**Unit 2 – Forces: Test Review**  Science Class Website: [**www.nsdscience.weebly.com**](http://www.nsdscience.weebly.com)

1. Newton’s First Law (Inertia)
   1. Define Inertia.
   2. Define Mass.
      1. How are mass and inertia related?
   3. Visit the following URL: [**https://tinyurl.com/cp68hxp**](https://tinyurl.com/cp68hxp)
      1. Play the video.
      2. After the video is over take the quiz by clicking the “test yourself” button.
      3. Record your score here:
2. Newton’s Second Law (F=MA), (A=F/M), (M=F/A)
   1. Define Force.
   2. Define Acceleration.
      1. How are force and acceleration related?
      2. How are mass and acceleration related?
   3. Visit the following website: [**https://tinyurl.com/p3mt5as**](https://tinyurl.com/p3mt5as)
      1. Play the video.
      2. After the video is over take the quiz by clicking the “test yourself” button.
      3. Record your score here:
   4. Use this website to practice calculating with Newton’s 2nd Law: **http://www.softschools.com/quizzes/science/force\_and\_acceleration/quiz1590.html**
      1. Click on “take quiz: and Record your score here:
3. Newton’s Third Law of Motion (Force-Pairs)
   1. What does the 3rd law of motion state?
   2. What two facts are always true about the force-pairs described in the 3rd law?
   3. The forces in Newton’s 3rd law of motion do NOT cancel out. Why?
4. Newton’s Law of Universal Gravitation (Fg = (G × M1 × M2) ÷ d2)
   1. Describe the Law of Universal Gravitation (in sentence form).
      1. Be sure to include the relationship between mass and the magnitude (strength) of gravity.
      2. Be sure to include the relationship between distance and the magnitude (strength) of gravity.
   2. What to factors (things) matter in determining the magnitude (strength) of gravity?
   3. Visit the following website: **https://tinyurl.com/ma8rw9x**
      1. In this simulation, you can adjust the mass of the objects and the distance of the objects.
      2. Change these two parameters several times and look at the value of the gravitational force.
         1. What makes the gravitational force stronger? (two things)
         2. What makes the gravitational force weaker? (two things)
5. Balanced vs. Unbalanced Forces
   1. Define the term Net Force.
   2. Visit the following website: **https://tinyurl.com/y7q5me5c**
   3. Use the information found there to create a Venn diagram showing the similarities and differences between balanced vs. unbalanced forces.
6. Mass vs. Weight
   1. Visit the following website: [**https://tinyurl.com/ybvwg6fw**](https://tinyurl.com/ybvwg6fw)
   2. Create a two-column table. In the left column list all the characteristics of Mass. In the right column list all the characteristics of Weight.

Bonus Material

* Visit the following website for a Vocabulary Review: [**https://quizlet.com/\_5c5yoh**](https://quizlet.com/_5c5yoh)
* Visit the following website for a Gravity Game: **http://sciencenetlinks.com/interactives/gravity.html**
* Visit the following website for a Gravity & Inertia tutorial: **https://tinyurl.com/8x59pys**