**Date Understand gravity**

1. What is a force?
2. What do all objects have and what does this cause to happen?
3. What is an object’s gravitational field?
4. Which two scientists made important contributions to our understanding of gravity?
5. Which two factors affect the strength of the attraction between two objects that is caused by gravity?
6. Why do we only notice the gravitational force of massive objects?
7. Name three things that gravity helps us to understand.
8. Give two differences between mass and weight.
9. Why does an object weigh less on the moon than on the Earth?
10. Name two ways in which people can ‘escape’ gravity?

**Extension**

1. If the Earth was twice as big as it is, would you weigh more or less? Why?
2. What do you think would happen to the distance between the Earth and the sun if the sun became much smaller? Why?
3. Why would we not be able to breathe without gravity?

Name: Date:

 **Understand gravity**

1. A force is
2. All objects have a , which

 .

1. An object’s gravitational field is

1. and made important contributions to our understanding of gravity.
2. and affect the strength of the attraction between two objects that is caused by gravity.
3. We only notice the gravitational force of massive objects because

1. Gravity helps us to understand:

a)

b)

c)

1. Two differences between mass and weight are:

a)

b)

1. An object weighs less on the moon than on the Earth because

1. People can ‘escape’ gravity by

**Answers**

1. A force is a push or a pull on an object
2. All objects have a gravitational force and this causes them to pull objects towards them.
3. An object’s gravitational field is the area within which its gravitational force has an effect.
4. Galileo Galilei and Isaac Newton made important contributions to our understanding of gravity.
5. The size of the objects and the distance between them affects the strength of the attraction between two objects.
6. We only notice the gravitational force of massive objects because smaller objects do not have a strong enough gravitational force.
7. Gravity helps us to understand the orbit of the planets / why people do not float into space / why the moon orbits the Earth / why we have tides (any 3 from these)
8. Mass never changes, whereas weight does change / mass is measured in grams and kilograms and weight is measured in Newtons / mass is the amount of matter in an object, whereas weight is the measure of the pull of gravity on an object’s mass (any 2 from these)
9. An object weighs less on the moon than on the Earth because the moon is smaller than the Earth and so it has a smaller gravitational force.
10. People can ‘escape’ gravity by taking a zero gravity flight or by travelling into space.

**Extension**

1. If the Earth was twice as big as it is, you would weigh more because the Earth would have a larger gravitational force.
2. If the sun became much smaller, the distance between the Earth and the sun would increase because the gravitational force of the sun would be lower
3. We would not be able to breathe without gravity because the Earth would not have an atmosphere.