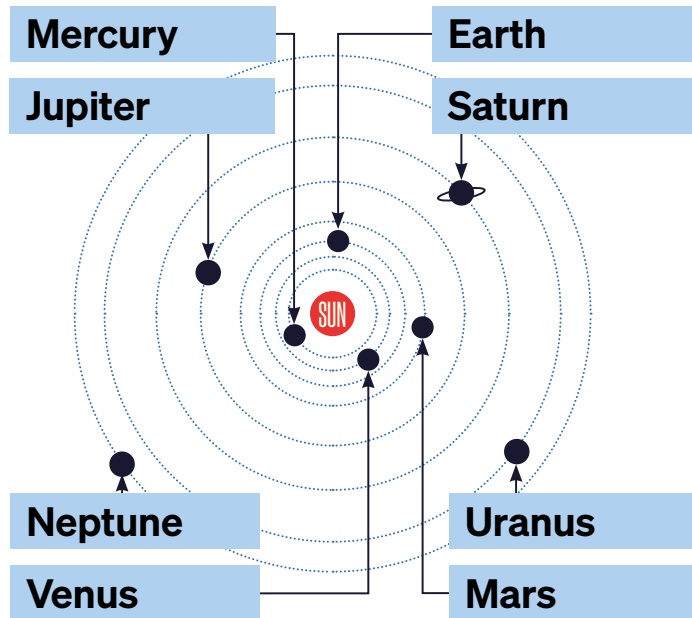


Key Stage 3

Answers / Planet Pavilion

1. Use the orrery to help label each of the planets below...



2. How many planets are there in the Solar System?

8

3. Which planet is orbiting the Sun the quickest?

Mercury

4. Which planet is orbiting the Sun the slowest?

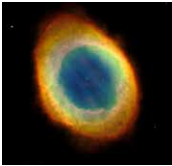
Neptune

5. What force is keeping the planets in their orbits?

Gravity

6. Do you think that our orrery shows the solar system 'to scale'?

No

7.  A planetary nebula formed when a star like the Sun runs out of fuel.

Name: **Ring Nebula.**

At the centre: **white dwarf star**



The nearest large spiral galaxy to our own Milky Way galaxy.

Name: **Andromeda Galaxy.**

How far away: **2.5 million light years***



What has been left behind after a big star exploded.

Name: **Crab Nebula.**

What is at the centre? **Pulsar (spinning neutron star)**



A 3 light-year tall pillar where new stars are forming.

Name: **Carina Nebula.**

What is it made from? **Gas and dust**

* A light-year is the distance a beam of light will travel in one year. One light year is approximately equal to 10 trillion kilometres.

8. At the centre of our galaxy is a black hole called Sagittarius A*. How many times heavier than the Sun is it?

4 million

Black holes aren't holes! They are objects floating in space, made of matter. This means they have mass. When things fall into black holes, they become part of it, and black holes get bigger and heavier as they grow.

Key Stage 3

Answers / Space Pavilion

1. What do the telescopes at Jodrell Bank collect instead of light?

Radio Waves

2. Why is the paraboloid (bowl) shape of the telescope dish important?

Reflects radio waves to a focus point

3. What is the diameter of the Lovell telescope?

76.2 metres

4. Which force pulls objects into black holes?

Gravity

5. In this model, what force slows the ball, causing it to spiral inwards?

Friction (please note friction does not exist in space, so objects can remain in orbit around black holes, like orbiting anything else in space)

6. Which part of you has the highest temperature?

Usually **Face** or **head**

7. Why don't clothes appear as hot as areas of bare skin (e.g. face)?

Clothes are an insulating layer.

8. Find the props near the screen. For each of the props, circle whether it is opaque or transparent to visible light and infrared.

	Visible light	Infrared
Black bin bag	Opaque	Transparent
Plastic 'alien' mask	Transparent	Opaque
Piece of paper	Opaque	Opaque

9. Which astronomer first discovered pulsars?

Dame Jocelyn Bell Burnell (discovered the first pulsar in 1967)

10. Draw an arrow to show the flow of electric charge when you touch the plasma ball.

Arrow should show charge travelling from the ball, into the hand (not other way round).

11. What happens to the light level when a planet passes between the star and camera?

There is a dip in the light level detected.

12. Which planet (small or large) is easier to detect? Why?

The larger planet is easier to spot as it blocks out more of the star's light. It's also closer to the star so it creates a dip more often.

13. How many exoplanets have astronomers discovered so far?

This number increases every day and will depend on the current figure. You can look up the current number of confirmed exoplanets at <https://exoplanetarchive.ipac.caltech.edu/index.html>

14. What type of object can you see through the telescope?

Galaxy

15. This telescope is an example of a reflecting telescope. What does it use to focus the beams of light?

(Curved) Mirrors

16. Choose two telescopes from the global telescope map. Write down their names, where they are and how big they are.

Answers depend on the choices of the pupils