

شكراً لتحميلك هذا الملف من موقع المناهج الإماراتية



ملخص ومراجعة الدرس الثالث Law Third s'Newton قانون نيوتن الثالث

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تاريخ نشر الملف على موقع المناهج: 14-02-2024 08:46:46 | اسم المدرس: Marey Ahmed

التواصل الاجتماعي حسب الصف التاسع المتقدم



روابط مواد الصف التاسع المتقدم على تلغرام

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المزيد من الملفات بحسب الصف التاسع المتقدم والمادة فيزياء في الفصل الثاني

[ملخص ومراجعة الدرس الثاني Force Drag and Weight الوزن وقوة السحب](#)

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المزيد من الملفات بحسب الصف التاسع المتقدم والمادة فيزياء في الفصل الثاني

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LESSON 3

NEWTON'S THIRD LAW

Newton third law

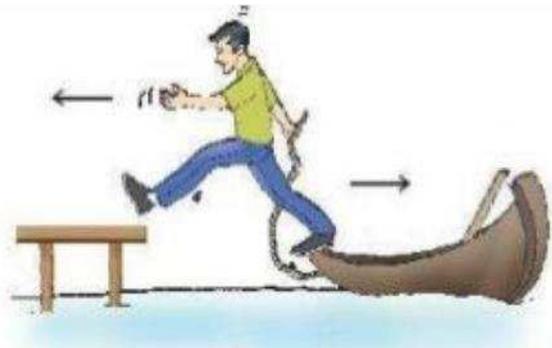
Newton's third law : each action has a reaction equals in magnitude and different in direction

$$\vec{F}_{1,2} = - \vec{F}_{2,1}$$

- 1) Determine the action and the reaction in the picture?

Action : the person exerted force in the boat and the boat go backward

Reaction the boat exerted force in the person and person go forward



- 2) Why do you feel a pain when you push the table by your finger ?

Because there is a reaction from the table to your finger

- 3) Why always the forces is mutual?-because always action has reaction

- 4) How many objects affect in action and reaction? Two objects

) look to the picture below and answer the following question

a) Determine any action and reaction in the picture?

action: force exerted from the cannon to the bomb and the bomb goes forward

reaction: force exerted from bomb to the cannon and cannon goes backward

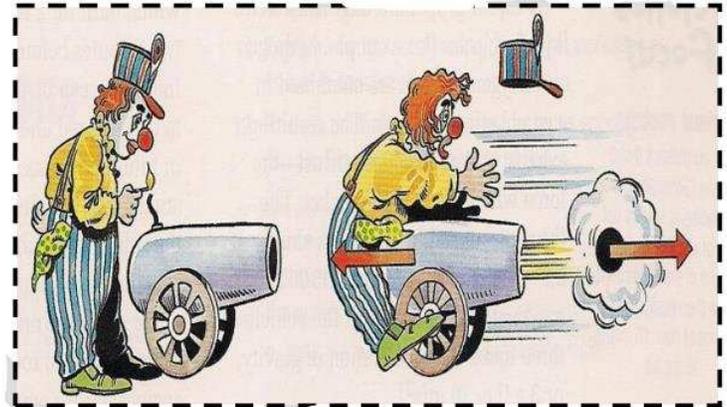
b) Why the cannon return back ?

Because there is a reaction from the bomb

c) Why the person return back ?

Because there is a reaction from the cannon

d) Which one exerted a big force (cannon , bomb)?



Same force because action force equals reaction force

e) Which one has a big acceleration (cannon or bomb) ? why ?

