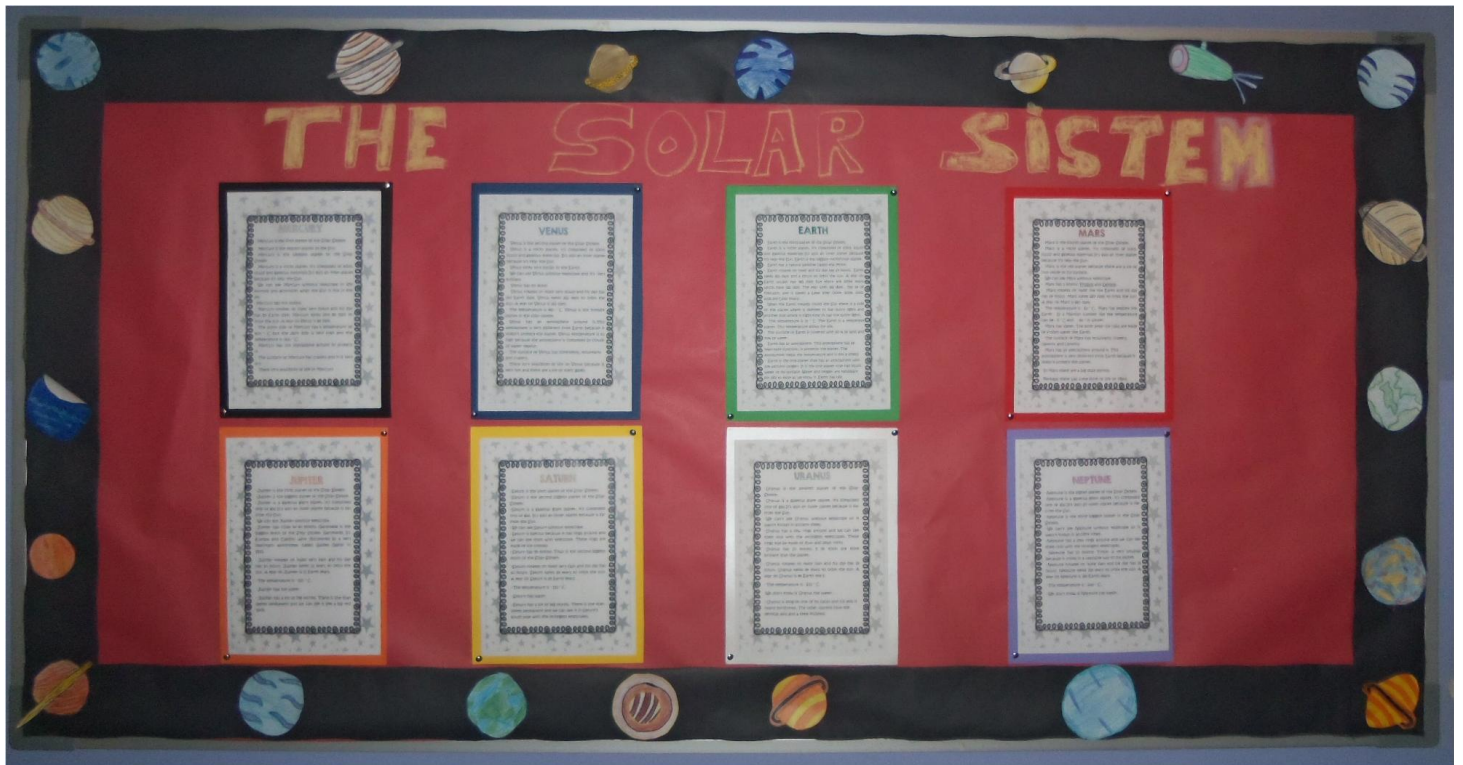


GRUP D'EXPERIMENTACIÓ PER AL PLURILINGÜISME

TÍTOL: THE SOLAR SYSTEM

Àrea: Medi Natural. Cicle mitjà. 4t

Autoria: Imma Reoyo González



GRUP D'EXPERIMENTACIÓ PER AL PLURILINGÜISME

TÍTOL: *The Solar System*

Material elaborat durant la realització de la formació adreçada als docents que implementen el pilotatge del GEP (Grup d'Experimentació per al Plurilingüisme) durant el curs 2014-2015, realitzada amb el/la formador/a del OUP

SG de Llengua i Plurilingüisme
Servei de Llengües Estrangeres

Abril, 2015



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Ten tips for learning success

- ❖ Read information about a planet in a group in order to be able to compare information with the others groups.
- ❖ Be responsible for your own task in a work group.
- ❖ Work collaboratively with your partners in groups.
- ❖ Use different strategies to help you understand scientific information.
- ❖ Share information to help you and others understand scientific knowledge better.
- ❖ Use different kinds of materials and activities (authentic texts and multimedia; writing, reading, craft and experiment activities).
- ❖ Do activities that require thinking and problem solving.
- ❖ Provide scientific knowledge related to the Solar System.
- ❖ Assess your own work and that of others.
- ❖ Provide suggestions on how to improve.

