

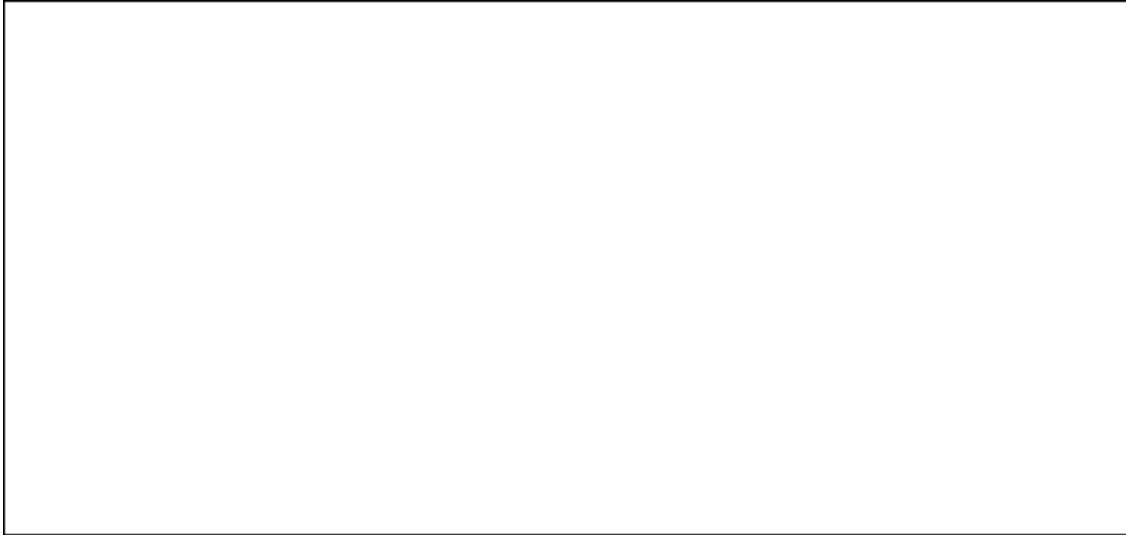
- A. What kind of force caused the washers to move? **Circle one:** balanced or unbalanced

Part Three: Seat Belts Save Lives

Materials •matchbox car •clay •ramp •tape •a notebook •2 textbooks

Procedure

1. Make a ramp by elevating one end of the ramp onto two books.
2. Place a notebook about 2 car lengths from the end of the ramp. This will be a "wall" for the car to hit
3. Use the clay to make a **snowman** type figure.
4. Flatten the bottom and gently set it on the hood of the car (**do not press** it onto the car).
5. Position the car at the top of the ramp, release and allow it to roll down to collide with the notebook.
 - A. Draw a diagram of the experiment for **A**. Include: car with person going down ramp, a notebook..
Include an arrow showing direction of motion of the car as it goes down the ramp. —————→



6. **Recreate the experiment to answer the following questions**

7. You should repeat your experiment several times to make sure the first attempt is not a fluke.

- B. What happens to your person when the car hits the thin book? _____
- C. What happens to your person as the **height** of the ramp is increased? _____
Why? _____
- D. Explain **what** happens to your person if he wears a "**seatbelt**" (tape)? _____
Why? _____
- E. Remove seatbelt. What happens to your person if you move **the notebook further away**?
_____ Why? _____

Explain the following after your car (with no tape) has hit the "wall"

- 1) which object kept moving forward (stayed in motion)? _____
- 2) which object is stopped by the unbalanced force of the notebook? _____
- 3) This activity relates to Newton's First Law because the person was in m _____ as they rolled down the ramp and _____ in _____ when the car hit the "wall".