
7.2L.2 Explain the processes by which plants and animals obtain energy and materials for growth and metabolism.	IALS 14, 15	<b>14</b> [IB] B16 <b>15</b> AQ3 UC, [IB] B2, B5, B25-28	[31]
7.2E.1 Describe and evaluate the environmental and societal effects of obtaining, using, and managing waste of renewable and non-renewable	IAPS 64	<b>64</b> AQ3 ET, AQ4 AD, [IB] D7	704, EI-2

SCIENCE STANDARD	CORE SEPUP PROGRAMS		LAB-AIDS KITS
	Location	Assessment	
resources.			
7.2E.2 Describe the composition of Earth's atmosphere, how it has changed over time, and implications for the future.	IAPS 65, 66	<b>65</b> Proc DI; D13 <b>66</b> Proc DI; [IB] D16	
7.2E.3 Evaluate natural processes and human activities that affect global environmental change and suggest and evaluate possible solutions to problems.	IAES 70	<b>70</b> AQ3 ET, [IB] E16	
7.2E.4 Explain how landforms change over time at various rates in terms of constructive and destructive forces.	IAES 28, 29, 30	<b>28</b> Proc GI; [IB] C2, C7 <b>29</b> AQ2 UC; [IB] C1, C3 <b>30</b> [IB] C2, C10	442
<b>7.3 Scientific Inquiry: Scientific Inquiry includes the investigation of hypotheses based on observation and prior science knowledge, the collection, analysis, and interpretation of accurate and relevant data, and the production of justifiable evidence-based explanations about the natural world.</b>			
7.3S.1 Based on observations and science principles propose questions or hypotheses that can be examined through scientific investigation. Design and conduct a scientific investigation that uses appropriate tools and techniques to collect relevant data.	IAPS 3, 10, 38, 39, 51, 54, 65, 66, 68, 74, 77 IALS 7, 9, 14, 17, 48, 62, 64, 70, 77, 96 IAES 16, 55, 67, 72	IAPS <b>3</b> Proc DI; [IB] A16 <b>10</b> AQ1 AD, Proc DI; [IB] A10-12 <b>38</b> AQ 1-3 AD [IB] C2 IALS <b>7</b> AQ5 DCI & CM, [IB] A4-6 <b>9</b> Act DCI & GI, [IB] A4-6, A8-10, A15-16 <b>14</b> [IB] B16 IAES <b>16</b> AQ3 RE; [IB] B7-10 <b>55</b> Proc DI <b>67</b> Proc DI	
7.3S.2 Organize, display, and analyze relevant data, construct an evidence-based explanation of the results of an investigation, and communicate the conclusions including possible sources of error.	IAPS 3, 10, 38, 39, 51, 54, 65, 66, 68, 74, 77 IALS 7, 9, 14, 17, 48, 62, 64, 70, 77, 96 IAES 16, 55, 67,	IAPS <b>3</b> Proc DI; [IB] A16 <b>10</b> AQ1 AD, Proc DI; [IB] A10-12 <b>38</b> AQ 1-3 AD [IB] C2 IALS <b>7</b> AQ5 DCI	

SCIENCE STANDARD	CORE SEPUP PROGRAMS		LAB-AIDS KITS
	Location	Assessment	
	72	& CM, [IB] A4-6 <b>9</b> Act DCI & GI, [IB] A4-6, A8-10, A15-16 <b>14</b> [IB] B16 IAES <b>16</b> AQ3 RE; [IB] B7-10 <b>55</b> Proc DI <b>67</b> Proc DI	
7.3S.3 Evaluate the validity of scientific explanations and conclusions based on the amount and quality of the evidence cited.	IAPS 3, 10, 38, 39, 51, 54, 65, 66, 68, 74, 77 IALS 7, 9, 14, 17, 48, 62, 64, 70, 77, 96 IAES 16, 55, 67, 72	IAPS <b>3</b> Proc DI; [IB] A16 <b>10</b> AQ1 AD, Proc DI; [IB] A10-12 <b>38</b> AQ 1-3 AD [IB] C2 IALS <b>7</b> AQ5 DCI & CM, [IB] A4-6 <b>9</b> Act DCI & GI, [IB] A4-6, A8-10, A15-16 <b>14</b> [IB] B16 IAES <b>16</b> AQ3 RE; [IB] B7-10 <b>55</b> Proc DI <b>67</b> Proc DI	
<b>7.4 Engineering Design:</b> <b>Engineering Design includes the definition of practical problems, identification of constraints, and evaluation of proposed solutions.</b>			
7.4D.1 Define a problem that addresses a need and identify constraints that may be related to possible solutions.	IAES 93 IALS 104, 105, 106 IAPS 71, 72	<b>IALS 93</b> [IB] G5 <b>IAPS 71</b> AQ1 UC <b>72</b> AQ1 ET, [IB] D17	
7.4D.2 Design, construct, and test a possible solution using appropriate tools and materials. Evaluate the proposed solutions to identify how design constraints are addressed.	IAES 93 IALS 104, 105, 106 IAPS 71, 72	<b>IALS 93</b> [IB] G5 <b>IAPS 71</b> AQ1 UC <b>72</b> AQ1 ET, [IB] D17	
7.4D.3 Explain how new scientific knowledge can be used to develop new technologies and how new technologies can be used to generate new scientific knowledge.	IAES 93 IALS 104, 105, 106 IAPS 71, 72	<b>IALS 93</b> [IB] G5 <b>IAPS 71</b> AQ1 UC <b>72</b> AQ1 ET, [IB] D17	

