

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

<b>Target Language:</b> Arabic	<b>Grade Level:</b> 2 and 3
<b>Proficiency Level:</b> Junior Novice Low – Junior Novice Mid	
<b>Context and Storyline:</b> <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>	
<b>Enduring Understanding:</b> <p>Living things and their environment form a system, in which they need each other.</p>	
<b>Essential Questions:</b> <p>What are the living things in our environment? How does environment affect living things?</p>	
<b>Module Duration and Lessons:</b> <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 – (Engagement stage or introduction) من أين تأتي السلطات؟</p> <p>Lesson 2 – (Exploration stage for main events and practice) هيا نزرع البذور</p> <p>Lesson 3 – <i>Conduct Experiments of Changing Environments.</i> (Explanation stage for main events and practice) إجراء تجارب تغيير البيئة</p> <p>Lesson 4 – (Elaboration stage for summary and review) مرحبا بأجزاء النبتة!</p>	

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Lesson 5 – (Evaluation stage for assessing student learning outcomes)

تحت إشراف سلطة والتعهد لندب تتي

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

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of the concept of culture through comparisons of the culture studied and their own. (4.2)

### Communities

- 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)

Knowledge: Students will know...	Skills: Students can...
<p>Vocabulary (both linguistic and content areas)</p> <p>Needs: الغذاء، الهواء، التربة، الماء، المواد الغذائية، الشمس</p> <p>Verbs: يشرب، ينمو، يذرع، يذرع، لكن أي،</p> <p>Plant parts: أوراق، ساق، جذر، زهرة، ثمرة، بذور،</p> <p>Expressions and patterns</p> <p>ما هو ذلك من؟ (بكم؟) كثيرا، ليس كثيرا ساخن، ليس ساخن أحب (لا أحب) (لا أحب)، أحب (لا أذرع) (أذرع)، (لا أذرع) أذرع تذرع الذرة تذرع مذلف أين، من، ما هي الأسئلة خلف، أمام</p>	<p>Students can:</p> <ul style="list-style-type: none"><li>• Identify and name the basic needs of living things.</li><li>• State that plants need soil, water, air and sun.</li><li>• Name different parts of a plant.</li><li>• Explain how the environment affects living things.</li></ul>

### Performance Assessment

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### Interpretive Task: Shop for a Salad

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).

### Interpersonal Task: Let's Make a Salad

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.

### Presentational Task: This is Our Salad

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.)

### Presentational Task: My Pledge to My Plant

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.

After everyone has presented their plants, the class will read the pledge together.

## 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.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://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.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](http://www.farmtoschool.org)
- Healthy Foods for Healthy Kids: [www.healthyfoodsforhealthykids.org/](http://www.healthyfoodsforhealthykids.org/)

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- 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 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 is 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 axillary buds that can also develop into new branches.

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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 apical meristem 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 at which photosynthesis takes 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.

### 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.

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**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 – Where Do Salads Come from?

من أين تأتي السلطات؟

Lesson 1 of 5 – Where Do Salads Come from?		Duration: 30 Minutes
<b>Objectives</b>	<p><b>I Can:</b> استطيع</p> <p><b>Oral language:</b></p> <ul style="list-style-type: none"><li>Name the things we need: الغذاء، الماء، الهواء، ال بيت</li><li>Name the things plants need: (الضوء) الشمس، الهواء، الماء، التربة</li></ul> <p><b>Literacy:</b></p> <ul style="list-style-type: none"><li>Recognize the words: بذور، تربة، ماء، هواء، شمس، بيت</li></ul> <p><b>STEM and Other Subject Areas:</b></p> <ul style="list-style-type: none"><li>Identify the needs of living things.</li><li>Identify the needs of plants</li></ul>	
<b>Vocabulary and Expressions</b>	<p><b>Previously learned:</b> Students know the difference between living and non-living things. Students know color words.</p> <p><b>Content obligatory language:</b> سلطة، غذاء، نقاتق، جزر، خس، طماطم، كرفس، خيار يحتاج، ينمو، يأكل، يشرب، سوق حديقة نباتية، مزرعة هواء، تربة، بذرة، نبات، ماء، شمس</p> <p><b>Content compatible language:</b> صور، يملك، صخرة، صحراء، ضفة النهر لذيذ، سوق، حديقة، مزرعة</p>	
<b>Materials/ Resources</b>	<ul style="list-style-type: none"><li>Realia: glass, water, various fruits and vegetables (apple, orange, grapes, lettuce, berry, جزر, cucumber, broccoli), rock, flower</li><li>Pictures of fruits, vegetables, and plants (apple, apple tree, grape vine, berry bush, cucumber, broccoli,..), sun, plant, flower</li><li>Bag to hold vegetable pictures</li><li>Seeds packages</li><li>Copy of “Seed Song” (refrain) on chart paper.</li><li><b>M.1 – Game “Red Light, Green Light”</b></li><li><b>Worksheet 1a</b> -- Vegetables and fruits</li><li><b>Worksheet 1b</b>– Various Salads (Maybe enlarge pictures)</li></ul>	

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	<ul style="list-style-type: none"> <li>○ <b>Worksheet 1c</b> – Supermarket , Garden, and Farm</li> <li>○ <b>Worksheet 1d</b> -- Little Seed Finds a Home</li> <li>○ <b>Worksheet 1e</b> – What Little Seed Needs (chant /hand emotions)</li> <li>○ <b>Ppt</b> – Little Seeds Finds Home</li> </ul>
<p><i>Lesson Storyline and Core Text</i></p>	<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><b>Core Text :</b></p> <p>مرد با، انا ال يوم أحتاج إلى بعض المساعدة ل تحضير سلطة معظم السلطات تأتي من النباتات عندي بعض الصور هل هذه سلطة أو ...؟ هل تحب أن تأكل السلطة؟ هل يمكن أن تقول لنا ماذا يوجد في السلطة؟ هل يمكنك أن تجد الجزر في السلطة؟ من فضلك، ضع الجزر في صحن السلطة من أين تأتي هذه الأشياء؟ من السوق / الحديقة / المزرعة هل يمكننا زراعة الخضروات / الفواكه؟ سوف نزرع الخضروات / الفواكه / النباتات هذه هي البذور النباتات تنمو من البذور دعونا نرى كيف تنمو البذرة ماذا تحتاج البذور الصغيرة؟ هل تحتاج إلى التربة؟ البذور تحتاج إلى التربة والهواء والماء والشمس لكي تنمو.</p>