- We go to work this topic in groups of 3 or 4 people.
- Each group takes one planet.

THE PLANETS OF THE SOLAR SYSTEM

MERCURY

- Mercury is the first planet of the Solar System.
- Mercury is the nearest planet to the Sun.
- Mercury is the smallest planet of the Solar System.
- Mercury is a rocky planet, it's composed of solid, liquid and gaseous materials. It's also an inner planet because it's near the Sun.
- We can see Mercury without telescope in the morning and afternoon when the Sun is not in the sky.
- Mercury has not moons.
- Mercury rotates on itself very slowly and his day has 59 Earth days. Mercury takes only 88 days to orbit the sun. A year on Venus is 88 days.
- The sunny side of Mercury has a temperature of 400 ° C but the dark side is very cold and the temperature is -200 ° C.
- Mercury has not atmosphere around to protect it.
- The surface of Mercury has craters and it is very dry.
- There isn't possibility of life on Mercury.

VENUS

- Venus is the second planet of the Solar System.
- Venus is a rocky planet, it's composed of solid, liquid and gaseous materials. It's also an inner planet because it's near the Sun.
- Venus looks very similar to the Earth.
- We can see Venus without telescope and it's very brilliant.
- Venus has no moon.
- Venus rotates on itself very slowly and his day has 243 Earth days. Venus takes 262 days to orbit the sun. A year on Venus is 262 days.
- The temperature is 460°C . Venus is the hottest planet in the solar system.
- Venus has an atmosphere around it. This atmosphere is very different from Earth because it doesn't protect the planet. Venus temperature is so high because the atmosphere is composed by clouds of water vapour.
- The surface of Venus has continents, mountains and Craters.
- There isn't possibility of life on Venus because is very hot and there are a lot of toxic gases.

EARTH

- Earth is the third planet of the Solar System.
- Earth is a rocky planet, it's composed of solid, liquid and gaseous materials. It's also an inner planet because it's near the Sun. Earth is the biggest rocky/inner planet.
- Earth has a natural satellite called the Moon.
- Earth rotates on itself and his day has 24 hours. Earth takes 365 days and 6 hours to orbit the sun. A year on Earth usually has 365 days but there are some years which have 366 days. The year with 366 days, has 29 of February, and is called a Leap Year (2004, 2008, 2012, 2016 are Leap Years).
- When the Earth rotates round the Sun there is a side of the planet where is daytime (it has sunny light) and another side where is night-time (it has not sunny light).
- The temperature is 15 ° C. The Earth is a temperate planet. This temperature allows for life.
- The surface of Earth is covered with 30 % by land and 70% by water.
- Earth has an atmosphere. This atmosphere has an important function, it protects the planet. The atmosphere keeps the temperature and is like a shield.
- Earth is the only planet that has an atmosphere with 21% percent oxygen. It is the only planet that has liquid water on its surface. Water and oxygen are necessary for life to exist as we know it. Earth has life.

MARS

- Mars is the fourth planet of the Solar System.
- Mars is a rocky planet, it's composed of solid, liquid and gaseous materials. It's also an inner planet because it's near the Sun.
- Mars is the red planet because there are a lot of iron oxide on his surface.
- We can see Mars without telescope.
- Mars has 2 moons: [Phobos](#) and [Deimos](#).
- Mars rotates on itself like the Earth and his day has 24 hours. Mars takes 687 days to orbit the sun. A year on Mars is 687 days.
- The temperature is - 63 ° C. Mars has seasons like Earth. In a Martian summer day the temperature can be - 5 ° C and - 82 ° in winter.
- Mars has water. The both polar ice caps are made of frozen water like Earth.
- The surface of Mars has mountains, craters, caverns and canyons.
- Mars has an atmosphere around it. This atmosphere is very different from Earth because it doesn't protect the planet.
- In Mars there are big dust storms.
- Perhaps there was some form of life on Mars.

JUPITER

- Jupiter is the fifth planet of the Solar System.
- Jupiter is the biggest planet of the [Solar System](#).
- Jupiter is a gaseous giant planet, it's composed only of gas. It's also an outer planet because it's far from the Sun.
- We can see Jupiter without telescope.
- Jupiter has close to 60 moons: Ganymede is the biggest moon of the Solar System. Ganymede, Io, Europa and Callisto were discovered by a very important astronomer called Galileo Galilei in 1610.
- Jupiter rotates on itself very fast and its day has 10 hours. Jupiter takes 11 years to orbit the sun. A year on Jupiter is 11 Earth years.
- The temperature is -120°C .
- Jupiter has not water.
- Jupiter has a lot of big storms. There is one that seems permanent and we can see it like a big red spot.

