

World Language-STEM MODULE COVERSHEET

De Semillas a la Mesa

Target Language: Spanish	Grade Level: 2 and 3
Proficiency Level: Junior Novice Low – Junior Novice Mid	
<p>Context and Storyline:</p> <p>One day, the teacher brings in seed packets for common ingredients for salad. (i.e. Onion, carrot, green beans, celery, spinach, lettuce, sunflowers, corn, radishes, cucumber, tomato and so on. Teachers will choose 4-5 kinds, depending on the time when this module is taught and the availability of these seeds in a supermarket.) Students will select a plant and grow these seeds while they keep a log recording how they take care of the plant and the progress of the plant's growth. They will understand that it takes a long time for seeds to grow into mature plants because they have to turn water, sunlight, air, and soil into nutrients.</p> <p>Meanwhile, students will study the conditions for different plants to grow. They will discover that plants have differing needs for water, sunlight, air/temperature, and type of soil, so the environment in which they live is important for them. They will understand that plants and other living things interact with one another and also with the environment to form a food chain, in which each plays an important role.</p> <p>At the end, students will make their own salad/dish by using different parts of plants and telling their audience in what kind of environment the selected items of their salad live. They will report on the growth of their own plants. Before they take home their plants, students will make a pledge to take care of the plant.</p>	
<p>Enduring Understanding:</p> <p>Living things and their environment form a system, in which they need each other.</p>	
<p>Essential Questions:</p> <p>What are the living things in our environment? How does environment affect living things?</p>	
<p>Module Duration and Lessons:</p> <p>Depending on the length and frequency of classes per week, we suggest the five lessons in this module could be taught during the period of three to five weeks. On the average, each lesson may be taught over a week, with 30 minutes classes three to five times per week.</p> <p>Lesson 1 – <i>¿De dónde vienen las ensaladas?</i> (Engagement stage or introduction)</p> <p>Lesson 2 – <i>Vamos a sembrar semillas.</i> (Exploration stage for main events and practice)</p> <p>Lesson 3 – <i>Experimentemos con cambios ambientales.</i> (Explanation stage for main events and practice)</p> <p>Lesson 4 – <i>¡Hola, partes de las plantas!</i> (Elaboration stage for summary and review)</p> <p>Lesson 5 – <i>Haciendo una ensalada y una promesa a mi planta.</i> (Evaluation stage for assessing student learning outcomes)</p>	

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Standards Targeted	
5C – World Language Standards	5E – STEM Standards
<p>Communication</p> <ul style="list-style-type: none">• Students engage in conversations, provide and obtain information, express feelings and emotions, and exchange opinions while learning about plants and their environment. (1.1)• Students understand and interpret written and spoken language on a variety of topics related to this module.(1.2)• Students present information, concepts, and ideas to an audience of listeners or readers on topics related to this module. (1.3) <p>Cultures</p> <ul style="list-style-type: none">• Students demonstrate an understanding of the relationship between the products of the culture and environment (e.g., salads of different cultures). (2.1) <p>Connections</p> <ul style="list-style-type: none">• Students reinforce and further their knowledge of ecology and plants through the study of a foreign language. (3.1) <p>Comparisons</p> <ul style="list-style-type: none">• Students demonstrate understanding of the nature of language through comparisons of the language studied and English. (4.1)• Students demonstrate understanding of the concept of culture through comparisons of the culture studied and their own. (4.2) <p>Communities</p> <ul style="list-style-type: none">• Students use the language both within and beyond the school setting (5.1)• Students use their target language and cultural knowledge to enrich their life (5.2)	<p>2. Interdependence of Organisms and Their Surroundings</p> <ul style="list-style-type: none">a. Construct a representation in which plants and animals depend on their environment to meet their needs.c. Plan and carry out investigations to test whether plants from different settings have different needs for water, sunlight and type of soil.

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Knowledge: Students will know...	Skills: Students can...
<p>Vocabulary (both linguistic and content areas)</p> <p>Needs: <i>el agua, la comida, el aire, la tierra, el sol, los nutrientes</i></p> <p>Verbs: <i>comer, tomar, crecer, necesitar, tener</i></p> <p>Plant parts: <i>las semillas, la hoja, el tallo, la raiz, la flor, la fruta</i></p> <p>Expressions and patterns</p> <p style="padding-left: 20px;"><i>Cuánto</i></p> <p style="padding-left: 20px;"><i>Mucho, no mucho</i></p> <p style="padding-left: 20px;"><i>Caliente, no caliente</i></p> <p style="padding-left: 20px;"><i>Me gusta / os gustamos,</i></p> <p style="padding-left: 20px;"><i>No me gusta / no nos gustamos</i></p> <p style="padding-left: 20px;"><i>Necesito, no necesito</i></p> <p style="padding-left: 20px;"><i>Necesita</i></p> <p style="padding-left: 20px;"><i>Una planta necesita</i></p> <p style="padding-left: 20px;"><i>Diferente</i></p> <p style="padding-left: 20px;"><i>Preguntas; De dónde, Quién y Qué</i></p> <p style="padding-left: 20px;"><i>Atrás y al frente</i></p>	<p>Students can:</p> <ul style="list-style-type: none"> • Identify and name the basic needs of living things. • State that plants need soil, water, air and sun. • Name different parts of a plant. • Explain how the environment affects living things.

Performance Assessment
<p>Interpretive Task: Shop for a Salad</p> <p>Students walk up to a basket filled with small brown bags of cut out fruit or vegetable. Each student will pick out one bag and tell the class what he/she has (e.g., I have tomatoes. Tomatoes are fruits).</p>
<p>Interpersonal Task: Let's Make a Salad</p> <p>Students will go around the room to look for salad partners. In each salad, there must be at least one part of plants (e.g., leaves, fruits, seeds, roots, and stems). Students cannot tell people what they have until they are asked appropriate questions. They must ask other students to identify partners for their salad. Continue until all salad groups are formed. Each group of students will make a salad by mixing the content of their bags into a big bowl.</p>
<p>Presentational Task: This is Our Salad</p> <p>Each group presents their salad. Students will each talk about their own contributions and provide a brief description of the ingredient used (such as the name, which part of a plant it is.)</p> <p>Presentational Task: My Pledge to My Plant</p> <p>Students will each present the plant they have chosen. They will tell the class how they planted it and how they will take care of it.</p> <p>After everyone has presented their plants, the class will read the pledge together.</p>

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Materials/Resources

Poster or display board for model, markers, magazines, glue, cutouts of universal symbols for water/sun light, two pieces of plain paper 8 ½" x 11, Informational chart on different seeds, timer, examples of seed packets.

Useful Articles:

- Kids Gardening: <http://www.burpee.com/vegetables/kid-s-gardening-article10196.html>
- Video: how to plant-grow-lettuce: <http://www.burpee.com/heinz/lettuce/how-to-plant-grow-lettuce-article10469.html>
- http://www.bgfl.org/bgfl/custom/resources_ftp/client_ftp/ks2/science/s_plants/index.htm
- <http://www.firstschoolyears.com/science/living/interactive/growing-plants.swf>
- Parts of Plants We Eat http://pubs.ext.vt.edu/348/348-823/348-823_pdf.pdf
- http://www.bbc.co.uk/schools/scienceclips/ages/9_10/changing_state.shtml
- <http://www.tutorvista.com/biology/parts-of-a-plant-for-kids>
Germination times for seeds
- <http://www.heirloomseeds.com/germination.html>
- <http://www.plantingseedsblog.com/2011/07/seed-germinating-times-and-tips/>

Additional Resources:

- Maryland Department of Agriculture: <http://www.mda.state.md.us/mdfarmtoschool/index.php>
- National Farm-to-School Network: www.farmtoschool.org
- Healthy Foods for Healthy Kids: www.healthyfoodsforhealthykids.org/
- College of Agriculture & Natural Resources <http://growit.umd.edu/>

Note:

See lesson plans for specific materials needed for the particular lesson
Worksheet M.1 – Game: Red Light, Green Light

STEM Background for teachers:

Ecology

Ecology is the study of how living things relate to one another and to the world around them. Scientists who study ecology are called ecologists.

Many different things live in the world. Each living thing depends on other living and nonliving things in its environment, or surroundings. For example, a moose eats certain plants for food. If the plants in its surroundings were destroyed, the moose would have to move to another area, or it would starve to death. Plants also depend on animals. Wastes from animals provide many of the nutrients, or nourishing substances, that plants need to live. Ecologists study how these different things depend on one another.

