Código: **CA-02**	**CA-02 LEARNING RUBRIC AND LEARNING EXPERIENCE** **LESSON PLAN 2024**	COLEGIO TERESIANO BOGOTÁ COMPAÑÍA DE SANTA TERESA DE JESÚS
Versión: **1**		
Fecha de revisión: **24/03/2023**		

PROJECT'S NAME: The forces that control the universe		
LEVEL: Third grade.	**CLASS:** A-B	**TEACHER/S:** Mauricio Acevedo
PERIOD III **FROM:** August 10th **TO:** November 30th	**KEY SKILLS:** Proposing hypotheses about the natural phenomena around me. **STANDARD KNOWLEDGES:** Model the movements generated by the interaction between the sun, the Earth, and the moon considering magnetism, gravity, and distance.	
WHICH ARE THE COMPREHENSIVE SKILLS WE WANT THE STUDENTS HAVE? Identifies the main characteristics of the Earth, The Sun, and the Moon. Experience and identify the magnetism concept giving examples according to different natural phenomena.	 **WHAT TO LEARN FROM THE TERESIAN SKILLS?** **Conceptual:** Stars, constellations, planets, gravity, moon, orbits, magnetism and satellites. **Procedural:** Graphic organizers development, observation, instruction following, exploration exercises. **Attitudinal:** Respect for others' opinions and work, class participation, commitment to the deliveries and personal work, punctuality with the dates given by the teacher.	**WHICH IS THE SCENERY OR PROBLEMATIC SITUATION?** This mini-project will be shown through the school's social media to show what we know about the universe.

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STUDENT'S ROLE: Astronomer		
CHALLENGE: What do you know about the history of the universe? Maybe that idea is different than mine, so come with me and represent our vision of the universe.	**PRODUCT:** Alien Solar system model.	**PROMOTION:** School's social media.

LEARNING OUTCOMES			
SUPERIOR (S)	**ACCURATE (A)**	**AVERAGE (B)**	**LOW (J)**
The student creates a REPRESENTATION OF THE UNIVERSE, using the elements or ways he/she decides are the best to talk about all the characteristics of the GRAVITY as the main force that makes our universe move and how the magnitudes like temperature, distance, and weigh relate each other; assuming an excellent disposition for all activities, directing the exercises with a focus investigative, good attitude and respect for everyone's production.	The student designs a REPRESENTATION OF THE UNIVERSE, using the elements or ways he/she decides are the best to talk about all the characteristics of the GRAVITY as the main force that makes our universe move and how the magnitudes like temperature, distance, and weigh relate each other; assuming an excellent disposition for all activities and in all the challenges of class.	The student presents a conventional MODEL OF THE SOLAR SYSTEM and describes its main elements, he/she also mentions some relations between temperature, weight, and size with the celestial bodies, assuming an excellent disposition for all activities with good disposition, attitude, and order.	The student shows low development of their comprehension skills and some barriers to conceptually relating the main biological animals' structures and their need for being alive; therefore, the student must rehearse all the conceptual main aspects of the class.

LEARNING EXPERIENCE

STAGE 1: The history of the universe.
EXECUTION: From cycle one to cycle five
CRITERIUM: ***Identifying some of the remarkable theories of the universe formation.***
TASKS:

Describing the main elements that conform to the universe and solar system.

(Cycle 1, six hours)

- ✓ The students describe the universe's elements using the information from the videos, by completing a char given by the theacher.
  - https://www.youtube.com/watch?v=GncYOf29uc4
  - https://www.youtube.com/watch?v=Vw_TBtAf1Bc

Element	Physic characteristics
	Temperature Size Shape

- ✓ The students watch videos about the solar system theories and make a comparison chart to analyze the models.
  - https://www.youtube.com/watch?v=UtOEnTiAZlU
  - https://www.youtube.com/watch?v=RsKdoEtZdd8
  - https://www.youtube.com/watch?v=ZGr1nHdzLyk
  - https://www.youtube.com/watch?v=REUdlA44vuY

✓ The students complete the chart to define differences and things in common between different theories.