<p>Key Elements</p>	<p>Lesson 1 Procedures – <i>Where Do Salads Come from?</i></p>
<p><i>Engagement</i></p> <ul style="list-style-type: none"> <li>● <i>Object, event or question used to engage students.</i></li> </ul>	<p><b>Plan a meal</b></p> <p>(Show pictures of different salads. Also show pictures of various produce. e.g., vegetable, fruit; both as produce and as living plants) <b>Worksheet 1a</b></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>

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Key Elements	Lesson 1 Procedures – <i>Where Do Salads Come from?</i>
<ul style="list-style-type: none"><li>• <i>Connections facilitated between what students know and can do</i></li></ul>	<p>T:</p> <p>مرحبا بكم يا تلاميذ، أنا فعلا أحتاج إلى مساعدتكم اليوم. أنا أنوي أن أحضر وجبة لصديق يحب فعلا السلطة. أحتاج أن أحضر سلطة لذيذة هل ستساعدوني؟</p> <p>Students respond.</p> <p>T:</p> <p>عندي بعض الصور. هل هذه سلطة أو نقانق / فطيرة / شطيرة لحم؟</p> <p>Ss:</p> <p>سلطة / فطيرة / لحم شطيرة</p> <p>Teacher sets all pictures of salads together in front of the class. <b>Worksheet 1b</b> هل تحب أن تأكل السلطة؟ أي واحدة تحب أكثر؟ T:</p> <p>Ask different students to respond. (like, not like, eat)</p> <p>Teacher with a picture of a salad.</p> <p>T:</p> <p>دعونا نتحدث عن ما تحتويه السلطة؟</p> <p>T: (showing picture of a carrot or a plastic carrot.) (Students pick out or point at carrots in the salad pictures.) هذه جزرة. هل يمكنك أن تجد الجزر في السلطة</p> <p>T:</p> <p>هل هذه جزرة؟ هل يمكن أن تخبرني ما هذه؟</p> <p>Ss:</p> <p>جزرة</p> <p>T: (models) الآن أنا أضع الجزرة في صحن السلطة.</p> <p>T: (calls on another student) من فضلك، ضع جزرة أخرى في صحن السلطة.</p> <p>Student chooses from among pictures on the floor or desk.</p> <p>Repeat with procedure for carrots and then for (الكرفس والطماطم والخس) 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:</p>

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Key Elements	Lesson 1 Procedures – <i>Where Do Salads Come from?</i>
	<p>يا سلام ! يبدو أن سلطتنا هذه لذيذة. هل تظنون أنها ستكون لذيذة؟</p> <p>Ss: نعم لذيذة</p> <p>T: هل تحبون هذه السلطة؟ أو أنكم لا تحبونها؟</p> <p>Ss: نعم، نحن نحبها (لا، لا نحبها)</p> <p>T: (Showing a picture of a supermarket)? <b>Worksheet 1c</b></p> <p>جيد، من أين تأتي هذه الأشياء في السلطة؟ من السوق؟</p> <p>S: نعم، من السوق</p> <p>T: أجل، من السوق.</p> <p>هل تظنون السوق يزرع الخضروات و الفواكه؟</p> <p>S: لا - نعم</p> <p>T: (showing a picture of a farm)</p> <p>السوق لا يزرع الخضروات أو الفواكه. زرعها شخص في حديقة أو مزرعة.</p> <p>T: (Waits for a show of hands, and then names the children, saying: _____</p> <p>هل أحد في هذا الصف يسكن في مزرعة؟</p> <p>_____ يسكن في مزرعة، و _____ يسكن في مزرعة الخ</p> <p>T: (Show pictures of home gardens.)</p> <p>T: هل أحد في هذا الصف عنده مزرعة في البيت؟</p> <p>(Waits for a show of hands, and then names the children, saying: _____</p> <p>_____ عنده حديقة، و _____ عنده حديقة الخ</p> <p>هل يمكننا أن نزرع أيضا الخضروات و الفواكه؟</p> <p>Students respond.</p> <p>T: عندما نحضر سلطتنا، سوف نتعلم كيف نزرع الأشياء للسلطة ، يمكنكم زراعة أشياء أخرى أيضا.</p> <p>سوف نقوم بتحضير السلطات بعدما نتعلم كيف تنمو النباتات.</p>

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Key Elements	Lesson 1 Procedures – <i>Where Do Salads Come from?</i>
<p><i>Exploration</i></p> <ul style="list-style-type: none"> <li>• <i>Objects and phenomena are explored.</i></li> <li>• <i>Hands-on activities, with guidance.</i></li> </ul>	<p><b>Introduce Seeds</b>  T: (Shows a seed package, opens it, and shows seeds)  هذه هي البذور. تنمو النباتات من البذور.  معظم هذه الأشياء في السلطة تأتي من البذور.  (Distribute a seed packet for students to look. Model as they pass the packet from one student to another.)  أنظروا، هذه حزمة من البذور.  Students repeat the utterances as they pass along the seed packet.</p> <p><b>Note:</b> Use the “Red Light, Green Light” game, <b>Worksheet M.1</b>. 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.</p> <p>S:  هذه حزمة من بذور الطماطم</p> <p>T:  إذا زرنا هذه البذور فسوف تنمو إلى نباتات  دعونا نرى كيف تنمو البذرة</p> <p>T: (Pick up a book)  لقد وجدت قصة عن البذور الصغيرة  دعونا نستمع إلى القصة و نكتشف ما تحتاجه البذور لكي تنمو؟</p>
<p><i>Explanation</i></p> <ul style="list-style-type: none"> <li>• <i>Students explain their understanding of concepts and processes.</i></li> <li>• <i>New concepts and skills are introduced as conceptual clarity and cohesion are sought.</i></li> </ul>	<p><b>Story of Little Seed</b>  Teacher reads the story of “Little Seed Finds a Home”. <b>Worksheet 1d</b></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. <b>Worksheet 1e</b>  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>ال تربة، ماء، عاؤها، الشمس  هذه هي الأشياء التي تحتاجها.  أنا بحاجة لـ لعثور عليهم في بيوتهم.  هذه هي الأشياء التي تحتاجها.</p> <p>تربة (Palm of hand facing down, sweep hand from left to right)  ماء (Make wave motion with hand from left to right-palm down)  هواء (Hand up, palm facing left, move hand in fan motion from side to side)</p>

