Directions:

1. Go to the DM 8th grade website: [http://dms8thgrade.weebly.com/science.html](READING%20NOTES.docx)
2. Click on the science tab
3. Click on the Newton’s Law Web quest link
4. Go through each slide on the power point (web quest) and answer the questions in your web quest guide.
5. DUE AT THE END OF CLASS: hand in your complete web quest guide at the end of the period.

Section 1: Sir Isaac Newton

1. Describe 2 personality traits of Sir Isaac Newton

Section 2: Newton’s 1st law or the law of inertia

1. Write Newton’s first law:
2. Complete the graphic organizer explaining Newton’s 1st law:

Forces are **balanced**

1. Write a scenario that explain Newton’s first law:
2. Write a scenario explaining what would happen if the law were not

Section 3: Mass and Inertia

1. What is inertia?
2. Explain what happens to a moving object if no friction is present?
3. What is the relationship between mass and inertia?
4. The more \_\_\_\_\_\_\_\_that an object has the more\_\_\_\_\_\_ that it has.
5. How does this video describe inertia and mass?
6. If a car makes a sudden stop, what happens to a passenger riding in the back seat who is not wearing a seat belt?

Section 4: Balanced and Unbalanced Forces

1. Using the table below, make an outline and draw a diagram about balanced and unbalanced forces.

|  |  |
| --- | --- |
| Balanced | Unbalanced |
|  |  |

1. In complete sentences explain the difference between balanced and unbalanced forces.
2. If two individual forces are of same magnitude and opposite direction, then the forces are said to be\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Only a (an) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ force can change the motion of an object.

Section 6: Newton’s Second law of Motion

1. State Newton’s second law:
2. Complete the following graphic organzier

If forces are **unbalanced**

There is acceleration

***This means:*** As the force acting upon an object is increased, the acceleration of the object is increased. As the mass of an object is increased, the acceleration of the object is decreased.

1. Fill in the following using arrows. An arrow pointing up means INCREASE and an arrow pointing down means decrease.

A (an) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_in force= A (an) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in acceleration

A (an) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_in mass = a (an) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_in acceleration.

1. List the three main variables involved in Newton’s 2nd Law
2. The three equations involved in Newton’s second law are
   1. Force = Mass x Acceleration or F= m x a.
   2. Mass= Force/acceleration
   3. Acceleration = Force/ mass
3. Solve the following problems: (for more examples refer to your book, pages 51, 52 and 53).
4. If a 5 kg ball is accelerating 1.2m/s2, what is the force on it?
5. A man walking through the airport is pulling his luggage with a force of 4N. If the luggage has a mass of 8 kg, what is the luggage acceleration?
6. NASA is testing model rockets. They are trying to find the mass of the best model on each trial. If this model rocket is accelerating at a rate of 10m/s2 with a force of 2 N (nektons), what is the mass of the model rocket?

Section 7: Newton’s 3rd Law

1. Define Newton’s 3rd Law:
2. Action and reaction forces are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Explain how balanced forces are different from Newton’s 3rd law?

Concept Map of Newton’s Laws