The National Orthodox School /Shmaisani

Subject: Science/ Physics

Name: ……Key …… **Title: Worksheet 1- Forces**

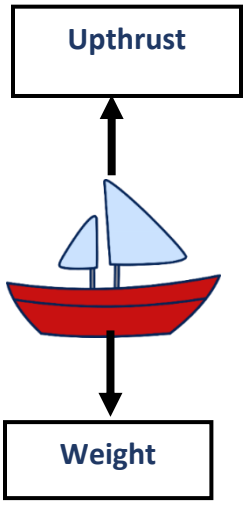
Grade-Section: 6 CS – All section **Date: ……..**

Objective:

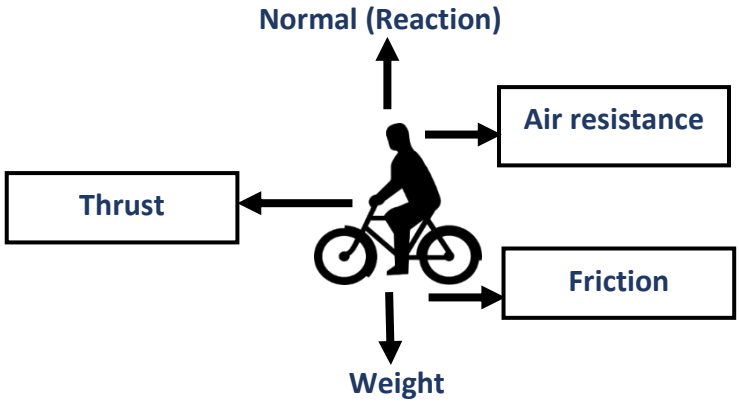
- **Identify different forces acting on different objects.**
- **Calculate the weight of different objects on Earth and on different planets.**

<u>Question One</u>:

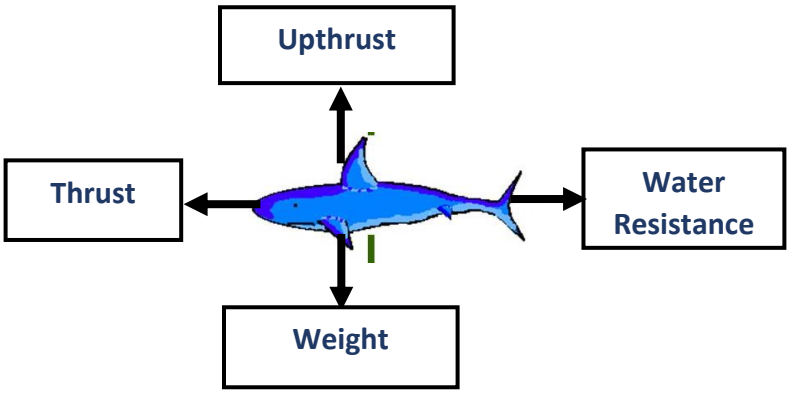
Label the following diagrams with the correct forces.



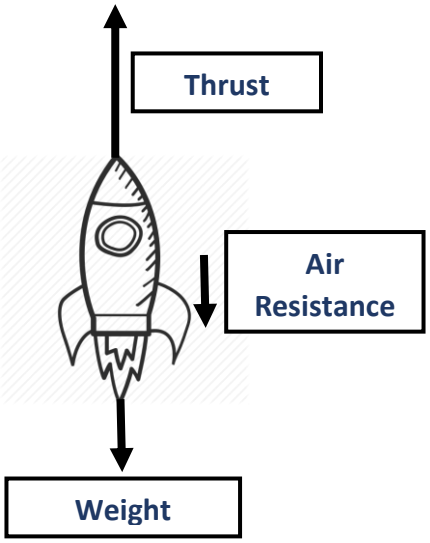
The boat is floating on water but not moving



The cyclist is moving forward

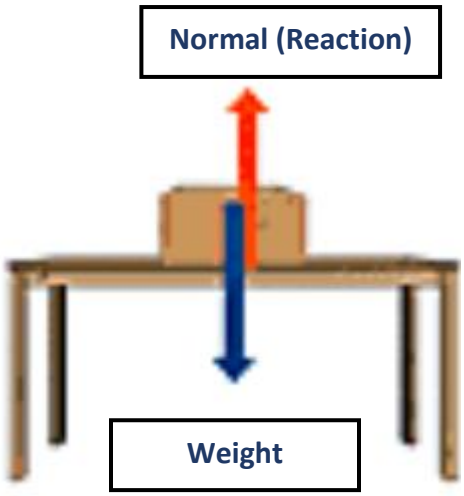


The shark is swimming forward



The rocket is launched

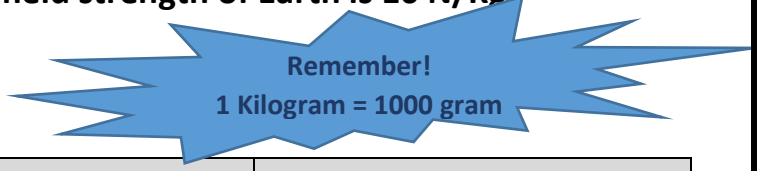
The parachutist is falling



A box on a table

Question Two:

Fill in the table with the correct values of the Weight/ mass of the following objects on Earth, knowing that the **gravitational field strength of Earth is 10 N/Kg**:



Object	Mass	Weight on Earth
A boy	25 Kg	**25 x10= 250 N**
A pencil case	250 g **÷1000**= **0.25 Kg**	**0.25 x10= 2.5 N**
A Laptop	**30/10= 3 Kg**	30 N
A Book	750 g**÷1000= 0.75 Kg**	**0.75 x10= 7.5 N**
A Desk	**200÷10= 20 Kg**	200 N
A Pencil	**2÷10= 0.2 Kg**	2 N
A bag of flour	1200 g**÷1000 = 1.2 Kg**	**1.2 x 10= 12 N**
A Chair	**75÷10= 7.5 Kg**	75 N
A Car	**1000÷10= 100 Kg**	1000 N

Question Three:

- If your mass is 65 Kg on Earth. What is your mass on the moon?

65 Kg (the mass of an object doesn't change when changing the planet).

- If your mass is 80 Kg on Earth, what will your weight be on Earth? And on Moon? Knowing that the gravitational field strength of Earth is 10 N/Kg, and of the moon equals 1.6 N/Kg. Show your work.

  Remember: Weight = gravitational field strength x mass

  Weight on Earth: **80 x 10 = 800 N** ……

  Weight on Moon: **80 x 1.6 = 128 N** …….

Question Four:

a) Fill in the mass/ weight in the table below for **an astronaut** on Earth and different planets:

Planet	Mass (Kg)	Gravitational Field Strength	Weight (N)
Earth	**50 Kg**	**10 N/Kg**	500 N
Moon	**50 Kg**	1.6 N/Kg	**50x1.6= 80 N**
Jupiter	**50 Kg**	25 N/Kg	**50 x 25= 1250 N**

b) Fill in the table below regarding the mass and weight of different objects on different planets:

Planet	Mass (Kg)	Gravitational Field Strength	Weight (N)
Planet X	20	**400 ÷ 20=20 N/Kg**	400 N
Moon	**160 ÷ 1.6=100**	1.6 N/Kg	160 N
Earth	15	**10 N/Kg**	**15 x 10 = 150 N**