SATURN

- Saturn is the sixth planet of the Solar System.
- Saturn is the second biggest planet of the [Solar System](#).
- Saturn is a gaseous giant planet, it's composed only of gas. It's also an outer planet because is far from the Sun.
- We can see Saturn without telescope.
- Saturn is famous because it has rings around and we can see them with telescope. These rings are made of ice crystals.
- Saturn has 59 moons: Titan is the second biggest moon of the Solar System.

- Saturn rotates on itself very fast and his day has 10 hours. Saturn takes 29 years to orbit the sun. A year on Saturn is 29 Earth years.
- The temperature is - 125 ° C.
- Saturn has water.
- Saturn has a lot of big storms. There is one that seems permanent and we can see it in Saturn's south pole with the strongest telescopes.

URANUS

- Uranus is the seventh planet of the Solar System.
- Uranus is a gaseous giant planet, it's composed only of gas. It's also an outer planet because it's far from the Sun.
- We can't see Uranus without telescope so it wasn't known in ancient times.
- Uranus has a few rings around and we can see them only with the strongest telescopes. These rings may be made of dust and small rocks.
- Uranus has 27 moons: 5 of them are more brilliant than the planet.
- Uranus rotates on itself fast and its day has 18 hours. Uranus takes 84 years to orbit the sun. A year on Uranus is 84 Earth years.
- The temperature is -210°C .
- We don't know if Uranus has water.
- Uranus is lying on one of its sides and its axis is nearly horizontal. The other planets have the vertical axis and a little inclined.

NEPTUNE

- Neptune is the eighth planet of the Solar System.
- Neptune is a gaseous giant planet, it's composed only of gas. It's also an outer planet because is far from the Sun.
- Neptune is the third biggest planet in the Solar System.
- We can't see Neptune without telescope so it wasn't known in ancient times.
- Neptune has a few rings around and we can see them only with the strongest telescopes.
- Neptune has 13 moons: Triton is very unusual because it orbits in an opposite way to his planet.
- Neptune rotates on itself fast and his day has 16 hours. Neptune takes 165 years to orbit the sun. A year on Neptune is 165 Earth years.
- The temperature is - 200 ° C.
- We don't know if Neptune has water.

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Activities

Based on the planet your group read about, answer the following. If you want you can choose 8 questions to answer.

Recalling

- 1- Is this planet a rocky/inner planet or a gaseous/outer planet?
- 2- What's the position of your planet?
- 3- Can I see your planet without telescope?

