Worksheet 3 |

Lower Secondary Stage (6-8)

1st Semester | 2023-2024

Name:

Subject: Science

Objectives:

Garde 7 A

- Calculate the weight of different objects on Earth and on different planets.
- To differentiate between mass and weight.

Question 1 :

The mass of the Moon is smaller than the mass of Earth.

a) Choose **two** answers from the box below to complete the sentences below.

greater than	equal to	smaller than

The gravitational field strength on Earth is _____ the gravitational field strength on the Moon.

If an astronaut travelled to the Moon, their weight would be _____ their weight on Earth.

b) Draw **one** line from each variable to the correct unit of measurement.

gravitational field strength	N
mass	kg
weight	N/kg

Question 2:

The mass of the moon is smaller than the mass of Earth.

a) Suggest how the weight of the astronaut would be affected if they travelled to the Moon.

_____

_____.

b) Explain your answer:

_____.

Question 3 :

An astronaut has a mass of 70 Kg on Earth. He is planning to have a tour in space.

Knowing that: the gravitational field strength on the moon is 1.6 N/ Kg. and the gravitational field strength on Jupiter is 25 N/Kg.

Calculate the following:

a. The astronaut's weight on Earth? Include the unit and show your work.

_____.

b. The astronaut's weight on the moon? Include the unit and show your work.

_____.

c. The astronaut's mass on Jupiter? Include the unit.

_____.

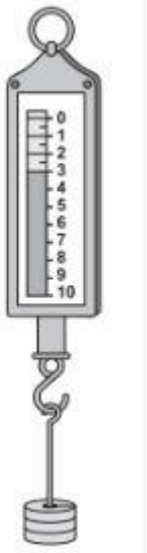
Question 4:

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	50 kg	
A pencil case	250 g	
A Laptop		30 N
A Book	750 g	
A Desk		200 N
A toy train		8 N
A bag of rice	1200 g	
A table		75 N
A Car		1000 N

Question 5:

a) what is the reading shown in the device below?



---------- .

b) Calculate the mass for this object on Earth knowing that the gravitational field strength on Earth is 10 N/kg.

---------- .

Question 6:

The ball has mass and weight.

a) Circle the correct statement about the **mass** of the ball.

the mass is 0.45 cm^2

the mass is 0.45 kg

the mass is 0.45 m

the mass is 4.5 N

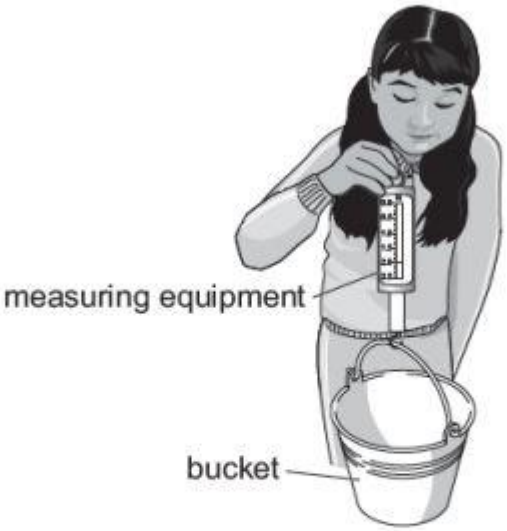
the mass is 4.5 s

b) complete the following table to calculate the mass and weight for the same ball on different planets:

Planet	Mass (kg)	Gravitational field strength(N/kg)	Weight (N)
Earth			
Moon		1.6	
Jupiter		25	

Question 7:

Priya investigates forces.



(a) Name the measuring equipment used to measure forces.

.....

(b) Priya adds water to the bucket and measures the force.

She writes her results in a table.

volume of water added to bucket in ml	force in N
0	2
100	3
200	4
300	5
400	6
500	7

a) Name the **independent variable** in this investigation.

---------- .

b) Name the **dependent variable** in this investigation.

----------.

c) Name one controlled variable in this investigation.

----------.

d) Suggest a way that she can make sure that her results are accurate:

----------.