Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block \_\_\_\_\_\_ Binder Page Number \_\_\_\_\_\_

**Newton’s Laws Lab – Alternative Assignment**

<http://www.sciencechannel.com/newtons-laws-of-motion-interactive/>

Go to Mr. Reitsma’s website, then Daily Activities, then February 27 and 28 or March 1 and 2, then Daily Links,

Click on the link for Newton’s Laws Lab – Alternative Assignment (or enter the link listed above)

**Read / listen to the homepage about Sir Isaac Newton**

**Click on 1st Law – Law of Inertia**

1. Complete the definition – Every object \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Test it out – **click on the hand** to apply an external force to the apple.

1. Why does the apple move? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Click on the apple** to bring it to a sudden stop.

1. Why does the worm keep flying? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Click on the worm**.

1. Why does the worm stop? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**GO TO Next Law**

**2nd Law**

See the worm pulling the apple.

**Click the hand** to continue.

1. The 2nd law is often stated as F = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. The Force (F) acting of the objects is equal to the objects mass (m) multiplies by its acceleration (a)

F = m x a \*\*Force is in “**Newtons**”\*\* (N)

10 = \_\_\_ x \_\_\_\_

**Click the hand** to continue.

**Click the worm or apple** to change the variables.

1. Stronger worm exerts more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. Larger apple has more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. A larger apple limits it’s A\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**3rd Law**

1. Copy the law: For every \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**Click the worm** to start the launch.

1. When the rocket ignites, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is forced out of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the ship. This creates an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ - a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ force.

**Click the rocket** to watch the liftoff.

1. The downward force creates an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reaction, propelling the rocket \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**On the top line, click on “Newton’s Bio”**

1. When was Newton born? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. At Cambridge, he became interested in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, optics, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. He invented a reflecting \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in 1668.
4. He died in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Newton’s Apple**

1. T / F Newton was inspired to theorize about gravity when an apple fell from a tree onto his head.

**On the top line click on “Quiz” – Take the Quiz until you get all 10 right – Good Luck!**

**(Turn over for Quiz)**

**Quiz**

**Question 1: The worm below is pulling an apple. If we want the apple’s acceleration to increase, what variables**

**could we change?**

1. Force and Mass
2. Mass and Weight
3. Power and Mass
4. All of the above

**Question 2: This apple is at rest. Which law states that the apple is going to remain that way until a force is**

**applied?**

1. First Law
2. Second Law
3. Third Law
4. None of the above

**Question 3: Which Law is often represented by the below equation: F = ma**

1. First Law
2. Second Law
3. Third Law
4. None of the above

**Question 4: In what field was Isaac Newton not involved?**

1. Physics
2. Biology
3. Astronomy
4. Mathematics

**Question 5: The rocket below has a mass of 2 kilograms (it’s all that metal weighing it down). How many Newtons**

**(units of force) would it take to make the apple accelerate to 10 m/s/s? (F = m x a)**

1. 5 Newtons
2. 10 Newtons
3. 20 Newtons
4. 40 Newtons

**Question 6: the worm is tired of pulling the apple and now wants to push it. If he pushes it, what is he exerting on**

**the apple?**

1. Mass
2. Acceleration
3. Force
4. All of the above

**Question 7: Newton’s inspiration for his 3 laws of motion came from when he was hit on the head by an apple.**

**True / False.**

1. True
2. False

**Question 8: The apple below is floating in a pond. The hitchhiking worm jumps from the apple as shown.**

**According to Newton’s Third Law, what is likely to happen to the apple?**

1. It stays still
2. It sinks
3. It moves away from the worm
4. It moves towards the worm

**Question 9: What is a “Newton” a unit of?**

1. Mass
2. Heat
3. Acceleration
4. Force

**Question 10: What color was the worm’s scarf in the example for Newton’s First Law?**

1. Blue
2. Yellow
3. Cream
4. Chartreuse

**Once you have all 10 correct, turn in this activity. THANK YOU!!**