General Plant Organization Facts

Scientists believe there are over 260,000 species of plants. Some plants are so small they can barely be seen. Others are taller than people or animals. Some of the largest living plants on the earth are the sequoia trees of California. Some stand over 290 feet (88 meters) high and measure over 30 feet (9

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meters) wide. Plants play the most important part in the cycle of nature. Without plants, there could be no life on Earth. They are the primary producers that sustain all other life forms. This is so because plants are the only organisms that can make their own food. Unlike animal cells, plants have an additional cell wall made from cellulose. The cellulose enables plants to stand upright without the aid of an internal or external skeleton. Animals, incapable of making their own food, depend directly or indirectly on plants for their supply of food. All animals and the foods they eat can be traced back to plants.

The Shoot and Root Systems

Plants have two organ systems (groups of organs that perform related functions), the shoot system and the root system. The shoot system is above ground and includes the organs such as leaves, buds, stems, flowers, and fruits (if the plant has them). The root system includes those parts of the plant below ground, such as the roots, tubers (swollen underground stems in plants that store food, such as the potato), and rhizomes (a horizontal stem with upright leaves containing specialized tissues for transporting fluids and nutrients in plants).

Vascular plants have systems of tubes (xylem and phloem) for the transport of nutrients and water. There are a wide variety of plants on Earth and even a whole group that doesn't have vascular systems. Mosses and liverworts may still have photosynthesis, but they do not have the typical plant structure. The tip (terminal bud) of the main stem has a specialized structure that is the source of new growth for plants. You will find the apical meristem that develops into young leaves. There are other points of growth at each node where leaves and branches develop on the stems. Those branching points are home to auxiliary buds that can also develop into new branches.

Roots are designed to pull water and minerals from whatever material the plant sits on. For water plants, the roots may be in the water. For trees, the roots go deep into the soil. There are even plants called epiphytes that live in trees and their root system clings to branches. Humans often rely on the roots of plants for food. Carrots are just one big orange root.

Root systems also provide support for plants in the form of an anchor in the soil. If the wind blows hard, those roots keep the plant from falling over. Some plant species have roots above ground that provide support for the entire plant. Roots are further broken down into the primary root and lateral roots that each has a pistil and stem at their tips. Root hairs are also a common structure on roots. They make the roots look fuzzy and help in the absorption of water and nutrients.

Plants and Their Environment

Plants require a reasonable level of heat to grow. The most favorable temperature for photosynthesis to take place ranges from near freezing to 20 to 25° C (70 to 80° F). The rates of photosynthesis and respiration increase with rising temperatures, temperatures above or below these levels limit plant growth. The climate of a region determines what types of plants can survive in that region.

A plant's environment is made up of many factors. One of the most important is the weather – sunlight, temperature, and precipitation (rain, melted snow, and other moisture). Soil and other plants and animals that live in the same area are also included in the environment of a plant. All these factors form what is called a natural community. No two natural communities are exactly alike, but many resemble one another more than they differ. Botanists divide the world into biomes – natural communities of plants, animals, and other organisms.

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Parts of Plant:

Root: Roots originate from the lower portion of a plant and they are in the soil. Their functions are to absorb nutrients and moisture, anchor the plant in the soil, support the stem, and store food, as with carrots. In some plants, they can be used for propagation.

Stem: The stem is the upper part of the plant and bears branches, leaves, flowers and fruits. The stem is generally green when young and later often become woody and dark brown. It conducts water and minerals from the roots to the leaves. Some stems perform the function of storage of food, for example potato, ginger, turmeric

Bud: A bud is an undeveloped shoot from which leaves or flower parts grow. Enlarged buds or parts of buds also form the edible portion of some crops, for example cabbage.

Leaves: Leaves provide trees with all their food because they turn sunlight and carbon dioxide into food energy through photosynthesis. Leaves also return oxygen to the air that we breathe as a product of photosynthesis.

Flowers: Flowers generally are the showiest part of a plant. Their beauty and fragrance attract pollinators (insects or birds) that play an important role in the reproductive process.

Fruit: Fruit is the fleshy structure of certain plants that may be sweet and edible in the raw state, such as apples, oranges, grapes etc. It also consists of seeds used for propagation of the plant. The seed contain food that supplies energy and materials for growth until the plant grows its first leaves above the ground.

Information compiled from World Book Encyclopedia, National Geographic, and Maryland at a Glance State Symbols.

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Lesson 1 – ¿De Dónde Vienen las Ensaladas?

Lesson 1 of 5 – ¿De Dónde Vienen las Ensaladas?		Duration: 30 Minutes
<i>Objectives</i>	<p>I Can:</p> <p>Oral language:</p> <ul style="list-style-type: none"> • Name the things we need: <i>la comida, el agua, el aire, el hogar</i> • Name the things plants need: <i>la tierra, el agua, el aire, el sol, (la luz del sol)</i> <p>Literacy:</p> <ul style="list-style-type: none"> • Recognize the words: <i>las semillas, la tierra, el agua, el aire, el sol, el hogar</i> <p>STEM and Other Subject Areas:</p> <ul style="list-style-type: none"> • Identify the needs of living things. • Identify the needs of plants 	
<i>Vocabulary and Expressions</i>	<p>Previously learned: Students know the difference between living and non-living things. Students know color words.</p> <p>Content obligatory language: <i>La ensalada, la comida, el perrito caliente, la zanahoria, la lechuga, el tomate, el apio, el pepino</i> <i>Necesitar, crecer, comer, beber, el mercado, el huerto vegetal, el aire de rancho (campo), la tierra, la semilla, la planta, el agua, el sol</i></p> <p>Content compatible language : <i>Imágenes, tu propio, tu propia, la roca, el desierto, la orilla, deliciosa, el mercado, el jardín, la rancho</i></p>	
<i>Materials/ Resources</i>	<ul style="list-style-type: none"> ○ Realia: glass, water, various fruits and vegetables (apple, orange, grapes, lettuce, berry, carrot, cucumber, broccoli), rock, flower ○ Pictures of fruits, vegetables, and plants (apple, apple tree, grape vine, berry bush, cucumber, broccoli,..) ,sun, plant, flower ○ Bag to hold vegetable pictures ○ Seeds packages ○ Copy of “Seed Song” (refrain) on chart paper. ○ M.1 – Game “Red Light, Green Light” ○ Worksheet 1a -- Vegetables and fruits ○ Worksheet 1b– Various Salads (Maybe enlarge pictures) ○ Worksheet 1c – Supermarket , Garden, and Farm ○ Worksheet 1d -- Little Seed Finds a Home ○ Worksheet 1e – What Little Seed Needs (chant /hand emotions) 	

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	<ul style="list-style-type: none"> ○ Ppt – Little Seeds Finds Home
<i>Lesson Storyline and Core Text</i>	<p>At the beginning, the teacher tells students that she/he is planning a meal for a friend who loves salad and wants some help from the class. The teacher will show pictures and have students pick and choose what ingredients to use in their salad. (Teaching vocabulary). Teacher poses a question: Where do these salad ingredients come from? (From a supermarket or someone will have to grow them?) (Reading the story of Little Seeds, and identify what seeds need to grow. As a preview, tell students that they will plant and grow their own seeds later.)</p> <p>Core Text :</p> <p><i>Bienvenidos. Hoy necesito ayuda con una ensalada. La mayoría de las ensaladas vienen de las plantas. Tengo algunas imágenes. ¿Es una ensalada o ...? ¿Te gusta comer la ensalada? ¿Puedes decirme qué hay en una ensalada? ¿Puedes encontrar las zanahorias en una ensalada? Por favor, pon las zanahorias en el plato. ¿De dónde vienen todas estas cosas? -- Del supermercado/ el jardín / la rancho ¿Podemos cultivar vegetales / frutas? Vamos a cultivar vegetales/frutas/plantas.</i></p> <p><i>Estas son semillas. Plantas crecen de las semillas. Vamos a ver como crecen las semillas. ¿Qué necesita la Pequeña Semilla para crecer? ¿Necesita la tierra? Las semillas necesitan la tierra, el aire, el agua, y el sol para crecer.</i></p>

