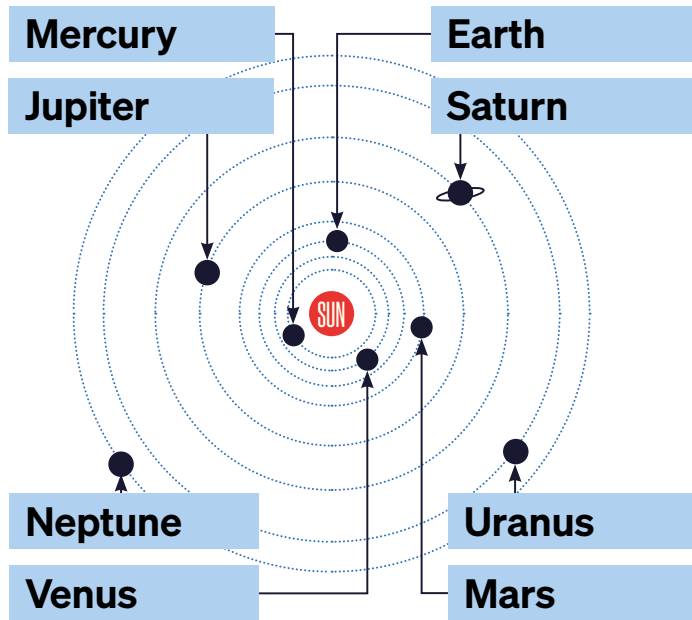


# Answers / Planet Pavilion

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

**No**

6. Objects pictured around the room:

a) **Ring Nebula**

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

b) **Andromeda Galaxy**

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

c) **Crab Nebula**

*What has been left behind after a big star exploded*

d) **Carina Nebula**

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

7. What is the name of our own galaxy?

**The Milky Way**

8. In what year did people see object 6 (b) explode?

**1054 AD**

9. How many light years away is the Orion Nebula?

**1,300**

*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.*

10. How many times heavier is black hole Sagittarius A\* compared to our Sun?

**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.*

11. From smallest to largest:

**Planet > Sun > Solar System > Galaxy > Universe**

# Answers / Space Pavilion

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

**Radio Waves**

2. What colour on the infrared camera shows the hottest/coolest things?

*This depends on the day's camera settings.  
The **hottest things are usually white** and the **coolest things are usually blue or black.***

3. Which part of you is the hottest?

**Face or head**

4. Try rolling a ball into the black hole. Which force pulls the ball into the black hole?

**Gravity**

5. What force slows the ball down, making it fall into the hole?

**Friction**

6. a. When I touch the plasma ball I see a spark jump out of my hand - **FALSE**  
b. When I touch the plasma ball I see a spark jump into my hand - **TRUE**  
c. The electricity is attracted to my hand - **TRUE**  
d. When it touch it, electricity goes through me and into the floor - **TRUE**
7. Which of these galaxies can you see through the telescope?

**Middle option**

8. What happens to your pupil when the light goes dimmer?

**It gets bigger**

*This final question explains why the Lovell telescope at Jodrell Bank is so big!*

*Your pupil gets bigger in dark light, so it can collect more light. This means you can see fainter objects, and see better in the dark. In the same way, bigger telescopes can collect more light, to see fainter and more distant objects in space.*

# Answers / First Light

**School Report:** Bernard Lovell's headmaster said he "Should do well, but must definitely decide not to think of **cricket** when he is doing **maths** or **science**."

**Telegram:** When the Second World War broke out Bernard Lovell was sent to **Bawdsey** radar station on **14th** August 1939. During the war he worked on military **radar**.

Which other research station was he sent to?

**Staxton Wold**

**Meteorite:** The first thing detected in the sky at Jodrell Bank was a meteor shower. A meteor is a piece of space rock that burns up in the Earth's atmosphere. Sometimes they fall to earth as meteorites, such as the Campo del Cielo meteorite. What is this one made of?

**Iron**

**Bicycle:** In the early days at Jodrell Bank **vehicles** (such as cars) were not allowed on site because they created electrical interference, so scientists used **bicycles** to get around.

**Gear Rack:** The engineers building the telescope recycled gun racks from the HMS **Royal Sovereign** and HMS **Revenge** in the telescope.

**Sputnik 1:** On **4th October** 1957 the Soviet Union launched Sputnik 1, the first artificial satellite. The new Lovell Telescope detected Sputnik's launch rocket. This rocket was developed into the rockets that transported astronauts to the **International Space Station**.

**Filing Cabinets:** During the Cold War in the 1960s Jodrell Bank was the UK's early warning system for missile attack.

**True**

**Telescope Log Book:** When scientists at the University of Cambridge discovered a new type of pulsating star they thought it was a signal from **Little Green Men!** The Lovell telescope was an ideal instrument for studying these new stars which became known a **pulsar**.