UNIT 2: THE EARTH AND THE UNIVERSE

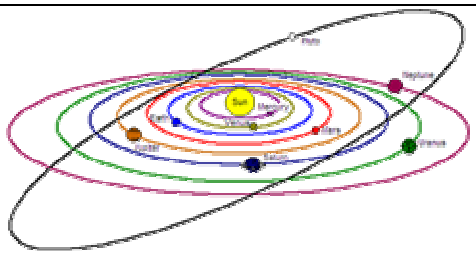
COMPONENTS OF THE SOLAR SYSTEM.

Dear language assistant,

This is our first class about unit 2. Our objectives are to know the names of the components of the Solar System and to learn to describe them.

1.**Reading** page 25 of the Activity Book. You can read each sentence and ask a student to repeat and translate it. They must write the meaning of the new words above them (I have already underlined some words. We can give up this activity after 10-15 minutes.

1.THE SOLAR SYSTEM.

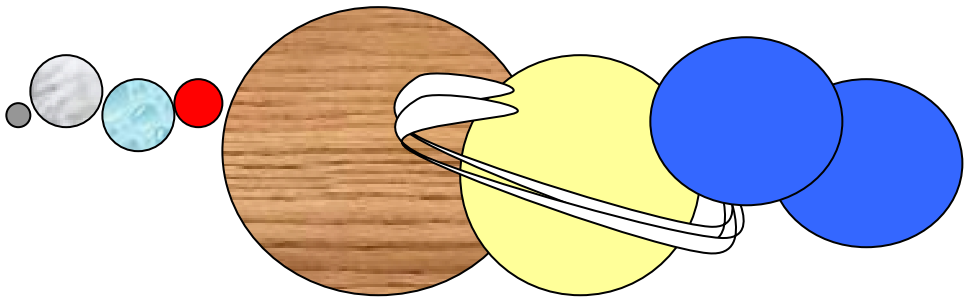


Our Solar system consists of a star, planets and dwarf planets, moons, asteroids and comets. We call our star the Sun and it consists of over 99% of all the mass in our Solar System. The Sun heats and lights our world and allows life on Earth. It is a luminous object; planets and moons are non-luminous objects but we can see them because of the light they reflect. The Sun is just a simple star inside the Milky Way, our galaxy. Galaxies are made up of thousands of stars.

The planets orbit the Sun and the Earth is one of these eight planets. Moons are large natural satellites that orbit a planet; we have just one moon but some planets have several moons.

Asteroids are smaller rocky bodies orbiting the Sun. They vary in size from several meters to about 1000 km. Many asteroids are between Mars and Jupiter and form the asteroid belt. Comets are made of ice and rocks and they orbit the Sun too, but they have a very elliptical orbit; showing a long tail when they are near the Sun.

2.You can show a picture of the eight planets of the Solar System and you can **say their names**, starting on the nearest one to the Sun (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune and Pluto). Perhaps somebody can ask about Pluto but nowadays Pluto is considered a dwarf planet. The students can repeat the pronunciation of the names. Then they can copy the drawing:



Mercury Venus Earth Mars Jupiter Saturn Uranus Neptune

3.We can talk about their **position** and review ordinal numbers using these questions and other questions on your own. The students should answer using complete sentences.

- Which planet is the first? (Mercury)
- Which planet occupies the second position? (Venus)
- And the fifth planet? (Jupiter)
- And the eighth planet? (Neptune)
- Which planet is the fourth?
- Which planet….
- Which position does Neptune occupy?
- Which position…

4.We can also use the words **far and near** to express the position of a planet. (They haven't studied superlatives and comparatives yet)

- Is Mecury near the Sun?
- Is Jupiter far from the Sun?
- Is Saturn near the Sun?
- Is Mars near the Earth?
- Is Venus near Jupiter?
- Is Neptune far from the Sun?
- Is Uranus near Mercury?

As a conclusion of this exercise they can write below the planets:

Mercury Venus Earth Mars — Near to the Sun

Jupiter Saturn Uranus Neptune — Far from the Sun

5.Then we can chat about the **size of the planets**: small, big=large.

- Is Mars a big/large planet?
- Is Jupiter a big planet?
- Is Venus a small planet?
- There are four big planets. Which planets are big?
- Which planets are small?

Mercury Venus Earth Mars — Near the Sun, Small planets

Jupiter Saturn Uranus Neptune — Far from the Sun, Big planets

6.After that we can talk about the **colour and the appearance** of the planet.

- Which planet is red? (Mars)
- Which planets are bluish coloured? (Uranus and Neptune. The Earh is blue because of the oceans)
- Which planet has rings around it? (Jupiter)
- Which planet displays bands of colours? (Jupiter)
- What colour is Mars? (Red)
- How can you recognise Jupiter? (Colour bands) And Saturn? (Rings)

7.Finally you can describe a planet **taking into account position, size and appearance**. For instance: "Mercury is the first planet, it is near the Sun. It is a very small planet and it is grey". A second example: "Jupiter is the fifth planet, it's far from the Sun. It is very big and it has got bands of colours". Then the students have to the same, writing on their notebooks the description for Mars, the Earth, Venus, Saturn, Uranus and Neptune.

8. If we have some time left we can work on a table on page 26.

	Orbital Distance (AU)	**Mass** (earths)	**Diameter** (earths)	**Rotational Period** (days)	**Orbital Period** (years)	**Density** (earths)	**Surface Gravity** (earths)	**Moons**	Temp (ºC)
Sun	0.0	330,000	109.2	25.4	...	1.42	28	...	
Mercury	0.4	0.06	0.38	59	0.24	0.98	0.38	0	167
Venus	0.7	0.81	0.95	243	0.62	0.95	0.90	0	464
Earth	1.0	1.00	1.00	1.00	1.0	1.00	1.00	1	15
Mars	1.5	0.11	0.53	1.03	1.9	0.71	0.38	2	-63
(Ceres*)	2.8	0.00015	0.07	0.38	4.6	0.38	0.03	0	-34
Jupiter	5.2	317.8	11.2	0.42	11.9	0.24	2.34	63	-108
Saturn	9.5	95.2	9.4	0.44	29.4	0.12	1.16	47	-139
Uranus	19.2	14.5	4.0	0.72	83.7	0.23	1.15	27	-215
Neptune	30.1	17.2	3.9	0.67	163.7	0.30	1.19	13	-201
(Pluto*)	39.4	0.002	0.18	6.40	248.0	0.37	0.04	3	-223
(Eris*)	67.7	0.002?	0.18	~8	557	?	?	1	-243

*(*Now defined as a "dwarf planet.")*

1. How far is Venus from the Sun?
2. How long does it take the Earth to make one complete orbit of the Sun?
3. How long does it take for Uranus to orbit the Sun?
4. How long does it take for the Earth to complete one rotation?
5. How long does it take for Mercury to make a rotation?
6. How many satellites has Mars got?
7. How warm is it on Uranus?
8. Which planet in our Solar System has the largest mass?
9. Which planet has the highest temperature?
10. Which planet has the lowest temperature?
11. Which planet is the nearest to the Earth?
12. Which planet is the nearest to Saturn?
13. Name the four planets with the highest density.
14. Which planet has the lowest density?
15. Which planet is the farthest from the Sun?
16. Which planets are nearer to the Sun than the Earth?
17. Which planets are larger than Uranus?
18. Which planets are smaller than Venus?
19. Which planets are hotter than the Earth?
20. Which planets are colder than the Earth?