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| **Lesson Content** | | | |
| **What Standards (national or state) relate to this lesson?**  (You should include ALL applicable standards. Rarely do teachers use just one: they’d never get through them all.) | SC.4.L.16.1- Identify processes of sexual reproduction in flowering plants, including pollination, fertilization (seed production), seed dispersal, and germination. | | |
| **Essential Understanding**  (What is the big idea or essential question that you want students to come away with? In other words, what, aside from the standard and our objective, will students understand when they finish this lesson?) | Students will be able to understand that flowers play an essential roll as they make seeds and fruits, and serve more of a purpose than beauty and fragrance. They will be able to understand how the different parts allow flowers to make seeds, and reproduce. | | |
| **Objectives- What are you teaching?** | * Students will be able to identify parts of a flower involved in pollination, fertilization, and seed formation. * Students will be able to understand how these parts of the flower play a roll in reproduction. | | |
| **Rationale**  Address the following questions:   * Why are you teaching this objective? * Where does this lesson fit within a larger plan? * Why are you teaching it this way? * Why is it important for students to learn this concept? | * This standard has been visited in third grade, and will be revisited but not retaught in fifth grade, and thus is an important concept for students to grasp. * This lesson fits into the life cycle unit of plant growth and reproduction. Additionally, students will later use this knowledge to be able to meet objectives such as comparing plant and animal structures, which is a fifth grade standard. * I believe that my lesson emphasizes student accountability. The students lead their own learning and generate their own questions through accountable talk. Additionally, the use of models, hands on investigations, and videos meets the needs of all students. * This concept is one that is relevant to our lives and what is around us, and students can use this knowledge to understand the world they live in. | | |
| **Evaluation Plan- How will you know students have mastered your objectives?**  Address the following:   * What formative evidence will you use to document student learning during this lesson? * What summative evidence will you collect, either during this lesson or in upcoming lessons? | **Formative Assessments**   * Thumbs up/Thumbs down – This is a great way to assess that students are on track when guiding questions are asked throughout the lesson. Students are often honest with their answers and therefore I think this is effective * Checkpoint Questions – These would be asked throughout the lesson to check student understanding and determine if I need to restructure my lesson. * Monitoring/Circulating – When students are in their groups, I will circle around and monitor to ensure that they are on task and in the right direction. Additionally, I will monitor as they work on their individual checkpoint questions. * Checklist – I will circulate with a checklist to make anecdotal notes, which would determine how I group students for performance task. * Flower model – I will circulate with a flower model and ask students to point and name different parts of it.   Summative Assessment:   * Students will draw and label the parts of the flower in their Science notebooks.   Exit Question:  As an exit ticket, we will then play “pin the part on the flower.” I will display a drawing of a flower. Each group will create sticky notes for each part of the flower, and come up and place it where they think it goes. For an extension, students would label these with a description of the role of each part in reproduction. | | |
| **What misconceptions might students have about this content?** | Students may confuse the terms fertilization and pollination, and use them interchangeably. They may not realize that though these two processes contribute to reproduction, they are separate entities. | | |
| **Lesson Implementation** | | | |
| **Teaching Methods**  (What teaching method(s) will you use during this lesson? Examples include guided release, 5 Es, direct instruction, lecture, demonstration, partner word, etc.) | * Accountable Talk * Videos * Models * Hands on Investigation * Microscope Use * Table Talks | | |
| **Step-by-Step Plan**  (What exactly do you plan to do in teaching this lesson? Be thorough. Act as if you needed a substitute to carry out the lesson for you.)  Where applicable, be sure to address the following:   * What Higher Order Thinking (H.O.T.) questions will you ask? * How will materials be distributed? * Who will work together in groups and how will you determine the grouping? * How will students transition between activities? * What will you as the teacher do? * What will the students do? * What student data will be collected during each phase? * What are other adults in the room doing? How are they supporting students’ learning? * What model of co-teaching are you using? | Time  2 minutes  2 minutes  1 minute  1 minutes  8 minutes    3 minutes  1  2 minutes  5 minutes  10  minutes  1 minute  10 minutes  3 minutes | Who is responsible (Teacher or Students)?  Students  Students and teachers  Teacher  Students  Students  Students and Teachers  Students  Students  Students and teacher  Students | Each content area may require a different step-by-step format. Use whichever plan is appropriate for the content taught in this lesson. For example, in science, you would detail the 5 Es here (Engage/Encountering the Idea; Exploring the Idea; Explanation/Organizing the Idea; Extend/Applying the Idea; Evaluation).  The class captain will come up to the front of the class and read the objective and essential question. The students will turn and talk about what they’re expected to do and achieve by the end of the day. I will circulate in order to monitor conversations, and ask questions such as “What are we learning today?”  