

Action and reaction

pp360-361

Newton's Third Law

- ▶ Forces ***always*** come in pairs.
- ▶ Force pairs ***never*** act on the same object.
- ▶ Equal forces don't have equal effects.
 - Why?

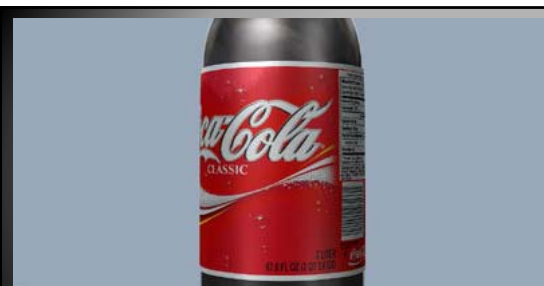
Newton's third law: for every action there is an equal and opposite reaction



Action: The bat hits the ball >>
REACTION: The bat slows down.



Action: hot rocket gas exits the rocket engine >>
REACTION: The rocket goes forward



Action: the soda presses against the bottle >>
REACTION: The bottle presses against the soda.



Action: the propeller pushes the air back >>
REACTION: The plane goes forward



Action: Jet engine pushes exhaust gasses back >>
REACTION: The plane goes forward



Action: the neck of the balloon is released >>
allowing air to escape

Reaction: The balloon goes forward



Action: the water presses against the flask >>

REACTION: The flask presses against the water



Action: the bowling ball knocks the pin back >>

REACTION: The pin slows down the bowling ball



Action: the smurfs pull on the rope >>

REACTION: The rope pulls on the smurfs.