## World Language-STEM MODULE COVERSHEET

### From Seeds to Table

من البذور إلى المائدة

Key Elements	Lesson 1 Procedures – <i>Where Do Salads Come from?</i>
	<p>شمس (Make circle shape with two hands held over head) (Point to self)</p> <p>هذه هي الأيدي التي أضعها. (Palms up, side by side in front of body, move hands apart.)</p> <p>هذه هي الأيدي التي في بيدي</p> <p>(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"> <li>• <i>Activities allow students to apply concepts in contexts, and build on or extend understanding and skill.</i></li> </ul>	<p><b>Teacher conducts a comprehension check about the story of Little Seed</b> Make sure to provide the language and ensure students' learning of the concept about needing soil, water, air, and sun. <b>Worksheet 1d</b></p> <p>نماذج من الأسئلة:</p> <p>T: إلى ماذا تحتاج البذرة الصغيرة؟ T: هل تحتاج إلى التربة؟ T: هل توجد التربة في صحراء / ضفة النهر؟ T: هل تحتاج إلى الهواء / الشمس / الماء؟</p> <p>Students respond. Conclude with the following utterance: T: أجل، البذور تحتاج إلى التربة و الماء و الهواء و الشمس لكي تنمو.</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"> <li>• <i>Students assess their knowledge, skills and abilities.</i></li> </ul>	<p>Assessment:</p> <ol style="list-style-type: none"> <li>1. Show pictures of different salads. Students pick what they want to talk about and name common ingredients of their chosen salad.</li> <li>2. Using pictures, students retell the story of Little Seed.</li> <li>3. Students perform the chant about Little Seed and name things that plants need to grow.</li> </ol>

Teacher Reflection Lesson 1- *Where Do Salad Come from?*

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### From Seeds to Table

من البذور إلى المائدة

<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>	

### Lesson 2 – Let's Plant Seeds

هيا نزرع البذور

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

Lesson 2 of 5 – البذور نزرع هيا		Duration: 30 Minutes
<i>Objectives</i>	<p><b>I Can:</b> أستطيع</p> <p><b>Oral language:</b></p> <ul style="list-style-type: none"> <li>Name the things plant need: التربة، الماء، الهواء، الشمس (الضوء)</li> </ul> <p><b>Literacy:</b></p> <ul style="list-style-type: none"> <li>Recognize and write: البذور، تنمو، النباتات، التربة، الماء، الهواء، الشمس (الضوء)</li> </ul> <p><b>STEM and Other Subject Areas:</b></p> <ul style="list-style-type: none"> <li>Identify the needs of plants</li> <li>Describe how to plant seeds</li> </ul>	
<i>Vocabulary and Expressions</i>	<p><b>Content obligatory language:</b></p> <p>البذور، تنمو، نبات، هواء، شمس، يحتاج، رقيق، وعاء</p> <p><b>Content compatible language:</b></p> <p>عندك، ضع، تحقق، اعتني، بالماء</p>	
<i>Materials/ Resources</i>	<ul style="list-style-type: none"> <li>A big calendar for the class to use daily</li> <li>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)</li> <li>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.</li> <li>Necessary tools for planting seeds</li> <li>A potted plant</li> <li>Picture cards: water, sun, air, soil, stem, leaves, roots, fruit, seeds, plants (plain, flower, tree from previous lesson)</li> <li><b>Worksheet 2a</b> – Planting Seeds Chant</li> <li><b>Worksheet 2b</b> – Matching for Literacy</li> <li><b>Worksheet 2c</b> – Planting Seeds mini book</li> </ul>	
<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>هيا نزرع هذه البذور سويا إلى ماذا نحتاج لكي نزرع؟ أولا نحن نحتاج إلى بعض التربة و وعاء</p> <p><b>Planting Seeds Chant:</b></p>	

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

	<p>ع ندي وعاء عندي بعض التربة أضع التربة في الوعاء عندي بعض البذور أضع البذور في التربة أضع الوعاء في الشمس أسقي نبتتي بالماء أعتني بنبتتي أشاهدها تنمو كل يوم</p>
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Key Elements	Lesson 2 Procedures – بذور – ه يا نزرع ال
<p><i>Engagement</i></p> <ul style="list-style-type: none"> <li>• <i>Object, event or question used to engage students.</i></li> <li>• <i>Connections facilitated between what students know and can do</i></li> </ul>	<p><b>Review the story of Little Seeds and what it needs to grow.</b> 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.)</p> <p style="text-align: right;">سوف نزرع نبتتنا الخاصة بنا من البذور. هيا نزرع هذه البذور سويا</p> <p>T: (Teacher models how to plant seeds) (Show a plant pot )</p> <p style="text-align: right;">إلى ماذا نحتاج؟ أولا نحن نحتاج إلى وعاء، أليس كذلك؟ هنا، _____ (إسم التلميذ) ، من فضلك، أحمل الوعاء</p> <p style="text-align: right;">التربة، الماء، و البذور</p> <p>Repeat with _____ , enlisting student help to hold each item. Open one seed package and show students how to plant it. While planting each step, recite with actions the “Planting Seeds Chant” <b>Worksheet 2a</b></p> <p><b>Planting Seeds:</b> Use Gouin series Instructions: Use the hand motions below when singing the refrain to the story.</p> <p>(Cup left hand as if holding a pot, then sets it down.)</p> <p style="text-align: right;">ع ندي وعاء</p> <p>. (Right hand shovels soils into the pot)</p> <p style="text-align: right;">عندي بعض التربة. أضع التربة في الوعاء</p> <p>(extend left arm to show the seeds in your palm) .عندي بعض ابذور (Left hand puts seeds into the pot and both hands pat them down gently.)</p>

