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| **TEXAS CTE LESSON PLAN**  [www.txcte.org](http://www.txcte.org) | |
| **Lesson Identification and TEKS Addressed** | |
| **Career Cluster** | Finance |
| **Course Name** | Securities and Investment |
| **Lesson/Unit Title** | Investment Models |
| **TEKS Student Expectations** | **130.184.(c) Knowledge and Skills**  (3) The student describes investment analysis and selection processes.  (G) The student is expected to interpret analysis used in making investment decisions  (H) The student is expected to discuss strategies for selecting investments  (I) The student is expected to identify performance measurements for venture capital  (J) The student is expected to describe investment analysis and selection theory such as the Modern Portfolio Theory, the Capital Asset Pricing Model, and the Arbitrage Pricing Theory |
| **Basic Direct Teach Lesson**  (Includes Special Education Modifications/Accommodations and  one English Language Proficiency Standards (ELPS) Strategy) | |
| **Instructional Objectives** | **Performance Objective**  Students will describe various methods used in analyzing investments.  **Specific Objective**   * Students will explain the Capital Asset Pricing Model. * Students will explain the Modern Portfolio Theory. * Students will explain the Arbitrage Pricing Theory. * Students will compare and contrast the various investment selection strategies. |
| **Rationale** | The Finance Career Cluster focuses on planning, services for financial and investment planning, banking, insurance, and business financial management. In Securities and Investments, students will understand the laws and regulations to manage business operations and transactions in the securities industry. |
| **Duration of Lesson** | 2-3 class periods |
| **Word Wall/Key Vocabulary**  *(ELPS c1a,c,f; c2b; c3a,b,d; c4c; c5b) PDAS II(5)* | * Risk – the possibility of losing some, if not all, of an investment * Return – ideally the gain on an investment, but may be a loss; the higher the risk, the higher the return * Asset allocation – diversification, or spreading out investments to try to balance risk and reward in a portfolio * Capital Asset Pricing Model – a pricing model for riskier investments that generates a higher expected rate of return * Arbitrage Pricing Theory – assumes an investment may not be priced accurately so it looks at past performance of the investment itself as opposed to the whole market * Modern Portfolio Theory – emphasizes diversification of assets to balance out the risk in a portfolio * Portfolio – a grouping of different financial investment types * Large cap stocks – companies whose market capitalization (the number of outstanding shares multiplied by the price per share) is greater than $10 billion * Mid cap stocks – companies whose market cap. is between $2 and $10 billion * Small cap stocks – companies whose market cap is less than $2 billion but greater than $300 million * Bonds – basically a loan that a government entity or corporation makes to investors with the promise to pay back the amount plus interest at a later date * Mutual funds – a grouping of individual securities that investors can purchase shares in while being managed by a fund manager for a fee * Venture capital‐money invested by an investor in new or small businesses that may have high growth potential, risky investment for the venture capitalist (the investor) |
| **Materials/Specialized Equipment Needed** | **Instructional Aids**   * Instructor Computer/Projection Unit * Online Websites |
| **Anticipatory Set**  (May include pre-assessment for prior knowledge) | **Ask** students how they would go about selecting how to invest their money. Discuss with them that beginninginvestors usually buy what they know, in the case of stocks  **Ask** students if they have ever made a decision based on a ‘feeling’ instead of conducting research. It doesn’tmean the method of the decision‐making is wrong, but let them know there are other ways of making decisions, especially when it comes to financial decisions. |
| **Direct Instruction \*** | 1. Why use investment models? (**NOTE**: We have discussed risk a great deal and that is the purpose of investment models. These models are simply a mathematical tool to determine the value of potential investments. These calculations can be complicated and may be out of the scope of this lesson, but the various aspects of these models are what it is important. They are all designed to reduce as much risk as possible.    1. All investors expect to earn money on their investments.)    2. All investors would like to be able to predict the future.    3. Investing can be very risky.    4. All investors want to eliminate as much risk as possible.    5. Investment models provide tools for selecting investments. 