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| **Strand: (MS-PS2-4) Motion and Stability: Forces and Interactions** | | | |
| **Topic: Construct and present arguments using evidence to support the claim that gravitational interactions are attractive and depend on the masses and distance between interacting objects** | | | |
| **Grade: 6** | | | |
| **Score 4.0** | **In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught.** | | **Sample Activities** |
| * Construct/explain a model showing a stable and non-stable interaction of gravity and their affects |
|  | **3.5** | In addition to score 3.0 performance, in-depth inferences and applications with partial success. |  |
| **Score 3.0** | **The student:**   * Can compare the amount of gravitational forces acting between objects * Can explain how every object exerts a gravitational force on every other object   **The student exhibits no major errors or omissions.** | | * Construct and design your own roller coaster * Solve equations showing their weight on other planets and moons * Identify gravity as a force that keeps us on Earth |
|  | **2.5** | No major errors or omissions regarding 2.0 content and partial knowledge of the 3.0 content. |  |
| **Score 2.0** | **There are no major errors or omissions regarding the simpler details and processes as the student:**   * recognizes or recalls specific terminology, such as:   + gravity, mass, orbit, Newton’s Law of Universal Gravitation, force, motion, gravitational force * performs basic processes, such as:   + recognizes an object’s weight is a measure of the gravitational force of a planet/moon acting on that object   + recognizes or recalls examples of objects exerting a gravitational force on other objects   **However, the student exhibits major errors or omissions regarding the more complex ideas and processes.** | | * Verbally identify at least one planet that will affect Earth’s orbit * Identify or produce definitions to given terms |
|  | **1.5** | Partial knowledge of the 2.0 content, but major errors or omissions regarding the 3.0 content. |  |
| **Score 1.0** | **With help, a partial understanding of some of the simpler details and processes and some of the more complex ideas and processes.** | |
|  | **0.5** | With help, a partial understanding of the 2.0 content, but not the 3.0 content. |
| **Score 0.0** | **Even with help, no understanding or skill demonstrated.** | |