Key Elements	Lesson 1 Procedures – <i>¿De Dónde Vienen las Ensaladas?</i>
<i>Engagement</i> ● <i>Object, event or question used to engage students.</i> ● <i>Connections facilitated between what students know</i>	<p>Plan a meal</p> <p>(Show pictures of different salads. Also show pictures of various produce. e.g., vegetable, fruit; both as produce and as living plants) Worksheet 1a</p> <p>As class begins, place a variety of cutout pictures of salad ingredients on the floor or on a desk, so students can choose them later.</p> <p>T: <i>Estudiantes, bienvenidos. Hoy necesito su ayuda. Estoy planeando un almuerzo para mi amigo(a). A mi amigo(a) le gusta mucho las ensaladas. Necesito planear una gran ensalada. ¿Me ayudan?</i></p> <p>Students respond.</p>

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Key Elements	Lesson 1 Procedures – <i>¿De Dónde Vienen las Ensaladas?</i>
<i>and can do</i>	<p>T: <i>Tengo algunas imágenes. ¿Es esto una ensalada/un perrito caliente/ una pizza/ una hamburguesa?</i> Ss: <i>Una ensalada/Una pizza/Una hamburguesa.</i> Teacher sets all pictures of salads together in front of the class. Worksheet 1b T: <i>¿Te gusta comer ensalada? ¿Cuál te gusta más?</i> Ask different students to respond. (like, not like, eat)</p> <p>Teacher with a picture of a salad. T: <i>Ahora vamos a hablar de que hay en la ensalada.</i> T: (showing picture of a carrot or a plastic carrot.) <i>Es una zanahoria. ¿Puedes encontrar zanahorias en una ensalada?</i> (Students pick out or point at carrots in the salad pictures.) T: <i>¿Es una zanahoria? ¿Puedes decirme qué es?</i> Ss: <i>Zanahoria.</i> T: (models) <i>Ahora pongo la zanahoria en el plato de la ensalada.</i> T: (calls on another student) <i>Por favor, ponle otra zanahoria en el plato de la ensalada.</i> Student chooses from among pictures on the floor or desk.</p> <p>Repeat with procedure for carrots and then for <i>lettuce, tomato, celery, cucumber</i>, or any choices that teacher decides to put in the salad (or the picture shows). To vary the procedure, mix up ingredients and ask students to put in a vegetable that had been added earlier.</p> <p>Note: make sure your choices can be found in seed packages sold in a grocery store or ordered online. Additionally, the selection must include using leaves, stems, fruits, and roots of vegetable or fruit. If health concern is taken care of, you may include seeds such as sunflower seeds or other kinds of seeds.</p> <p>T: <i>Caramba, nuestra ensalada se ve deliciosa. ¿Piensas que nuestra ensalada va a ser deliciosa?</i> Ss: <i>Sí, deliciosa.</i> T: <i>¿Te gusta la ensalada? o ¿Piensas que no te gusta?</i> Ss: <i>Sí, me gusta. (No, no me gusta.)</i> T: <i>Muy bien. ¿De dónde vienen estas cosas que están en la ensalada?</i> (Showing a picture of a supermarket) <i>¿del supermercado?</i> S: <i>Sí, del supermercado.</i> T: <i>Hmmm, del supermercado. ¿Piensas que en el supermercado cultivan frutas o vegetales?</i> S: <i>Sí/No.</i> T: <i>Un supermercado no cultiva vegetales/ frutas. Otra persona las cultivó en un huerto o en una rancho.</i> (showing a picture of a farm) T: <i>¿Alguno de ustedes vive en un rancho?</i> (Waits for a show of hands, and then names the children, saying: <u> </u> vive en un rancho, and <u> </u> vive en un</p>

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Key Elements	Lesson 1 Procedures – <i>¿De Dónde Vienen las Ensaladas?</i>
	<p><i>rancho, etc.)</i> T: (Show pictures of home gardens.) T: <i>¿Alguno de ustedes tiene un huerto de vegetales?</i> (Waits for a show of hands, and then names the children, saying: <i>___ tiene un huerto. ___ tiene un huerto, etc.) ¿Podemos cultivar vegetales y frutas también?</i> Students respond. T: <i>Mientras planeamos nuestra ensalada, vamos a aprender cómo cultivar las cosas para la ensalada y como tú puedes cultivar vegetales y frutas también. También vamos a hacer una ensalada después de que aprendamos sobre las plantas y cómo las plantas crecen.</i></p>
<p><i>Exploration</i></p> <ul style="list-style-type: none"> ● <i>Objects and phenomena are explored.</i> ● <i>Hands-on activities, with guidance.</i> 	<p>Introduce Seeds T: (Shows a seed package, opens it, and shows seeds) <i>Estas son semillas. Las plantas crecen de las semillas. La mayoría de las cosas en una ensalada vienen de las semillas.</i> (Distribute a seed packet for students to look. Model as they pass the packet from one student to another.) <i>Look, this is a packet of seeds.</i> Students repeat the utterances as they pass along the seed packet.</p> <p>Note: Use the “Red Light, Green Light” game, Worksheet M.1. Give one packet to a student, saying: “This is a packet of seeds.” Call “Green Light” and motion the student to pass it along, telling the next student as they pass it, “This is a packet of seeds.” After several passes call “Red Light” and the student who holds the packet must name it. Once class is comfortable playing this game, add more packets to pass around. S: <i>Esto es un paquete de semillas de tomate... etc...</i> T: <i>Si sembramos estas semillas crecerán como plantas. Vamos a ver cómo una semilla crece.</i> T: (Pick up a book) <i>Oh, Encontré una historia de La Pequeña Semilla. Vamos a escuchar la historia para ver que necesitan las semillas para crecer.</i></p>
<p><i>Explanation</i></p> <ul style="list-style-type: none"> ● <i>Students explain their understanding of concepts and processes.</i> ● <i>New concepts and skills are introduced as conceptual clarity and cohesion are sought.</i> 	<p>Story of Little Seed Teacher reads the story of “Little Seed Finds a Home”. Worksheet 1d</p> <p>While reading it, make sure students understand the storyline and the concepts of plants needing air, water, sun, and soil to grow.</p> <p>Students chant “What Little Seed Needs” with hand motions. Worksheet 1e Instructions: Use the hand motions below when singing the refrain to the story. (You may also find a tune appropriate for your language.)</p> <p style="text-align: center;"><i>Tierra, agua, aire y sol</i> <i>Son las cosas que necesito.</i> <i>Son las cosas en mi hogar</i> <i>Son las cosas que necesito.</i></p>

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Key Elements	Lesson 1 Procedures – <i>¿De Dónde Vienen las Ensaladas?</i>
	<p><i>Tierra-</i> (Palm of hand facing down, sweep hand from left to right) <i>Agua-</i> (Make wave motion with hand from left to right-palm down) <i>Aire-</i>(Hand up, palm facing left, move hand in fan motion from side to side) <i>Sol-</i> (Make circle shape with two hands held over head) <i>Son las cosas que necesito.</i> (Point to self) <i>Son las cosas-</i> (Palms up, side by side in front of body, move hands apart.) <i>En mi hogar-</i> (Make triangle house shape in front of face).</p> <p>If time the students can retell the story to each other or practice sing the song together.</p>
<p><i>Elaboration</i></p> <ul style="list-style-type: none"> • <i>Activities allow students to apply concepts in contexts, and build on or extend understanding and skill.</i> 	<p>Teacher conducts a comprehension check about the story of Little Seed Make sure to provide the language and ensure students’ learning of the concept about needing soil, water, air, and sun. Worksheet 1d</p> <p><i>Sample questions might be:</i></p> <p>T: <i>¿Qué necesita la Pequeña Semilla?</i> T: <i>¿Necesita tierra?</i> T: <i>¿Encuentra la tierra en una roca/un desierto/una orilla?</i> T: <i>¿Necesita aire/ sol/ agua?</i></p> <p>Students respond. Conclude with the following utterance: T: <i>Correcto, las semillas necesitan tierra, agua, aire y sol para crecer.</i></p> <p>Review Salad, vegetable and fruits, make sure students can tell where these things come from.</p>
<p><i>Evaluation</i></p> <ul style="list-style-type: none"> • <i>Students assess their knowledge, skills and abilities.</i> 	<p>Assessment:</p> <ol style="list-style-type: none"> 1. Show pictures of different salads. Students pick what they want to talk about and name common ingredients of their chosen salad. 2. Using pictures, students retell the story of Little Seed. 3. Students perform the chant about Little Seed and name things that plants need to grow.