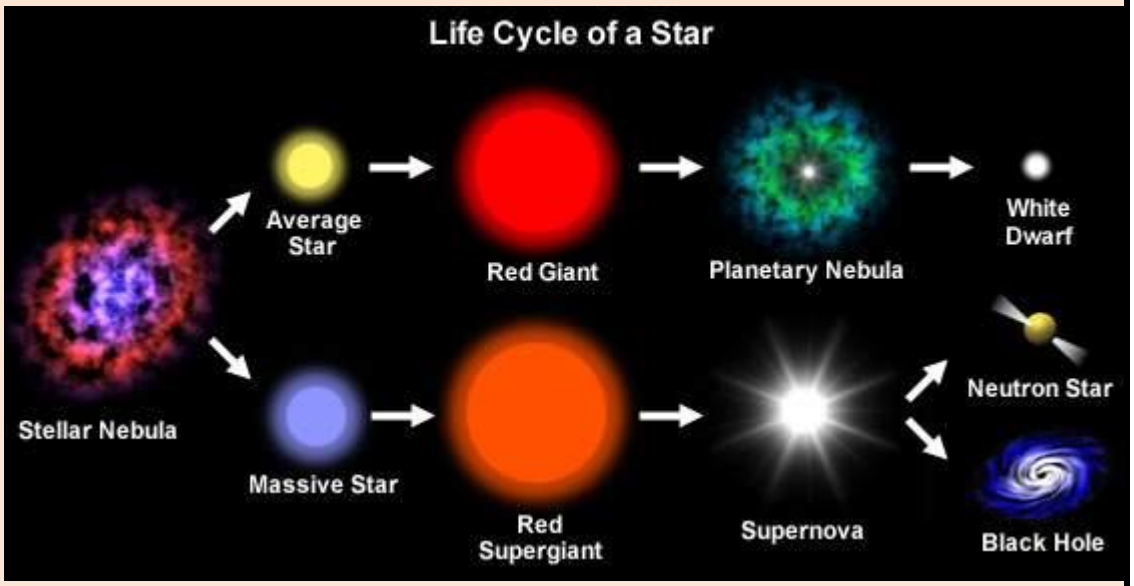
Galileo/ Heliocentrism	Geocentrism	Differences	Things in common

(Cycle 2, six hours)

✓ The students rehearse and analyze the forces in the universe like temperature, gravity, and so on.

- https://www.youtube.com/watch?v=PeNuj2GH8xg
- https://www.youtube.com/watch?v=e8YzKyot4Pc&t=71s
- https://www.youtube.com/watch?v=BQvo7vyCmuE

✓ The students practice different exercises to comprehend the importance of the universe's forces.



- Why do you think there are many types of stars?
- Why is they are represented with different colors?
- What do you think makes them so different and why?

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Recognizing gravity as a force that maintains the universe in movement.

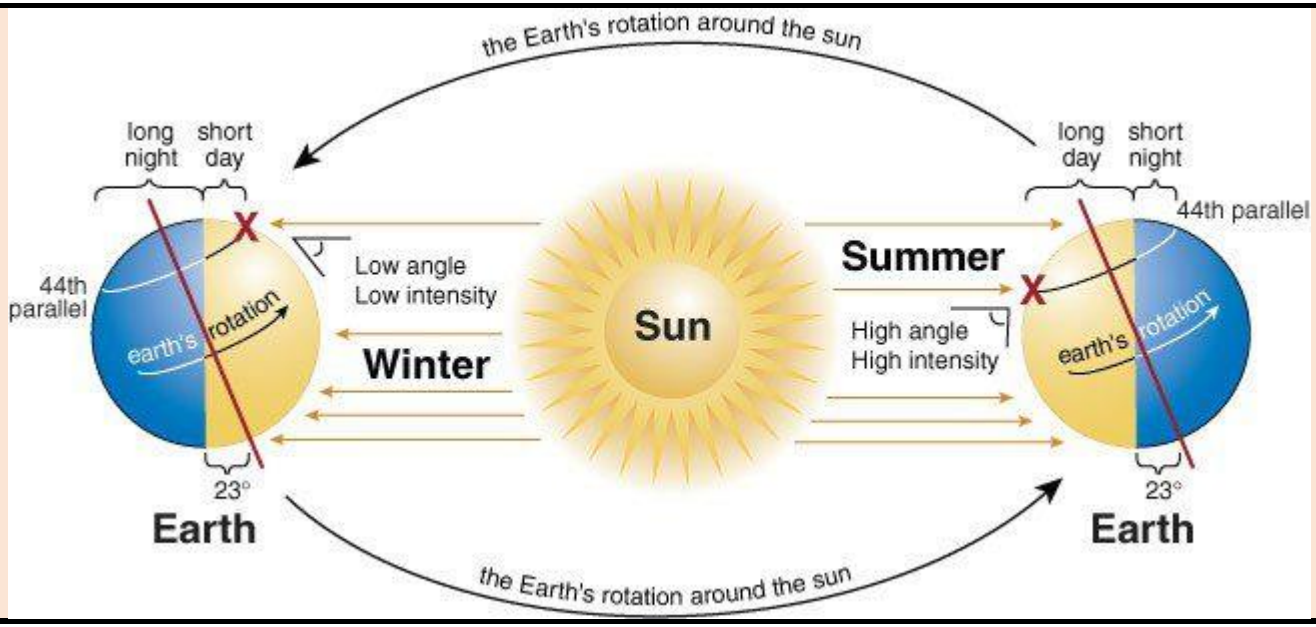
(Cycle 3 and 4)

