**Week of:** May 12th, 2025, **Teacher:** Frank Cottone

**Module/Unit:** Unit 1:Cells and Organization in Organisms **Invest/Parts:** Lesson 2: Plant Body Systems **Grade/Content:** 6th grade Science

**NJSLA**

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|  | **Session 1** | **Session 2** | **Session 3** | **Session 4** | **Session 5** |
| **New Jersey Student Learning Standards – ELA & MATH** | **ELA Standards**  **WHST.6-8.8**: Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism.  **Math Standards**  **6.EE.C.9**: Model two changing quantities in a real-world problem with an equation and analyze the relationship. | | | | |
| **New Jersey Student Learning Standards- Science**  **(Performance Expectations)**  **NJ SLS-S (PEs)**  **NGSS** | **MS-LS1-8**: Gather and synthesize information that sensory receptors respond to stimuli by sending messages to the brain for immediate behavior or storage as memories.  **MS-LS1-3**: Use argument supported by evidence for how the body is a system of interacting subsystems composed of groups of cells. | | | | |
| **Science & Engineering Practices** | **Obtaining, Evaluating, and Communicating Information**  **Engaging in Argument from Evidence** | | | | |
| **Disciplinary Core Ideas** | **LS1.A Structure and Function**  **LS1.D Information Processing** | | | | |
| **Crosscutting Concepts** | **Cause and Effect**  **Systems and System Models**  **Science is a Human Endeavor** | | | | |
| **Components of the Lesson** | **Can You Explain the Phenomenon?** | **Exploration 2** | **Exploration 3** | **Exploration 4** | **Lesson Self-Check** |
| **Anticipatory Set**  List specific statements or activities you will use to focus students on the lesson  State clearly what students are learning and how it connects to prior learning. The teacher points out possible areas for misunderstanding, uses rich language offering vocabulary development where appropriate  **(Eliciting-Engaging/**  **Focus Question)** | • Display the tulip-stem cross-section image and ask: “What do you notice about the variety of cells?” | • Review the Driving Question and display the tulip-stem image: “How does studying this image help us understand plant systems?” | • Ask: “How does water move from roots to leaves? How are sugars transported back down?” | • Show a wilting stem and a plant bending toward light; ask, “Why are these responses important?” | • Rapid review: three key takeaways from Explorations 1–3. |
| **Direct Instruction**  What information is essential for the student to know before beginning and will this skill be communicated? How will you be demonstrating this skill? Identify strategies to be used to determine if students have learned the objectives. The teacher models the process to be followed and makes connections to previous instruction. The teacher checks for student understanding. The teacher’s explanation is clear. Questions and tasks are higher order and have multiple possible answers.  (Teacher Facilitation) | • TELL: Explain that multicellular plants are built from diverse cell types that form tissues and organs, which interact to keep the plant alive.  • COLLABORATE: Introduce the Driving Question:  • How do the different types of cells in the tulip stem system work to meet the tulip’s needs? | • TELL: Describe the levels of biological organization—cells → tissues → organs → organ systems—using clematis stem and water-lily examples. | • Explain photosynthesis inputs/outputs and the roles of xylem (water) and phloem (sugar) in transport. | • Describe how guard cells control stomata opening/closing, and explain phototropism and gravitropism. | • Model a CER for the Driving Question:  • Claim: Different cell types in the tulip stem work together to meet the plant’s needs.  • Evidence: Data from organizational, transport, and response activities.  • Reasoning: How each evidence piece supports the claim. |
| **Guided Practice/Monitoring**  List activities which will be used to guide student practice and provide a timeframe for completing this practice. Teacher monitors individual and group understanding. The teacher provides timely feedback. Students are actively engaged in discussions and extend them without mediation by the teacher. Students assess and make improvements to their work.  **(Exploring/Explaining)** | • ANALYZE: In small groups, brainstorm questions about the tulip image. Sort into those addressing the Driving Question vs. questions for later exploration. | • EXPLORATION 1 (Gather Data):  • Read “Exploring Levels of Organization in Organisms.”  • Complete a hierarchical graphic organizer, identifying specific cell types, tissues (dermal, vascular), organs (stem, leaf), and the root vs. shoot systems.  • DISCUSS:  • In pairs, use the clematis stem image to support the claim that specialized tissues form an organ, and the water-lily image to show how organs form organ systems. | • EXPLORATION 2 (Gather Data): Complete the inputs/outputs diagram.  • Hands-On Lab (“Observe Transport”): Follow protocol using red food coloring with asparagus vs. broccoli stems. | • EXPLORATION 3 (Gather Data):  • Calculate stomatal index on a leaf image; discuss trade-offs between gas exchange and water loss.  • Examine desert plant adaptations (e.g., sundew, Onyanga) and predict structural changes under drought. | • Complete one sample CER together using the Self-Check prompts. |
| **Independent Practice**  Assignments to be given to students to ensure they have mastered the skill without the teacher’s guidance.  Students have a choice in how they complete tasks. Students may modify or make additions to the task based on their needs.  **(Extending/Elaborating)** | • Each student selects one Driving-Question–related question to research and records their reasoning. | • Write two claim–evidence sentences:  • “These specialized cells form tissues that…”  • “These tissues join to create organs that…” | • After 24 hrs, measure colored-water ascent, record observations, and write a claim on how vascular arrangement affects transport. | • Write a CER paragraph explaining how dermal or guard-cell structures change in water-limited conditions. | • Finish the Lesson Self-Check, including CER and checkpoint questions. |
| **Closure**  What method of review and evaluation will be used to complete the lesson. Students have an opportunity for reflection, answer open-ended questions, provide reasonable responses and explanations to events or phenomena, sense-making, and closure.  Teacher cites multiple approaches for those students who experience difficulties. The teacher conveys that the lesson is not “done” until all students understand.  **(Evaluating)** | • Groups share one key question to set the stage for tomorrow’s Exploration 1. | • Volunteers share one claim–evidence sentence; whole class refines language for precision. | • Groups share one piece of evidence that supports xylem or phloem function. | • Share one adaptation example that illustrates structure–function in response to environment. | • Optionally, students create a comic or poem using key vocabulary (tissue, transport, response, organ system). |
| **Differentiation**  ***(GE, SPE, ELL, 504, GT)***  **Include student initials** | ELL students are provided English and Spanish version, and extra time if needed. Work with students who are able to help with translation.  SPE students- extra time if needed. Visual aids. Create illustrations to show understanding of concepts, extra time.  RC, MH, UW | | | | |

