

CRM 4 El Sistema del Sol, la Tierra y la Luna

Administración

- 25 days
- Nov. 13-Dec. 20
- Week 12-17

RESULTADOS ESPERADOS

Formando Conceptos

Concepts in the study of the Sun, Earth, and Moon System help explain many patterns of change we observe in the world around us. Students examine changes in the sky and build an understanding of the Earth and our place in the solar system. These concepts in this unit build a foundation for the study of Astronomy, Climate Change, and Environmental Sciences. The following make meaning valuable for learners and are investigated in this unit:

- The Sun, Earth, and Moon interact in a system and are intricately interconnected. The motion of the Sun, Earth, and moon and tilt of the Earth cause observable patterns: the apparent movement of the Sun in the sky, day/night, daily and seasonal changes in the length of shadows, seasons, phases of the moon, and the movement of stars in the night sky.
- Earth is part of a broader system: the solar system, which is a small part of the Milky Way Galaxy which is one of many galaxies in the universe.
- Gravity holds the planets in orbit around the Sun, and the gravity of various planets holds their moons in orbit around them.
- The Sun is the major source of energy for Earth, and fuels the water cycle and weather.

Transferencia: Students will observe, graph, and analyze patterns of change in both weather and objects in the sky to build an understanding of interactions among the Sun, Earth, and Moon. Students will analyze the position of the planets to understand as the Earth and other planets formed, the heavier elements fell to their centers. On planets close to the Sun, the lighter elements were mostly blown or boiled away by radiation from newly formed the Sun. On the outer planets, the lighter elements still surround them as a thick layer of gas or frozen solid layers. So, how the planets are positioned in the solar system gives you an idea of how they were formed and their composition.

Entendimiento perdurable:

- El sol conduce muchos de los ciclos en la Tierra.
- Podemos observar, describir y anotar objetos y patrones en nuestro cielo y en la Tierra.
- Ocho planetas de diferentes tamaños, composición, y superficies orbitan el sol.

Preguntas Esenciales:

- ¿Cómo nos afectan los patrones y ciclos del sistema de la Tierra, la Luna y el Sol?
- ¿Cómo se posicionan los planetas en nuestro sistema solar?

Vocabulario Esencial

- asteroid belt / correa asteroide
- atmosphere / atmósfera
- axis/eje
- condensation / condensación
- Earth/la Tierra
- evaporation/evaporación
- gas/ gaseoso
- gravity/gravedad
- inner planets/planetas interiores
- Jupiter/Júpiter
- location/ubicación
- Mars/Marte
- Mercury/Mercurio
- Neptune/Neptuno
- orbit/órbita
- outer planets/planetas exteriores
- precipitation /precipitación
- radiation / radiación
- revolution/vuelta
- rotation/rotación
- saturation / saturación
- Saturn/Saturno
- Sphere/esfera
- solar system/sistema solar
- sunspots/mancha solar
- temperature /temperatura
- thermometer/termómetro
- tilt/inclinación
- UV light / luz ultravioleta
- Uranus/Urano
- Venus/Venus
- wind direction/dirección del viento

Vocabulario de apoyo

- [Vocabulario de apoyo para las escuelas primarias](#)

Requisitos de conocimiento previo del estudiante:

Students should know:

- weather occurs locally over a short time.
- thermometers measure temperature (heat energy.)
- weather changes are caused by changes in air pressure systems.
- weather can be predicted.
- weather changes from season to season.
- preparing for changes in the weather can keep us safe and prevent illnesses due to weather conditions.
- The water cycle consists of the movement of water above and on the surface of the earth.
- the Sun is the main energy source for the water cycle
- patterns occur in the cycle of the seasons, tides, shadows, and the observable appearance of the Moon.

Recursos Kit del módulo de AISD, Carpeta de lecciones modelo, Libros electrónicos: Libros nivelados de ciencias de Envisions, Texto de Scott Foresman, [Recursos para el cuaderno de ciencias](#), [BrainPop Jr.](#), [Discovery Education](#), [Recursos y Estrategias de Diferenciación](#)

ELPS: Bajo el mandato del Código Administrativo de Texas (19 TAC §74.4), haz clic en el enlace [English Language Proficiency Standards \(ELPS\)](#) para proporcionar apoyo a los Aprendices del Idioma Inglés.