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Teacher Reflection Lesson 1- <i>¿De dónde vienen las ensaladas?</i>	
<i>What worked well?</i>	
<i>What did not work well?</i>	
<i>What would I do differently?</i>	
<i>Other comments or notes</i>	

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Lesson 2 – ¡Vamos a Sembrar Semillas!

Lesson 2 of 5 – ¡Vamos a Sembrar Semillas!		Duration: 30 Minutes
<i>Objectives</i>	<p>I Can:</p> <p>Oral language:</p> <ul style="list-style-type: none"> • Name the things plant need: <i>tierra, agua, aire y sol</i> <p>Literacy:</p> <ul style="list-style-type: none"> • Recognize and write: <i>las semillas, cultivar, sembrar, la planta, la tierra, el agua, el aire, el sol (la luz del sol)</i> • STEM and Other Subject Areas: • Identify the needs of plants • Describe how to plant seeds 	
<i>Vocabulary and Expressions</i>	<p>Content obligatory language: <i>las semillas, cultivar, sembrar, la tierra, el agua, el aire, el sol, crecer, necesitar, delgado(a), el tiesto</i></p> <p>Content compatible language: <i>tener, poner, verificar, cuidar, echar agua</i></p>	
<i>Materials/ Resources</i>	<ul style="list-style-type: none"> ○ A big calendar for the class to use daily ○ Seeds packages and pots – enough for all students Choose seeds that will germinate fairly quickly, such as lettuce, spinach, onion, sunflowers, beans (green beans are seeds in a protective pod) ○ Set up a planting area in the front or at a corner of the classroom. Cover the floor with newspaper or shower curtain so the dirt will not soil the classroom. Make sure there are enough seeds and pots for each student. ○ Necessary tools for planting seeds ○ A potted plant ○ Picture cards: water, sun, air, soil, stem, leaves, roots, fruit, seeds, plants (plain, flower, tree from previous lesson) ○ Worksheet 2a – Planting Seeds Chant ○ Worksheet 2b – Matching for Literacy ○ Worksheet 2c – Planting Seeds mini book 	
<i>Lesson Storyline and Core Text</i>	<p>Students plant seeds and learn a “Planting Seeds” chant. Every day they observe the growth of their plants. They check the soil and water if the soil is dry.</p> <p>Core Text:</p> <p style="text-align: center;"><i>Vamos a sembrar estas semillas juntos. ¿Qué necesitamos para sembrarlas? Primero, necesitamos un tiesto y tierra.</i></p>	

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	<p>Planting Seeds Chant:</p> <p style="text-align: center;"><i>Tengo un tiesto.</i> <i>Tengo la tierra.</i> <i>Pongo la tierra en el tiesto.</i> <i>Tengo unas semillas.</i> <i>Pongo las semillas en la tierra.</i> <i>Pongo el tiesto bajo el sol.</i> <i>Echo agua a mi planta.</i> <i>Cuido mi planta.</i> <i>Y la veo crecer todos los días.</i></p>
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Key Elements	Lesson 2 Procedures – ¡Vamos a Sembrar Semillas!
<p><i>Engagement</i></p> <ul style="list-style-type: none"> ● <i>Object, event or question used to engage students.</i> ● <i>Connections facilitated between what students know and can do</i> 	<p>Review the story of Little Seeds and what it needs to grow. Begin the day with calendar work. Repeat this activity daily. Using pictures, invite students to retell the story of Little Seed. Review what plants need. Lead students in the Little Seed chant.</p> <p>T: (Show seed packages.) <i>Vamos a cultivar nuestras propias plantas de estas semillas. Vamos a sembrar estas semillas juntos.</i> T: (Teacher models how to plant seeds) <i>¿Qué necesitamos? (Show a plant pot) Primero, necesitamos un tiesto, verdad? Aquí, _____ (Student name), Por favor, agarra el tiesto.</i></p> <p>Repeat with <i>la tierra, el agua, and las semillas</i>, enlisting student help to hold each item.</p> <p>Open one seed package and show students how to plant it. While planting each step, recite with actions the “Planting Seeds Chant” Worksheet 2a</p> <p>Planting Seeds: Use Gouin series Instructions: Use the hand motions below when singing the refrain to the story.</p> <p><i>Tengo un tiesto.</i> (Cup left hand as if holding a pot, then sets it down.) <i>Tengo la tierra. Pongo la tierra en el tiesto.</i> (Right hand shovels soils into the pot) <i>Tengo unas semillas.</i> (Extend left arm to show the seeds in your palm) <i>Tengo las semillas en el tiesto.</i> (Left hand puts seeds into the pot and both hands pat them down gently.) <i>Pongo el tiesto bajo el sol.</i> (Make circle with the hand and put down the pot, then look up the sky with right hand over the eyes) <i>Echo agua en mi planta.</i> (One hand tilted as if watering the plant) <i>Cuido mi planta.</i> (Two arms fold over the heart and rock sideways) <i>Y la veo crecer todos los días.</i> (Two hands motioning as if the plant is growing)</p>

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Key Elements	Lesson 2 Procedures – <i>¡Vamos a Sembrar Semillas!</i>
	Lead students first to pantomime while the teacher recites. Then have them repeat each line after the teacher while they do the actions.
<p><i>Exploration</i></p> <ul style="list-style-type: none"> • <i>Objects and phenomena are explored.</i> • <i>Hands-on activities, with guidance.</i> 	<p>Practice first in whole class, then in pairs or small groups. Call on volunteer pairs or groups to perform.</p> <p>Students planting their own plants from seeds</p> <p>Formative assessment: Recite Planting Seeds chant</p> <p>Before students plant their seeds, have them recite the chant with you.</p> <p>Tell students that the groups that can recite can come to the gardening area. Call on each group one by one. Distribute a pot and soil to each student, and let them choose the type of seed they wish to plant. The group will plant while the rest of class recites the chant. At the end, recite one more time in chorus.</p>
<p><i>Explanation</i></p> <ul style="list-style-type: none"> • <i>Students explain their understanding of concepts and processes.</i> • <i>New concepts and skills are introduced as conceptual clarity and cohesion are sought.</i> 	<p>Students recite and act out the “Planting Seeds” Gouin Series chant.</p> <p>Using their own language, tell the class how they plant their seeds. This can be done in groups. Teacher models how to write the essential vocabulary: <i>las semillas, crecer, sembrar, la tierra, el agua, el aire, el sol.</i></p> <p>Have students practice writing key vocabulary. Ask them to make their own flash cards, drawing pictures in the back.</p> <p>Peer Review: Have students exchange their flash cards and double check accuracy of the writing. Return to the original students for correction. Make new flash cards if necessary. Ensure all flash cards are accurate</p>
<p><i>Elaboration</i></p> <ul style="list-style-type: none"> • <i>Activities allow students to apply concepts in contexts, and build on or extend understanding and skill.</i> 	<p>Play the Red Light-Green Light game, Worksheet 1a, with student-made flash cards as a review of literacy.</p> <p>Using the Planting Seeds worksheet, students draw pictures and explain the sequence of planting seeds in writing. Worksheet 2a – Potting Seeds</p> <p style="text-align: center;"> <i>Tengo un <u>tiesto</u>.</i> <i>Tengo la <u>tierra</u>.</i> <i>Pongo la tierra en el <u>tiesto</u>.</i> <i>Tengo unas <u>semillas</u>.</i> <i>Pongo las <u>semillas</u> en la <u>tierra</u>.</i> <i>Pongo el <u>tiesto</u> bajo el <u>sol</u>.</i> <i>Echo <u>agua</u> a mi <u>planta</u>.</i> <i>Cuido mi <u>planta</u>.</i> <i>Y la veo <u>crecer</u> todos los días.</i> </p>

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Key Elements	Lesson 2 Procedures – <i>¡Vamos a Sembrar Semillas!</i>
	Peer review: Students exchange their worksheet to review accuracy. Make corrections. They can also perform the chant as preparation for performance assessment next day.
<i>Evaluation</i> ● <i>Students assess their knowledge, skills and abilities.</i>	Performance Assessment: <ol style="list-style-type: none"> a. Chant the Gouin series for <i>Sembrando Semillas</i>. b. Students display their scientific illustration and writing of how to plant seeds. Worksheet 2b c. Make oral presentations as individuals or in groups. d. Observe and record changes to their own seedlings. Worksheet 2c