## World Language-STEM MODULE COVERSHEET

### From Seeds to Table

#### من البذور إلى المائدة

Key Elements	Lesson 2 Procedures – هيا نزرع البذور
	<p style="text-align: right;">أضع الوعاء تحت الشمس</p> <p>(Make circle with the hand and put down the pot, then look up the sky with right hand over the eyes)</p> <p style="text-align: right;">أسقي نباتي</p> <p>(One hand tilted as if watering the plant)</p> <p style="text-align: right;">أعطني بذبتني</p> <p>(Two arms fold over the heart and rock sideways)</p> <p style="text-align: right;">أشاهدها تنمو كل يوم</p> <p>(two hands motioning as if the plant is growing)</p> <p>Lead students first to pantomime while the teacher recites. Then have them repeat each line after the teacher while they do the actions.</p>
<p><i>Exploration</i></p> <ul style="list-style-type: none"> <li>• <i>Objects and phenomena are explored.</i></li> <li>• <i>Hands-on activities, with guidance.</i></li> </ul>	<p>Practice first in whole class, then in pairs or small groups. Call on volunteer pairs or groups to perform.</p> <p><b>Students planting their own plants from seeds</b></p> <p><b>Formative assessment: Recite Planting Seeds chant</b></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"> <li>• <i>Students explain their understanding of concepts and processes.</i></li> <li>• <i>New concepts and skills are introduced as conceptual clarity and cohesion are sought.</i></li> </ul>	<p><b>Students recite and act out the “Planting Seeds” Gouin Series chant.</b></p> <p>Using their own language, tell the class how they plant their seeds. This can be done by groups. Teacher models how to write the essential vocabulary:</p> <p style="text-align: center;">البذور، تنمو، البذور، التربة، الهواء، الماء، الشمس</p> <p>Have students practice writing key vocabulary. Ask them to make their own flash cards, drawing pictures in the back.</p> <p><b>Peer Review:</b> 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"> <li>• <i>Activities</i></li> </ul>	<p>Play the Red Light-Green Light game, <b>Worksheet 1a</b>, with student-made flash cards as a review of literacy.</p>

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

Key Elements	Lesson 2 Procedures – هيا نزرع البذور
<i>allow students to apply concepts in contexts, and build on or extend understanding and skill.</i>	<p>Using the Planting Seeds worksheet, students draw pictures and explain the sequence of planting seeds in writing. <b>Worksheet 2a – Potting Seeds</b></p> <p>عندي وعاء عندي بعض التربة. أضع التربة في الوعاء . عندي بعض البذور أضع البذور في التربة أضع الوعاء تحت الشمس أسقي نبتتي بالماء . أعطني نبتتي . أشاهدت نمو يوم كل</p> <p><b>Peer review:</b> Students exchange their worksheet to review accuracy. Make corrections. They can also perform the chant as preparation for performance assessment next day.</p>
<i>Evaluation</i> ● <i>Students assess their knowledge, skills and abilities.</i>	<p>Performance Assessment:</p> <ol style="list-style-type: none"><li>Chant the Gouin series for زراعة البذور</li><li>Students display their scientific illustration and writing of how to plant seeds. <b>Worksheet 2b</b></li><li>Make oral presentations as individuals or in groups.</li><li>Observe and record changes to their own seedlings. <b>Worksheet 2c</b></li></ol>

Teacher Reflections on Lesson 2 – Let's Plant Seeds	
What worked well?	
What did not work well?	

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

<i>What would I do differently?</i>	
<i>Other comments or notes</i>	

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

### Lesson 3 – Let’s Conduct an Experiment to Change the Environment

هيا نجرى تجربة لتغيير البيئة

Lesson 3 of 5 – هيا نجرى تجربة لتغيير البيئة Duration: 30 Minutes	
<b>Objectives</b>	<p><b>I can:</b> أستطيع</p> <p><b>Oral language:</b></p> <ul style="list-style-type: none"><li>Name</li></ul> <p>مج ففة أصد فر، م ي تا أو ت موت، ال يوم، ادغ، أمس</p> <p><b>Literacy:</b></p> <ul style="list-style-type: none"><li>Recognize the words</li></ul> <p>مج ففة أصد فر، م ي تا أو ت موت، ال يوم، أمس، غدا،</p> <p><b>STEM and Other Subject Areas:</b></p> <ul style="list-style-type: none"><li>Construct a representation in which plants depend on their environment to meet their needs.</li><li>Plan and carry out investigations to test whether plants from different settings have different needs for water, sunlight and type of soil.</li></ul>
<b>Vocabulary and Expressions</b>	<p>Content obligatory language:</p> <p>مج ففة أصد فر، م ي تا أو ت موت، ال يوم، ادغ، أمس</p> <p>Content compatible language:</p> <p>ال بيئة، ت غير، ادغ، أخرج، الظلام ...</p>
<b>Materials/ Resources</b>	<ul style="list-style-type: none"><li>○ Pencil, paper, worksheets, a video presenter, computers, map of the world,</li><li>○ visuals of fruit and plants from the previous lesson</li><li>○ Actual plant that is dried, yellow, dying, or dead. (If necessary, this could be a picture)</li><li>○ Plastic bag, brown bags</li><li>○ Newsprint for teacher</li><li>○ Poster for groups to predict their experiments and share with others</li><li>○ <b>Worksheet 3a</b> – Changes in the Environment</li></ul>
<b>Lesson Storyline and Core Text</b>	<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>

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

### من البذور إلى المائدة

	<p>Students will continue to observe and care for their own seedlings/plants.</p> <p>Core Text:</p> <p>ودعونا نكتشف ماذا يحدث عندما تتغير البيئة .</p> <p>ماذا يحدث للنبات؟</p> <p>ماذا يحدث عندما تفقد البيئة الهواء / الماء / التربة / الشمس؟</p> <p>عندما تفقد البيئة الماء ، هل سينمو النبات/ يجف / يموت؟ عندما تفقد البيئة الماء هل سينمو النبات/ يجف / يموت؟</p> <p><b>No-Soil Group:</b> دعونا نرى ماذا يحدث إذا لم يكن هناك تربة البيئة بالنسبة لهذا النبات سوف تتغير ليس عنده تربة دعونا نكتشف ماذا يحدث له</p> <p><b>No-Water Group:</b> البيئة بالنسبة لهذا النبات سوف تتغير لن يكون عنده ماء لن نسقيه دعونا نكتشف ماذا يحدث له</p> <p><b>No-Sun Group:</b> البيئة بالنسبة لهذا النبات سوف تتغير لن يكون عنده شمس سندضع النباتات في الظلام دعونا نكتشف ماذا يحدث له</p>
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<b>Key Elements</b>	<p>هيا نجري تجربة لتغيير البيئة – Lesson 3 Procedures</p>
<p><b>Engagement</b></p> <ul style="list-style-type: none"> <li>● Object, event or question used to engage students.</li> <li>● Connections facilitated between what students know and can do</li> </ul>	<p><b>What happens when the environment does not have air/ water/soil/sun?</b></p> <p>T: (Ask and lead students to talk about what they did in Lesson 2: زراعة البذور، قراءة النشيد، الحديث عن البذور الخاصة بهم)</p> <p>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). أردت أن أريكم هذا النبات أيضا، لكن أنظروا ماذا حدث.)</p> <p>(Provide language as needed for students to respond: ما هو العيب في هذا النبات؟ جاف ، ميت ، أصدفر ، بني</p> <p>T:</p>

