



UNIT GRAPHIC ORGANIZER

SUBJECT: Science

UNIT: 4

COURSE: Fifth

TEACHER: Luisa Ascencio – Noelia Vega

DATE: September 6th -2021

The universe

THROUGHLINES:

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| <ol style="list-style-type: none"> 1. How was our Earth planet formed? 2. What objects can I find in the outer space? 3. How do astronomers explore the universe? |
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GENERATIVE TOPIC



UNDERSTANDING GOALS:

<p>The student will recognize characteristics of different celestial bodies that exist in the universe, through the comparison of their position to the sun, surface, movements, and gravities, to show specific features about them.</p>	<p>The student will comprehend different theories that explain the creation of the universe as well as the factors that brought life to the Earth, through the analysis of different evidence, to improve his/her comprehension about universe's origin.</p>	<p>The student will understand the importance of scientific and technological advances in the explanation of the universe, through the use of some of NASA's platforms and the creation of a spaceship model, to improve his/her scientific thinking skills.</p>
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	UNDERSTANDING PERFORMANCES	TIME	ASSESSMENT	
	ACTIONS		WAYS	CRITERIA
Exploration Stage	<ul style="list-style-type: none"> •To understand the organization of our current solar system. •To compare characteristics of different celestial bodies such as stars, planets, comets, asteroids, meteors, etc. •To describe the effect of gravity in the change of weight the different planets. 	Weeks: 3	<ul style="list-style-type: none"> • Creating comparative charts about differences between some celestial bodies. • Making a solar system scroll, to scale the distance between planets of the Solar System. • Describing the structure and movements of the 8 planets, using sources as the NASA Space Place. • Inventing a planet that combines characteristics of two or more planets of the Solar System. The students will explain the abiotic and biotic factors present there. • Calculating the weight of each student on the 8 planets of the Solar System, taking into account their mass and the gravity of other planets. • Solving activities from the science guide. <p>SYNTHESIS PROJECT</p> <ol style="list-style-type: none"> 1. Students will recognize the structure of the astronomy accordion shape journal they will develop, and they will prepare it using two-eighths of cardstock (divided into 8 sections, each one of 12,5 x 17,5 cm approximately). The first (1st) section will be the cover. 2. Students will make a diagram of the Solar System with informative labels on the second (2nd) section of the accordion journal. 3. Students will create a graphic vocabulary panel on the third (3rd) section of the accordion journal. 4. Students will create graphs about the rotation and revolution periods of the 8 planets in the Solar System on the fourth (4th) section of the accordion journal. 5. Students will create a graph about their weight on the 8 planets of the Solar System on the fifth (5th) section of the accordion journal. 6. <u>Case study:</u> Students will use the scientific method to establish a comparison between different celestial bodies. 	<p>Describe properties and compare graphs about different celestial bodies.</p>

<p>Guided Stage</p>	<ul style="list-style-type: none"> •To recognize evidence that supports theories about the origin of the universe and life on the Earth. •To identify different scales in the structure of matter, related to the Big Bang theory. 	<p>Weeks: 3</p>	<ul style="list-style-type: none"> • Creating a timeline to show the characteristics from the creation of the universe in the Big Bang until the proliferation of life on the Earth. • Drawing different scales in the structure of matter, to underline the relation between a molecule and a quark. • Modeling some variables of the expanding model of the universe, using a balloon and a measuring tape. • Solving activities from the science guide. <p>SYNTHESIS PROJECT</p> <ol style="list-style-type: none"> 1. Students will represent the phases of the Big Bang, through drawings and explanations on the sixth (6th) section of the accordion journal. 2. Students will compare some theories about the origin of life on the Earth, through drawings and explanations on the seventh (7th) section of the accordion journal. 3. <u>Case study:</u> Students will analyze some evidence that supports the Big Bang theory and some theories about the origin of life on the Earth planet. 	<p>Explain how the universe and life on Earth could be originated.</p>
<p>Learning Evidence</p>	<ul style="list-style-type: none"> •To distinguish functions and structures of the needed components of artificial satellites. •To understand the importance of scientific and technological advances in the exploration of the universe. 	<p>Weeks: 2</p>	<ul style="list-style-type: none"> • Discussing some facts and hypotheses about potentially habitable exoplanets, based on an inquiry about the NASA's Exoplanet Exploration Program. • Describing functions of some components of satellites as the Hubble Space Telescope and the Curiosity Rover, based on the exploration of some NASA's platforms. • Modeling the creation of an artificial satellite, pointing its purpose out, as well as the linked wavelengths, instruments, and optics. <p>SYNTHESIS PROJECT</p> <ol style="list-style-type: none"> 1. Students will draw a model of a rocket ship, including the main parts, their functions, and explanations, on the eighth (8th) section of the accordion journal. 2. <u>Case study:</u> Students will create a story about how a human day could be on the drawn rocket ship. 3. Students will present their accordion book as if they were astronomy journalists. 	<p>Design a spacecraft, applying technological advances to explore the universe.</p>