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| <u>Lesson Title:</u> All About Flowering Plants | <u>Unit Title:</u> The Complete Plant unit | <u>Teacher Name:</u> Texas Farm Bureau |
| <u>Lesson Purpose/Goal:</u> The students will gain a complete understating of parts and processes of plants. | | <u>Time:</u> 1-2 Class Periods? |
| <u>Instructional Objectives:</u> (Students...) <ol style="list-style-type: none"> 1. Read and Discuss “Oh Say Can You Seed?” 2. Analyze flower parts through dissection; 3. Construct a miniature green house, and 4. Relate the planting and growing process to production agriculture. | | |
| <u>TEKS:</u> | <u>TAKS:</u> | |
| <u>Materials/Supplies Needed:</u> <ul style="list-style-type: none"> • “Oh Say Can You Seed?” book, clear plastic cup, tape, potting soil, spray bottles, small seeds (mustard, radish, poppy, etc.), large seeds (corn, bean, cotton, etc.), enough flowers for each student, scissors, clear plastic gloves, cotton balls, markers, paper towels. | | |
| <u>References:</u> <ul style="list-style-type: none"> • “Oh Say Can You Seed?” by Bonnie Worth • Agriculture in the Classroom – Texas Farm Bureau – Tad Duncan & Craig Lenard | | |
| <u>Global Contextual Set:</u> (1. Where we have been; 2. Where we are going & why; 3. What we are doing today; 4. How learners should conduct themselves) <ol style="list-style-type: none"> 1. Yesterday we learned about seed parts and functions. 2. Next we will be learning about plant parts, because without plants we could not live. 3. Today we will revisit our book, and build a mini greenhouse. 4. Be prepared to get involved and get your hands dirty while paying close attention. | | |
| <u>Focus/Interest Approach/Anticipatory Set:</u> (Captures attention and focuses students’ thinking through physical/cognitive engagement. <i>Principle – Experience before label.</i>) <ul style="list-style-type: none"> • http://www.youtube.com/watch?v=VLU0Xz7P8LU&feature=related • Use this link to get your students interested and focused. | | |
| Lesson Content: | | |
| 1. Objective 1: (Read and Discuss “Oh Say Can You Seed?”) <i>(Include all content, activities, directions, scripting, etc. below. Use as much space as needed)</i> | | <u>Teaching Method:</u> Discussion |
| <p>We are going to read “Oh Say Can You Seed?” again today; however, this time we will be looking for different key facts. As we are reading today we will pick out the parts of the flower/plant and pick out the functions for each part. Remember these parts and their function because we will use them in a few minutes for an activity.</p> <p>Read book to class, or read as a class!</p> <p>The entire class did a great job listening/reading our book, thank you.</p> <ul style="list-style-type: none"> - What looked familiar in the book? - What parts of this book were new or different? - Other discussion questions? | | <u>Notes:</u> |
| <u>Checking for Understanding:</u> <ul style="list-style-type: none"> • Where is the ovary of the flower? (show on picture) • Where is the petal of the flower? (show on picture) • Where is the pistil of the flower? (show on picture) • Where is the stamen of the flower? (show on picture) | | |

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| <u>Contextual Bridge:</u> <ul style="list-style-type: none"> Great, now we have discovered the plant parts in the book, so let's discover them on a real flower! | |
| <u>Objective 2 & Guided Practice: (Analyze flower parts through dissection)</u> <i>(Include all content, activities, directions, scripting, etc. below. Use as much space as needed)</i> | <u>Teaching Method:</u> Surgeon/Method Demonstration |
| <p>In a moment each of us will be given a flower with all parts in tact. Our task is to act as a surgeon as we dissect this flower. The parts need to be taken apart in a specific order so that we can see each part clearly. We are looking for seven parts in particular: stigma, style, ovary, ovules, anther, filament, and petals. There are other parts such as the leaves and stem that may be on some of our flowers, but not all of them.</p> <p>As I demonstrate this process be sure to write down the order that the parts are removed.</p> <p>First, we will pull off the petals very gently.</p> <p>Second, we will look for the anther and filament which are collectively called the stamen.</p> <p>Third, look for the stigma, style, and ovary which are collectively called the pistil.</p> <p>Fourth, very carefully, use a fingernail to cut open the ovary and use the magnifying glass to see the ovules inside.</p> <p>Now it's your turn, be very delicate!</p> | <u>Notes:</u> Use the picture on pp. 30 of "Oh Say Can You Seed?" to show the parts of the flower. SMART BOARD OPPORTUNITY! |
| <u>Checking for Understanding:</u> <ul style="list-style-type: none"> Check for understanding as the students are dissecting their flowers. Ask direct questions pertaining to the purpose of each part. | |
| <u>Contextual Bridge:</u> <ul style="list-style-type: none"> Ok, we know what the parts are and we have seen their purpose, now let's get our hands dirty and explore how plants grow! | |
| <u>Objective 3 & Guided Practice: (Construct a miniature green house)</u> <i>(Include all content, activities, directions, scripting, etc. below. Use as much space as needed)</i> | <u>Teaching Method:</u> Construction |
| <p>After a plant is pollinated it will grow seeds inside the ovary. Remember back to our lesson on seeds. Remember the seed parts: seed coat (body guard), cotyledons (seed leaves), and embryo (baby plant). In a few moments we will be constructing a green house that we will grow three types of plants in. We will be planting the seeds in a clear cup so that we will be able to explore the growth process as it occurs. Each of us needs to have full focus on the example that we will see in a moment, because we will be making these for ourselves in a moment.</p> <p>Here is the process:</p> <p>First we will need two plastic cups.</p> <p>Second, we will fill one cup about $\frac{3}{4}$ of the way with soil.</p> <p>Third, we will pick three different types of seeds to plant in our greenhouse.</p> <p>Fourth, press each seed down into the soil along the side of the cup. We want to be able to see the seed so push it along the outside edge of the cup about one inch deep.</p> <p>Fifth, spray the soil 10-15 times with a mister squirt bottle.</p> <p>Sixth, Place the second clear cup on top of the first cup (with soil and seeds in it) and tape the seam.</p> <p>Lastly, label which seed is where in the greenhouse.</p> | <u>Notes:</u> Be sure to teach the student that the seed has its own energy until it sprouts its first set of leaves. At that point the plant begins photosynthesis. The seed does not need sunlight until it sprouts its first leaves! Make one for the students first as an example/template. |