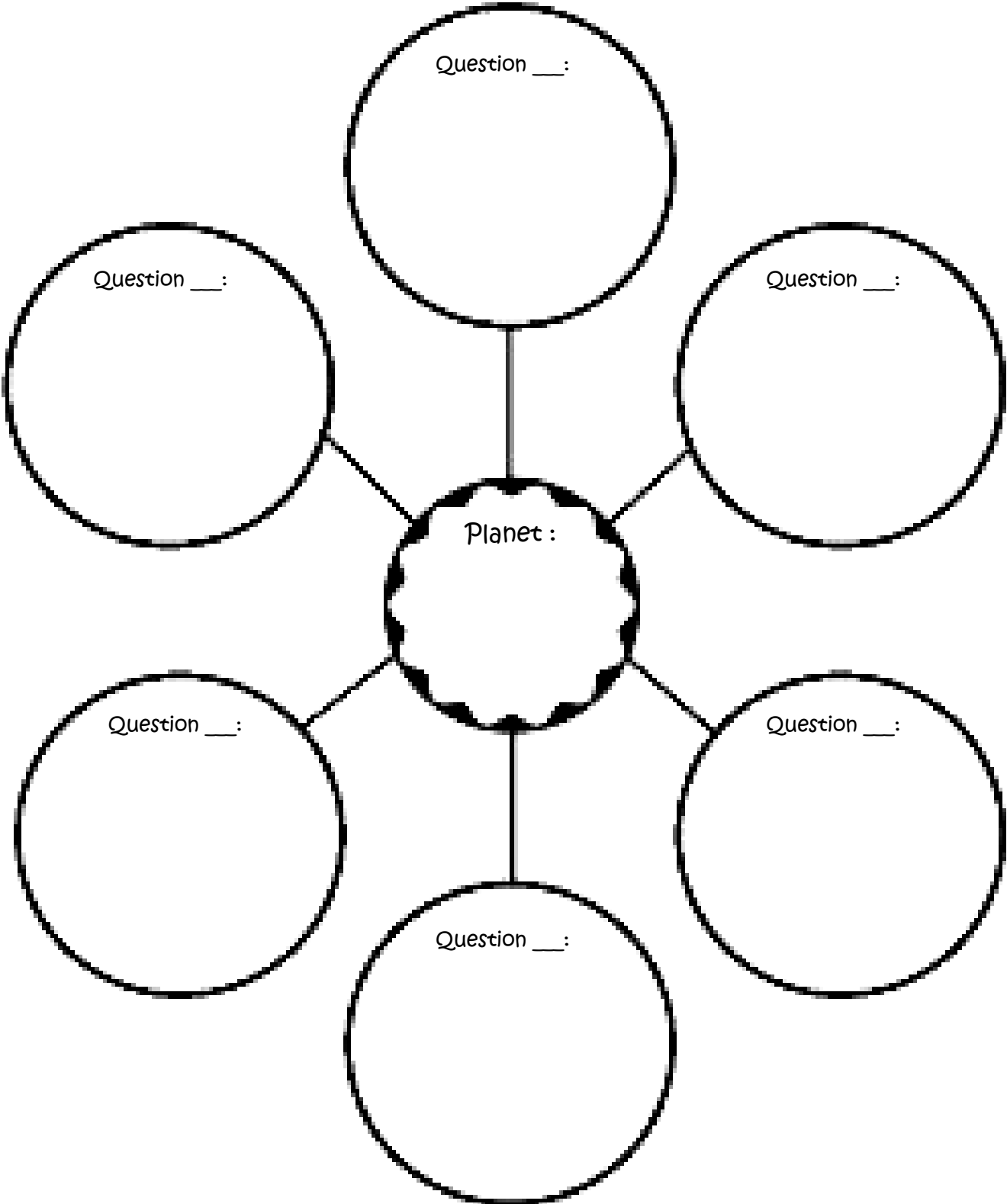
Understanding

- 4- Is this planet cold or hot?
- 5- Has this planet a long day or a short day?
- 6- Why have never visited your planet?

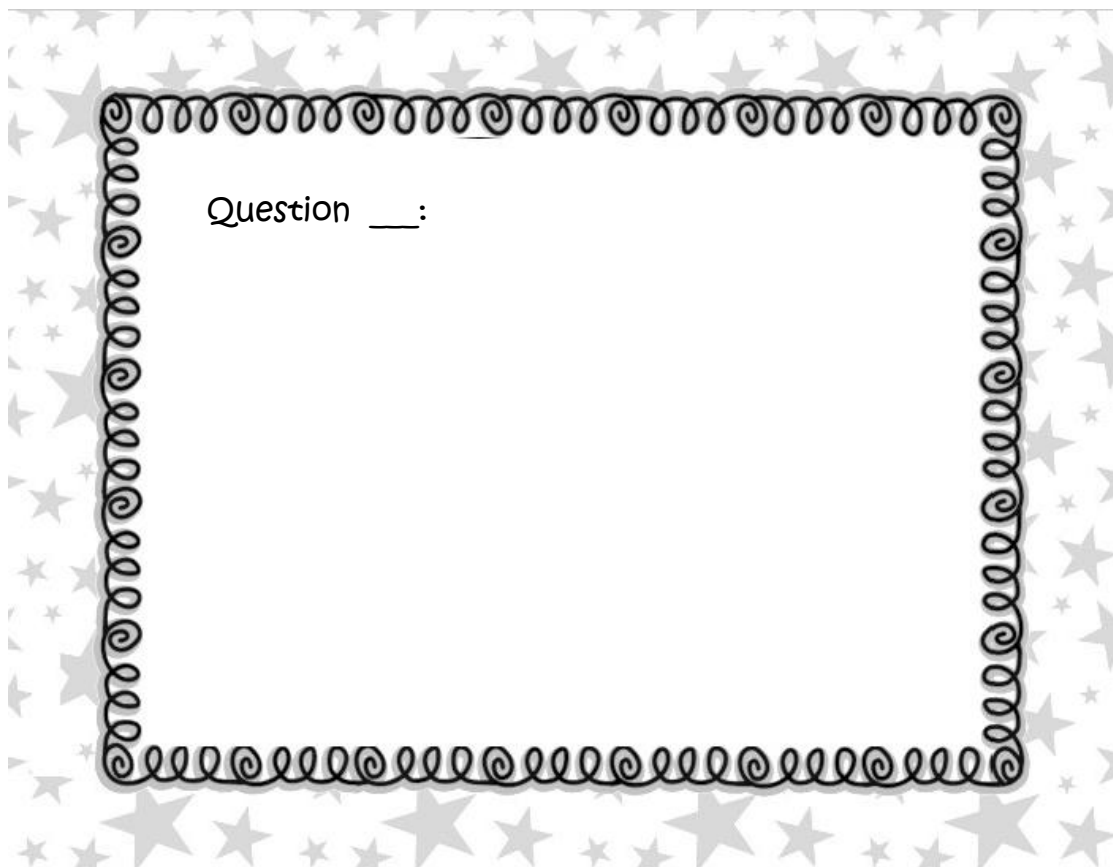
Applying

- 7- Do you think someone could visit this planet in a few years?
- 8- What do you think is the most important problem to live on this planet?
- 9- What could happen if this planet is closer to the sun?
- 10- If you go on holidays to this planet, what things are you going to carry?

