

# eMind Product Alignment to NGSS

This chart indicates which standards are supported by eMind Software.

	<p>eMind Fish</p>	<p><b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.  <b>HS.LS1.3</b> Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.</p>
	<p>eMind Frog</p>	<p><b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.  <b>HS.LS1.3</b> Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.</p>
	<p>eMind Fly</p>	<p><b>HS.LS3.3</b> Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.  <b>HS.LS3.2</b> Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.  <b>HS.LS3.3</b> Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.</p>
	<p>eMind Pig</p>	<p><b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.  <b>HS.LS1.3</b> Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.</p>
	<p>eMind Cat</p>	<p><b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.</p>
	<p>eMind Invertebrate</p>	<p><b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.  <b>HS.LS1.3</b> Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.</p>
	<p>Course Builder</p>	<p>See Below. (The 16 lessons listed below are all part of Course Builder.)</p>
	<p>Biomolecules and Metabolic Processes</p>	<p><b>HS.LS1.5</b> Use a model to illustrate how photosynthesis transforms light energy into stored chemical energy.  <b>HS.LS1.6</b> Construct and revise an explanation based on evidence for how carbon, hydrogen, and oxygen from sugar molecules may combine with other elements to form amino acids and/or other large carbon-based molecules.  <b>HS.LS1.7</b> Use a model to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.</p>
	<p>Cells and Organelles</p>	<p><b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.</p>

	Membranes and Transport	<b>HS.LS1.3</b> Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.
	Chromosomes and Mitosis	<b>HS.LS1.4</b> Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms. <b>HS.LS3.1</b> Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.
	Meiosis	<b>HS.LS3.1</b> Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. <b>HS.LS3.2</b> Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors. <b>HS.LS3.3</b> Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.
	Genetics and Patterns of Inheritance	<b>HS.LS3.1</b> Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. <b>HS.LS3.3</b> Apply concepts of statistics and probability to explain the variation and distribution of expressed traits in a population.
	DNA Basics	<b>HS.LS1.1</b> Construct an explanation based on evidence for how the structure of DNA determines the structure of proteins which carry out the essential functions of life through systems of specialized cells. <b>HS.LS3.1</b> Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring. <b>HS.LS3.2</b> Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.
	DNA Technologies	<b>HS.LS3.2</b> Make and defend a claim based on evidence that inheritable genetic variations may result from: (1) new genetic combinations through meiosis, (2) viable errors occurring during replication, and/or (3) mutations caused by environmental factors.
	Evolution	<b>HS.LS2.8</b> Evaluate the evidence for the role of group behavior on individual and species' chances to survive and reproduce. <b>HS.LS4.1</b> Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence. <b>HS.LS4.2</b> Construct an explanation based on evidence that the process of evolution primarily results from four factors: (1) the potential for a species to increase in number, (2) the heritable genetic variation of individuals in a species due to mutation and sexual reproduction, (3) competition for limited resources, and (4) the proliferation of those organisms that are better able to survive and reproduce in the environment. <b>HS.LS4.3</b> Apply concepts of statistics and probability to support explanations that organisms with an advantageous heritable trait tend to increase in proportion to organisms lacking this trait. <b>HS.LS4.4</b> Construct an explanation based on evidence for how natural selection leads to adaptation of populations. <b>HS.LS4.5</b> Evaluate the evidence supporting claims that changes in environmental conditions may result in: (1) increases in the number of individuals of some species, (2) the emergence of new species over time, and (3) the extinction of other species.

	Classification	<b>HS.LS4.1</b> Communicate scientific information that common ancestry and biological evolution are supported by multiple lines of empirical evidence.
	Bacteria and Viruses	<b>HS.LS2.3</b> Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions.
	Protists and Fungi	<b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
	Plants	<b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. <b>HS.LS1.4</b> Use a model to illustrate the role of cellular division (mitosis) and differentiation in producing and maintaining complex organisms.
	Animals – The Invertebrates	<b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
	Animals – The Vertebrates	<b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms.
	Ecology	<b>HS.LS2.3</b> Construct and revise an explanation based on evidence for the cycling of matter and flow of energy in aerobic and anaerobic conditions. <b>HS.LS2.4</b> Use mathematical representations to support claims for the cycling of matter and flow of energy among organisms in an ecosystem. <b>HS.LS2.5</b> Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere, and geosphere. <b>HS.LS2.6</b> Evaluate the claims, evidence, and reasoning that the complex interactions in ecosystems maintain relatively consistent numbers and types of organisms in stable conditions, but changing conditions may result in a new ecosystem.
	eMind Animalcules	<b>HS.LS1.2</b> Develop and use a model to illustrate the hierarchical organization of interacting systems that provide specific functions within multicellular organisms. <b>HS.LS1.3</b> Plan and conduct an investigation to provide evidence that feedback mechanisms maintain homeostasis.