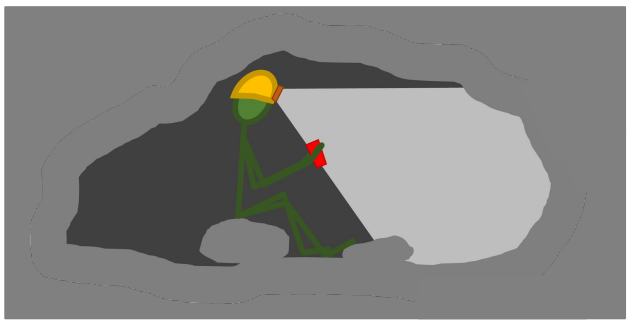
Gravity

Task A: Gravitational attraction



Sam

Gravity pulls them downwards in the picture.

1) Which pupil is correct? Explain why they are correct.

Sam is correct because gravity pulls objects towards the centre of the Earth, which is is downwards in the picture.

2) Explain why the other two pupils are incorrect.

The other pupils are incorrect because people are not pulled upwards and do not float around when they go underground, e.g. in a basement, subway or railway tunnel. Both pupils have made the mistake of thinking gravity attracts objects to surfaces, which is not correct. Gravity attracts objects towards the centre of Earth.

Task B: Gravity on the Moon and other planets

1 and 3) Compare the weight of the object on each planet.

The object felt lightest on Mars, then a bit heavier on Venus and Earth.
The object felt a similar weight on Venus and Earth, slightly heavier on Earth.
The object felt much heavier on Jupiter.

2 and 4) Explain why you think this.

On planets with more mass, the gravity is stronger so the gravitational force pulling the object down is greater, making the same object feel heavier.

The object felt lightest on the planet with smallest mass, which would have the weakest gravity (Mars). The object felt heaviest on the planet with greatest mass (Jupiter), which would have the strongest gravity.

Task C: Gravity in our solar system

Discuss whether each statement is correct or incorrect, then tick the box that shows what you think.

		I am **sure** this is **correct**	I **think** this is **correct**	I **think** this is **incorrect**	I am **sure** this is **incorrect**
a	There is no gravity in space.				✓
b	The Sun has no gravity because the Sun has no air.				✓
c	Saturn has stronger gravity than Earth does.	✓			
d	The Sun's gravity stops the planets from escaping their orbits.	✓			