Gravity in space

Creative 4–5

1 Gravity holds the planets in orbit and pulls us to the surface of the Earth.

If we travel downwards very quickly in a lift or on a very fast roller coaster, we can feel weightless – almost as though gravity has disappeared. Imagine life without gravity. Write an account highlighting the advantages and disadvantages of life without gravity.

Test yourself 5–6

2 **a** Copy and complete the sentences by selecting from the words shown below:

smaller **rotation** **further away** **orbit**
gravitational field **speed** **closer** **larger**

Gravitational force is responsible for keeping the planets in ..... around the Sun. The Moon is in orbit around the Earth due to the ..... mass of the Earth. The ..... objects are, the greater the gravitational force. The planets stay in orbit around the Sun because of their ..... and the ..... of the Sun.

b What would happen to the Earth if the Sun's gravitational field was to decrease?

Digital 7–8

3 Your class is given the following statement:

'Once in orbit around the Earth, artificial TV satellites will remain there without a power source.'

Use the Internet to research the power systems used by satellites.

Present the findings from your research in the form of a diagram and use it to argue against this statement and to persuade the rest of your class why these power systems are necessary, even though gravity helps to keep the satellite in orbit.

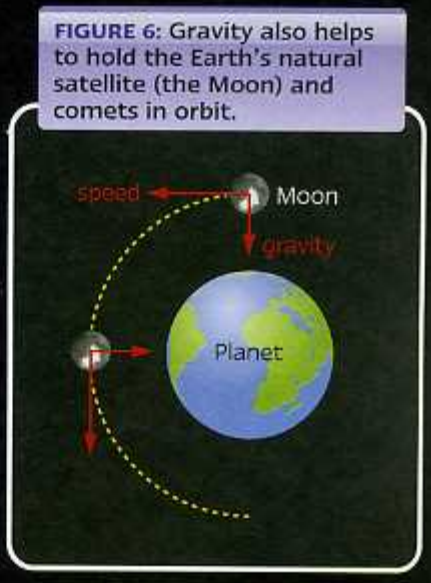

FIGURE 6: Gravity also helps to hold the Earth's natural satellite (the Moon) and comets in orbit.

See pages 194–195 of your Pupil Book