

MOTION AND FORCES

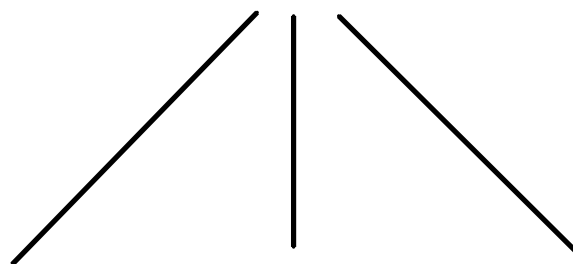
STOPPED



SPEED = 0

$F_{net} = 0$

MOVING



**MAINTAINING
SPEED**

$F_{net} = 0$

**GAINING
SPEED**

**F_{net}
with the
motion**

**LOSING
SPEED**

**F_{net}
against
the
motion**

1st Law of Motion

If the net Force is zero...

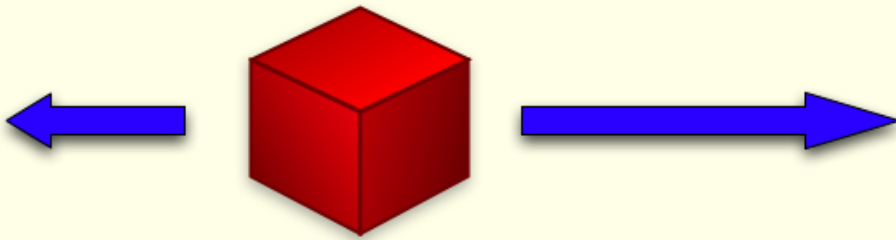
- and the object is moving, it will maintain speed & direction
- and the object is not moving, it will stay at rest

2nd Law of Motion

If the net Force is not zero...

- and the object is moving with the net Force, it will gain speed
- and the object is moving against the net Force, it will slow down
- and the object is not moving, it will start to gain speed with that net Force

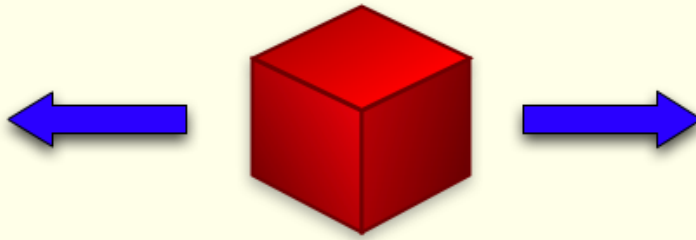
What's it doing?



If the box was moving to the right - it's speeding up

If the box was moving to the left - it's slowing down

What's it doing?



If the box was stopped, it'll stay stopped

If the box was moving to the right or left,
it will maintain its motion