Gravity and weight

Creative

4–5

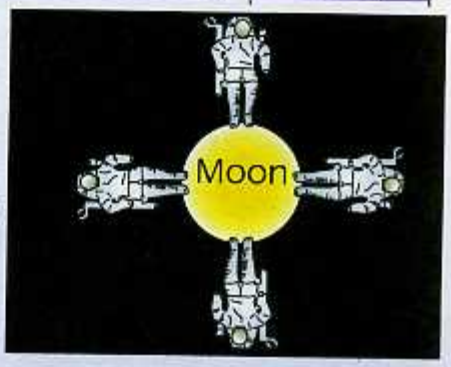
1 Astronauts living on a space station on the Moon have run out of sugar for their tea!

Produce a poster for a classroom display showing the mass and weight of a 1 kg bag of sugar on the Earth, in space and when you arrive on the Moon in your space shuttle.

Test yourself

5–6

2 **a** Copy out the diagram opposite. On your diagram, draw force arrows to show the direction of gravity acting on the astronauts standing on the surface of the Moon.



b When the astronauts are on the surface of the Moon, which of these effects will they observe?

They will be able to jump higher than on Earth.

They will be weightless.

They will be able to hit a golf ball further than on Earth.

Their mass will be less than it is on Earth.

c You hear this conversation in a supermarket between a customer and a shop attendant:

"I can only find flour sold in 500 g bags. I would like to buy a bag of flour with a weight of 1 kg."

Use the correct terms to re-write the conversation.

d Your friend weighs himself on a set of Newton scales and finds that he weighs 400 N. What will your friend's **mass** be?

Digital

7–8

3 Look at the table on page 199 of the Pupil Book. It shows data that astronomers have collected on the rocky planets. Complete the following activities:

a Produce a line graph of the data using Excel.

b i Use your graph to determine the trends in the data.

ii Using the trends that you have identified, describe the advantages and disadvantages of living on each planet compared to Earth.

c i Add to your graph data on a new planet, Planet X, situated beyond Mars.

ii Use this data to produce a wiki entry describing what life is like on Planet X.

See pages 198–199 of your Pupil Book