Teacher Reflections on Lesson 2 – <i>¡Vamos a Sembrar Semillas!</i>	
<i>What worked well?</i>	
<i>What did not work well?</i>	
<i>What would I do differently?</i>	
<i>Other comments or notes</i>	

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Lesson 3 – Experimentemos con cambios ambientales

Lesson 3 of 5 – <i>Experimentemos con cambios ambientales</i>		Duration: 30 Minutes
<i>Objectives</i>	<p>I can:</p> <p>Oral language:</p> <ul style="list-style-type: none"> • Name <i>secas, amarillas, muere, or muerta, hoy, mañana, ayer</i> <p>Literacy:</p> <ul style="list-style-type: none"> • Recognize the words <i>secas, amarillas, muere, or muerta, hoy, mañana, ayer</i> <p>STEM and Other Subject Areas:</p> <ul style="list-style-type: none"> • Construct a representation in which plants depend on their environment to meet their needs. • Plan and carry out investigations to test whether plants from different settings have different needs for water, sunlight and type of soil. 	
<i>Vocabulary and Expressions</i>	<p>Content obligatory language: <i>secas, amarillas, muere, or muerta, hoy, mañana, ayer</i></p> <p>Content compatible language: <i>el ambiente, cambio, mañana, saca, oscuridad</i></p>	
<i>Materials/ Resources</i>	<ul style="list-style-type: none"> ○ Pencil, paper, worksheets, a video presenter, computers, map of the world, ○ visuals of fruit and plants from the previous lesson ○ Actual plant that is dried, yellow, dying, or dead. (If necessary, this could be a picture) ○ Plastic bag, brown bags ○ Newsprint for teacher ○ Poster for groups to predict their experiments and share with others ○ Worksheet 3a – Changes in the Environment 	
<i>Lesson Storyline and Core Text</i>	<p>Students will conduct an experiment to find out what happens to a plant if the environment changes. They will predict what happens to a plant when the environment has not enough soil, water, air, and sun. They will also report on the experiments they conducted.</p> <p>Students will continue to observe and care for their own seedlings/plants.</p> <p>Core Text:</p> <p><i>Vamos a ver que pasa cuando el ambiente cambia.</i></p> <p><i>¿Qué va a pasar con la planta?</i></p> <p><i>¿Qué pasa cuando el ambiente no tiene aire, agua, tierra o sol?</i></p> <p><i>¿Cuando el ambiente no tiene aire, la planta crece/ se seca/ muere?</i></p> <p><i>¿Cuando el ambiente no tiene agua, la planta crece/ se seca/ muere?</i></p> <p><i>Vamos a ver qué pasa si la planta no tiene tierra.</i></p>	

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	<p>No-Soil Group: <i>El ambiente de esta planta va a cambiar</i> <i>No va a tener tierra.</i> <i>Vamos a ver qué le pasa a la planta.</i></p> <p>No-Water Group: <i>El ambiente de esta planta va a cambiar.</i> <i>No va a tener agua.</i> <i>No vamos a echar agua a la planta.</i> <i>Vamos a ver qué le pasa a la planta.</i></p> <p>No-Sun Group: <i>El ambiente de esta planta va a cambiar. No va a tener sol.</i> <i>La vamos a poner en la oscuridad.</i> <i>Vamos a ver qué le pasa a la planta.</i></p>
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Key Elements	Lesson 3 Procedures – <i>Experimentemos con cambios ambientales</i>
<p><i>Engagement</i></p> <ul style="list-style-type: none"> ● <i>Object, event or question used to engage students.</i> ● <i>Connections facilitated between what students know and can do</i> 	<p>What happens when the environment does not have air/ water/soil/sun?</p> <p>T: (Ask and lead students to talk about what they did in Lesson 2: planting seeds; recite the chant, talk about their own seedlings. Show students a real herb/flower plant, and ask various students to identify the four elements (soil, water, air, and sun) for plants to grow.)</p> <p>T: (Then bring out another plant that has died (or pictures, if necessary). <i>Quería enseñarles esta planta también, pero miren qué pasó. ¿Qué le pasó a la planta?</i> (Provide language as needed for students to respond: <i>seca, muerta, amarilla, café, etc.</i>)</p> <p>T: <i>Clase, vamos a ver qué le pasa a la planta cuando no tiene lo que necesita- cuando el ambiente cambia. ¿Qué le pasa a la planta?</i></p> <p>Show pictures of plants that are dried, yellow, dying, or dead. Provide language for students to respond.</p> <p>T: (Provide students with the language so they can predict.)<i>¿Qué pasa cuando el ambiente no tiene agua/ aire/ tierra/ sol?</i></p> <p>For example:</p> <p><i>¿Cúando el ambiente no tiene agua, crece la planta/ se seca/ se muere?</i></p> <p><i>¿Cúando el ambiente no tiene tierra, se levanta la planta/ se seca/ se muere?</i></p> <p><i>¿Cúando el ambiente no tiene aire, se seca la planta/se muere?</i></p> <p><i>¿Cúando el ambiente no tiene sol, se pone amarilla la planta/ se seca/ se muere?</i></p>

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Key Elements	Lesson 3 Procedures – <i>Experimentemos con cambios ambientales</i>
	<p>Guide students to sum up their predictions in chorus.</p> <p style="text-align: center;"><i>¿Cuándo el ambiente no tiene agua, la planta crece/ se seca/ se muere? ¿Cuándo o el ambiente no tiene tierra, la planta no se levanta / se seca/ se muere? ¿Cuándo o el ambiente no tiene aire, la planta se seca la planta/ se muere? ¿Cuándo el ambiente no tiene sol, la planta se pone amarilla/ se seca/ se muere?</i></p> <p>Have students observe and record the changes in their own seedlings.</p>
<p><i>Exploration</i></p> <ul style="list-style-type: none"> ● <i>Objects and phenomena are explored.</i> ● <i>Hands-on activities, with guidance.</i> 	<p>Review and facilitate students to make their own predictions about would happen to a plant if the environment lacks soil, water, air, and sun.</p> <p>T: (Bring out the plant that was shown to students in the Engagement stage.) <i>Vamos a ver cómo se afecta la planta cuando el ambiente cambia. ¿Y si no hay aire/agua/ tierra/ sol, ¿qué le pasaría a la planta?</i></p> <p>Students respond.</p> <p>T: <i>Veamos pues. Vamos a hacer un experimento para cambiar el ambiente de una planta.</i></p> <p>T: (Use NO-Soil as a model for the class.) <i>Vamos a ver, ¿qué pasa si la planta no tiene tierra?</i> (Dump the soil onto newspaper on the ground. Put the plant back into the empty pot; encourage students to discuss what will happen to it over the next few days. Refer back to the calendar so students can record the changes.) <i>El ambiente para esta planta va a cambiar. No tiene tierra. Vamos a ver, ¿qué le pasa a la planta?</i></p> <p>As students discuss what happens to a plant, write down key vocabulary on a poster for the No-soil group. Worksheet 3a</p> <p>Continue encouraging students to discuss how they can take away –elements from a plant.</p> <p>No-Water Group: Ask students to suggest how to take water from the plant. (Our suggestion: How about not watering it?). <i>Ss: El ambiente de esta planta va a cambiar. No va a tener agua. No vamos a echarle agua más. Vamos a ver, ¿qué le pasa a la planta?</i></p> <p>No-Sun Group: Ask students to suggest what they can do to take away the sun (students might suggest putting it in a dark place. Find a dark place to hide the plant. Or put it in a brown bag.) Our suggestion: put it in double brown bags <i>Ss: El ambiente de esta planta va a cambiar. No va a tener sol. Vamos a poner la planta en la oscuridad. Vamos a ver, ¿qué le pasa a la planta?</i></p>

