



Gravity

Name _____ Class _____

1. Draw an arrow on the diagram below to show the direction of the force of gravity on the mouse.



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

gravitational field strength	N
mass	kg
weight	N/kg

3. The mass of some objects is shown below.
The gravitational field strength on Earth is approximately 10N/kg.
Calculate the weight of the objects on Earth.
Use the equation:
weight = mass × gravitational field strength

mass = 1kg



weight = _____N

mass = 0.02kg



weight = _____N

mass = 0.06kg



weight = _____N



4. 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
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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) An astronaut has a mass of 80kg. On the Moon, they have a weight of 128N. Calculate the gravitational field strength on the Moon.

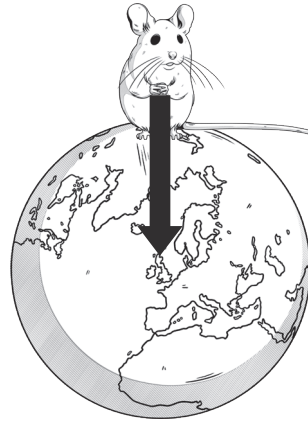
Use the equation:

$$\text{gravitational field strength} = \text{weight} \div \text{mass}$$

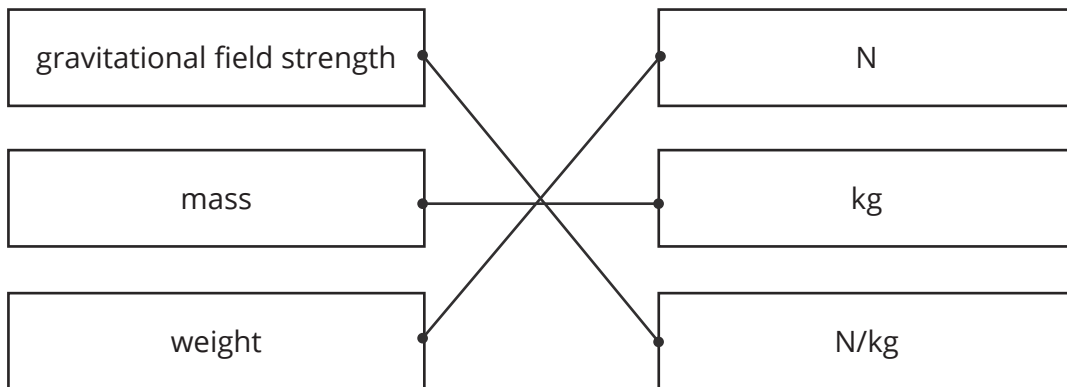
$$\text{gravitational field strength} = \text{_____ N/kg}$$

Gravity Answers

1. Draw an arrow on the diagram below to show the direction of the force of gravity on the mouse.



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



3. The mass of some objects is shown below.
The gravitational field strength on Earth is approximately 10N/kg.
Calculate the weight of the objects on Earth.
Use the equation:
 $\text{weight} = \text{mass} \times \text{gravitational field strength}$

mass = 1kg



$$\text{weight} = 1\text{kg} \times 10\text{N/kg}$$

$$\text{weight} = 10\text{N}$$

mass = 0.02kg



$$\text{weight} = 0.02\text{kg} \times 10\text{N/kg}$$

$$\text{weight} = 0.2\text{N}$$

mass = 0.06kg



$$\text{weight} = 0.06\text{kg} \times 10\text{N/kg}$$

$$\text{weight} = 0.6\text{N}$$



4. 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
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The gravitational field strength on Earth is **greater than** the gravitational field strength on the Moon.

If an astronaut travelled to the Moon, their weight would be **smaller than** their weight on Earth.

b) An astronaut has a mass of 80kg. On the Moon, they have a weight of 128N. Calculate the gravitational field strength on the Moon.

Use the equation:

$$\text{gravitational field strength} = \text{weight} \div \text{mass}$$

$$\text{gravitational field strength} = 128 \div 80$$

$$= 1.6$$

$$\text{gravitational field strength} = \mathbf{1.6N/kg}$$