

The Transfer Of Energy



Investigation Data Sheet

Law Of Conservation Of Mass And Energy

Energy cannot be created or destroyed — it just changes forms. In other words, whenever the amount of energy in one place decreases, the energy in another place increases by an equal amount.

Objective

Using balls of different densities, test whether an increase in energy in one object will show up as a decrease in energy in another object.

Materials

- a golf ball
- a ping-pong ball
- a hard floor
- a piece of long white tape marked in meters and stuck to the wall
- two marking pens in different colors — one to record the results of the golf ball and another to record the results of the ping-pong ball

Safety Notice: All applicable laboratory safety rules must be followed. Students should not perform any experimental activity without the teacher's supervision and express permission. Students must follow safety guidelines and wear appropriate protective gear.

Part One

1. Prepare the wall with the white tape and get ready to drop the balls from the same height. Before dropping them, predict how high you think each ball will bounce.

2. First, drop the golf ball and record the height of its bounce on the tape. Then, drop the ping-pong ball and record how high it bounces on the tape. Were your predictions correct? Why or why not?

3. Next, try transferring some of the energy of the high-flying to the low-flying ball. Place the ping pong ball directly over the golf ball so that it will bounce straight up — not at an angle. Getting the release just right will take some practice. Once you are comfortable with this process, release the balls from the same height as before. What happens?

Conclusions

- Explain what happened to the energy of the golf ball.