## GRADE 8

SCIENCE STANDARD	CORE SEPUP PROGRAMS		LAB-AIDS KITS
	Location	Assessment	
<b>8.1 <u>Structure and Function: Systems function through interactions of component parts via mechanisms with various levels of complexity.</u></b>			
8.1P.1 Describe the atomic model and explain how the types and arrangements of atoms determine the physical and chemical properties of elements and compounds.	IAPS 15, 16	<b>15</b> AQ5 UC [IB] B7-11 <b>16</b> [IB] B7-11	82, 83, 84, 85, 110R, 131, 132, 133, 140
8.1P.2 Explain how the Periodic Table is an organization of elements based on their physical and chemical properties.	IAPS 15, 16	<b>15</b> AQ5 UC [IB] B7-11 <b>16</b> [IB] B7-11	
8.1P.3 Explain how the motion and spacing of particles determines states of matter.	IAPS 15, 16, 17	<b>15</b> AQ5 UC [IB] B7-11 <b>16</b> [IB] B7-11 <b>17</b> AQ6 UC	
8.1L.1 Explain how genetics and anatomical characteristics are used to classify organisms and infer evolutionary relationships.	IALS 75, 93, 99	<b>75</b> [IB] E4, E36 <b>93</b> AQ4 UC, [IB] F8-11 <b>99</b> AQ2 UC, [IB] 434-36	406S, 550S
<b>8.2 <u>Interaction and Change: Systems interact with other systems.</u></b>			
8.2P.1 Compare and contrast physical and chemical changes and describe how the law of conservation of mass applies to these changes.	IAPS 14, 26	<b>14</b> [IB] B4-6	
8.2P.2 Explain how energy is transferred, transformed, and conserved.	IAPS 57, 58	<b>57</b> AQ3 UC, [IB] D2-3 <b>58</b> AQ2 UC, [IB] D4-5, D8	38, 206S, P210, ES-2, [212, 215]
8.2L.1 Explain how species change through the process of natural selection. Describe evidence for evolution.	IALS 89, 94	<b>89</b> AQ4 ET, [IB] F1-4, F29 <b>94</b> AQ3 UC, [IB] F16, F26	91, 406S, 443S
8.2E.1 Explain how gravity is the force that keeps objects in the solar system in regular and predictable motion and describe the resulting phenomena. Explain the interactions that result in Earth's seasons.	IAES 77, 78, 81, 89, 90, 95-96	<b>77</b> [IB] F10-12 <b>78</b> AQ2 UC <b>81</b> AQ5 UC; [IB] F5, F8 <b>89</b> Proc RE; [IB] G6, G14 <b>90</b> [IB] G9, 16, 18 <b>95</b> AQ4 AD; [IB] G10, 12 <b>96</b> [IB] G 4, 7, 19	