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Key Elements	Lesson 3 Procedures – <i>Experimentemos con cambios ambientales</i>
	<p>Reading and summary: Pointing at the posters, lead students to read their predictions. Students post their prediction on a poster.</p> <p>Note to teacher: No-Air: Tell the students that there is no good way to take away air from the plant, because air is everywhere. We won't make air as part of the experiment.</p>
<p><i>Explanation</i></p> <ul style="list-style-type: none"> • <i>Students explain their understanding of concepts and processes.</i> • <i>New concepts and skills are introduced as conceptual clarity and cohesion are sought.</i> 	<p>Students conduct their experiments</p> <p>Divide the class into three groups: No-Soil, No-Water, and No-Sun groups, and another group that will be responsible for taking care of a plant that has everything. (In fact, there could be groups for too much sun, too much water.)</p> <p>Each group will conduct their experiment and report back to the class orally about their experiment (what they did with the plant). Worksheet 3a</p>
<p><i>Elaboration</i></p> <ul style="list-style-type: none"> • <i>Activities allow students to apply concepts in contexts, and build on or extend understanding and skill.</i> 	<p>Students discuss what they did to the plant.</p> <p>Model how to make the observations and enter them into the log. Use the “Plant Log” Worksheet 3b, to record the change in the plant.</p> <p>Use the experiment log from the worksheet, each group illustrates and records what they did. They will continue the observation and recording during the next lesson. They will also continue to observe and care for their own seedlings.</p> <p>Note: Make sure each group will have the time to observe and record the changes each day during Lesson 4.</p>
<p><i>Evaluation</i></p> <ul style="list-style-type: none"> • <i>Students assess their knowledge, skills and abilities. Activities permit evaluation of student development and lesson effectiveness.</i> 	<p>Students can:</p> <ul style="list-style-type: none"> • Predict what happens if the environment changes and a plant does not have one of its essential elements to live. • Talk about their experiments: what they did to change the environment of a plant and what they did to observe and keep a record. <p>Performance assessment Tasks:</p> <ul style="list-style-type: none"> • Presentational mode: Using the posters the class made, in small groups, students talk about their predictions. • Interpersonal mode: Exchanging the environment logs, Worksheet 3a, students ask questions about other groups’ experiments. (But not the

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Key Elements	Lesson 3 Procedures – <i>Experimentemos con cambios ambientales</i>
	results that will be reported in Lesson 4.)

Teacher Reflections on Lesson 3 – <i>Experimentemos con cambios ambientales</i>	
<i>What worked well?</i>	
<i>What did not work well?</i>	
<i>What would I do differently?</i>	
<i>Other comments or notes</i>	

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Lesson 4 – ¡Hola, partes de la planta!

Lesson 4 of 5 – ¡Hola, partes de las plantas!		Duration: 30 Minutes
<i>Objectives</i>	<p>I Can:</p> <p>Oral language:</p> <ul style="list-style-type: none"> • Name parts of plants: <i>las raíces, el tallo, las hojas, la fruta, la flor</i> • Name things we need for living: <i>los nutrientes, fotosíntesis, oxígeno, dióxido de carbono</i> • Name body parts: <i>el brazo, el pie, la mano</i> <p>Literacy:</p> <ul style="list-style-type: none"> • Recognize and write: <i>las raíces, el tallo, las hojas, la fruta, la flor</i> <p>STEM and Other Subject Areas:</p> <ul style="list-style-type: none"> • Obtaining, Evaluating, and communicating Information (2. IOS. Science and Engineering Practice) • Organisms obtain the materials they need to grow and survive from the environment. (2. IOS. LS2.B) 	
<i>Vocabulary and Expressions,</i>	<p>Content obligatory language:</p> <ul style="list-style-type: none"> • <i>Las semillas, las raíces, el tallo, las hojas, la fruta, la flor</i> <i>Los pies, crecer, grande, fuerte, los brazos, los gatos, los perros, los pájaros</i> <i>sobre la tierra, debajo de la tierra</i> <i>las cebollas, el ajo, la sal, el vinagre, el azúcar</i> <p>Content compatible language:</p> <p><i>Mexicano, Palestino, Iraní, se levanta, se acuesta, viaja, la paja, los nutrientes, dióxido de carbono, fotosíntesis, el plato de ensalada, el aderezo</i></p>	
<i>Materials/ Resources</i>	<ul style="list-style-type: none"> ○ Pencil, paper, worksheets, a video presenter/document camera/Elmo device ○ A plant or poster of a plant (with roots) ○ Prepare many cut out pictures of the following items (grocery stores usually have lots of flyers advertising them): Use Worksheet 1 to prepare cut out pictures. Leaf: lettuce, spinach Fruit: tomato, cucumber, apple, orange, grapes Seeds: sunflower seeds Stem: celery, asparagus Roots: carrots, beets ○ Adopted “Brown bear, brown bear, what do you see” http://www.youtube.com/watch?v=ek7j3huAApc ○ Mexican Salad 	

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	<p>http://allrecipes.com/recipe/mexican-salad-2/</p> <ul style="list-style-type: none"> ○ Tomato and Cucumber Salad: Arabic (Palestinian and Iranian) salad: http://www.food.com/recipe/arabic-salad-90140 ○ Chinese Salad http://chinesefood.about.com/od/salads/a/chinese_salad.htm ○ Worksheet 4a –What Do Living Things Eat ○ Worksheet 4b – Little Seed, Little Seed, What do You See? ○ Worksheet 4c – Parts of a Plant ○ Worksheet 4d – What Do Parts Do for a Plant? ○ Worksheet 4e – Chant: Making Salad ○ Mini Booklet – The Story of My Plant
<p><i>Lesson Storyline and Core Text</i></p>	<p>In this lesson, students will learn about different parts of a plant and what these parts do to help a plant grow. They will make a connection between parts of plants and the environment, and understand why environmental changes will affect plants. When they report the results of their <i>No-Agua/Aire/Tierral/Sol</i> experiments, they will include the information about what happened to parts of a plant.</p> <p>While learning parts of a plant, student will identify which parts of plants that we use for making salad. They will review names of vegetables and fruits commonly used in salad.</p> <p>Students will continue to observe and record the changes of their own seedlings/plants.</p> <p>Core Text:</p> <p style="padding-left: 40px;"><i>¿Necesitan las plantas comer alimentos como nosotros? Las plantas no necesitan comer alimentos. Las plantas necesitan abosober los nutrientes de la tierra. Las plantas pueden hacer su alimento de la tierra, el aire, el agua, y el sol. ¿Podemos hacer nosotros alimentos?</i></p> <p style="text-align: center;">Little Seeds, Little Seeds, What do you see? Worksheet 4b (Chant: Plant’s Body Part Chant)</p> <p style="padding-left: 40px;"><i>Pequeña Semilla, Pequeña Semilla, ¿Qué ves tú? Veo unas raíces creciendo como pies. Pequeña Semilla, Pequeña Semilla, ¿Qué ves tú? Veo mi tallo creciendo grande y fuerte. Pequeña Semilla, Pequeña Semilla, ¿Qué ves tú? Veo mis hojas creciendo en mis brazos. Pequeña Semilla, Pequeña Semilla, ¿Qué ves tú? Veo una fruta lista para usar.</i></p> <p style="text-align: center;">What do Parts do for a Plant? Worksheet 4c</p> <p style="padding-left: 40px;"><i>Estas son las raíces. ¿Son las raíces los pies o las manos de la planta? ¿Viven las raíces sobre la tierra o bajo la tierra?</i></p>

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	<p><i>Las raíces viven bajo la tierra.</i> <i>¿Cómo ayudan las raíces a las plantas?</i> <i>Las raíces ayudan a la planta a levantarse.</i> <i>Las raíces ayudan a la planta a recibir el agua y los nutrientes.</i> <i>Una planta tiene muchas raíces.</i></p> <p><i>¿Ayuda el tallo a la planta a levantarse o a acostarse?</i> <i>El tallo ayuda a la planta a acostarse.</i> <i>El agua y los nutrientes viajan desde las raíces al resto de la planta.</i> <i>Un tallo es como un sorbeto.</i> <i>El agua y los nutrientes viajan por el tallo hasta alcanzar el resto de la planta.</i></p> <p><i>Las absorben el aire y el sol.</i> <i>Las plantas usan la luz del sol y el dióxido de carbono para la fotosíntesis.</i> <i>Nos dan Oxígeno para respirar. Entonces, las plantas son buenas para nosotros. Algunas plantas tienen frutas pero otras plantas no.</i></p> <p>Making a Salad Chant: <i>Tengo una lechuga, tengo hojas para mi ensalada.</i> <i>Las corto y las pongo en el plato de ensalada.</i> <i>Tengo un apio, tengo un tallo para mi ensalada</i> <i>Lo corto y lo pongo en el plato de ensalada</i> <i>(Repeat with all other ingredients.)</i> <i>Los combino, pongo la ensalada en mi plato.</i> <i>Añado el aderezo. Yum, Me encanta la ensalada que hice.</i></p>