I will ask students questions in order to make real world connections. These will include “How many of you have flowers at home?” “What kind of flowers do you have at home?” Students should list various kinds. I will then state that this topic is something that we can apply and connect to in real life, as we constantly see flowers. I will also mention that students have learned this previously in third grade, and that it is only revisited and not retaught in fifth grade, as in fifth grade they learn about human bodies rather than plants, and quickly touch on the fair game policy.  I will hold a flower model in front of the classroom and say, “This flower is beautiful. But believe it or not, plants do not have flowers just to look pretty!” Today, we are going to learn about the parts of the flower, and how they help to reproduce so that we can make more plants!  I will then ask equipment managers to pass out Science textbooks, accountable talk sheet, and talking chips, and for students to take out their Science notebooks to refer to notes taken before.  I will remind students of the questions we generated ourselves with our QRT activity, and state that we hope we will answer some after today. Students will then watch a study jam video on pollination and parts of the flower. <http://studyjams.scholastic.com/studyjams/jams/science/plants/flowers.htm>. (start at flower picture)  Students will refer to their 3-2-1 activity in their notebooks. I will pause the video at certain times for students to discuss questions using their talking chips, and notes and textbooks as resources (pg 12 textbook).  Pause at right before definition “How does pollination occur?”  Pause at “A new seed is made” “How does fertilization occur?” **\*\*mention analogy whole group- pollen going to ovary is like basketball scoring in hoop.\*\***  I will walk around with my model while groups discuss these questions in order to assess formatively. One question would be done at a time, and I will circulate and make notes on my clipboard to record student data or misconceptions. Each question would be discussed before moving onto the next, as communication Scientist would share. Questions would also be displayed on a power point.  I will then mention to students that I noticed some misconceptions yesterday about fertilization and pollination, which is why we made Venn diagrams to try to address this misconception. I will then mention that I talked to Mrs. Stillman who suggested word derivations in order to really understand the meaning of the words. I will mention that I have high expectations for them, and that they can understand the breakdown of these words, and may them to prevent mixing them up in the future. I will point out the connection to language arts, with finding the root word and suffix.  I will then have students self assess with how comfortable they feel with plant reproduction. I will have them hold up three fingers at their chest, 1 through 3, (1 being need help, 3 being challenge me) and compare these to my anecdotal notes. Students who hold up a 1 will go to a small group with Mrs. Lawson, and would work on a modified version of the class.  Equipment managers will then collect bins for each table group that will contain a flower, a hand lens, color pencils and safety goggles.  Students will then be introduced to their task, which is to draw and label the flower in front of them. We will set our expectations and add it to our colorubric, so students know what is expected of them. I will also ask students what they think the voice level should be, and why?  Students will then begin drawing and labeling this part of the flower into their notebooks. As they do this, I will circulate with a model of a flower, and ask students to point and name different parts of the flower that I am holding. I will use this as an opportunity to address misconceptions. Students who finish this can complete “A flower study” as well as “The measurement activity” which would be located in their bins. I will point of the connection to mathematics, as we are currently learning measurement.  Students will then self assess themselves according to their colorubric guidelines, and draw this in at the top of their pages.  As an extension, students would be able to go to the microscopes in order to view specific parts of their flower, which they would be able to dissect, and makes notes about this in their notebooks.  As an exit ticket, we will then play “pin the part on the flower.” I will display a drawing of a flower. Each group will create sticky notes for each part of the flower, and come up and place it where they think it goes. Higher level learners can also provide a description of the function of each part. I will use this information to ensure that my objective has been met. |
| **What will you do if…** | **…a student struggles with the content?**  If a student does not feel confident, he/she will work in a small group for assistance with the performance task of drawing and labeling a flower. Additionally, these persons would be given a drawing of a flower, which is labeled in order to be guided. | | |
| **What will you do if…** | **…a student masters the content quickly?**  Students will be able to work on higher order questions that would be in their bins, as well as the measurement activity. Additionally, they will be able to provide captions for their drawings. | | |
|  | **How will you differentiate instruction for students who need additional challenge during this lesson (enrichment)?**  Students will be able to write annotated labels for their flower, as well as answer questions that would be in their bins. | | |
| **How will you differentiate instruction for students who need additional language support?**   * I believe that this lesson is ESOL friendly due to the amount of visual support provided. * They can also be provided with a word call with definitions so that new vocabulary is accessible. * Students will be given sufficient thinking time before having to answer questions, as students who are learning a new language often need this “wait time.” | | |
| **Materials**  (What materials will you use? Why did you choose these materials? Include any resources you used. This can also include people!) | * Science notebooks * Talking chips * Bins (hand lenses, color pencils, real flowers) * Flower models * Study Jams Video * Flower Study Questions (for differentiation) * Powerpoint * Microscopes * Sticky notes * Science textbooks | | |