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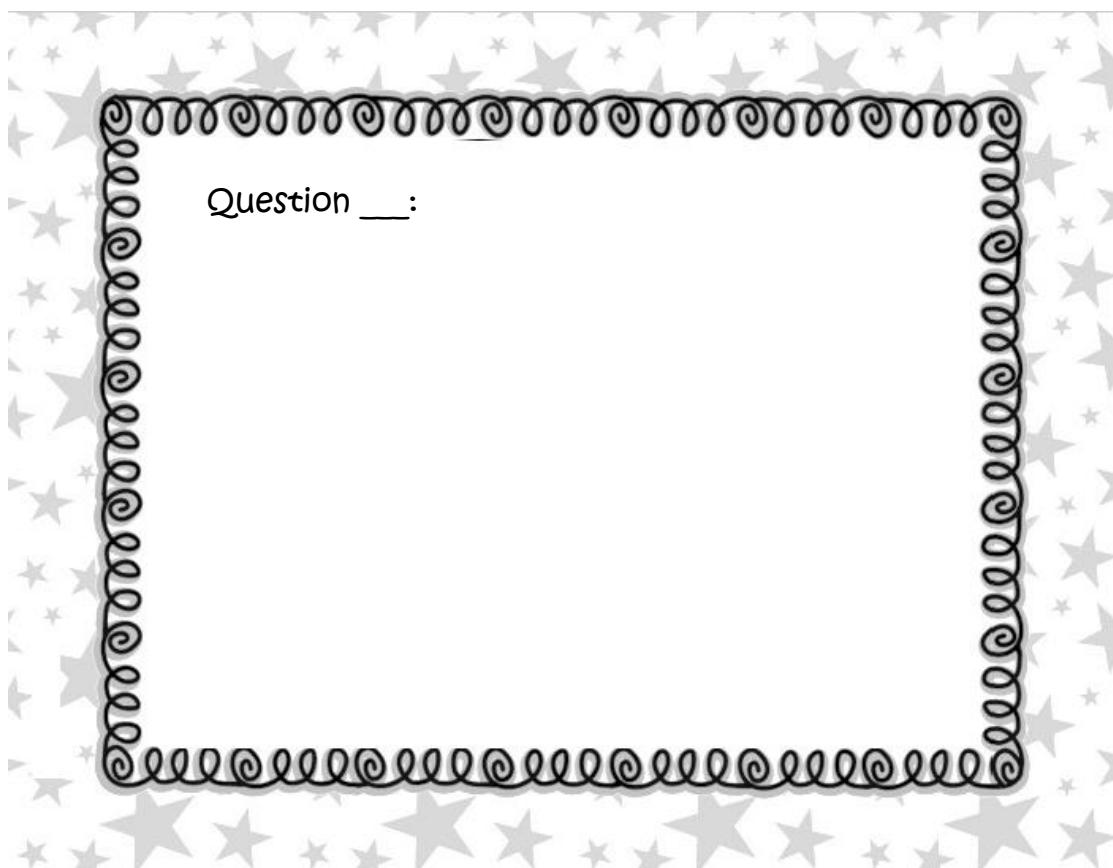


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Question ___:

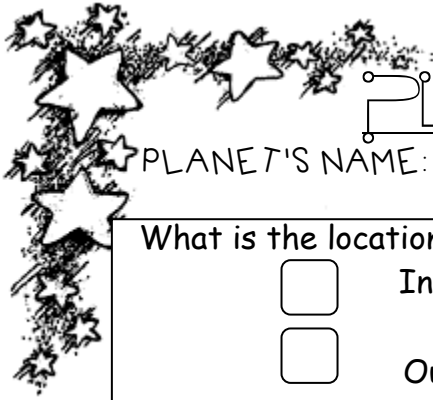
A rectangular card with a decorative border of small grey stars. Inside the border is a thick, black, hand-drawn wavy line forming a square frame. The text "Question ___:" is centered in the upper left area of the frame.



Question ___:

A rectangular card with a decorative border of small grey stars. Inside the border is a thick, black, hand-drawn wavy line forming a square frame. The text "Question ___:" is centered in the upper left area of the frame.

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PLANET REPORT

PLANET'S NAME: _____

What is the location of this planet? <input type="checkbox"/> Inner planet <input type="checkbox"/> Outer planet _____ from the Sun
The planet looks like ...
How many moons does it have?
How long is one rotation?

The planet is made of ... <input type="checkbox"/> rock <input type="checkbox"/> gas
What is the weather in this planet?
Interesting facts

