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Grade level: high school

**Abstract**

 “My Millionaire Plan” will teach students how to become a millionaire over time through systematic savings and investment. The unit lasts 40 days, with each day being equal to a year in the life of a student. As each “year” passes by, students contribute to an investment plan with the objective of reaching one million dollars in wealth by the 40th lesson. The amount of savings is adjusted each year of the lesson to correspond with expected increases in earnings due to education, career, and family changes. Savings are invested in the stock market through mutual funds and each year’s return varies depending upon a randomly drawn annual yield. Historical stock market returns are dawn to determine yield. By developing a millionaire plan and carrying out the plan over time, students can see the effect of saving, compound interest, wealth building, volatility of returns, goal setting, planning, and budgeting. Time spent each day on the unit will vary from a full class period the first lesson to five or ten minutes each day as students become familiar with the process.

In addition to the millionaire plan, students also complete a simultaneous “life happens” plan. The instructor inputs life events such as inheritances, unemployment, divorce, marriage, children, unexpected expenses, spending rather than saving, and more. By running two plans at once, students can see what happens financially when life’s events and obstacles interrupt a savings plan.

By conducting the unit over multiple days and creating 40 teaching opportunities on wealth building, investment, and personal finance, desired learning outcomes are more likely to stick. One lesson on wealth building will be forgotten. 40 lessons on wealth building will leave a lasting impression and provide numerous opportunities for scaffolding and introduction of additional concepts.

This lesson is suitable for students in grades 9-12 and is best suited for a personal finance class.

**Economic Content and Key Concepts**

**Economic or Personal Finance Concepts**

* Saving
* Investment
* Banking
* Financial planning
* Budgeting
* Investment alternatives
* Compounding of interest
* Stock market
* Mutual funds
* Risk & return
* Volatility in investments
* Building wealth
* Retirement
* Time value of money
* Financial obstacles
* Family finances
* Spending
* Purchasing a home
* Discretionary spending decisions
* Thrift and frugality

**Other Grade Level Concepts**

* Electronic spreadsheet application
* Math, particularly compounding
* Planning
* Career exploration

**Economic and Personal Finance Terms**

* Saving: Setting aside a portion of income for later use.
* Investing: Using savings to purchase assets that will hopefully increase in value.
* Compounding: The effect of adding returns on investment to principal, allowing for greater returns over time.
* Financial planning: The act of forming a plan for accumulation of wealth.
* Mutual funds: An investment alternative which allows for pooling of funds, portfolio diversification, and professional management.
* Volatility: The range of returns realized with a given investment.
* Return: Income earned on an investment.
* Risk: The chance that returns on an investment may be positive or negative, high or low, or not as hoped for or expected.

**How the Unit Teaches the Concepts**

 The millionaire plan takes students through a 40-year journey into the future. They start from their current position and move forward one year each day of the unit. As they move through life they can see the effects of all the concepts indicated above. They see compounding, they see what saving can do, they see the risk and volatility experienced by investing in stocks, and the see that becoming a millionaire is real. The real impact of this unit is that is provided multiple exposures to the concepts involved. It’s not just one lesson, quickly forgotten. Additionally, the millionaire plan builds the background knowledge needed to bring in countless other topics. Cover banking when the millionaire plan is started. Cover stocks and mutual funds when students start investing. Cover buying a home, retirement, need for medical insurance, or any number of other topics. The millionaire plan can be used as a framework or as a supplement.

**Economic Standards and Student Learning Outcomes**

Desired Student Outcomes (2014/2015 Competency-Based Task/Competency List)

* Demonstrate knowledge of basic economic concepts and structures (34).
* Evaluate discretionary spending decisions (60).
* Describe the types of financial institutions (61).
* Examine how financial institutions affect personal financial planning (62).
* Identify short-term and long-term personal financial goals (100).
* Identify anticipated and unanticipated income and expenses (101).
* Examine components and purposes of a personal net worth statement (102).
* Compare the impact of simple interest vs. compound interest on savings (106).
* Compare and contrast investment and savings options (107).
* Explain cost and income sources for investments (108).
* Contrast alternative retirement plans (110).
* Explore how the stock market works (111).