Key Elements	Lesson 4 Procedures -- ¡Hola, partes de las plantas!
<p><i>Engagement</i></p> <ul style="list-style-type: none"> ● <i>Object, event or question used to engage students.</i> ● <i>Connections facilitated between what students know and can do</i> 	<p>What do living things need? Do calendar work. Sing ; “What a Plant Needs” Song.</p> <p>T: <i>¿Qué necesitan las plantas para crecer?</i> Students respond.</p> <p>T: <i>¿Necesitan comer alimentos como nosotros?</i> Students respond.</p> <p>T: <i>No necesitan comer. Las plantas absorben los nutrientes de la tierra por sus raíces. Las plantas pueden hacer alimentos para nosotros de los nutrientes de la tierra, el dióxido de carbono, el aire, el agua y el sol. Las plantas nos dan oxígeno. ¿Podemos nosotros hacer nuestros propios alimentos?</i> T: <i>La gente y los animales necesitan comer. Necesitamos los nutrientes de los alimentos, el oxígeno del aire, agua y un lugar para vivir.</i></p>

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Key Elements	Lesson 4 Procedures -- <i>¡Hola, partes de las plantas!</i>
	<p>Work with students to talk about and compare what different living things (animals vs. plants) need. Use Worksheet 4a.</p> <p>T: (Teacher models and ask student in pairs or small groups to do a Venn Diagram to ensure students' understanding. Lead students to conclude that people and other animals need to eat food and get oxygen from the air; plants need to have the four essential elements to live: carbon dioxide from the air, nutrients from the soil, water, and sun.)</p> <p>Observe and record students' No-tierra/No-agua/No-sol experiments, Worksheet 3a</p>
<p><i>Exploration</i></p> <ul style="list-style-type: none"> ● <i>Objects and phenomena are explored.</i> ● <i>Hands-on activities, with guidance.</i> 	<p>Identify different parts of a plant: roots, stems, leaves, fruits, and seeds. Bring out a plant with that has some kind of fruit and take the plant out of its pot. Dump all the soil to show roots. (Or use pictures.) Invite students to point out parts of the plant as you mention them.</p> <p><i>Las raíces mantienen la planta en la tierra y absorben el agua y los nutrientes. ¿Quién me puede enseñar las raíces? The stem holds up the plant and carries nutrients and water to the leaves. Who can point to the stem? The leaves take in the sun and carbon dioxide from the air The plant grows the fruit for us to pick and eat. Who can point to the fruit?</i></p> <p>Using the “Brown Bear, Brown Bear, What Do You See?” song, teach new vocabulary, pointing at the specific part and miming. Worksheet 4b http://www.youtube.com/watch?v=ek7j3huAApc</p> <p>Note: If weather permits and there is grass or small flowers or plants (e.g., dandelions) outside, you may take the students to pick their own grass or plants. Return to the classroom. Later, the grass or plants can be pressed into an art project.</p> <p>T: <i>Vamos a aprender un canto sobre las partes de la planta. Vamos a pretender que somos una Pequeña Semilla, y crecemos como una planta. Muévanse conmigo.</i></p> <p><i>Canto de la Pequeña Semilla</i></p> <p style="padding-left: 40px;"><i>Pequeña Semilla, Pequeña Semilla, ¿Qué ves tú?</i> <i>Veo unas raíces creciendo como pies. (Moving legs and wiggle toes)</i></p> <p style="padding-left: 40px;"><i>Pequeña Semilla, Pequeña Semilla, ¿Qué ves tú?</i> <i>Veo mi tallo creciendo grande y fuerte.</i> <i>(Stretching arms upward and straighten the body)</i></p> <p style="padding-left: 40px;"><i>Pequeña Semilla, Pequeña Semilla, ¿Qué ves tú?</i> <i>Veo mis hojas creciendo en mis brazos. (moving fingers)</i></p> <p style="padding-left: 40px;"><i>Pequeña Semilla, Pequeña Semilla, ¿Qué ves tú?</i> <i>Veo una fruta lista para usar.</i></p>

World Language-STEM MODULE COVERSHEET

De Semillas a la Mesa

Key Elements	Lesson 4 Procedures -- ¡Hola, partes de las plantas!
	<p style="text-align: center;">(Stretching an arm to pick fruits and put them into an imaginary basket.)</p> <p>Literacy practice: Model for students how to write the words for Parts of a Plant. Worksheet 4c and Worksheet 4d spend 2-3 minutes per day to engage in literacy practice.</p> <p>Observe and record students' No-Soil/No-Water/ No-Sun experiments, Worksheet 3b</p>
<p><i>Explanation</i></p> <ul style="list-style-type: none"> ● <i>Students explain their understanding of concepts and processes.</i> ● <i>New concepts and skills are introduced as conceptual clarity and cohesion are sought.</i> 	<p>How does each part help plants grow?</p> <p>Sing the "Little Seed What do You See?" song. Review different parts of a plant. http://www.bgfl.org/bgfl/custom/resources ftp/client ftp/ks2/science/s_plants/index.htm Click on parts of a plant to show students first.</p> <p>T: (Take the plant that is out of its pot, pointing at the root or use Worksheet 4c) <i>Estas son raíces. ¿ Recuerdan el canto de la Pequeña Semilla?</i></p> <p>S: <i>pies.</i></p> <p>T: <i>Correcto, ¿Piensas que las raíces viven sobre la tierra o debajo de la tierra? (use hand gesture to help students understand words underground and above ground)</i></p> <p>Ss: <i>debajo.</i></p> <p>T: <i>Sí, las raíces viven debajo de la tierra. ¿Que piensas que hacen las raíces para ayudar una planta?</i></p> <p>Ss: (Answers varies.)</p> <p>T: <i>Las raíces ayudan a las plantas a levantarse. También ayudan a las plantas a absorber el agua y os nutrientes de la tierra al cuerpo.</i></p> <p>T: <i>Una planta tiene muchas raíces, Las raíces ayudan a la planta a a absorber el agua y los nutrientes</i></p> <p>T: (Pointing at stem and bring a straw to simulate a stem.) <i>Alguien sabe qué hace el tallo por la planta? Ayuda el tallo a levantar la planta o a acostar la planta. S: (Answers varies.)</i></p> <p>T: <i>Sí, un tallo ayuda a la planta a levantarse. ¿Hay algo más?</i></p> <p><i>Students' responses.</i></p> <p>T: <i>Correcto. El agua y los nutrientes viajan de las raíces al resto de la planta. Un tallo es como un sorbeto. El agua y los nutrientes viajan por el tallo hasta llegar al resto de la planta.</i></p> <p>T: (Pointing at leaves) <i>Las hojas absorben el sol y el dióxido de carbono del aire. Las plantas convierten la luz del sol y el agua y el dióxido de carbono en energía. Esto se llama fotosíntesis. Las plantas dan oxígeno.</i></p> <p>T: <i>La gente necesita oxígeno para vivir. Entonces las plantas son buenas para nosotros. La fotosíntesis es buena para las personas y para las plantas.</i></p> <p>T: (Pointing at fruits) <i>Algunas plantas tienen frutas, pero algunas plantas no. ¿Puedes decirme un ejemplo o algunas frutas?</i></p> <p>Students might respond: <i>una manzana, una naranja, unas uvas...</i> and so on.</p>

