Fall Semester

Standard Bundles	7th	Assessment Boundaries observed (grade level)	Assessment Boundaries removed (honors)
Sensory Receptors Instructional Days: **15**	**MS-LS1-8**: Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.	The assessment should provide evidence of students' abilities to provide a basic and conceptual explanation that sensory cells respond to stimuli in the environment and send electrical impulses to the brain where they are processed as either response or memory. Assessment does not include mechanisms for the transmission of this information.	Assessment can include the mechanisms for the transmission of information including the communication between neurons with neurotransmitters. Content may expand to include consideration of chemical composition of neurotransmitters.
Matter and Its Interactions District Resource: Build Models of Molecules Instructional Days: **23**	**MS-PS1-1**: Develop models to describe the atomic composition of simple molecules and extended structures.	Assessment does not include valence electrons and bonding energy, discussing the ionic nature of subunits of complex structures, or a complete depiction of all individual atoms in a complex molecule or extended structure. (BAPS – Students should be able to identify the number of valence electrons based on periodic table family/group.)	Assessment will include students understanding the valence of alkali metals and halogens and how they form ionic bonds. Students will employ the use of electron-dot structures to explain the formation of ionic bonding.
	MS-PS1-2: Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred.	Assessment is limited to analysis of the following properties: color change, formation of a gas, temperature change, density**, melting point, boiling point, solubility**, flammability, and odor. (BAPS – Students will not consider bold properties in depth.)	Assessment will include the **bold** listed items in greater depth. Students will also require pre-algebraic calculations to solve for unknown variables in density.
Energy Instructional Days: **22**	**MS-PS3-6**: Construct, use and present arguments to support the claim that when the kinetic energy of an object changes, energy is transferred to or from the object.	Assessment does not include the calculations of energy. (BAPS – Students may be required to infer relationships from data.)	Assessment will include students using the calculations of kinetic energy ($KE = \frac{1}{2} mv^2$) and relate to gravitational potential energy ($PE = mgh$) and/or heat ($Q = mC_p \Delta T$).

Fall Semester

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Earth's Place in the Universe District Resource: Lunar Phases Activity Instructional Days: **25**	**MS-PS2-4**: Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses of interacting objects.	Assessment does not include Newton's Law of Gravitation or Kepler's Laws. (BAPS – Qualitative concepts may be included.)	Calculations for Newton's Law of Gravitation may be used to verify relationships.
	MS-ESS1-1: Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.	No assessment boundary provided.	Students may be required to use Earth-sun-moon system to predict patterns.
	MS-ESS1-2: Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.	Assessment does not include Kepler's Laws of orbital motion of the apparent retrograde motion of the planets as viewed from Earth.	Students' exploration may extend beyond the role of gravity to consider the formation of the solar system and/or different galaxies and anomalies.
	MS-ESS1-3: Analyze and interpret data to determine scale properties of objects in the solar system.	Assessment does not include recalling facts about properties of the planets and other solar system bodies.	Students may be required to do proportional calculations relating their properties on Earth relative to other solar system bodies. Students may be required to engineer devices to manage these differences. (i.e. space race)
Weather and Climate (***This standard bundle will carry over into the spring***.) Instructional Days: **25**	**MS-ESS2-5**: Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.	Assessment does not include recalling the names of cloud types or weather symbols used on weather maps or the reported diagrams from weather stations.	Assessment may include additional data such as cloud types to make weather predictions.
	MS-ESS2-6: Develop and use a model to describe how unequal heating and rotation of the Earth causes patterns of atmospheric and oceanic circulation that determine regional climates.	Assessment does not include the **dynamics** of the Coriolis effect.	Assessment may include certain aspects of the Coriolis effect. Students may also investigate patterns that result in severe weather conditions.

Spring Semester

Standard Bundles	7th	Assessment Boundaries observed (grade level)	Assessment Boundaries removed (honors)
Heredity District Resource: Modeling Mendel's Laws, Genetics of Taste Lab Kit Instructional Days: **25**	**MS-LS3-1:** Develop and use a model to describe why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism.	Assessment does not include specific changes at the molecular level, mechanisms for protein synthesis, or specific types of mutations.	Assessment will include discussion of specific nucleotide sequencing mutations such as deletion, insertion, and inversion mutations.
	MS-LS3-2: Develop and use a model to describe why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation.	The assessment should measure the students' abilities to explain the general outcomes of sexual versus asexual reproduction in terms of variation seen in the offspring. (BAPS - Teachers should not require students to memorize the steps of mitosis or meiosis.)	Assessment will require students to model the mechanism of meiosis to explain the resulting genetic diversity in sexual reproduction. (i.e. Law of Independent Assortment)
	MS-LS4-3: Analyze displays of pictorial data to compare patterns of similarities in the embryological development across multiple species to identify relationships not evident in the fully formed anatomy.	Assessment of comparisons is limited to gross appearance of anatomical structures in embryological development.	
Biological Unity and Diversity District Resource: Tree Ring Dating Instructional Days: **40**	MS-LS1-4: Use arguments based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.	No OSDE assessment boundary provided. BAPS teachers must include consideration of animal and plant reproduction, but should not include any specialized mechanisms of these processes. Students only need to understand how the different types of seed dispersal and behaviors (courting/protection of young) promote success of the species.	Student assessment may include designing a plant with reproductive mechanisms that will result in optimal success within an assigned environment.
	MS-LS1-5: Construct a scientific explanation based on evidence for how environmental and genetic factors influence the growth of organisms.	Assessment does not include genetic mechanisms, gene regulation, or biochemical processes.	
	MS-LS4-4: Construct an explanation based on evidence that describes how genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment.	The assessment should provide evidence of students' abilities to explain why some traits are suppressed and other traits become more prevalent for those individuals better at finding food, shelter, or avoiding predators.	Student assessment may include relating their understanding of genetic variation and environmental stresses to propose a conservation solution for an endangered animal or plant species.

Standard Bundles	7th	Assessment Boundaries observed (grade level)	Assessment Boundaries removed (honors)
Biological Unity and Diversity (continued) Instructional Days: **40** (continued)	**MS-LS4-5**: Gather and synthesize information about the technologies that have changed the way humans influence the inheritance of desired traits in organisms.	The assessment should provide evidence of students' abilities to understand and communicate how technology affects both individuals and society.	
	MS-LS4-6: Use mathematical representations to support explanations of how natural selection may lead to increases and decreases of specific traits in populations over time.	The assessment should provide evidence of students' abilities to explain trends in data for the number of individuals with specific traits changing over time. Assessment does not include Hardy Weinberg calculations. (BAPS - Students will only be required to explain changes in frequency in a general sense [i.e. increasing/decreasing])	Students will be required to support their explanations with quantitative data including percents, ratios, etc.