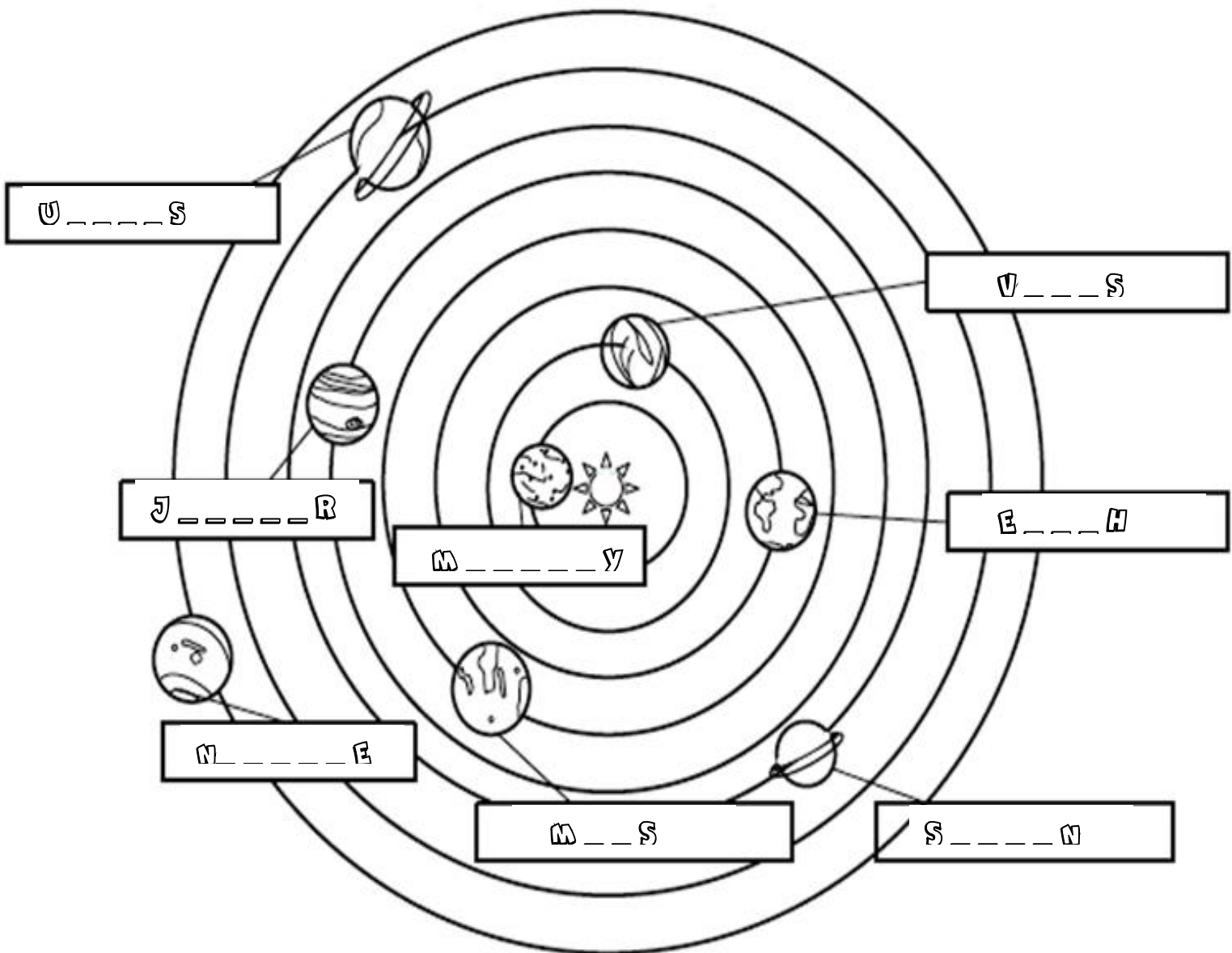
Image of the planet



Revision

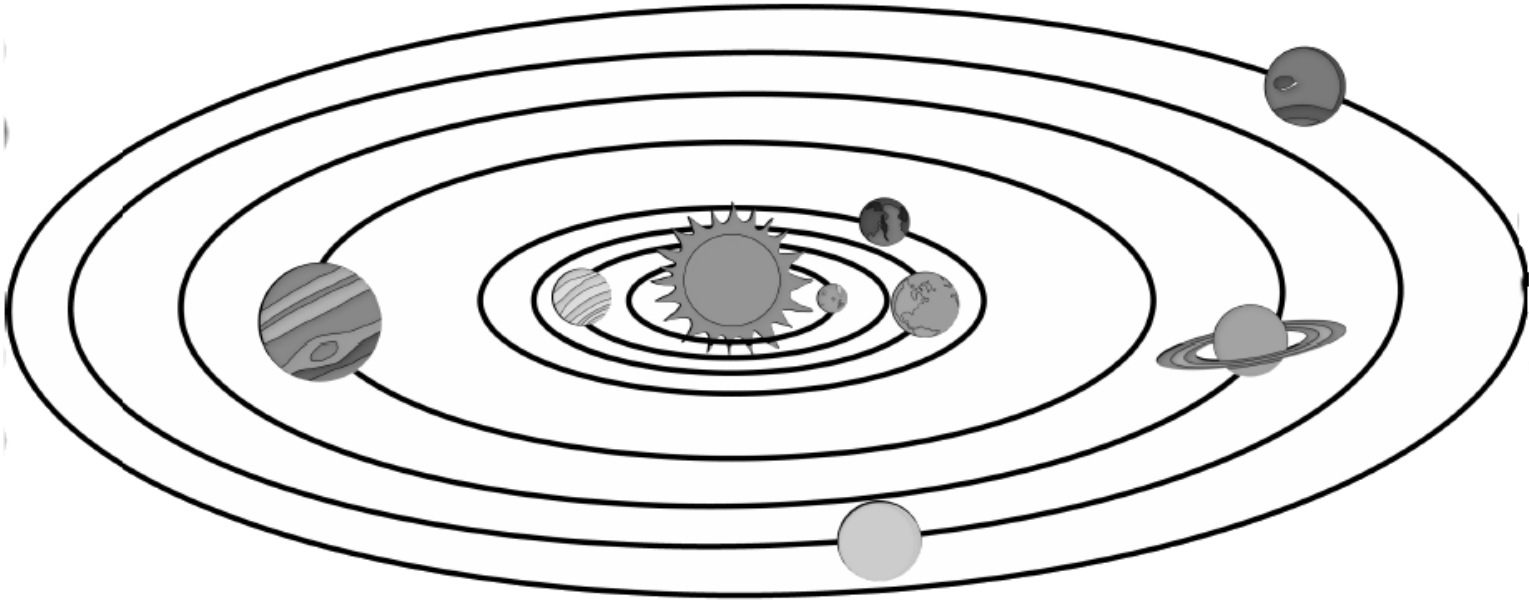
REVISION TASK

- 1- What is a planet?
 - a - It is a big ball to play football.
 - b - It is a celestial body that has no light or no heat.
 - c - It's a new bus to go to school.
- 2- How many planets and stars are in the Solar System?
 - a- There are one hundred stars and one planet.
 - b- There are zero stars and a million planets.
 - c- There are eight planets and only one star.
- 3- Complete:



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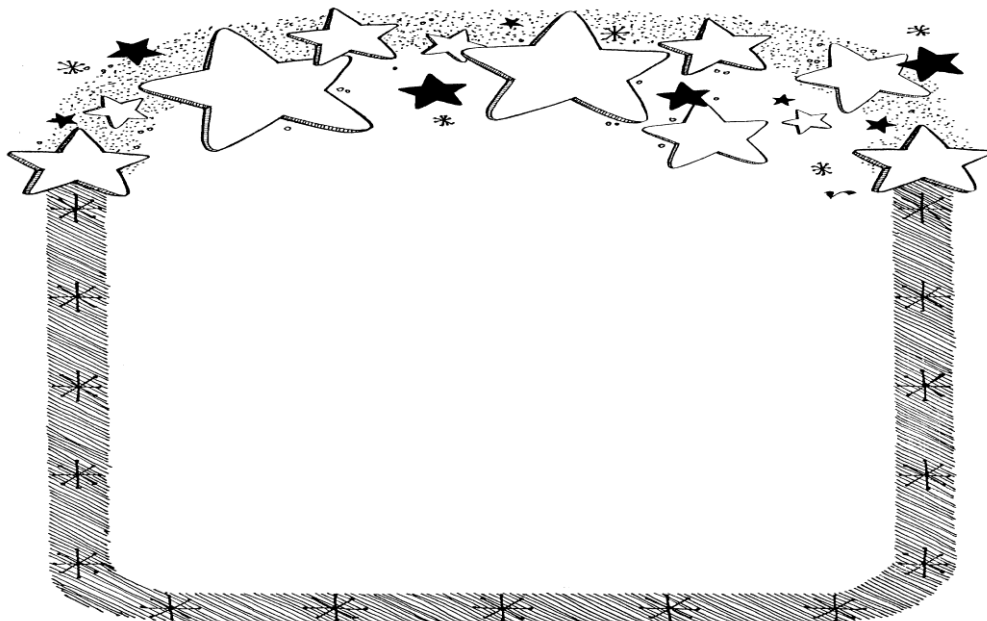
4- Circle the inner planets:



5- In which planet do you think your parents can live? Why?

My parents can live in _____ because they _____

6- Can you do a drawing of the people who live in an outer planet?
Write the noun of the planet where they come from.



Extension

Extension

- Now, you know a lot about your planet. Do you want to know more about the rest of planets of the Solar System?

Can you search, look



and play



in these websites:

http://www.kidsastronomy.com/solar_system.htm

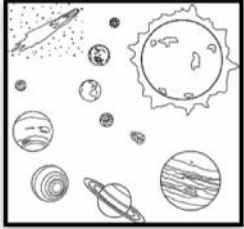
<http://www.planetsforkids.org/>

<http://kids.nineplanets.org/intro.htm>

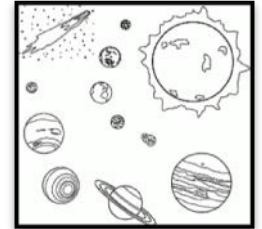
<http://www.makemegenius.com/cool-facts/solar-system-planets-space-100-interesting-facts>

<https://solarsystem.nasa.gov/kids/>

Project: collaborative problem solving



SOLAR SYSTEM PROJECT



<https://www.youtube.com/watch?v=LvwrDgId2HY>

https://www.youtube.com/watch?v=B4dK_083LrA

These weeks, we have been learning about the Solar system and we have seen these videos. In order to show what you have learned, I would like for you to create your own model about some fact of the Solar system to show in the school. There are no limits to the project; you can use anything you like!