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

### من البذور إلى المائدة

Key Elements	Lesson 3 Procedures – هيا نجرى تجربة لتغير البيئة –
	<p>يا تلاميذ، دعونا نكتشف ماذا يحدث عندما لا يحصل النبات على ما يحتاجه – عندما تتغير البيئة، ماذا يحدث للنبات؟</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.) ماذا يحدث عندما تفقد البيئة الهواء / الماء / التربة / الشمس؟</p> <p>For example:</p> <p>عندما تفقد البيئة الماء ، هل سينمو النبات/ يجف / يموت؟</p> <p>عندما تفقد البيئة التربة ، هل سرتحمل النبات/ يجف / يموت؟</p> <p>عندما تفقد البيئة الهواء ، هل سيجف النبات / يموت؟</p> <p>عندما تفقد البيئة الشمس ، هل النبات سيصبح أصفر / يجف / يموت؟</p> <p>Guide students to sum up their predictions in chorus.</p> <p>عندما تفقد البيئة الماء ، هل سينمو النبات/ يجف / يموت؟</p> <p>عندما تفقد البيئة التربة ، هل سرتحمل النبات/ يجف / يموت؟</p> <p>عندما تفقد البيئة الهواء ، هل سيجف النبات / يموت؟</p> <p>عندما تفقد البيئة الشمس ، هل النبات سيصبح أصفر / يجف / يموت؟</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"><li>• Objects and phenomena are explored.</li><li>• Hands-on activities, with guidance.</li></ul>	<p><b>Review and facilitate students to make their own predictions about what would happen to a plant if the environment lacks</b> الشمس ، الهواء ، الماء ، التربة</p> <p>T: (Bring out the plant that was shown to students in the Engagement stage.) دعونا نكتشف كيف سيأثر النبات إذا تغيرت البيئة. ماذا إذا لم يكن هناك هواء / ماء / تربة / شمس، ماذا سيحدث للنبات؟</p> <p>Students respond.</p> <p>T: هل يجب علينا أن نكتشف؟ هيا نجرى تجربة لتغيير بيئة النبات</p> <p>T: (Use NO-Soil as a model for the class.) دعونا نرى ماذا يحدث إذا لم يحصل النبات على التربة</p>

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

Key Elements	Lesson 3 Procedures – هيا نجرى تجربة ل تغير البيئة –
	<p>(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. )</p> <p>البيئة بالنسبة لهذا النبات سوف تتغير ليس عنده تربة لنكتشف ماذا يحدث له</p> <p>As students discuss what happens to a plant, write down key vocabulary on a poster for the No-soil group. <b>Worksheet 3a</b></p> <p>Continue encouraging students to discuss how they can take away –elements from a plant.</p> <p><b>No-Water Group:</b> Ask students to suggest how to take water from the plant. (Our suggestion: How about not watering it?). Ss:</p> <p>البيئة بالنسبة لهذا النبات سوف تتغير لن يكون عنده ماء لن نسقيه أبدا دعونا نكتشف ماذا يحدث له</p> <p><b>No-Sun Group:</b> 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 Ss:</p> <p>البيئة بالنسبة لهذا النبات سوف تتغير لن يكون عنده شمس سنضع النبات في الظلام دعونا نكتشف ماذا يحدث له</p> <p>Reading and summary: Pointing at the posters, lead students to read their predictions. Students post their prediction on a poster.</p> <p><b>Note to teacher:</b> <b>No-Air:</b> 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"> <li>• <i>Students explain their understanding of concepts and</i></li> </ul>	<p><b>Students conduct their experiments</b></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>

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

Key Elements	Lesson 3 Procedures – هيا نجرى تجريرة ل تغير البيئة
<p><i>processes.</i></p> <ul style="list-style-type: none"><li>• <i>New concepts and skills are introduced as conceptual clarity and cohesion are sought.</i></li></ul>	<p>Each group will conduct their experiment and report back to the class orally about their experiment (what they did with the plant). <b>Worksheet 3a</b></p>
<p><i>Elaboration</i></p> <ul style="list-style-type: none"><li>• <i>Activities allow students to apply concepts in contexts, and build on or extend understanding and skill.</i></li></ul>	<p><b>Students discuss what they did to the plant.</b></p> <p>Model how to make the observations and enter them into the log. Use the “Plant Log” <b>Worksheet 3b</b>, 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><b>Note:</b> 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"><li>• <i>Students assess their knowledge, skills and abilities. Activities permit evaluation of student development and lesson effectiveness.</i></li></ul>	<p>Students can:</p> <ul style="list-style-type: none"><li>• Predict what happens if the environment changes and a plant does not have one of its essential elements to live.</li><li>• Talk about their experiments: what they did to change the environment of a plant and what they did to observe and keep a record.</li></ul> <p>Performance assessment Tasks:</p> <ul style="list-style-type: none"><li>• Presentational mode: Using the posters the class made, in small groups, students talk about their predictions.</li><li>• Interpersonal mode: Exchanging the environment logs, <b>Worksheet 3a</b>, students ask questions about other groups’ experiments. (But not the results that will be reported in Lesson 4.)</li></ul>

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

Teacher Reflections on <b>Lesson 3</b> هيا نجري تجربة لتغيير البيئة	
<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>	

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

### Lesson 4 – Hello, parts of the plant!

مرحبا ، أجزاء النبات !

