

Weight Practice

- 1 On Earth, what is the rule for working out the weight in newtons
 - (a) if you are given the mass in kg?

 - (b) if you are given the mass in g?

- 2 Calculate the weight of these masses on Earth.
 - (a) 4.0 kg
 - (c) 0.3 kg
 - (e) 350 g

 - (b) 8.0 kg
 - (d) 7.2 kg
 - (f) 15 g

- 3 Calculate the mass (in kg) of these weights on Earth.
 - (a) 80 N
 - (c) 480 N
 - (e) 2.5 N

 - (b) 30 N
 - (d) 25 N
 - (f) 0.2 N

- 4 Calculate the mass (in g) of these weights on Earth.
 - (a) 6.5 N
 - (b) 0.3 N
 - (c) 0.07 N

- 5 Complete the word equations.
 - (a) Weight =

 - (b) Mass =

 - (c) g =

- 6 Complete the equations using symbols.
 W is the weight, m is the mass and g is the gravitational field strength
 - (a) $W =$
 - (b) $g =$
 - (c) $m =$

- 7 On a planet where $g = 14 \text{ N/kg}$, what is W when $m = 52 \text{ kg}$?

The table below shows the gravitational field strengths at the surfaces of different objects in our Solar System.

Space object	Mercury	Jupiter	Saturn	Ceres	Sun	Pluto
g (N/kg)	3.7	24.7	10.5	0.27	290	0.5

8 What is the weight of...

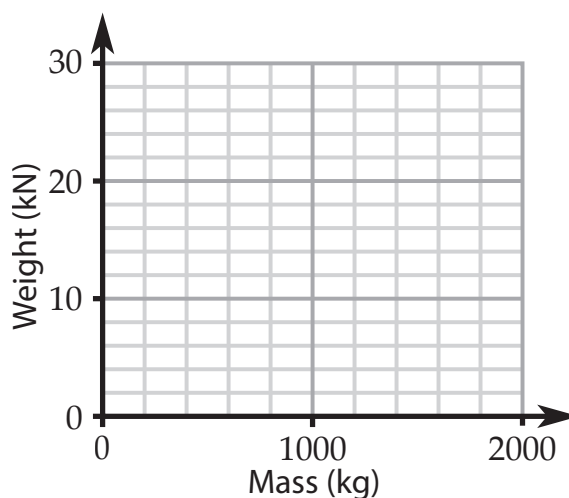
- (a) a 62 kg teenager on Mercury?
- (b) a 62 kg teenager on Jupiter?
- (c) a 62 kg teenager on the Sun?
- (d) a 800 kg small car on Saturn?
- (e) a 1400 kg van on Pluto?
- (f) a 2300 kg minibus on Ceres?

9 How many kilograms of mass would you need to weigh...

- (a) 21 N on Saturn?
- (b) 0.5 N on Pluto?
- (c) 29 N on the Sun?
- (d) 200 N on Ceres?

10 The weights of some objects on a new planet are given in the table.

Object	Mass (kg)	Weight (N)	Weight (kN)
Motorcycle	200	3000	
Car	1200	18 000	
Hippo	2000	30 000	
Walrus	1500	22 500	



- (a) Fill in the column with weights in kN.
- (b) Plot a graph of weight against mass. Add a best fit straight line.
- (c) What is the weight of a 1800 kg giraffe? Use the graph.
- (d) Choose a point on your straight line, and use it to work out the gravitational field strength on this planet.