Instructions

1- You must think and draw a design of the project. All the people of the group have to agree with it. The design must have a list with the materials you need to do it.

2- You must show it to me.

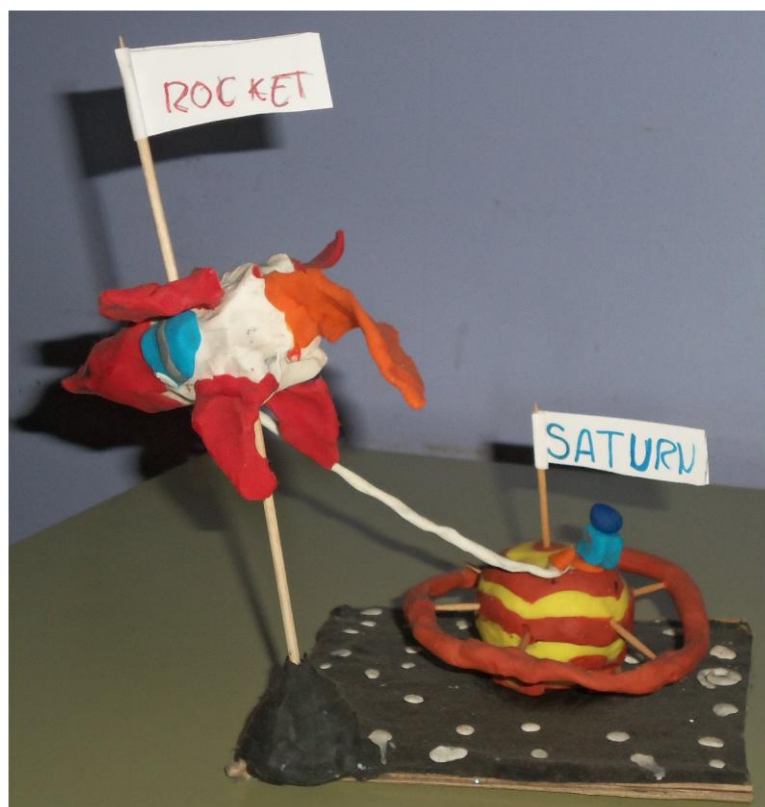
3- You must find the materials. If your group haven't got something, you need to borrow the others. Use sentences like these:

- Can you lend me some?
- Do you have ...?
- Can I catch ...?

Can use these materials:

- different colours of plasticine
- wood sticks, long and short (toothpicks)
- paper board and cardstock
- all the things you have in your pencil case
- all the things you find in the class





























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SOLAR SYSTEM PROJECT RUBRIC

Group name: _____ Project: _____

Members: - _____ - _____ Grade: _____
 - _____ - _____

	EXCELLENT (5 POINTS)	VERY GOOD (4 POINTS)	GOOD (3 POINTS)	IMPROVABLE WORK (1 POINTS)	SCORE
FOLLOW INSTRUCTIONS					
MAKING A DESIGN					
CREATIVITY					
HAND SKILLS					
TEAMWORK					
BEHAVIOUR					
RELATIONSHIP WITH OTHERS					

Teacher comments:

Final score: _____





























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Assessment

SOLAR SYSTEM UNIT RUBRIC

Group name: _____ Unit: _____

Members: - _____ - _____ Grade: _____
 - _____ - _____

	EXCELLENT (5 POINTS)	VERY GOOD (4 POINTS)	GOOD (3 POINTS)	IMPROVABLE WORK (1 POINTS)	SCORE
UNDERSTAND AND REMEMBER INFORMATION					
EFFORT FOR SPEAKING ENGLISH					
NEATNESS OF THE PRESENTATION IN THE ACTIVITIES					
ACCURACY OF CONTENT IN THE PROJECT					
ENJOY IMPLEMENTING THE ACTIVITIES					
APPROPRIATE BEHAVIOR IN ALL SITUATIONS					
GOOD COLLABORATION WITH CLASSMATES					

Teacher comments:

Final score: _____

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Checklist

In this unit you have...

CHECKLIST

In this unit you have...



- ❖ Read information about a planet in a group in order to be able to compare information with the others groups.
- ❖ Be responsible for your own task in a work group.
- ❖ Worked collaboratively with your partners in groups.
- ❖ Used different strategies to help you understand scientific information.
- ❖ Shared information to help you and others understand scientific knowledge better.
- ❖ Used different kinds of materials and activities (authentic texts and multimedia; writing, reading, craft and experiment activities).
- ❖ Done activities that require thinking and problem solving.
- ❖ Provided scientific knowledge related to the Solar System.
- ❖ Assessed your own work and that of others.
- ❖ Provided suggestions on how to improve.