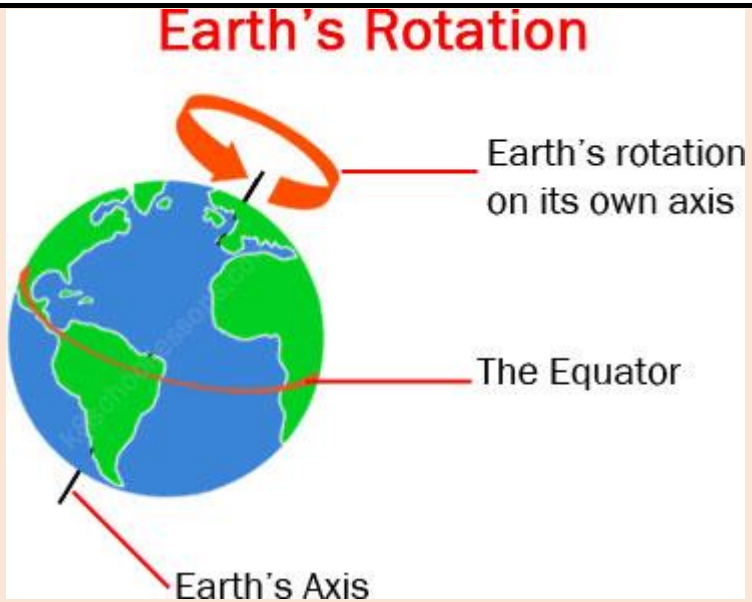
✓ The kids observe the videos to identify the main characteristics of gravity as a force and the light as an energy type.

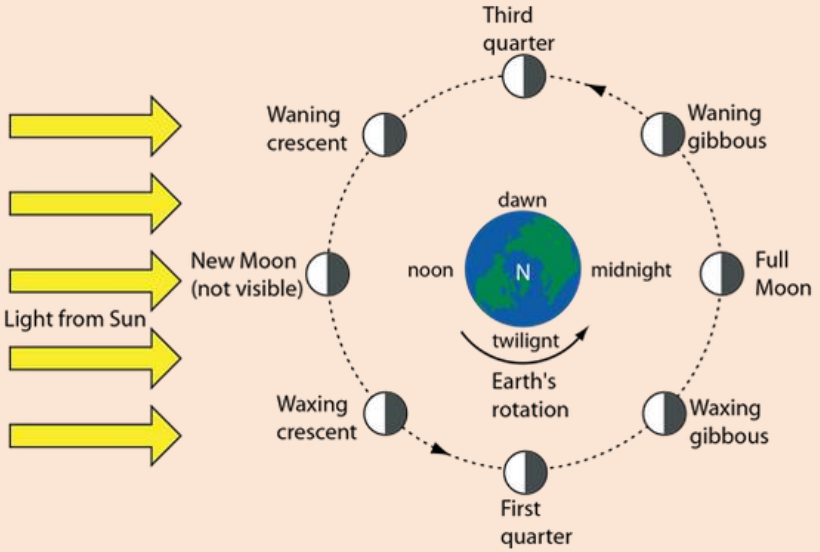
- https://www.youtube.com/watch?v=kkwgPwBKyl4
- https://www.youtube.com/watch?v=DzpHXtnXFCI
- https://www.youtube.com/watch?v=suQDwZcnJdg

- How the light and gravity affect the Moon Phases?
- Why is the Moon changing "its shape during a certain period?
- How long does the Moon take to complete an orbit around the Earth?
- How the light and gravity affect the Earth's planet?

✓ Students complete the schemes to complete the analysis proposed by the teacher.


the Earth's rotation around the sun
long night
short day
long day
short night
44th parallel
44th parallel
Low angle
Low intensity
Summer
Sun
Winter
High angle
High intensity
earth's rotation
earth's rotation
23°
23°
Earth
Earth
the Earth's rotation around the sun





Discovering the main characteristics of the solar system.
(Cycle 5)

- ✓ Students watch videos about the solar system and relate the magnitudes they have learned with the celestial bodies.
  - https://www.youtube.com/watch?v=w36yxLgwUOc&t=31s
  - https://www.youtube.com/watch?v=lcZTcfdZ3Ow&t=213s

* make the readings about the planes and underline the main factors from each one of them.