**Virginia Standards of Learning**

* EPF.1.b. The student will demonstrate knowledge of basic economic concepts and structures by explaining that choices often have long-term unintended consequences.
* EPF.17.a. The student will demonstrate knowledge of personal financial planning by identifying short-term and long-term financial goals.
* EPF.17.b. The student will demonstrate knowledge of personal financial planning by identifying anticipated and unanticipated income and expenses.
* EPF.17.f. The student will demonstrate knowledge of personal financial planning by explaining how economics influences a personal financial plan.
* DM.10.a. The student will use recursive process and difference equations with the aid of appropriate technology to generate compound interest.
* EPF.18.a-f. The student will demonstrate knowledge of investment and savings planning by comparing the impact of simple interest vs. compound interest on savings, comparing and contrasting investment and savings options, explaining costs and income sources for investments, contrasting alternative retirement plans, and describing how the stock market works.

**Instructional Process**

**Preparation**

 The millionaire plan can be completed in notebook form or electronically using Excel. Both plans are explained below.

**Electronic Plan**. To use the electronic version, all students will need daily access to a computer loaded with Excel. They will also need safe storage ability since the program will need to be saved each day. A lost millionaire plan is a bad thing. Start with a blank spreadsheet on lesson one.

**Notebook Plan**. Have students prepare a notebook to keep their plan. One page equals one year is a good format. Students may keep their notebooks, but it might be a better approach to keep them in the classroom. A lost notebook in the 25th year is not good. Students may complete their own daily entries each year or the instructor can provide pre-printed forms (see attached form).

**Rates of Return**. In the early years of the plan, while students are still in school and are only saving small amounts, a current savings account rate should be used for annual return. Once students have finished school or started careers they will begin investing. This will require a switch to an annual rate of return which is accomplished by a random drawing. Prepare a basket with actual historical stock market rates of return on small pieces of paper (see attached rates of return). Draw a return each day.

 The instructor may want to remove “outlier” returns from the drawing possibilities. Huge negative losses or positive gains may be historically accurate, but smoothing out the possible returns will keep students from becoming discouraged (you should see what a 40% loss does to a 10th grader!) from investing while still providing essentially the same average rate of return over the life of the plan.

**Student Cards**. You will need a set of student cards. Use 3x5 index cards and write each student’s name on a card. You will use these cards to randomly draw students who get married, don’t save, inherit money, have a medical emergency, or any other “life happens” event you come up with. Shuffle the cards each day and draw.

**Life Happens Cards.** Life happens cards can be used to draw simulated life events. Create your own cards or use the attached cards if desired. Each phase in the millionaire plan will bring new life happens possibilities, so try to match the event with the age of the students when drawing.

**Lesson 1**

Lesson 1 introduces the unit, sets up the plan, and demonstrates the calculation of wealth.

Start with the hook that every student in the room can be a millionaire. It’s actually very easy to do and all they have to do is do it. Becoming wealthy is just a matter of saving money over time. You are going to show them exactly how to do it.

Set up the millionaire plan in either a notebook or Excel spreadsheet. You will be running two plans at the same time. The first plan is the millionaire plan. The second plan is the “life happens” plan. Both look the same on paper, but will have different inputs. The millionaire plan will show students how to become a millionaire. The life happens plan will introduce variables that might arise as they move through life. Set up the plan, either in Excel or notebook, as shown in the attached calculation sheet.

Run the first year of the plan. Start with $10 per month in savings. Tell student that this is a good savings goal for them to start with. It can be done and it is not too restrictive. Start with a beginning balance of zero.

Walk students through the calculations. Expect that they will be confused. This is normal and will go away after a couple of year’s calculations.

Use a savings account rate for your rate of return. Students will not really be investing until they have enough money to invest or are working where their savings can be automatically invested for them.