Lesson 4 of 5 – مرحبا ، أجزاء النبات !		Duration: 30 Minutes
<b>Objectives</b>	<p><b>I Can:</b> أستطيع</p> <p><b>Oral language:</b></p> <ul style="list-style-type: none"><li>الجنور ، الساق ، الأوراق ، ال ثمار ، الزهور</li><li>Name things we need for living: العناصر الغذائية، التمثيل الضوئي، الأكسجين، ثاني أكسيد الكربون</li><li>Name body parts اليدين، القدم، الذراع</li></ul> <p><b>Literacy:</b></p> <ul style="list-style-type: none"><li>Recognize and write: الجنور ، ال ساق ، الأوراق ، ال ثمار ، ال زهور</li></ul> <p><b>STEM and Other Subject Areas:</b></p> <ul style="list-style-type: none"><li>Obtaining, Evaluating, and communicating Information (2. IOS. Science and Engineering Practice )</li><li>Organisms obtain the materials they need to grow and survive from the environment. (2. IOS. LS2.B)</li></ul>	
<b>Vocabulary and Expressions,</b>	<p><b>Content obligatory language:</b></p> <p>البذور ، الجنور ، ال ساق ، الأوراق ، الثمار ، أقدام ، تنموك بيرة ، قوية ، ذراع ، قطف ، كلاب ، طيور فوق الأرض وتحت الأرض ال بصل ، ال ثوم ، ال ملح ، ال خلا ، ال سكر .</p> <p><b>Content compatible language:</b></p> <p>مكسيكي ، ف لسط يني ، إيراني ، يتحمل ، يستلقي ، يسافر قش ، العناصر الغذائية ، ثاني أكسيد الكربون ، التمثيل الضوئي ، وعاء ، صلصة</p>	

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

<p><i>Materials/ Resources</i></p>	<ul style="list-style-type: none"><li>○ Pencil, paper, worksheets, a video presenter/document camera/Elmo device</li><li>○ A plant or poster of a plant (with roots)</li><li>○ 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.<ul style="list-style-type: none"><li>Leaf: lettuce, spinach</li><li>Fruit: tomato, cucumber, apple, orange, grapes</li><li>Seeds: sunflower seeds</li><li>Stem: celery, asparagus</li><li>Roots: carrots, beets</li></ul></li><li>○ Adopted "Brown bear, brown bear, what do you see" <a href="http://www.youtube.com/watch?v=ek7j3huAApc">http://www.youtube.com/watch?v=ek7j3huAApc</a></li><li>○ Mexican Salad <a href="http://allrecipes.com/recipe/mexican-salad-2/">http://allrecipes.com/recipe/mexican-salad-2/</a></li><li>○ Tomato and Cucumber Salad: Arabic (Palestinian and Iranian) salad: <a href="http://www.food.com/recipe/arabic-salad-90140">http://www.food.com/recipe/arabic-salad-90140</a></li><li>○ Chinese Salad <a href="http://chinesefood.about.com/od/salads/a/chinese_salad.htm">http://chinesefood.about.com/od/salads/a/chinese_salad.htm</a></li><li>○ <b>Worksheet 4a</b> –What Do Living Things Eat</li><li>○ <b>Worksheet 4b</b> – Little Seed, Little Seed, What do You See?</li><li>○ <b>Worksheet 4c</b> – Parts of a Plant</li><li>○ <b>Worksheet 4d</b> – What Do Parts Do for a Plant?</li><li>○ <b>Worksheet 4e</b> – Chant: Making Salad</li><li>○ <b>Mini Booklet</b> – The Story of My Plant</li></ul>
<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-Water/Air/Soil/Sun</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</p> <p>هل تحتاج النباتات إلى تناول الطعام مثلنا؟</p> <p>إنها لا تحتاج إلى تناول الطعام، إنها تمتص العناصر الغذائية من التربة ف إنها تستطيع أن تتغذى من التربة والهواء والماء والشمس .</p> <p>هل يمكن أن نحضر الطعام؟</p>

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

### من البذور إلى المائدة

#### Little Seeds, Little Seeds, What do you see? Worksheet 4b

(Chant: Plant's Body Part Chant)

أيّتها البذرة قرّ يغصلا، البذرة الصغيرة، ماذا ترى؟  
أرى جذوري تنمو مثل قدمي  
أيّتها البذرة قرّ يغصلا، البذرة الصغيرة، ماذا ترى؟  
أرى جذوعي تنمو كبديرة وقوية.  
أيّتها البذرة قرّ يغصلا، البذرة الصغيرة، ماذا ترى؟  
أرى أوراقتي تنمو على ذراعي.  
أيّتها البذرة قرّ يغصلا، البذرة الصغيرة، ماذا ترى؟  
أرى ثماري جاهزة للإسعمال.

#### What do Parts do for a Plant? Worksheet 4c

هذه هي الجذور .  
هل الجذور هي القدمين أو اليدين لنبات؟  
هل تعيش الجذور تحت الأرض أو فوق الأرض؟  
تعيش الجذور تحت الأرض  
ماذا تقوم به الجذور لمساعدة النبات؟  
تساعد الجذور النبات بالوقوف .  
تساعد الجذور النبات في أخذ الماء والعناصر الغذائية .  
النبات له جذور كثيرة .  
هل تساعد الساق النبات بالوقوف أو بالالتقاء؟  
نعم ، الساق تساعد النبات بالوقوف  
الماء والعناصر الغذائية تسافر من الجذور إلى بقية النبات .  
ساق النبات مثل القش  
الماء والعناصر الغذائية تسافر من الجذور إلى بقية النبات .  
الأوراق تسد تفيد من الهواء والشمس .  
النباتات تسد تخدم ضوء الشمس و  
ثاني أكسيد الكربون في عملية التمثيل الضوئي .  
إنها تعطينا الأكل سجين للتنفس . إذا كانت النباتات جديدة بالنسبة لنا .  
بعض النباتات لها رائحة، ولاكن بعض النباتات الأخرى ليس لها رائحة .

#### Making a Salad Chant:

عندي خس، عندي أوراق لسلطتي  
أقطعها وأضعها في صحن السلطة  
عندي كرفس، عندي سيقان لسلطتي  
أقطعهم وأضعهم في صحن السلطة  
(يُعاد مع كل من الخضروات الأخرى)  
أخلطهم معاً، أضع السلطة في صحن  
أضيف الصلصة، لذيذاً أحب السلطة التي أحضرت !