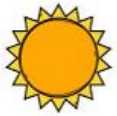
Space Game Cheatsheet

Earth

- the planet we live on
- 3rd planet from the sun
- only has 1 moon

Mercury

- closest to the sun
- gray colored
- no atmosphere



Sun

- a star
- the planets orbit around it
- provides the Earth with warmth

Jupiter

- 5th planet from the sun
- largest planet
- has 53 moons

Uranus

- light blue planet
- 7th planet from the sun
- coldest temperature of the planets

Neptune

- blue planet
- 8th planet from the sun
- has 6 faint rings

Saturn

- has large rings
- 2nd largest planet
- 6th planet from the sun

Mars

- red planet
- 4th planet from the sun
- has 2 moons

Venus

- 2nd planet from the sun
- hottest planet
- no moon

Astronaut

- person who travels in space

Space Shuttle

- reusable spacecraft that carries people into space

Rocket Ship

- non-reusable vehicle that goes into space

our solar system
FUN FACTS

Mercury Mercury is the smallest planet in our solar system. Made mainly of metal and rock, Mercury is the closest planet to the sun but not the hottest (Venus has experienced higher temperatures). It has no moons, no rings, and 38% the gravity of Earth. A day on Mercury lasts 176 Earth days.

Venus Venus has no moons or rings, and can reach temperatures of nearly 880°F. It is sometimes called the morning or evening star because Earth's moon is the only thing brighter than Venus in the night sky. The core is made of iron and metal. Venus rotates in the opposite direction of Earth.

Earth Our planet is the only one in the solar system that has life. It is the only planet that has an atmosphere humans can breathe, and the only planet that has liquid water on its surface. The Earth is the only one of the inner planets (Mercury, Venus, Earth and Mars) to have one large satellite, the Moon.

Mars Mars is named after the Roman god of war and has two moons named Phobos and Deimos. Because Mars doesn't have any oceans, it has nearly the same land surface as the Earth. Mars' surface is dry and much of it is covered with a reddish dust and rocks making it appear red when viewed from Erath's surface.

Jupiter Jupiter is the largest planet in the solar system and has more than 50 moons. Four of the moons are the size of planets. Io, one of the moons, has more volcanoes than any other planet in the solar system. Jupiter has rings made of dust and bits of rock, a fact that surprised scientists when the rings were discovered in 1979. The "Red Spot" on Jupiter is a gigantic storm that has been visible for at least 300 years.

Saturn Saturn is the second largest planet in our solar system and is made up of more hydrogen than helium so it's less dense (If we could fit Saturn into a bathtub it would float.) It has a small rocky core covered with liquid gas. The rings surrounding Saturn stretch out into space for thousands of miles and are made up of millions of ice crystals, some as big as houses and others as small as specks of dust.

Uranus Uranus turns on its axis once every 17 hours and 14 minutes, and makes one trip around the Sun every 84 Earth years. It's often referred to as an "ice giant" planet and has an upper atmosphere made of water, ammonia, and methane ice crystals that give the planet its pale blue color. Uranus has hit the coldest temperatures of any planet at -371°F although Neptune is usually colder.

Neptune Neptune is the coldest planet in the solar system. Its largest moon, Triton, has a retrograde orbit meaning it orbits Neptune backwards from the rest of the moons (there are 13 known moons). Despite its huge size, the gravity on Neptune is similar to that on Earth. Neptune's atmosphere is mostly made up of hydrogen with a smaller amount of helium, which gives it its blue color.

STAGE 2: An ideal solar system.
EXECUTION: From cycle six to cycle seven.
CRITERIUM: ***Designing a model of a solar system that could keep life.***
TASKS:

Classify celestial bodies that will be in the model.
(Cycle 6, six hours)

- ✓ The students propose different celestial bodies they want to be part of their models of solar systems, then they will use the information from the CiFi movie.
  - https://www.youtube.com/watch?v=2YTYleNFaPE

STAGE 3: Life is possible in other universe's places.
EXECUTION: Cycle eight.
CRITERIUM: ***Designing an alien solar system.***
TASKS:
The students create their models following the thinking routine.

- ✓ Students make a list of the elements in their designs, planets, stars, moon, and so on.
- ✓ Students plan the model.
- ✓ Students make a drawing of their model.
- ✓ Students show their models on the school's social media, with a brief explanation.
- ✓ Students present their final test.