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| **Anticipatory Set**  **(Eliciting/Engaging)** | **Direct Instruction**  **(Teacher Facilitation)** | **Guided Practice/Monitoring**  **(Exploring/Explaining)** | **Independent Practice**  **(Extending/Elaborating)** | **Closure**  **(Evaluating)** |
| Admit slips, Do Now, essential questions, writing journals | Media presentations, lecture/guided notes, interactive discussion, modeling/I do, | Practice active reading, ask/answer questions, use manipulatives, peer review/revision, we do | Draft writing, revise work, design/construct other problems/questions/labs, you do, | Exit slip, review major points, summary statement, student reflection activity, |

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| **Differentiation Strategies** | |
| **Addressing English Language Learners**  **In addition to the Lesson Objective, you must include the Language Objective for ELL students. Language Domains & Language Development Level:** (Refer to CAN DO Descriptors, appendix A, to identify language levels and methods of specific language differentiation according to grade cluster)  Reading- Match icons & symbols to words, phrased or environmental print… Identify concepts about print & text features.  Writing- Draw in response to oral directions… Label objects, pictures, diagrams… Produce icons, symbols, words, to convey messages.  Listening- Point to stated pictures, words, phrased… Follow 1-step oral directions… Match oral statements to objects, figures or pictures.  Speaking- Name objects, people, pictures… Answer what or choice questions. | **Addressing Special Education Students**  **IEP Accommodations and Modifications:** (Refer to individual IEP and for further strategies of differentiation, see Appendix B) |
| **Addressing 504 Students**  (Refer to school’s 504 Committee) | **Addressing Gifted and Talented Students**  Allow students to create their own tasks and questions |