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Key Elements	Lesson 4 Procedures -- ¡Hola, partes de las plantas!
	<p>T: <i>How about cucumbers/tomatoes (and other examples of fruit that are vegetables)? Las frutas también tienen semillas. ¿Qué puede crecer de las semillas?</i></p> <p>Ss: <i>Mas árboles de manzanas, más uvas, etc.</i> T: <i>Correcto, porque las semillas tienen nutrientes para que la planta crezca. Entonces las Pequeñas Semillas se convierten en plantas grandes que tienen frutos.</i></p> <p>Worksheet 4d- What Do Parts Do for a Plant? Divided students into 3 groups, lead students to do a dramatic demonstration. Students can perform and compete by group to make it more fun.</p> <p>What do Parts do for a Plant? <i>Somos las raíces.</i> <i>Somos los pies de la planta.</i> Vivimos debajo de la tierra. <i>Ayudamos la planta a levantarse</i> <i>Ayudamos la planta a absorber el agua y los nutrientes.</i></p> <p><i>Somos los tallos.</i> <i>Somos los brazos y el cuerpo de la planta.</i> Vivimos sobre la tierra. <i>Ayudamos a la planta a levantarse</i> <i>Ayudamos a la planta a absorber el agua y los nutrientes.</i></p> <p><i>Somos las hojas.</i> <i>Somos las manos de la planta.</i> <i>Ayudamos a la planta a absorber el aire y el sol.</i> <i>Podemos hacer fotosíntesis.</i> <i>Damos oxígeno y alimento a todas las cosas vivas.</i></p> <p>Observe and record students' No-tierra/No-agua/ No-sol experiments, Worksheet 3b</p>
<p><i>Elaboration</i> <i>Activities allow students to apply concepts in contexts, and build on or extend understanding and skill.</i></p>	<p>Review or learn names of fruit or vegetable that can add into a salad. Identify which part of a plant the edible bites belong.</p> <p>Review parts of the plants Worksheet 4c and parts of the plant chant. Worksheet 4d</p> <p>What can we use for making a salad? As in a cooking show, teacher models how to make a salad. Ask students to pantomime mime as teacher does the salad chant: Worksheet 4e –Making a Salad</p>

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De Semillas a la Mesa

Key Elements	Lesson 4 Procedures -- ¡Hola, partes de las plantas!
	<p>Making a Salad: <i>Tengo una lechuga, tengo hojas para mi ensalada.</i> <i>Las corto y las pongo en el plato de ensalada.</i></p> <p><i>Tengo un apio, tengo un tallo para mi ensalada</i> <i>Lo corto y lo pongo en el plato de ensalada</i></p> <p><i>Tengo unos tomates. Tengo frutas para mi ensalada.</i> <i>Lo corto y los ponngo en el plato de ensalada.</i></p> <p><i>Los combino, pongo la ensalada en mi plato.</i> <i>Añado el aderezo. Yum, mi ensalada es deliciosa.</i></p> <p>Invite volunteers to come up to pick out pictures from the basket. Lead the class to help the volunteers to do the salad chant.</p> <p>Salads from the World: Worksheet 1b Show pictures of different salads such as Black bean salad (Mexican), tomato and cucumber salad (Arabic), and cucumber and carrot (Chinese). Invite students to identify what ingredients are used to make those salads. Show pictures of basic and additional ingredients such as onions, garlic, salt, vinegar, oil, and sugar.</p> <p>Divide the class into small groups and ask the groups to decide what kind of salad they will make. Have the groups practice doing a cooking show with the salad chant.</p> <p>Each group will perform for the class with their own cooking show and salad chant. Lead the whole class to do the cooking show and salad chant as the big finish.</p>
<p><i>Evaluation</i></p> <ul style="list-style-type: none"> ● <i>Students assess their knowledge, skills and abilities. Activities permit evaluation of student development and lesson effectiveness.</i> 	<p>Review</p> <p>Recite the salad chant together. Invite a few volunteers to perform. Ask the class to talk about their (1) No-Soil/No-Water/ No-Sun experiments.</p> <p>No-agua/Aire/Tierra/ Experimentos del sol:</p> <ul style="list-style-type: none"> ○ Each group will put their “products” on a table. Have students observe and compare each product. ○ Take the original posters with students’ predictions. Compare the results of the experiment with the predictions. See if the predictions were correct. If not, what do the plants look like now? ○ Have students enter the findings onto their logs. ○ Ask students to practice before doing a report to the class.

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Teacher Reflections on Lesson 4 – <i>¡Hola, partes de las plantas!</i>	
<i>What worked well?</i>	
<i>What did not work well?</i>	
<i>What would I do differently?</i>	
<i>Other comments or notes</i>	

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De Semillas a la Mesa

Lesson 5 - Evaluaciones

Haciendo una Ensalada y una Promesa a Mi Planta

Lesson 5 of 5 - <i>Evaluaciones</i>	Duration: 30 Minutes
<i>Objectives</i> (core can dos)	<p>Students can:</p> <ol style="list-style-type: none"> 1. Retell the story of Little Seed 2. Identify and name common vegetables and fruits used in salad 3. Talk about the sequence of planting seeds into pots 4. Tell others what seeds and plants need to live and grow 5. Talk about an experiment showing the result of environmental changes on a plant 6. Identify parts of a plant and name their functions in supporting the life of a plant 7. Make a salad with different parts of various plants, including leaves, fruits, stems, seeds, and roots 8. Make a pledge to take care of a plant
<i>Materials/Resources</i>	<ul style="list-style-type: none"> ○ Preparation: Cut out pictures of various vegetables or fruits that the class has learned. E.g., <ul style="list-style-type: none"> Leaf: lettuce, spinach Fruit: apple, grapes, cucumber, orange, tomato Seeds: sunflower, corn Stem: asparagus, celery Roots: carrots, onions ○ Basket, brown bags, and sandwich bags for vegetables and fruits ○ Salad Bowls and utensils – enough for each group. ○ Worksheet 5a: What We Need ○ Worksheet 5b: Can do Statement
<i>Review</i>	<p>Before assessing students, make sure students have the opportunities to review lesson materials in terms of the Can-do statements listed above.</p>

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De Semillas a la Mesa

Interpretive Task

Title: **Shop for a Salad**

Task procedures/Instructions:

Students walk up to a basket filled with small brown bags of cut-out fruit or vegetable. Each student picks out one bag and tells the class what he/she has (e.g., I have tomatoes. Tomatoes are fruits).

Preparation: Cut real items or pictures of various vegetables or fruits that the class has learned. E.g.,

Leaf: lettuce, spinach

Fruit: apple, grapes, cucumber, orange, tomato

Seeds: sunflower, corn

Stem: asparagus, celery

Roots: carrots, onions

Interpretive Task:

1. Put all the bagged items or pictures in a basket, randomly go to a student for him/her to pick an item out of the basket.
2. He/she will tell the class what he/she has. For example: I have tomatoes in my salad. Tomatoes are fruits.

Interpersonal Task

Title: **Let's Make a Salad**

Task Procedures/Instructions:

Students will go around the room to look for salad partners. In each salad, there must be at least four (or three, if you prefer) parts of plants (e.g., leaves, fruits, seeds, roots, and stems). Students cannot tell people what they have until they are asked. They must ask each other what they have so they can build a salad. Continue until all the salad groups are formed. Each group of students will make a salad by mixing the content of the bags into a bowl.

Task Procedures/Instructions: Jigsaw activity:

1. Students will walk around to find their salad partners.
2. Each group must make sure it has at least four parts of a plant. E.g., leaf, stem, root, and fruit. If not, they have to find more partners.

Presentational Task

Title: **This is our Salad**

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Materials to be used:

Poster or display board for model, markers, magazines, glue, cut outs of universal symbols for water/sun light/temperature. Two pieces of plain paper 8 ½" by 11" Informational chart on different seeds, timer, seed packets for examples.

Student expresses his/her preference in the target language.

Student provides reason for preference in the target language

Presentational Task: This is Our Salad

Each group presents their salad. Students will talk about their own contribution and provide a brief description of the ingredient used (such as the name, which part of a plant it is.)

Task Procedures/Instructions:

1. Students will make their salad. Each group will describe how they made the salad and present their final product.

Title: **My Pledge to My Plant**

Presentational Task: My Pledge to My Plant

1. Each student will present the plant that he/she planted, telling what kind of plant it is.
2. After everyone has presented their plants, the class will read the pledge together.

Task Procedures/Instructions:

Make my pledge to my plant

1. Distribute a template of a pledge.
2. Students fill out the pledge.
3. Groups of students practice to prepare to make the pledge.
4. Each group makes the pledge

Querida Planta:

Tú eras una pequeña semilla de _____. Te sembré con tierra y agua. Usando el aire y el agua y el sol tú creciste. Ahora te llevo a casa. Te voy a echar agua y me voy a asegurar de que tengas aire y sol bueno. Te voy a cuidar..

Firma,

Nombre del estudiante,

Fecha

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Teacher Reflections on Lesson 5 – <i>Assessment Task</i>	
<i>What worked well?</i>	
<i>What did not work well?</i>	
<i>What would I do differently?</i>	
<i>Other comments or notes</i>	