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| **Strand: Science – Force and Motion** | | |
| **Topic: Newton’s Second Law (FM2)** | | |
| **Grade: 7th Grade** | | |
| **Score 4.0** | **In addition to Score 3.0, in-depth inferences and applications that go beyond what was taught.**   1. Can rearrange the formula F=MA to find A and M. | |
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|  | **3.5** | In addition to score 3.0 performance, in-depth inferences and applications with partial success. |
| **Score 3.0** | **The student understands that an object with a larger mass will require a larger force to accelerate.**   1. Can explain the way a net force can act on an object 2. Can use the formula F=MA to find the force needed to accelerate a mass. 3. Can identify the magnitude of a force required move a mass.   **The student exhibits no major errors or omissions.** | |
|  | **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:   1. net force   2. acceleration   3. mass   4. Understands the unit for *mass is Kg (kilogram)*   5. Understands the unit for *acceleration is m/s/s or m/s2 (m=meter, s=seconds)*   6. Understands the unit for *force is a Newton* * Recognizes an object moves because of a force.   **However, the student exhibits major errors or omissions regarding the more complex ideas and processes.** | |
|  | **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.** | |