

Mass and Weight

To calculate weight use the formula:

$$\text{Weight (N)} = \text{Gravitational Field Strength (N/kg)} \times \text{Mass (kg)}$$

$$W = g \times m$$

1. Complete the table to the side for a range of masses on Earth, where $g = 10$ N/kg.

Mass (kg)	Weight (N)
1	
5	
20	
100	
500	

2. Use the scales to find your mass, and then complete the table to calculate your weight on other planets in the Solar System.

Planet	Mass (kg)	g-value (N/kg)	Weight (N)
Mercury		3	
Venus		9	
Earth		10	
Mars		4	
Jupiter		26	
Saturn		11	
Uranus		11	
Neptune		12	
Pluto		0.5	

3. Where could you go to

a. Lose weight?

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b. Gain weight?

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4. What would you have to do to

a. Lose mass?

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b. Gain mass?

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5. Suggest why Jupiter have the greatest pull of gravity?

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6. Suggest why Pluto have the smallest pull of gravity?

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