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| Earth Science 7 | | **Standards-Based Education Priority Standards** |
| **7th Grade** | | |
| *Earth’s Place in the Universe* | | |
| 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 mood, and seasons. | |
| MS-ESS1-2 | Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system. | |
| MS-ESS1-3 | Analyze and interpret data to determine scale properties of objects in the solar system. | |
| MS-ESS1-4 | Construct a scientific explanation based on evidence from rock strata for how the geologic timescale is used to organize Earth’s 4.6-billion-year-old history. | |
| *Earth’s Systems* | | |
| MS-ESS2-1 | Develop a model to describe the cycling of Earth’s materials and the flow of energy that drives this process. | |
| MS-ESS2-2 | Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales. | |
| MS-ESS2-3 | Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions. | |
| MS-ESS2-4 | Develop a model to describe the cycling of water through Earth’s systems driven by energy from the sun and the force of gravity. | |
| MS-ESS2-5 | Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions. | |
| MS-ESS2-6 | Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates. | |
| *Earth and Human Activity* | | |
| MS-ESS3-1 | Construct a scientific explanation based on evidence for how the uneven distributions of Earth’s mineral, energy, and groundwater resources are the results of past and current geoscience processes. | |
| MS-ESS3-2 | Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects. | |
| MS-ESS3-3 | Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment. | |
| MS-ESS3-4 | Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth’s systems. | |
| MS-ESS3-5 | Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century. | |
| *Engineering* | | |
| MS-ETS1-1 | Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions. | |
| MS-ETS1-2 | Evaluate competing design solutions using a systematic process to determine how well they meet the criteria and constraints of the problem. | |
| MS-ETS1-3 | Analyze data from tests to determine similarities and differences among several design solutions to identify the best characteristics of each that can be combined into a new solution to better meet the criteria for success. | |
| MS-ETS1-4 | Develop a model to generate data for iterative testing and modification of a proposed object, tool, or process such that an optimal design can be achieved. | |
| *Literacy in Science* | | |
| 6-8.RST.1 | Cite specific textual evidence to support analysis of science and technical texts. | |
| 6-8.RST.3 | Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks. | |
| 6-8.RST.4 | Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6- 8 texts and topics. | |
| 6-8.RST.8 | Distinguish among facts, reasoned judgment based on research findings, and speculation in a text. | |
| 6-8.WHST.1 | Write arguments focused on discipline-specific content. | |
| 6-8.WHST.5 | With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed. | |
| 6-8.WHST.7 | Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration. | |