Year 5 Escape the Planetarium
Answers

Clue 1
Number **4** shows the planets in the correct order.
The first digit on the padlock is four.

Clue 2

It takes the Earth 365 days, or 1 year, to complete one rotation on its axis. **False**

The Earth's axis is at a tilt of 23.5 degrees. **True**

The Sun does not rotate or revolve. **True**

The sun rises in the west and sets in the east. **False**

The Earth revolves round the Sun. **True**

The path the Earth takes round the Sun is called its orbit. **True**

When the northern hemisphere of the Earth is tilted away from the Sun, people in this area are experiencing summer. **False**

There are **three** false statements.

The second digit on the padlock is three.

Clue 3
The correct labels are:

waxing half moon   **waxing crescent**   **new moon**   **waning crescent**

waning half moon   **waning gibbous**   **full moon**   **waxing gibbous**

There were **six** incorrect labels. The third digit on the padlock is six.

Clue 4

The ones with the tick are the criteria needed in order for a body in our Solar System to be classified as a planet.

It has to be roughly spherical. ✓	It has to have been discovered by an astronomer.	It has to orbit the sun. ✓
It must not orbit another planet. ✓	It must not be made of gas.	It must have at least one moon.
It must be big enough to clear away any debris floating near to it. ✓	It cannot be seen in the sky with the naked eye.	It must once have had water on it.

There are **four** things required. The fourth digit on the padlock is four.

Clue 5

71% of the Earth's surface is covered in this. wat**e**r

21% of the Earth's atmosphere is made up of this. oxyge**n**

The Earth, other planets and the Sun make up this. **s**olar system

When viewed from space, much of Earth is covered in this. wat**e**r **v**apour

The letters **e, n, s, e, v** rearranged spell **seven**.

The fifth digit on the padlock is seven.

Clue 6

The number of months it takes for the Earth to orbit the Sun **12**

+

The number of days it takes for the moon to orbit the Earth **28**

+

The number of hours it takes for the Earth to rotate on its axis **24**

Divide this total by 8

12 + 28 + 24 = 64

64 ÷ 8 = 8

The sixth digit on the padlock is eight.

Clue 7

Sydney is 10 hours ahead of London. So if it is 11pm in London, it is **9am** in Sydney.

The seventh digit on the padlock is nine.

Clue 8

Based on the way the shadow changed during the rest of the day, the shadow should be **6** metres.

The eighth digit on the padlock is six.

Clue 9

Gravity is a force that pulls objects towards its centre. It is measured in newtons and the strength of it changes with the mass of a planet.

The number of letters in **gravity** is seven.

The ninth digit on the padlock is seven.

Clue 10

Pluto is not classed as a planet anymore. This is due to its inability to clear debris from around it. There are **five** letters in Pluto.

The tenth digit on the padlock is five.