

## KS1 Science: Space

### What is the solar system?

MADDIE MOATE: The universe is vast.

CHILD: Vast means really, really big!

MADDIE: There are a lot of stars in our universe. And the sun is a star that gives out heat and light. The sun is at the centre of the solar system. The solar system is the name we use to describe the eight planets, and their moons, that circle, or orbit, around the sun.

CHILD: Our planet, Earth, is in the solar system.

CHILD: Yeah, but the closest planet to the sun is -

CHILD: Mercury!

MADDIE: Mercury is a rocky planet, with large round ditches that we call craters. Mercury takes about 88 days to travel around the sun. When it's closest to the sun it gets very hot. Hot enough to fry an egg or even burn it! But when it rotates away from the sun, it gets really, really cold.

CHILD: This planet is Venus.

MADDIE: Venus is the second closest planet to the sun. It is very hot. The hottest planet in the whole solar system.

CHILD: If it's further away from the sun, why is it hotter than Mercury?

MADDIE: That's because Venus is surrounded by a thick layer of gasses that keep the sun's heat in - like a greenhouse. Venus is the second brightest object we can see in the night sky after the moon.

CHILD: It takes Venus 225 days to orbit the sun.

MADDIE: Earth, where we live, is the third planet from the sun. The Earth has water to drink and air to breathe. It's the only planet in our solar system known to have the right conditions to support life - like plants and animals.

CHILD: And don't forget the people!

MADDIE: It takes Earth about 365 days to orbit the sun. That's one year. Mars is the fourth planet from the sun. People sometimes think Mars is hot because of its red colour but it's usually very cold. The red comes from a rusty metal called iron in the ground.

- CHILD: Vehicles like this model rover are used to explore Mars!
- MADDIE: That's right! Scientists have been studying whether Mars could support life in the future, or if it did in the past.
- CHILD: So how old is our solar system?
- MADDIE: That's a great question! Let's ask an expert.
- DR BECKY: Hi, I'm Dr Becky and I am a space expert. Now, the solar system and all the planets in it were formed at the same time, from the same stuff. So, If we can measure how old planet Earth is, then we know how old the solar system is. And we measure how old Earth is by looking at the stuff it's made from - rocks. Because we can read rocks kind of like a big clock and some rocks change with time. So, if you look at how much they've changed, we know how much time has passed. And when we do that we work out that the Earth, the sun and everything in the solar system is 4.6 billion years old!
- MADDIE: Jupiter is the fifth planet from the sun and the biggest. It's known as a gas giant because it's mostly made up of swirling gases and liquid. Jupiter has very stormy weather, making its colours constantly change. Jupiter has a storm that's been raging for over 200 hundred years.
- CHILD: The storm is called 'The Great Red Spot'.
- MADDIE: Saturn is the sixth planet from the sun and known for its great big rings that go around its middle. They look like hula hoops. The rings are made of ice and rock and move around Saturn.
- CHILD: Saturn takes a little over 29 Earth years to orbit the sun.
- CHILD: Saturn has 146 moons!
- CHILD: And those are just the ones we've discovered so far!
- MADDIE: Uranus is the seventh planet from the sun. Cold and windy, this icy planet has a rocky centre. Water and gasses, including a gas called methane, make up its surface. It takes Uranus 84 Earth years to orbit the sun.
- CHILD: What's next?
- MADDIE: The eighth planet from the sun is Neptune. It's another icy planet, like Uranus. *[To the children]* Oh, that looks like fun! Can you remember the right order of the planets? Our solar system is huge and it's just one of nearly 4000 star systems in our galaxy, the Milky Way. So there is still so much more to discover out there in space!
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