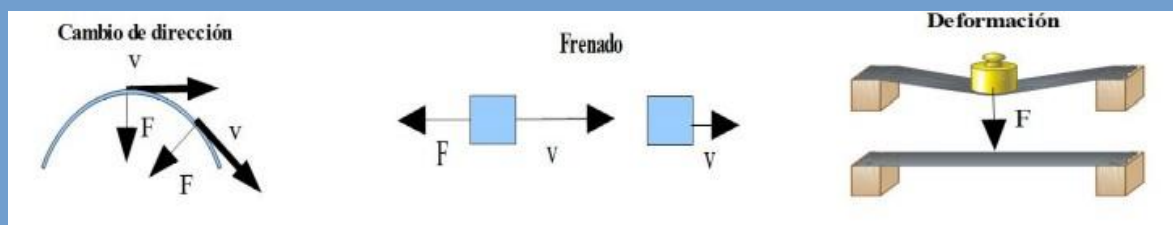


UNIT 6: MOTION AND FORCES

A force is any interaction (a push or a pull) that can change:

- Direction of movement.
- Speed.
- Shape (for example, an elastic band gets longer if you pull it)



1) Match the words to their definitions

- | | |
|-------------|---|
| 1. FORCE | A. To move something away from you |
| 2. MOTION | B. The action of moving or changing position. |
| 3. PULL | C. An object pushing on another object, slowing it. |
| 4. PUSH | D. To move something towards yourself |
| 5. FRICTION | E. A push or a pull |

2) Match the force to its definition:

- | | |
|-------------------|---|
| 1. GRAVITY | A. is a force that makes movement more difficult |
| 2. FRICTION | B. is a force that attracts iron objects |
| 3. ELASTIC FORCE | C. is a force that attract or repel charged bodies |
| 4. ELECTRIC FORCE | D. is a force exerted on a body by gravity |
| 5. MAGNETIC FORCE | E. is a force that attracts one mass to another |
| 6. WEIGHT | F. is a force that increases the length of a spring when pulled |

3) Indicate if the following sentences are **true** or **false**.

1. Weight is the amount of matter in a body.
2. The unit of mass in the SI is the newton.
3. The weight of a body does not depend on the place where it is measured.
4. The mass of a body is always the same, independently where it is measured.



4) Use your book and join the law with its equation:

- | | |
|---------------------------------|--|
| 1. Hooke's Law | A. $F_N = G \cdot \frac{m_1 \cdot m_2}{d^2}$ |
| 2. Second Newton's Law | B. $F = k \cdot x$ |
| 3. Law of Universal Gravitation | C. $F = k \cdot \frac{q_1 \cdot q_2}{r^2}$ |
| 4. Coulomb's Law | D. $F = m \cdot a$ |

5) Choose the correct answer:

- You have a spring with an elastic constant of 1 N/cm. What force do you need to apply so that the spring is lengthened by 10 cm?
 - 1000 N
 - 10 N
 - 0,1 N
- What type of force keeps the Moon orbiting the Earth?
 - Electric force
 - Gravitational force
 - Magnetic force
- Which of these characteristics does not correspond to gravitational force?
 - It is a force at a distance.
 - It is directly proportional to the sum of the masses.
 - It is inversely proportional to the square of the distance between the masses.
- Which of these characteristics does not correspond to electrical force?
 - It is a force through contact.
 - It is attractive and repulsive force.
 - It is inversely proportional to the square of the distance between the charges.
- If a magnet is cut in two, ...
 - The two poles appear in each of the halves.
 - The two poles disappear.
 - One half is the north pole and the other one is the south pole.