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| <p>What questions do you have before we begin?</p> <p>I will be placing you in partners for this activity. Be sure to split the responsibilities between each partner evenly.</p> <p>Take 10 minutes to complete this activity.</p> | <p>Have partners pre selected to avoid chaos.</p> <p>The extension activity is interchangeable with this activity.</p> |
| <p><u>Checking for Understanding:</u></p> <ul style="list-style-type: none"> • What did we learn from this activity? • How does the seed grow without sunlight? | |
| <p><u>Contextual Bridge:</u></p> <ul style="list-style-type: none"> • Now we have planted our own seeds, but how do farmers do this differently? | |
| <p><u>Objective 4:</u> Relate the planting and growing process to production agriculture.</p> | <p><u>Teaching Method:</u> Discussion</p> |
| <p>Just as we discussed about the farmer’s seeds and our seeds the growing process is the same for both. The only difference between our plants and the farmer’s plants is that the farmer used bigger tools to plant them.</p> <p>Although our plants do grow the same, we can not live on the garden we are growing in a cup. Farmers support the world when it comes to supplying food and fiber for the human race. We can only grow a few plants at a time in a garden, but the farmer grows thousands or even millions of plants in his field.</p> <p>Without the farmer, we would all be hungry and would not have many clothes to wear.</p> <p>What other things does a farmer do to help us on a daily basis?</p> <p>How can we help the farmer to do his job?</p> | <p><u>Notes:</u></p> <p>Allow all discussion to take place before moving to the next discussion question.</p> <p>Guide the students in a manner that will help them think about keeping the environment safe and clean.</p> |
| <p><u>Check for Understanding:</u></p> <ul style="list-style-type: none"> • The discussion serves as a check for understanding. But additional questions may be asked if needed. | |
| <p><u>Contextual Bridge:</u> We have learned how plants grow, their parts and how they are used in agriculture. Now let’s see if we remember what we learned!</p> | |
| <p><u>Independent Practice:</u> <i>(Individualized and independent activity occurring in the classroom. Include all activities, directions, and description below.)</i></p> <ul style="list-style-type: none"> • Depending on the grade level a labeling handout could be given. If too young for that a coloring handout could be completed. The independent practice is very open. | |
| <p><u>Closure - Global Contextual Set:</u> <i>(1. Where we have been; 2. Where we are going & why; 3. What we will do next; 4. How learners should conduct themselves or what supplies are needed next.)</i></p> <ol style="list-style-type: none"> 1. We have now learned about the seed and the plant parts, but that is not all we need to know! 2. Next, we will learn about how plants make their own food. 3. Tomorrow, we will discover and explore the photosynthesis process. 4. Be prepared to concentrate on the science terms and be engaged in the activities. | |
| <p><u>Extension Activity:</u> <i>(Optional)</i></p> <p>This extension activity is more like an alternative activity to the miniature greenhouse, because it teaches the same lesson.</p> | |

After a plant is pollinated it will grow seeds inside the ovary. Remember back to our lesson on seeds. Remember the seed parts: seed coat (body guard), cotyledons (seed leaves), and embryo (baby plant). This seed will then fall to the ground and begin to grow, but in a very special way. The seed doesn't need sunlight until it sprouts above the ground with its first set of leaves. We are going to plant a garden today, but not the type that you have seen before. This garden will be planted in a GLOVE!

In a moment we will be creating a garden in a glove that we will be able to watch over the next few weeks and see the process.

Watch as I show the process, and then we will all make a garden in a glove.

First, we must gather our materials: one clear plastic glove, five different types of small seeds (mustard, radish, etc.), five cotton balls, cup of water, tape, and a marker.

Second, we will write our name on the palm of the glove and the five different seed names on each finger.

Third, we will get the cotton balls moist, but not soaked.

Fourth, we will dip a cotton ball in one type of seeds. Get about three seeds on the cotton ball.

Fifth, place that cotton ball in the finger that has the name of that particular seed on it.

(repeat for each seed)

Sixth we will fold the wrist of the glove over and tape it down to keep the moisture in.

Seventh, we will put our gardens somewhere safe while the seeds sprout.

Lastly, after the seeds sprout, we will transfer them into a pot with dirt and sunlight.

Assessment: *(What formal method will be utilized to measure students' knowledge/learning?)*

- The plant part quiz that is administered can serve as the assessment, or more formative assessment can be used.

Lesson plan template designed by Tarleton State University College of Agricultural and Environmental Sciences.

Supplemental materials begin here.