

Investigating Newton's Laws at the Physics Classroom

Directions: Go to the website:

<http://www.physicsclassroom.com/Class/newtlaws/>

Click on **Newton's Laws** and use these pages to answer the following questions.



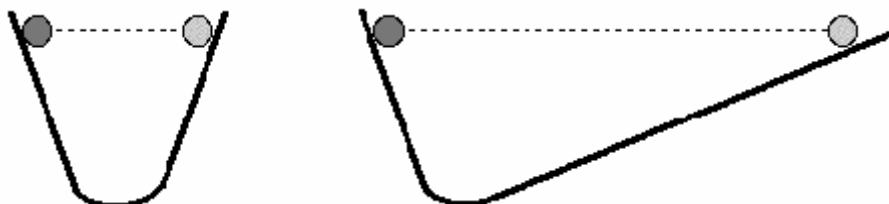
A. Click on the link *Newton's First Law* and read through the information. Read the examples next to the picture of the hammer and describe why each of these occur.

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____

B. Inertia and Mass and read through the information and answer the following questions.

- 1) What is inertia? _____
- 2) What was the thought on the motion of objects prior to Newton's ideas of motion? _____

3) Galileo contributed much to the understanding of the motion of objects. He hypothesized based on the experiment show below. Describe this experiment and how it describes the motion of objects.



4) Why is the girl in this picture not hurt by the action of the hammer?



Scroll down to the practice problems listed under the sections check Your Understanding. Read each of the questions and place your answers including explanations in the spaces listed below.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____

C. Click on the link *State of Motion* and read through the material. Please your answers including explanations in the spaces listed below.

1. _____
2. _____

D. Click on the link *Balanced and Unbalanced Forces* and read through the material and answer the questions that follow.

1. How are the terms balanced forces and equilibrium related? _____

Scroll down to the section Check You Understanding and provide your answers including explanations in the spaces below.

1. _____
2. _____
3. _____

E. Click on the link *The Meaning of Force* and read through the material and answer the following questions.

1) What is a force? _____

2) There are two main categories of forces. Describe the categories and provide examples of each.

Contact forces are _____

Examples: _____

Action-at-a-distance forces are _____

Examples: _____

3) What do we draw to represent the forces acting on a body? _____

4) Draw one of these for a book accelerating to the right affected by friction.

F) Click on the link *Types of Forces* and read through the material. State the symbol and briefly describe each of the forces listed below

1) Applied Force _____

2) Gravitational Force _____

3) Normal Force _____

4) Frictional Force _____

5) Air Resistance _____

6) Tensional Force _____

7) What is the difference between mass and weight? _____

8) Calculate you weight in Newton's using the conversion (1 lb. = 0.454 kg)

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