bomb, because of the inversely proportional between mass and acceleration

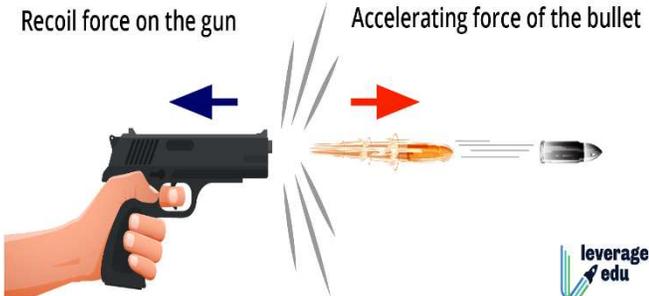
SOME EXAMPLES OF ACTION-REACTION PAIR

Reaction

Recoil force on the gun

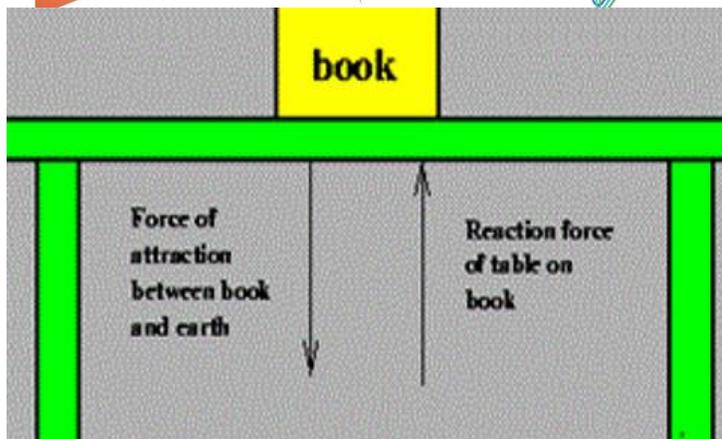
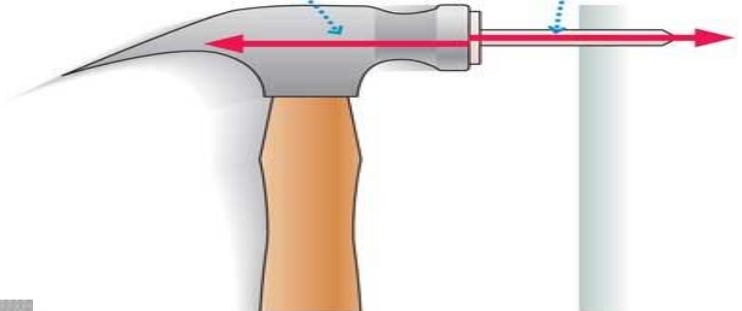
Action

Accelerating force of the bullet



The force of the nail on the hammer

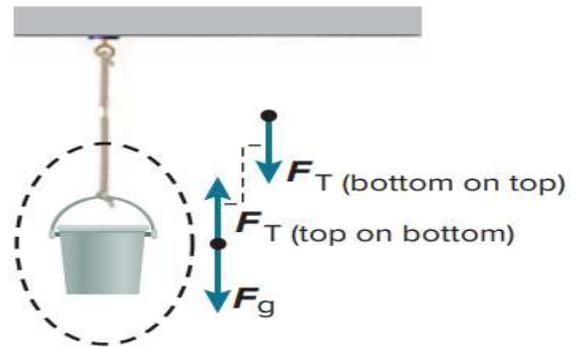
The force of the hammer on the nail



tension force and Normal force (surface reaction)

Tension force (T): is the force exerted from the rope or string to the object

Figure 17 The tension in the rope is equal to the weight of all the objects hanging from it.



Q) Find the tension force from the diagram if mass of the bucket=5kg

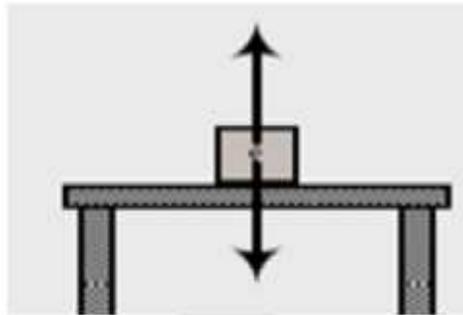
The Normal Force

Normal force (N): is the force exerted from surface to the object(system)