TEKS Conocimientos y Destrezas	Adquisición Conocimientos y Destrezas Importantes	
STAAR: RC = Área de Conocimientos; DC = Destrezas de Doble Codificación; Estándar de Preparación Esencial; Estándar de Apoyo , Conceptos son tratados en otra unidad.	Los estudiantes conocerán	Los estudiantes serán capaces de

3.8 La Tierra y el espacio. El estudiante entiende que hay patrones reconocibles en la naturaleza y entre los objetos en el cielo. Se espera que el estudiante:

3.8A: observe, mida, anote y compare los cambios diarios en el estado del tiempo en distintos lugares al mismo tiempo, incluyendo la temperatura del aire, la dirección del viento y la precipitación.	<ul style="list-style-type: none"> • Weather is always changing and occurs locally over a short time. • Thermometers measure temperature (heat energy.) • Weather changes are caused by changes in air pressure systems that result from the Sun heating the Earth. 	<ul style="list-style-type: none"> • Observe, measure and record daily weather and changes in weather over time (temperature, precipitation, wind direction and conditions). • Graph and compare recorded weather data in different locations.
3.8B: describa y dibuje al Sol como una estrella compuesta por gases que provee energía luminosa y térmica para el ciclo del agua.	<ul style="list-style-type: none"> • The Sun is a medium sized star that provides heat and light energy for the water cycle. • The water cycle consists of the movement of water above and on the surface of the Earth, causing patterns and cycles in Earth’s weather. • Water evaporates from the Earth’s surface, rises and cools, condenses into precipitation, and falls again to the surface. Water that falls to the ground collects in streams, rivers, and lakes, and eventually flows back into the oceans. 	<ul style="list-style-type: none"> • Create a diagram of the Sun and its effect on Earth. • Describe and illustrate the continuous movement of water above and on the surface of Earth. • Investigate the water cycle processes through hands-on explorations.

<p>3.8C: construya modelos que demuestren la relación del Sol, la Tierra y la Luna, incluyendo órbitas y posiciones.</p>	<ul style="list-style-type: none"> • Models help us understand the relationships, positions and orbits of the Sun, Moon, and Earth system. • The moon orbits the Earth in a 28 day cycle which causes different parts of the moon to be illuminated and seen from the Earth. (moon phases) • The Earth orbits the Sun in a 365 day cycle. (one year) • The Sun, moon, and Earth all rotate. • The Earth's rotation causes day and night cycles on Earth. • The Earth tilts on its axis at a 23.5 degree angle. This tilt coupled with the revolution gives us the seasons. 	<ul style="list-style-type: none"> • Construct models of the Sun, moon, and Earth system. • Demonstrate the interactions between all of the parts of the system. • Demonstrate the movement and position of each part of the system. • Describe the interactions of these parts of the system.
<p>3.8D: identifique los planetas en nuestro sistema solar y sus posiciones con relación al Sol. RC3</p>	<ul style="list-style-type: none"> • People cannot determine how the Solar System is put together just by observing the night sky. • The Sun is the center of our Solar System and its gravity keeps all the planets and other objects in orbit around it. • The Earth is one of 8 planets that revolve around the Sun in nearly circular orbits. • Each planet has unique characteristics and a unique position in the solar system. 	<ul style="list-style-type: none"> • Illustrate and describe the position of each of the 8 planets in our solar system. • Describe the unique characteristics of each of the planets
<p>El estudio de las Ciencias se enseña a través de la perspectiva de los Procesos Científicos (TEKS 3.1-3.4) por lo tanto, los Conocimientos y Destrezas Esenciales de Texas (TEKS) deberán enseñarse en conjunto con el contenido durante el transcurso del año. Sugerencias para integrar los TEKS en cada unidad se ofrecen en el Itinerario Anual; sin embargo, los TEKS que se pueden tratar dentro de una unidad dependen en gran parte de las actividades de aprendizaje en que están participando los estudiantes. Por esta razón, el maestro debe considerar las actividades que se emplearán con los estudiantes para asegurar que todos los Procesos Científicos TEKS estén debidamente incorporados durante el curso. En el tercer grado, se recomienda a los distritos que faciliten la realización de investigaciones en el laboratorio y de campo por lo menos en 60 por ciento de tiempo de instrucción.</p>		

