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| **TEXAS CTE LESSON PLAN**[www.txcte.org](http://www.txcte.org) |
| **Lesson Identification and TEKS Addressed** |
| **Career Cluster** | Business Management & Administration |
| **Course Name** | Business Information Management I |
| **Lesson/Unit Title** | Data Mining Basics |
| **TEKS Student Expectations** | **130.136. (c) Knowledge and Skills**(9) The student uses commands to retrieve data and create reports from databases.(A) The student is expected to discuss the nature of data mining(B) The student is expected to describe data mining tools(C) The student is expected to demonstrate basic data mining techniques |
| **Basic Direct Teach Lesson**(Includes Special Education Modifications/Accommodations and one English Language Proficiency Standards (ELPS) Strategy) |
| **Instructional Objectives** | • The student is expected to discuss the nature of data mining. • The student is expected to describe data mining tools and techniques.  |
| **Rationale** | The student will understand and will be able to recall information on data mining basics. |
| **Duration of Lesson** | 150 minutes |
| **Word Wall/Key Vocabulary***(ELPS c1a,c,f; c2b; c3a,b,d; c4c; c5b) PDAS II(5)* | * Data Mining‐ The process of analyzing data from different perspectives and summarizing it into useful information.
* Perspective‐ A attitude toward or way of regarding something.
* Database‐ A structured set of data held in a computer.
* Gather‐ To collect.
* Information‐ Facts provided or learned about something or someone.
* Data‐ Facts and statistics collected together for reference or analysis.
* Data Gathering Tool‐ The tools used to collect and record information.
* Analysis‐ Detailed examination of the elements or structure of something, typically as a basis for discussion or interpretation.
* Analytical Tools‐ Any tools used to help with analysis.
* Regression Analysis‐ A procedure for determining a relationship between a dependent variable and an independent variable.
* Query‐ A request of information from a database.
* Consumer Trends‐ Habits or behaviors currently prevalent among consumers of goods or services.
* Extract‐ To get, pull, or draw out, usually with special effort, skill, or force.
* Transform‐ To change in form, appearance, or structure.
* Infrastructure‐ The basic underlying framework or features of a system
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| **Materials/Specialized Equipment Needed** | Instructional Aids • Data Gathering Tool (Spreadsheet) • Instructor Computer/Projection Unit • Online Website listed in the References Section |
| Anticipatory Set(May include pre-assessment for prior knowledge) | The main purpose of this lesson is to help students understand the terminology and nature of data mining and be able to describe and discuss data mining tools and techniques/methods. **Say:** Currently, every two days, we create as much information as we did from the dawn of civilization until 2003. (This is a quote from Eric Schmidt.) **Ask:** On any given day, what are some ways you gather information? **Ask:** Do you think any of these ways are better than others? Why or why not? **Ask**: Do you realize what kind of information is being gathered on you on any given day? **Ask**: What methods do you think are being used to gather information on you? **Say**: Now that we have discussed ways to gather information/data, let’s gather some! |
| **Direct Instruction \*** | Vocabulary/Personal Word Walls- students will have created personal, possibly electronic, word walls. The teacher will establish the method and location. 1. Introduction (Ask and Say)
	1. Specifics are in this document
2. Discovery Activity
	1. After the discussion questions, students will be given a data gather tool to collect data on their classmates. Once they have gathered and recorded their information, they will analyze their findings and make predictions/assumptions based on their findings.
	2. How do we gather information?
	3. Activity Review
3. Instruction/Discussion
	1. When did data mining start?
	2. Why use data mining?
	3. How does it work?
	4. What makes it data mining?
	5. Different levels of analysis
	6. What kind of technological infrastructure is required?
4. Review and Evaluation
	1. Review the main points from the lesson with students and then give them the provided assessment.
5. Extensions
	1. Extension 1= Students can do individually, with a partner, or within a group. Extension 2= Classroom
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| **Guided Practice \*** | Using the provided template, gather data on classmates.  Students can use the provided fields or they can customize their data gathering tool (spreadsheet).     Instruction/Discussion/Information This information is provided to help get your students ready to do some sort of application of the information in Lesson 3 of this unit.  Share this with your students in the manner that works best for you and your classroom.   *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** | Review the lesson’s purpose and evaluate its effectiveness.   |
| **Summative / End of Lesson Assessment \*** | **Informal Assessment**All the following can be used as informal assessments:* Class participation
* Discovery Activity‐Data Gathering Tool

**Formal Assessment*** Data Mining Basics
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| **References/Resources/****Teacher Preparation** | Preparation * Review and familiarize yourself with the terminology, all website links, and any resource materials required.
* Have materials and websites ready prior to the start of the lesson.

References * http://www.anderson.ucla.edu/faculty/jason.frand/teacher/technologies/palace/datamining.htm
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| **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** |  |
| **Writing Strategies****Journal Entries + 1 Additional Writing Strategy** |  |
| **Communication****90 Second Speech Topics** |  |
| **Other Essential Lesson Components** |
| **Enrichment Activity**(e.g., homework assignment) | • Data Mining SoftwareResearch and report on three different types of data mining software available for purchase. Include name of software, its capabilities, its infrastructure requirements, and any companies that use it (if available).• Data Mining for UsSet up the classroom as a business in which people could make purchases. Keep the “store” open for a week and record all daily purchases (time of purchase, gender of purchaser, age of purchaser, item purchases, quantity purchased, etc.). Once you have gathered and recorded data, make predictions about what should be sold next week and where those items should be placed in the classroom. |
| **Family/Community Connection** |  |
| **CTSO connection(s)** | Business Professionals of AmericaFuture Business Leaders of America |
| **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)