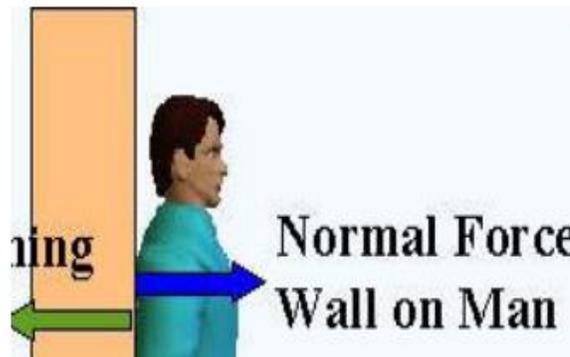
always it is a straight line make 90 degree with the surface and always goes outward the surface

Examples:

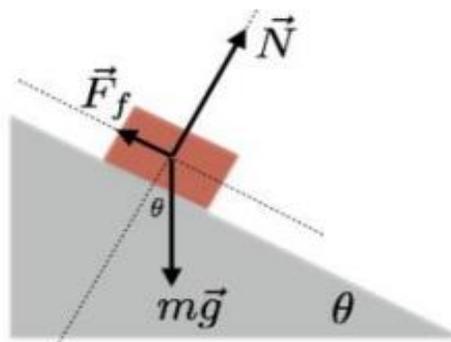
if there is a horizontal surface , the normal force will be vertical



if there is a vertical surface , the normal force will be



if there is a incline surface , the normal force will be incline to make 90 with the surface



Q) Picture then compare it with gravity force (assume the mass of the system (box) = 7kg)

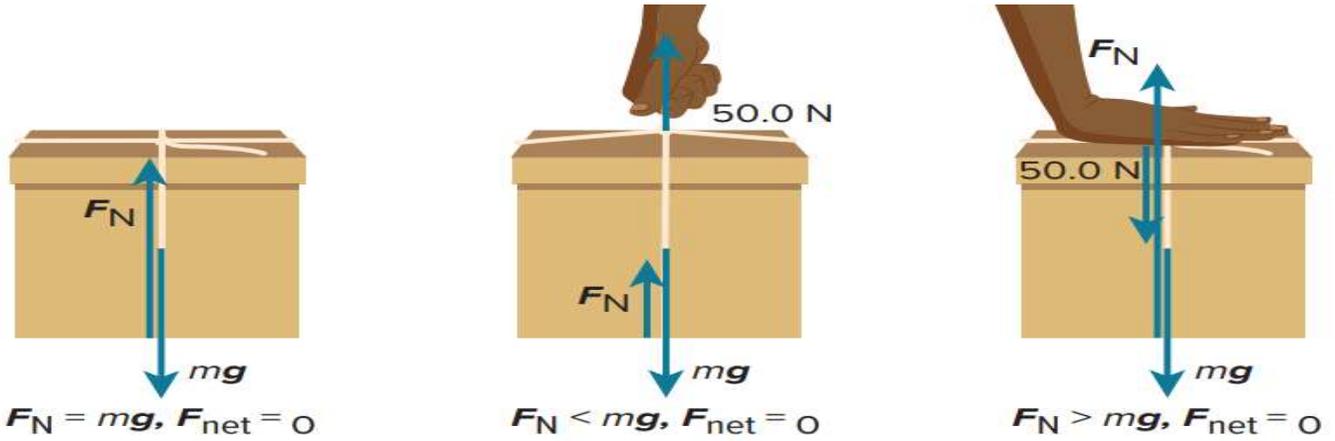


Figure 19 The normal force is not always equal to the object's weight.

LIFTING A BUCKET A 50.0-kg bucket is being lifted by a rope. The rope will not break if the tension is 525 N or less. The bucket started at rest, and after being lifted 3.0 m, it moves at 3.0 m/s. If the acceleration is constant, is the rope in danger of breaking?

32. Diego and Mika are trying to remove a tire from Diego's car. When they pull together in the same direction, Mika with a force of 23 N and Diego with a force of 31 N, they just barely get the tire to move off the wheel. What is the magnitude of the force between the tire and the wheel?

33. CHALLENGE You are loading equipment into a bucket that roofers will hoist to a rooftop. If the rope will not break as long as the tension does not exceed 450 N and you fill the bucket until it has a mass of 42 kg, what is the greatest acceleration the workers can give the bucket as they hoist it?