

Space Physics (KS3)

Section A – Recall (1–2 marks each)

Q1 (1 mark)

What force keeps planets in orbit around the Sun?

Q2 (1 mark)

State the formula used to calculate weight.

Q3 (1 mark)

What is the gravitational field strength on Earth?

Q4 (1 mark)

What is the unit of weight?

Q5 (2 marks)

State TWO objects in space that have gravity.

Q6 (2 marks)

State TWO things found in a galaxy.

Section B – Understanding (3 marks each)

Q7 (3 marks)

Explain the difference between mass and weight.

Q8 (3 marks)

State whether astronauts weigh more or less on the Moon compared to the Earth. Explain your answer.

Q9 (3 marks)

Explain why we have seasons on Earth.

Q10 (3 marks)

Explain what a light year is and why it is used.

Section C – Application (3 marks each)

Q11 (3 marks)

A person has a mass of 50 kg. Calculate their weight on Earth.
Use: gravitational field strength = 10 N/kg

Q12 (3 marks)

A box weighs 200 N on Earth. Calculate its mass.

Q13 (3 marks)

Earth takes 365 days to orbit the Sun. Explain how this movement and the Earth's tilt can affect the day length during the year.

Q14 (3 marks)

A star is 5 light years away from Earth. Explain what this distance means.

Q15 (3 marks)

An astronaut has a mass of 70 kg. Calculate their weight on Earth.

Use: $g = 10 \text{ N/kg}$

Q16 (3 marks)

A planet has a gravitational field strength of 5 N/kg.

An object has a mass of 12 kg. Calculate the weight of the object on this planet.

Section D – Extended Response (6 marks each)

Q17 (6 marks)

Explain how gravity affects objects in space, including planets, moons and stars.

Q18 (6 marks)

Explain what stars and galaxies are and describe the place of our Solar System in space.

Total: ____ / 50
Percentage: ____%