## World Language-STEM MODULE COVERSHEET

### From Seeds to Table

#### من البذور إلى المائدة

Key Elements	Lesson 4 Procedures – أجزاء النبتة – مرحبا ،
<p><i>Engagement</i></p> <ul style="list-style-type: none"> <li>● <i>Object, event or question used to engage students.</i></li> <li>● <i>Connections facilitated between what students know and can do</i></li> </ul>	<p><b>What do living things need?</b></p> <p>Do calendar work. Sing “What a Plant Needs” Song.</p> <p>T:</p> <p style="text-align: right;">إلى ماذا تحتاج البذور لكي تنمو؟</p> <p>Students respond.</p> <p>T:</p> <p style="text-align: right;">هل تحتاج إلى تناول الطعام مثلنا؟</p> <p>Students respond.</p> <p>T:</p> <p style="text-align: right;">إنها لا تحتاج إلى الأكل. إنها تستفيد من العناصر الغذائية عبر جذورها. إنها تصنع الغذاء لنا من العناصر الغذائية الموجودة في التربة، ثاني أكسيد الكربون الموجود في الهواء و الماء و الشمس. إنها تطلق الأكسجين هل يمكننا أن نصنع طعامنا الخاص بنا؟</p> <p>T:</p> <p style="text-align: right;">الناس و الحيوانات تحتاج أن تأكل. نحن نحتاج إلى العناصر الغذائية الموجودة في الطعام، الأكسجين الموجود في الهواء، الماء ومكان للعيش فيه</p> <p>Work with students to talk about and compare what different living things (animals vs. plants) need. Use <b>Worksheet 4a</b>.</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-Soil/No-Water/No-Sun experiments, <b>Worksheet 3a</b></p>
<p><i>Exploration</i></p> <ul style="list-style-type: none"> <li>● <i>Objects and phenomena are explored.</i></li> <li>● <i>Hands-on activities, with guidance.</i></li> </ul>	<p><b>Identify different parts of a plant:</b> الجذور، السيقان، الأوراق، الفواكه، والبذور</p> <p>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 style="text-align: right;">الجذور تمسك بالأزهار في التربة وتستخدم الماء والعناصر الغذائية . من يستطيع أن يشير إلى الجذور؟</p> <p style="text-align: right;">السيقان تمسك بالأزهار وتحمل العناصر الغذائية و الماء إلى الأوراق . من يستطيع أن يشير إلى السيقان؟</p> <p style="text-align: right;">الأوراق تستخدم في الشمس وثاني أكسيد الكربون عبر الهواء الأزهار ينمو الثمار لئلا نخسرها ونأكلها</p>

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

### من البذور إلى المائدة

Key Elements	Lesson 4 Procedures – أجزء النبتة – مرحبا ،
	<p>من يد س تط يع أن يشير إلى ال ثمار؟</p> <p>Using the “Brown Bear, Brown Bear, What Do You See?” song, teach new vocabulary, pointing at the specific part and miming. <b>Worksheet 4b</b>  <a href="http://www.youtube.com/watch?v=ek7j3huAApc">http://www.youtube.com/watch?v=ek7j3huAApc</a></p> <p><b>Note:</b> 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:</p> <p>دعونان تعلم ن شدي ن أجزاء ال نبات  سوف ن تظا هج م يعا و ك أن ن ال بذرة ال صغيرة ال تي نمت ل تصبح ن بذرة  ن حركوا معي</p> <p>ن شيد ال بذرة ال صغيرة  أي تها ال بذرة تر يغ صلا، ال بذرة ال صغيرة ، ماذا ترين؟  أرى جنوري ن نمو م ثل قدمي (moving legs and wiggle toes)</p> <p>أي تها ال بذرة تر يغ صلا، ال بذرة ال صغيرة ، ماذا ترين؟  أرى جنوعي ن نمو ك بذرة وقوية .</p> <p>(stretching arms upward and straiten the body)  أي تها ال بذرة تر يغ صلا، ال بذرة ال صغيرة ، ماذا ترين؟  أرى أوراقي ن نمو على ذراعي .  أي تها ال بذرة تر يغ صلا، ال بذرة ال صغيرة ، ماذا ترين؟  أرى ن ماري جاهزة ل لإس تعمل .  (Stretching an arm to pick fruits and put them into an imaginary basket.)</p> <p><b>Literacy practice:</b> Model for students how to write the words for Parts of a Plant. <b>Worksheet 4c</b> and <b>Worksheet 4d</b> spend 2-3 minutes per day to engage in literacy practice.</p> <p>Observe and record students’ No-Soil/No-Water/ No-Sun experiments,  <b>Worksheet 3b</b></p>
<p><i>Explanation</i></p> <ul style="list-style-type: none"> <li>• Students explain their understanding of concepts and processes.</li> </ul>	<p><b>How does each part help plants grow?</b></p> <p>Sing the “Little Seed What do You See?” song. Review different parts of a plant.  <a href="http://www.bgfl.org/bgfl/custom/resources_ftp/client ftp/ks2/science/s_plants/index.htm">http://www.bgfl.org/bgfl/custom/resources_ftp/client ftp/ks2/science/s_plants/index.htm</a> 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 <b>Worksheet 4c</b>)  هذه هي ال جنور ،</p>

