

### SS3 PHYSICS STUDY GUIDE

	Topic and content	Reference
Weak 1	Gravitational field -Concept of gravitational field. -Gravitational force between two masses. -Relationship between “G” and “g”. -Gravitational potential. -Kepler’s law. -Natural and artificial satellite. -Escape velocity.	New School Physics M. W. Anyakoha. Pg. 370 – 377.

1. Two bodies, of masses 50 kg and 100 kg, are 25 cm apart. Calculate the universal gravitational force between them if the universal gravitational constant  $G$  is  $6.67 \times 10^{-11} \text{ Nm}^2\text{kg}^2$  and radius of the earth is  $6.4 \times 10^6 \text{ m}$ .
2. A rocket of mass 150 kg is fired from the earth’s surface so that it just escapes from the gravitational influence of the earth. Calculate the velocity with which it escapes. The universal gravitational constant  $G$  is  $6.67 \times 10^{-11} \text{ Nm}^2\text{kg}^2$ , radius of the earth is  $6.4 \times 10^6 \text{ m}$  and mass of the earth is  $6.0 \times 10^{24} \text{ kg}$ .