* Energy, Earth Systems and Life Sciences are more developed and rigorous in the NGSS standards than the previous state standards.
* The study of waves is new to 4th grade in NGSS.
* Study of matter has moved to 2nd and 5th grade.
* Almost all standards in the 3-5 grade band remained intact, the greatest changes are the instructional approaches moving from content based to more performance based. In NGSS, students are asked to understand, use and apply scientific processes to a greater degree than in current state standards.
* Content is more integrated with scientific inquiry standards, increased rigor and real-world connections.

| NGSS PE | ORSS | Content | Practice | CCC | Notes on Alignment |
| --- | --- | --- | --- | --- | --- |
| 4-PS3 Energy | | | | | |
| 4-PS3-1.  Use evidence to construct an explanation relating the speed of an object to the energy of that object. | 4.1P.1 | S |  | N | CCC- energy and matter |
| 4-PS3-2.  Make observations to provide evidence that energy can be transferred from place to place by sound, light, heat, and electric currents. | 4.1P.1  4.3S.1 | S | P | N | CCC- energy and matter |
| 4-PS3-3.  Ask questions and predict outcomes about the changes in energy that occur when objects collide. | 3.2P.1  4.3S.1 | D/P | P | N | CCC- energy and matter |
| 4-PS3-4.  Apply scientific ideas to design, test, and refine a device that converts energy from one form to another. | 4.4D.2 |  | S | N | CCC- energy and matter |
| 4-PS4 Waves and Their Applications in Technologies for Information Transfer | | | | | |
| 4-PS4-1.  Develop a model of waves to describe patterns in terms of amplitude and wavelength and that waves can cause objects to move. | 6.2P.1 | D/S |  | N | CCC- patterns |
| 4-PS4-2.  Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen. | 4.1P.1 | S |  | N | CCC- patterns  Refer to ps4.b |
| 4-PS4-3.  Generate and compare multiple solutions that use patterns to transfer information. |  | N |  | N | CCC- patterns |
| 4-LS1 From Molecules to Organisms: Structures and Processes | | | | | |
| 4-LS1-1.  Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction. | 5.1L.1 | D/S |  | N | CCC- systems and system models |
| 4-LS1-2.  Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways. | 4.2L.1  5.2L.1 | P  P |  | N | CCC- systems and system models |
| 4-ESS1 Earth's Place in the Universe | | | | | |
| 4-ESS1-1.  Identify evidence from patterns in rock formations and fossils in rock layers for changes in a landscape over time to support an explanation for changes in a landscape over time. | 4.1L.1  4.2E.1 | P  S |  | N  N | CCC- patterns |
| 4-ESS2 Earth's Systems | | | | | |
| 4-ESS2-1.  Make observations and/or measurements to provide evidence of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. | 4.2E.1 | S |  | N | CCC- patterns and cause and effect |
| 4-ESS2-2.  Analyze and interpret data from maps to describe patterns of Earth’s features. | 5.3S.2 |  | D/S | N | CCC- patterns and cause and effect |
| 4-ESS3 Earth and Human Activity | | | | | |
| 4-ESS3-1.  Obtain and combine information to describe that energy and fuels are derived from natural resources and their uses affect the environment. | 4.1E.1 | S |  | N | CCC- cause and effect |
| 4-ESS3-2.  Generate and compare multiple solutions to reduce the impacts of natural Earth processes on humans. | 4.4D.2  4.3S.3 |  | S  P | N  N | CCC- cause and effect |
| 3-5-ETS1 Engineering Design | | | | | |
| 3-5-ETS1-1.  Define a simple design problem reflecting a need or a want that includes specified criteria for success and constraints on materials, time, or cost. | 4.4D.1 |  | S | N | CCC- influence of engineering, technology, and science on society and the natural world |
| 3-5-ETS1-2.  Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. | 5.4D.1 |  | D/P | N | CCC- influence of engineering, technology, and science on society and the natural world |
| 3-5-ETS1-3.  Plan and carry out fair tests in which variables are controlled and failure points are considered to identify aspects of a model or prototype that can be improved. | 4.4D.2  4.4D.3 |  | S  P | N | CCC- influence of engineering, technology, and science on society and the natural world |
|  | | | | | |
| The following ORSS are not aligned to any NGSS: | | | | | |
| 4.3S.2 Summarize the results from a scientific investigation and use the results to respond to the question being tested. | | | | | |