EVIDENCIA DE EVALUACIÓN	
Productos del trabajo del estudiante/evidencia de evaluación	
Actividades de Desempeño Académico	Otras pruebas o evidencia (ej. exámenes de unidad, exámenes abiertos tipo ensayo, pruebas breves, ejemplos de trabajo diario del estudiante, observaciones, etc.)
<ul style="list-style-type: none"> • Record daily weather for several weeks by talking about it in daily classroom routines using the sentence stem Today's weather is _____. The temperature is _____. 	<p>Evaluación de Ciclo Corto</p> <ul style="list-style-type: none"> • <i>SCA Testing Window: December 10-14</i> <i>Tested TEKS: 3.8A, 3.8B, 3.8C</i>

<ul style="list-style-type: none"> • Measure weather patterns including temperature, rainfall, wind speed, cloud formations, make a graph, and draw conclusions about patterns from the data. • Compare the weather conditions in different places for the same period of time. Infer why the weather patterns are such, based on the location. • Identify weather patterns including the water cycle process from diagrams and lists. • Draw and label to show how water travels through the water cycle. • Water Cycle Labs • Build a Sun, Moon, Earth model • Illustrate and describe the Earth's solar system and present the information to peers in whole class presentations. 	<p><i>TEKS 3.8D tested with Earth Science concepts in Jan.</i></p> <p>Sugerencias Adicionales para la Evaluación</p> <ul style="list-style-type: none"> • Student Interactive Notebook • Student discussions • Weather Calendars and Data collection • Graphs and comparisons of weather form different places • Descriptions of the interactions between the Earth and Sun • Descriptions of the interactions between the Earth and moon • Descriptions of the interactions between the Sun, Earth and moon • Teacher observations: Use of safety rules and equipment • Teacher observations: management and use of tools • Tools foldable/web in Interactive Notebook • Students' use of evidence to support explanations and claim.
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HERRAMIENTAS PARA LA PLANEACIÓN DE LECCIONES DE CLASE

En el transcurso de la planeación de lecciones de clase, la expectativa es que los maestros tomen en cuenta consideraciones del estudiante en su totalidad como incluirán elementos que cubren todos los aspectos de diferenciación instructiva, educación especial, aprendizaje del idioma inglés, nivel de dotados y talentosos, aprendizaje social y emocional, actividad física y bienestar.

LECCIÓN MODELO- [WEATHER](#)

- Exploring Weather
- Exploring Weather with Tools
- Tracking Weather in Different Locations

Suggested Pacing: (4 days)

TEKS: 3.8A

LECCIÓN MODELO- [OUR SUN](#)

- Our Amazing Sun
- Our Sun's Energy

Suggested Pacing: (2 days)

Optional

- Our Sun's Affects

TEKS: 3.8B

LECCIÓN MODELO- [THE WATER CYCLE](#)

- Water Everywhere
- Terrarium Water
- Evaporation
- Condensation
- Precipitation/Saturation

Suggested Pacing (5 days)

TEKS: 3.8B

LECCIÓN MODELO- [SUN, EARTH AND MOON](#)

- Sun, Earth and Moon Models
- Earth's Rotation
- Earth's Revolution

Suggested Pacing (7 days)

TEKS: 3.8C

LECCIÓN MODELO- [OUR SOLAR SYSTEM](#)

- Where Are We? Our Place in Space
- Closer Look: Our Solar System
- Assessing Weather and Space

Suggested Pacing (7 days)

TEKS: 3.8D