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### From Seeds to Table

#### من البذور إلى المائدة

Key Elements	Lesson 4 Procedures – أجزاء النبتة – مرحبا،
<p>● <i>New concepts and skills are introduced as conceptual clarity and cohesion are sought.</i></p>	<p>هل تتذكرون نشيد، أي تها البذرة قر يغصلا، البذرة الصغيرة، ماذا رين؟</p> <p>فماذا نقول عن الجذور؟ هل هي قدمين أو اليدين لنبات؟</p> <p>القدمين</p> <p>S: T: (use hand gesture to help students understand words underground and above ground)</p> <p>ما قد، هل تظنون أن الجذور تعيش تحت الأرض أو فوق الأرض؟</p> <p>Ss: T: م عن، الجذور تعيش تحت الأرض . ماذا تظنون الجذور تفعل لمساعدة النباتات؟</p> <p>Ss: (Answers varies.) T:</p> <p>الجذور تساعد النباتات لكي تقف أنها أي ضا تساعد النباتات للاستفادة من الماء والعناصر الغذائية عبر التربة ثم إلى بقية الجسم .</p> <p>T: النبات له جذور كثيرة، الجذور تساعد النباتات في أخذ الماء والعناصر الغذائية .</p> <p>T: (Pointing at stem and bring a straw to simulate a stem.) هل أحد منكم يعرف ماذا يفعل الساق لنبات؟ هل يساعد الساق النبات بالوقوف أو بالالتقاء؟</p> <p>S: (Answers varies.) T: م عن، يساعد الساق النباتات بالوقوف . هل هناك أي شيء آخر؟</p> <p><i>Students' responses.</i> T: ما قد، الماء والعناصر الغذائية تسافر من الجذور إلى بقية النبات . ساق النباتات مثل القش، الماء والمواد الغذائية تسافر من الجذور إلى بقية النبات</p> <p>T: (Pointing at leaves) الأوراق تسد تفيد من الشمس و تانني أكسيد الكربون الموجود في الهواء . النباتات تحول أشعة الشمس والمياه و تانني أكسيد الكربون إلى طاقة غذائية هذا ما يسمى بعملية التمثيل الضوئي. أنها تطلق الأكسجين .</p> <p>T: يحتاج الناس إلى الأكسجين للتنفس لذلك النباتات هي جيدة لنا التمثيل الضوئي هو جيد للناس والنباتات .</p> <p>T: (Pointing at fruits) بعض النباتات لها رائحة، ولاكن بعض النباتات الأخرى ليس لها رائحة هل يمكنكم أن تعطوني بعض الأمثلة لثمار؟</p> <p>Students might respond: عنب، برتقال، تفاح and so on.</p>

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### من البذور إلى المائدة

Key Elements	Lesson 4 Procedures – أجزاء النبتة – مرحبا ، أجزء النبتة
	<p>T: (and other examples of fruit that are vegetables)? الفاكهة أي ضالها البذور. ماذا يمكن أن ينمو من البذور؟</p> <p>Ss: الكثر من أشجار التفاح ، والكثير من العنب وهلم جرا .</p> <p>T:  أقده، لأن البذور تحتوي على العناصر الغذائية من أجل البات أن ينمو ثم هذه البذور الصغيرة تنمو لتصبح نباتات كبيرة، وهي التي تعطي الثمار حياة النبات تبدأ مرة ثانية من البذور الصغيرة .</p> <p><b>Worksheet 4d- What Do Parts Do for a Plant?</b> 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><b>What do Parts do for a Plant?</b></p> <p>نحن الجذور نحن أقدم البات نعيش تحت الأرض نساعد البات بالوقوف . نساعد البات بامتصاص الماء والعناصر الغذائية . نحن السيقان نحن الذراع بين والجسم للبات نعيش فوق الأرض نساعد البات بالوقوف . نساعد البات بامتصاص الماء والعناصر الغذائية . نحن الأوراق نحن إيدي البات . نساعد البات بامتصاص الهواء والشمس . يمكننا أن نجري عملية التمثيل الضوئي نعطي الأكسجين والغذاء إلى جميع الكائنات الحية .</p> <p>Observe and record students' No-Soil/No-Water/ No-Sun experiments, <b>Worksheet 3b</b></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><b>Review or learn names of fruit or vegetable that can add into a salad. Identify which part of a plant the edible bites belong.</b></p> <p>Review parts of the plants <b>Worksheet 4c</b> and parts of the plant chant. <b>Worksheet 4d</b></p> <p><b>What can we use for making a salad?</b> As in a cooking show, teacher models how to make a salad. Ask students to pantomime mime as teacher does the salad chant: <b>Worksheet 4e –Making a Salad</b></p> <p>Making a Salad:</p>

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من البذور إلى المائدة

Key Elements	Lesson 4 Procedures – أجزء النبتة – مرحبا،
	<p>عندي <u>خس</u>، و عندي أوراق لسالطتي أقطعها و أضعها في صحن السلطة عندي <u>كرفس</u>، عندي سيقان لسالطتي أقطعهم و أضعهم في صحن السلطة عندي <u>طماطم</u> و عندي ثمار لسالطتي أقطعهم و أضعهم في صحن السلطة</p> <p>(Repeat with all other ingredients.)</p> <p>أخذ لظهم معا أضع السلطة في صحن أضيف الصلصة إلى سلطتي سلطتي لذية!</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><b>Salads from the World: Worksheet 1b</b> 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><b>Evaluation</b></p> <ul style="list-style-type: none"><li>• <i>Students assess their knowledge, skills and abilities. Activities permit evaluation of student development and lesson effectiveness.</i></li></ul>	<p><b>Review</b></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-Water/Air/Soil/Sun Experiments:</p> <ul style="list-style-type: none"><li>○ Each group will put their “products” on a table. Have students observe and compare each product.</li><li>○ 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?</li><li>○ Have students enter the findings onto their logs.</li><li>○ Ask students to practice before doing a report to the class.</li></ul>

# World Language-STEM MODULE COVERSHEET

## From Seeds to Table

من البذور إلى المائدة

Teacher Reflections on Lesson 4 – تنمو النبتة أجزاء مختلفة	
<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>	

### Lesson 5 - Assessment Tasks

Making a Salad and a Pledge to My Plant

Lesson 5 of 5	Duration: 30 Minutes
<i>Objectives (core can dos)</i>	<b>Students can:</b> 1. Retell the story of Little Seed

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

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### 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) part 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

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<b>Title: This is our Salad</b>
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
<b>Presentational Task: This is Our Salad</b>  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: <ol style="list-style-type: none"><li>1. Students will make their salad. Each group will describe how they made the salad and present their final product.</li></ol>
<b>Title: My Pledge to My Plant</b>
<b>Presentational Task: My Pledge to My Plant</b>  <ol style="list-style-type: none"><li>1. Each student will present the plant that he/she planted, telling what kind of plant it is.</li><li>2. After everyone has presented their plants, the class will read the pledge together.</li></ol> Task Procedures/Instructions: Make my pledge to my plant <ol style="list-style-type: none"><li>1. Distribute a template of a pledge.</li><li>2. Students fill out the pledge.</li><li>3. Groups of students practice to prepare to make the pledge.</li><li>4. Each group makes the pledge</li></ol> <p style="text-align: right;">نبتتي العزيزة، كنت صغيرة _____ (بذرة). زرعتك مع التربة و الماء. فنمت و كبرت بإستخدام الهواء و الماء و الشمس. الآن أخذك إلى بيتي. سأسقيك و أتأكد من حصولك على هواء و شمس جيدين. سأعتني بك.</p> <p style="text-align: right;">الإمضاء إسم ال تلم يذ</p>

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