SCIENCE STANDARD	CORE SEPUP PROGRAMS		LAB-AIDS KITS
	Location	Assessment	
8.2E.2 Describe the processes of Earth's geosphere and the resulting major geological events.	IAES 21, 22, 42, 45	22 AQ7 UC; [IB] B4-6, B11 42 [IB] D4, 6, 8-10, 16 45 [IB] D3, D11-12, D16	404S, 430, 436S, 438S, 442, 445S
8.2E.3 Explain the causes of patterns of atmospheric and oceanic movement and the effects on weather and climate.	IAES 57, 58, 66	57 [IB] E10 58 [IB] E6 66 AQ2 UC; [IB] E12-13	
8.2E.4 Analyze evidence for geologic, climatic, environmental, and life form changes over time.	IAES 35, 36, 65	35 AQ1 ET; [IB] C13 36 AQ2 ET	318S, 440S, EI-2, FV-2, HM-2, SP-2, WD-2
<b>8.3 Scientific Inquiry: Scientific Inquiry includes the investigation of hypotheses based on observation and prior science knowledge, the collection, analysis and interpretation of accurate and relevant data, and the production of justifiable evidence-based explanations about the natural world.</b>			
8.3S.1 Based on observations and science principles propose questions or hypotheses that can be examined through scientific investigation. Design and conduct a scientific investigation that uses appropriate tools, techniques, independent and dependent variables, and controls to collect relevant data.	IAPS 3, 10, 38, 39, 51, 54, 65, 66, 68, 74, 77 IALS 7, 9, 14, 17, 48, 62, 64, 70, 77, 96 IAES 16, 55, 67, 72	IAPS 3 Proc DI; [IB] A16 10 AQ1 AD, Proc DI; [IB] A10-12 38 AQ 1-3 AD [IB] C2 IALS 7 AQ5 DCI & CM, [IB] A4-6 9 Act DCI & GI, [IB] A4-6, A8-10, A15-16 14 [IB] B16 IAES 16 AQ3 RE; [IB] B7-10 55 Proc DI 67 Proc DI	
8.3S.2 Organize, display, and analyze relevant data, construct an evidence-based explanation of the results of a scientific investigation, and communicate the conclusions including possible sources of error. Suggest new investigations based on analysis of results.	IAPS 3, 10, 38, 39, 51, 54, 65, 66, 68, 74, 77 IALS 7, 9, 14, 17, 48, 62, 64, 70, 77, 96 IAES 16, 55, 67, 72	IAPS 3 Proc DI; [IB] A16 10 AQ1 AD, Proc DI; [IB] A10-12 38 AQ 1-3 AD [IB] C2 IALS 7 AQ5 DCI & CM, [IB] A4-6 9 Act DCI & GI, [IB] A4-6, A8-10,	

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		A15-16 14 [IB] B16 IAES 16 AQ3 RE; [IB] B7-10 55 Proc DI 67 Proc DI	
6.3S.3 Explain why if more than one variable changes at the same time in an investigation, the outcome of the investigation may not be clearly attributable to any one variable.	IAPS 3, 10, 38, 39, 51, 54, 65, 66, 68, 74, 77 IALS 7, 9, 14, 17, 48, 62, 64, 70, 77, 96 IAES 16, 55, 67, 72	IAPS 3 Proc DI; [IB] A16 10 AQ1 AD, Proc DI; [IB] A10-12 38 AQ 1-3 AD [IB] C2 IALS 7 AQ5 DCI & CM, [IB] A4-6 9 Act DCI & GI, [IB] A4-6, A8-10, A15-16 14 [IB] B16 IAES 16 AQ3 RE; [IB] B7-10 55 Proc DI 67 Proc DI	
8.3S.3 Explain how scientific explanations and theories evolve as new information becomes available.	IAES 40-42, 87 IAPS 16 IALS 2, 37, 94	41 AQ3 UC; [IB] D2 42 [IB] D4, 6, 8-10, 16 16 [IB] B7-11 2 AQ2b ET, AQ4 UC, AQ5 ET 37 Act UC, [IB] C14 94 AQ3 UC, [IB] F16, F26	
<b>8.4 Engineering Design: Engineering Design includes the definition of practical problems, identification of design criteria and constraints, and evaluation of proposed solutions.</b>			
8.4D.1 Define a problem that addresses a need, and using relevant science principles investigate possible solutions given specified criteria, constraints, priorities, and trade-offs.	IAES 93 IALS 104, 105, 106 IAPS 71, 72	<b>IALS 93</b> [IB] G5 <b>IAPS 71</b> AQ1 UC 72 AQ1 ET, [IB] D17	
8.4D.2 Design, construct, and test a proposed engineering design solution and collect relevant data. Evaluate a proposed design solution in terms of design and performance criteria, constraints, priorities, and trade-offs.	IAES 93 IALS 104, 105, 106 IAPS 71, 72	<b>IALS 93</b> [IB] G5 <b>IAPS 71</b> AQ1 UC 72 AQ1 ET, [IB] D17	

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Identify possible design improvements.			
8.4D.3 Explain how creating a new technology requires considering societal goals, costs, priorities, and trade-offs.	IAES 93 IALS 104, 105, 106 IAPS 71, 72	<b>IALS 93</b> [IB] G5 <b>IAPS 71</b> AQ1 UC <b>72</b> AQ1 ET, [IB] D17	