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| **G**  **R**  **A**  **D**  **E**  **8** | CROSS CUTTING THEMES | Earth and Space Sciences | | | Life Sciences | | Physical Sciences | | | Engineering, Technology, and Applications of Science |
| Stability and Change  Scale, Proportion, and Quantity | Space Systems | History of Earth | Human Impacts | Natural Selection and Adaptations | Growth Development, and Reproduction of Organisms | Forces and Interactions | Waves and Electromagnetic Radiation | Energy |
| MS-ESS1-1 | MS-ESS1-4 | MS-ESS3-4 | MS-LS4-1 | MS-LS3-1 | MS-PS2-1 | MS-PS4-1 | MS-PS3-1 | MS-ETS1-1 |
| MS-ESS1-2 |  |  | MS-LS4-2 | MS-LS4-5 | MS-PS2-2 | MS-PS4-2 | MS-PS3-2 | MS-ETS1-2 |
| MS-ESS1-3 |  |  | MS-LS4-3 |  | MS-PS2-3 | MS-PS4-3 |  | MS-ETS1-3 |
|  |  |  | MS-LS4-4 |  | MS-PS2-4 |  |  | MS-ETS1-4 |
|  |  |  | MS-LS4-6 |  | MS-PS2-5 |  |  |  |

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| **G**  **R**  **A**  **D**  **E**  **7** | CROSS CUTTING THEMES | Earth and Space Sciences | | | Life Sciences | | Physical Sciences | | | Engineering, Technology, and Applications of Science |
| Energy and Matter: Flows, Cycles, and Conservation  Cause and Effect | Earth’s Systems | History of Earth | Human Impacts | Interdependent Relationships in Ecosystems | Matter and Energy in Organisms and Ecosystems | Chemical Reactions | Structure and Property of Matter |  |
| MS-ESS2-1 | MS-ESS2-2 | MS-ESS3-2 | MS-LS2-2 | MS-LS1-6 | MS-PS1-2 | MS-PS1-1 |  | MS-ETS1-1 |
| MS-ESS3-1 | MS-ESS2-3 |  | MS-LS2-5 | MS-LS1-7 | MS-PS1--5 | MS-PS1-3 |  | MS-ETS1-2 |
|  |  |  |  | MS-LS2-1 | MS-PS1--6 | MS-PS1-4 |  | MS-ETS1-3 |
|  |  |  |  | MS-LS2-3 |  |  |  | MS-ETS1-4 |
|  |  |  |  | MS-LS2-4 |  |  |  |  |

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| **G**  **R**  **A**  **D**  **E**  **6** | CROSS CUTTING THEMES | Earth and Space Sciences | | | Life Sciences | | Physical Sciences | | | Engineering, Technology, and Applications of Science |
| Systems and System Models  Patterns  Structure and Function | Earth’s Systems | Weather and Climate | Human Impacts | Structure, Function and Information Processing | Growth Development, and Reproduction of Organisms |  |  | Energy |
| MS-ESS2-4 | MS-ESS2-5 | MS-ESS3-3 | MS-LS1-1 | MS-LS1-4 |  |  | MS-PS3-3 | MS-ETS1-1 |
|  | MS-ESS2-6 |  | MS-LS1-2 | MS-LS1-5 |  |  | MS-PS3-4 | MS-ETS1-2 |
|  | MS-ESS3-5 |  | MS-LS1-3 | MS-LS3-2 |  |  | MS-PS3-5 | MS-ETS1-3 |
|  |  |  | MS-LS1-8 |  |  |  |  | MS-ETS1-4 |