Name:

Date: Block:

**Newton’s Laws and Inertia**

Use Newton’s Laws website to answer the following questions.

http://www.physicsclassroom.com/class/newtlaws/Lesson-1/Newton-s-First-Law

Newton’s First Law Questions:

1. Do Newton’s Laws of Motion *describe* motion or *explain* motion? \_\_\_\_\_\_\_\_\_\_\_\_\_\_ How many Laws are there? \_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Newton’s First Law is sometimes referred to as the Law of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
3. Write Newton’s First Law:
4. The behavior of all objects can be described by saying that objects tend to “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” (unless acted upon by an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)
5. If an object is moving 25 km/s north and no unbalanced forces act on it, what will it’s motion be in 1 hour? How do you know?
6. What are the three conditions when a full bowl of water will spill?
7. Describe in one sentence why the water would spill during one of these conditions. Use a diagram with arrows in your explanation.
8. Define “inertia”.
9. Explain how seatbelts work using Newton’s First Law of Motion. Click on the animation to check your answer. When done, click “back” to continue.
10. Choose one of the inertia applications listed and explain how it works using Newton’s First Law of Motion and the term “inertia”.

Click on the “Inertia and Mass” link at the top of the page to answer the following questions.

1. Before Newton, what did people believe that objects had the tendency to do?
2. Who developed the idea of inertia?
3. What did he say eventually stopped moving objects?
4. When you push a book across a table, does a *force* bring it to rest or does a *lack of force* cause it to stop?
5. What quantity determines the amount of inertia in an object?
6. Explain, using *inertia*, why hitting someone with a hammer if they had several large books stacked on their head would not hurt them.
7. Watch the video (1 minute) and summarize what you saw.
8. Answer the 7 questions.