



Science

Year 5

Earth and Space

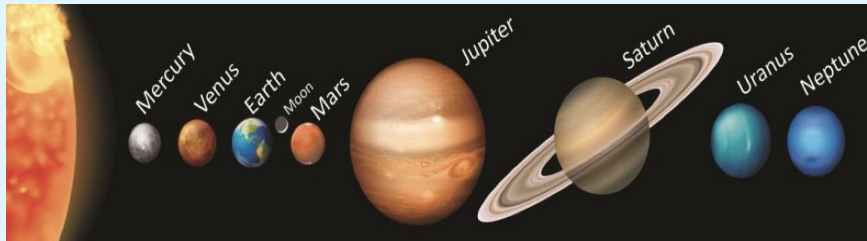
What connects the Earth, moon and stars?

Shakespeare Primary School and Nursery



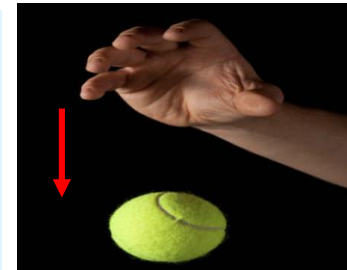
The Solar System

The main bodies that are found in our solar system are the Sun, Moon, Earth and planets. The Earth orbits the Sun. The time it takes to complete one orbit is called a year (365 days). The other planets of our solar system also orbit the Sun at different distances and take different times to complete one orbit. The Sun appears to move east to west in an arc across the sky from sunrise to sunset. Changes in shadows during the day can be explained by the changes in the position of the Sun. The Earth rotates on its axis and this causes day and night. The Moon orbits the Earth every 28 days and rotates on its axis.



Gravity

Why do you land on the ground when you jump up instead of floating off into space? Why do things fall down when you throw them or drop them? The answer is gravity: an invisible force that pulls objects toward each other. Earth's gravity is what keeps you on the ground and what makes things fall. The force of gravity keeps all of the planets in orbit around the sun.



A Scientist Just Like Me!



Vanessa Emeka-Okafor is an English astrophysicist. She uses extremely large telescopes to study planets around other stars (these are called exoplanets). Some are 100 times hotter than Earth, some rain iron, and some are made up completely of gas! Vanessa hopes that one day they will find signs of life on another Earth-like exoplanet.

Working Like a Scientist and working Scientifically

Scientists use evidence to develop and model explanations that change over time in response to new evidence and ideas. For example, Galileo was able to use his telescope to help prove that the planets orbit the Sun. Scientists present their evidence in different ways and are able to use it to support or argue against ideas.

Careers: astrophysicist, astronaut, astronomer

If you want to be an astrophysicist, you need...

- ✳️ **to be interested** in things like planets, stars, galaxies, black holes, comets etc
- ✳️ to have **great analytical thinking skills** so you can think things through and ask yourself important why/what/when/how questions
- ✳️ **to be passionate about physics** and to love solving problems and learning about topics like gravity and light.
- ✳️ **to be curious** and want to **ask questions**



Project Questions

- How do the planets move?
- How does the position of the Sun in the sky change?
- What causes day and night?
- How does the moon move?
- What planets are in our solar system?
- What is gravity?

Speak Like a Scientist

Previously learned vocabulary:
sunrise, sunset, dawn, dusk,

New vocabulary:
axis, orbit, solar system, shadow, gravity, model