2. Measures of Risk    1. Beta‐how a stock performs relative to the industry as a whole. (**NOTE**: A beta measure is simple to locate by searching online. Show students the beta for several companies. If it is greater than one, that company is more volatile than the industry it is in.)    2. Variance‐the calculation of the measurement of risk involved, can be reduced through diversification 3. Capital Asset Pricing Model (CAPM) (NOTE: Show students what a formula looks like for the CAPM so students see what actually goes into a detailed formula such as this.)    1. Used for pricing risky securities    2. Includes a return for a risk‐ free security in addition to a premium for a risky security.    3. Uses beta as a measure of risk    4. Includes risk that cannot be eliminated through diversifying    5. Includes risk that can be reduced through diversifying 4. Modern Portfolio Theory (**NOTE:** Many investors informally use the Modern Portfolio Theory without even realizing it, as it generally means that having a portfolio of investments reduces risk better than having a single investment.)    1. Assumes there is market risk but still diversifies    2. Diversification helps to balance risk    3. The risk on one stock or investment is greater than a combination of investments. 5. Arbitrage Pricing Theory (**NOTE**: The APT takes into consideration the individual betas of each of the stocks in a portfolio and not just an average beta for the entire portfolio. Have students in pairs search for the betas of five different companies and write them down separately. Then take an average of the five and write that down. Call on different pairs of students and ask them if their overall beta is higher or lower than one. Then ask them, of the five separate betas, which ones in particular stand out as high or low.)    1. Created by Stephen Ross in 1976    2. Assumes the asset being considered may not be priced accurately    3. Studies the individual investments as opposed to only the market as a whole. 6. Venture Capital (**NOTE:** This activity makes us look at the different industries that these companies are in, to see if our ‘portfolio’ may require more diversification. This is a greatly simplified version of comparing the different models. Venture capital funds would have a high beta as they are known to be very volatile.)    1. Money invested in a new or small business with a high growth potential    2. Extremely risky investments    3. Investors are part owners.    4. Funds are created as a pool of venture capital monies.    5. More risky than a mutual fund because of instability of new companies    6. Contribute seed or startup money    7. Contribute money for marketing or other purposes    8. Performance measurement for the fund is the Internal Rate of Return of the fund itself, the interest earned. |
| **Guided Practice \*** | **Review**  Ask students these questions either as a quiz or using exit tickets over a couple of class periods.  **Question #1:** What is the benefit of using and investment model to value securities?  **Answer #1:** Investment models can help to reduce risk which is a goal of investors.  **Question #2:** What does beta measure?  **Answer #2:** Beta measures a company’s stock volatility relative to the industry that the company is part of.  **Question #3:** What is the Capital Asset Pricing Model primarily used for?  **Answer #3:** CAPM is generally used to price risky securities.  **Question #4:** What is the main premise of the Modern Portfolio Theory?  **Answer #4:** That a single investment is more risky than a combination of investments.  **Question #5:** What is a main difference between CAPM and the Arbitrage Pricing Theory?  **Answer #5:** The APT considers individual betas as opposed to the beta of an entire portfolio. |
| **Independent Practice/Laboratory Experience/Differentiated Activities \*** | **Informal Assessment**  Any and all of the following can be used as informal assessment:   * Class discussion * Exit tickets for any questions students have about this topic   **Formal Assessment**   * **Asset Allocation Scenarios Assignment #1** – Given the following three scenarios, create a pie chart foreach displaying your recommendation for investment in different types of securities based upon the needs presented in each scenario. You may use spreadsheet software to create the pie charts or create them on poster board, clearly displaying each scenario, clearly‐labeled investments and percentages, and a paragraph summarizing your rationale for each scenario’s asset allocation. Following are the scenarios: 1) John is in his twenties, moderate income, single, very little in the way of assets, does not mind taking risks, 2) Mary has only a few years until she retires, has a high value of assets (house, cars, money to invest), but prefers safer (less risky) investments, 3) Ben is in his 40s, has a small amount of assets (car, electronics), and prefers a good balance between risky and conservative investments. Your pie charts will address percentages for cash, bonds, mutual funds, and stocks of large‐, mid‐, and small‐cap companies. * **Asset Allocation Timeline Assignment #2** – In pairs students are to create a timeline for every tenyears of life, from 20 to 60. They will add the different levels of risk tolerance for what they believe is typical for each time period. Then they will provide a short‐term and long‐term financial goal for each period on the timeline. They should include a graphic or some sort of visual for each of the goals listed. Then they will provide one investment for each of the time periods that is appropriate for the time period and financial goals. They may do this on a word processing document or on flipchart paper. * **Investment Strategy Brochure Assignment #3** – Students will create a six‐panel brochure in a wordprocessing program from the point‐of‐view of someone who is instructing another student about the different pricing models. The student should include sections about beta and what it means, major points about the different models, including who created the models, pros and cons for each model, and a section about what the student has learned about risk so far. Examples of each model can also be included. This assignment will require Internet research to increase understanding. The brochure should look professional when completed. |
| **Lesson Closure** |  |
| **Summative / End of Lesson Assessment \*** | **Informal Assessment**  Any and all of the following can be used as informal assessment:   * Class discussion * Exit tickets for any questions students have about this topic   **Formal Assessment**   * **Asset Allocation Scenarios Assignment #1** – Given the following three scenarios, create a pie chart foreach displaying your recommendation for investment in different types of securities based upon the needs presented in each scenario. You may use spreadsheet software to create the pie charts or create them on poster board, clearly displaying each scenario, clearly‐labeled investments and percentages, and a paragraph summarizing your rationale for each scenario’s asset allocation. Following are the scenarios: 1) John is in his twenties, moderate income, single, very little in the way of assets, does not mind taking risks, 2) Mary has only a few years until she retires, has a high value of assets (house, cars, money to invest), but prefers safer (less risky) investments, 3) Ben is in his 40s, has a small amount of assets (car, electronics), and prefers a good balance between risky and conservative investments. Your pie charts will address percentages for cash, bonds, mutual funds, and stocks of large‐, mid‐, and small‐cap companies. * **Asset Allocation Timeline Assignment #2** – In pairs students are to create a timeline for every tenyears of life, from 20 to 60. They will add the different levels of risk tolerance for what they believe is typical for each time period. Then they will provide a short‐term and long‐term financial goal for each period on the timeline. They should include a graphic or some sort of visual for each of the goals listed. Then they will provide one investment for each of the time periods that is appropriate for the time period and financial goals. They may do this on a word processing document or on flipchart paper. * **Investment Strategy Brochure Assignment #3** – Students will create a six‐panel brochure in a wordprocessing program from the point‐of‐view of someone who is instructing another student about the different pricing models. The student should include sections about beta and what it means, major points about the different models, including who created the models, pros and cons for each model, and a section about what the student has learned about risk so far. Examples of each model can also be included. This assignment will require Internet research to increase understanding. The brochure should look professional when completed. |
| **References/Resources/**  **Teacher Preparation** | * http://investor.gov/publications‐research‐studies/info‐sheets/beginners‐guide‐to‐asset‐allocation * *Investing in Your Future 2nd Edition*, Southwestern Publishing, ISBN: 0538438819 |
| **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** | Interview an investment professional and ask what they know in a one‐sentence summary of each of the models in this lesson. Ask if they use any of the models or if there is another one that they prefer to use. Write or type up a summary of your findings. |
| **Other Essential Lesson Components** | |  |
| **Enrichment Activity**  (e.g., homework assignment) |  |
| **Family/Community Connection** |  |
| **CTSO connection(s)** | Future Business Leaders of America  Business Professionals 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)