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| **TEXAS CTE LESSON PLAN**  [www.txcte.org](http://www.txcte.org) | |
| **Lesson Identification and TEKS Addressed** | |
| **Career Cluster** | Agriculture, Food, and Natural Resources |
| **Course Name** | Practicum in Agriculture, Food, and Natural Resources |
| **Lesson/Unit Title** | Using Microscopes to Conduct Research for Supervised Agricultural Experiences |
| **TEKS Student Expectations** | **130.25. (c) Knowledge and Skills**  (7) The student demonstrates technical knowledge and skills required to pursue a career in the Agriculture, Food, and Natural Resources Career Cluster. The student is expected to:  (A) develop advanced technical knowledge and skills related to the personal occupational objective  (C) explain the principles of safe operation of tools and equipment related to the practicum |
| **Basic Direct Teach Lesson**  **With Special Education Modifications/Accommodations and**  **one English Language Proficiency Standards (ELPS) Strategy** | |
| **Instructional Objectives** | **The students will be able to:**   * Identify the parts of a microscope * List and define common microscope terms * List common safety and handling procedures for using microscopes * Demonstrate the ability to properly focus, change magnification, and adjust field of vision in a microscope |
| **Rationale** | In the Agriculture Industry, it is essential to demonstrate the ability to properly use a microscope for research. |
| **Duration of Lesson** | Teacher’s Discretion |
| **Word Wall/Key Vocabulary**  *(ELPS c1a, c, f; c2b; c3a, b, d; c4c; c5b) PDAS II (5)* | Slide  Cover Slip  Magnification  Resolution  Field of view  Depth of field  Parfocal lens |
| **Materials/Specialized Equipment Needed** | **Equipment:**   * Computer * Projector   **Materials:**   * Handout - Using a Microscope note (Attached) * Using a Microscope PPT slides * Sticky notes (10 per pair of students) * Microscopes (1 per 2-3 students) * Newsprint * Microscope slides and cover slips * Threads (two colors) |
| **Anticipatory Set**  (May include pre-assessment for prior knowledge) | Show students slides 2-6 on the Microscope Use PPT. Allow them to guess what each of the magnified images is.  Slide 2: cross section of human skin  Slide 3: white blood cells attacking a pathogen  Slide 4: butterfly wing  Slide 5: pantyhose  Slide 6: shark skin  Ask students if they have ever thought about how these items looked on a magnified scale. Explain that understanding how the world works depends on looking at things from a different perspective. |
| **Direct Instruction \*** | Have students work in teams of 2-3 to write sticky notes with the parts of the microscope and place them on in the correct location on an actual microscope  *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **Guided Practice \*** | *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **Independent Practice/Laboratory Experience/Differentiated Activities \*** | *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **Lesson Closure** |  |
| **Summative/End of Lesson Assessment \*** | Teacher should move around the room to evaluate and provide guidance to the students in their microscope labelling activity. Formative assessment of student performance should be used to identify potential areas for reinforcement.  *Individualized Education Plan (IEP) for all special education students must be followed. Examples of accommodations may include, but are not limited to:*  NONE |
| **References/Resources/Teacher Preparation** |  |
| **Additional Required Components** | |
| **English Language Proficiency Standards (ELPS) Strategies** |  |
| **College and Career Readiness Connection[[1]](#footnote-1)** |  |
| **Recommended Strategies** | |
| **Reading Strategies** |  |
| **Quotes** |  |
| **Multimedia/Visual Strategy**  **Presentation Slides + One Additional Technology Connection** |  |
| **Graphic Organizers/Handout** | Handout - Using a Microscope - note (Attached) |
| **Writing Strategies**  **Journal Entries + 1 Additional Writing Strategy** |  |
| **Communication**  **90 Second Speech Topics** |  |
| **Other Essential Lesson Components** | |
| **Enrichment Activity**  (e.g., homework assignment) |  |
| **Family/Community Connection** |  |
| **CTSO connection(s)** |  |
| **Service Learning Projects** |  |
| **Lesson Notes** |  |

1. Visit the Texas College and Career Readiness Standards at <http://www.thecb.state.tx.us/collegereadiness/CRS.pdf>, Texas Higher Education Coordinating Board (THECB), 2009. [↑](#footnote-ref-1)