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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** | Mathematical Applications in Agriculture, Food, and Natural Resources |
| **Lesson/Unit Title** | Construct and analyze graphs, tables, and charts |
| **TEKS Student Expectations** | **130.10. (c) Knowledge and Skills**  (1) The student demonstrates mathematics knowledge and skills required to solve problems related to the agriculture, food, and natural resources industries.  (D) The student is expected to construct and analyze charts, tables, and graphs from data generated in agribusiness, animal, environmental service, food products and processing, natural resources, plant, and power, structural, and technical systems  (E) The student is expected to analyze data using measures of central tendency when interpreting operational documents in agribusiness, animal, environmental service, food products and processing, natural resources, plant, and power, structural, and technical systems |
| **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:**   * Construct charts, tables and graphs from data generated in agribusiness * Analyze charts, tables and graphs from data generated in agribusiness |
| **Rationale** | Provide careers in agriculture, food, and natural resources.  To encourage students to apply mathematics to problems arising in everyday life, society, and the workplace. |
| **Duration of Lesson** | Teacher’s Discretion |
| **Word Wall/Key Vocabulary**  *(ELPS c1a,c,f; c2b; c3a,b,d; c4c; c5b) PDAS II(5)* | Mean  Median  Standard deviation  Percentile  Frequency  Sample size  Measure of central tendency  Normal distribution  Outlier |
| **Materials/Specialized Equipment Needed** | **Materials:**   * Whiteboards * Corkboards * Tacks & map pins * Markers * Tape |
| **Anticipatory Set**  (May include pre-assessment for prior knowledge) | Begin the lesson with a Gallery Walk. Take graphs, tables, and charts from an agricultural based magazine and post them on chart paper around the room. Have students work in groups and allow them 2 minutes to write down on the chart paper everything they know from the graph.  (**Gallery Walk:** Using images or objects, students move from station to station making observations. The goal is for students to come to a conclusion about the objects/images that is related to a particular concept.) |
| **Direct Instruction \*** | * Have students write down what they know about the graphs, tables, and charts * Then discuss why we use data * Have students create their own questions using the graphs, tables, and charts you provided at * The beginning of class * Students will collect and represent their own data   *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 \*** | * Have students work in groups to synthesize, analyze, and represent data. (Have the data that you would like for students work with already printed out, or you could have the research on line and find the information.) * Have students present their data to the class.   *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** | * Texas A&M AgriLife Extension Service materials * IMS Materials, Texas A&M University * Texas Education Agency curriculum resources * *Mathematics for Agriculture*, Betty Rogers, Interstate Publishers |
| **Additional Required Components** | |
| **English Language Proficiency Standards (ELPS) Strategies** |  |
| **College and Career Readiness Connection[[1]](#footnote-1)** | **Mathematics**  I  II.C  II. D.  VI  VII  VIII.A  VIII.C  X B.1 |
| **Recommended Strategies** | |
| **Reading Strategies** |  |
| **Quotes** |  |
| **Multimedia/Visual Strategy**  **Presentation Slides + One Additional Technology Connection** |  |
| **Graphic Organizers/Handout** |  |
| **Writing Strategies**  **Journal Entries + 1 Additional Writing Strategy** |  |
| **Communication**  **90 Second Speech Topics** |  |
| **Other Essential Lesson Components** | |
| **Enrichment Activity**  (e.g., homework assignment) | Cover the following questions.   * What do we mean by collecting data? * What do we mean by analyzing data? * What are the two types of data?   Return to the charts from the beginning of the lesson. Have students continue their gallery walk. However, this time you want them to create questions for the graph, tables, and charts given. Only allow students two minutes at each poster. Once everyone has circulated through all charts have them complete a gallery walk reading all of the questions that were written. |
| **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)