At the end of the year students will have saved up $120 and a very small amount of interest. Not much money. This is where you MUST explain to them that it is not the amount that is important, it is the habit of saving. If they do not develop the habit of saving, they will not save, they will not become wealthy. $10 a month is fine for now and WILL make them millionaires. The habit will make them rich. They will see.

For the life happens plan, repeat the inputs for the millionaire plan. Except select two students randomly from your student cards and have them NOT save. You might also draw another student who starts out with a $1,000 balance with money from grandma. Life happens events are up to the instructor. They add fun, interest, and a dose of realism into the project. Use as you see fit.

There are some very important things your students need to know. These principles need to be repeated to them constantly. These principles are your “theme” throughout the unit.

* Time is on your side. Time is the biggest component of a millionaire plan. Students are RICH with time; they already have it! An abundance of it! Use it or lose it.
* The savings habit is what you need to develop now. It does not matter if it’s just $10 a month. The habit of saving is what will make you rich. It’s more about the habit than it is about the amount.
* Get started. You are already a millionaire as long as you just get started.
* Never touch your millionaire plan except to buy a house. Your millionaire plan should be a separate thing. Not accessible. Not spendable. Not there.
* Your millionaire plan is a monster that you are creating to have a life of its own. You will see it happen. You will see your monster come to life in about 25 days. When it does it will start earning big money for you all on its own. You must feed it now, to get it going, but in about 5 weeks you will see it become an incredible money making monster for you.

**Lessons 2 – 6**

Lessons two through six are the school years. Adjust according to the age of your students, might be 2-5 or other. Students will have small incomes as they obtain their educations, but they must still save. It’s the habit, not the amount.

If students tell you they are not going to college, then tell them that it represents the years they will be in trade school or getting established in their other careers. Either way it will take 2-6 years to get settled into a position where serious savings can occur.

 In year two, carry the ending balance from year one over for the beginning balance for year two. Then run the calculations. Use a savings account rate of return. The end result will still be a small number. But repeat; it’s the habit that matters.

 For the college years, increase their savings rate to $30 a month in the millionaire plan. This reflects the fact that they will be working through college and will have some income. $30 is a good number and is affordable.

 Each year in the life happens plan, pick a couple of students to spend all of their savings. Pick a couple to increase their savings. Pick a couple to acquire some “extra money.” Maybe even have one get married.

**Lesson 7 – 25**

 Years 7-25 are the investing years. Here students will begin saving at least 10% of their income and investing in mutual funds. Switch from savings account rates of return to randomly drawn yields from the stock market. Have a student draw each year’s rate of return. Toss away any drawn rate of return.

 A good starting savings amount here is $300 per month. Explain that this should be their target amount and that they should plan on increasing the amount as they move up in their careers and earn more income. Somewhere around year 10 they should increase their savings to $500 per month. In another five years think about bumping is up a little more, teacher’s discretion.

 Years 7-25 are also the family years. This is when the life happens plan becomes interesting. Using the student cards, marry a few students each year. Treat marriage as an increase in income if you like, allowing students to bump their savings in life happens by a couple of hundred dollars. Or marriage can be a savings neutral event; up to the teacher. Divorce some students too. Divorce should take half their wealth and cut their savings in half. Students should start having babies too; teacher’s call on how to treat this in the life happens plan as far as a deduction from total or monthly savings. Ask the students how much to charge for a baby and how to change savings, use it as a teachable moment. Also randomly select students to inherit, take money out of their plan, go bankrupt, have a medical emergency, take a trip to Hawaii, or whatever you can come up with. The life happens events make the project fun, have fun with it.

Consider having students withdraw a down payment for a house at some point around year 10. This is a good chance for students to see that a home is an investment too, and that their home can be an important part of their millionaire plan. Decide how much should be withdrawn based upon a typical house with 10% or 20% down.

**Lessons 26 – 40**

 Lessons 26 through 40 are the “monster” years for the millionaire plan. At about the 25th year students should see their annual returns amounting to real money. Tens of thousands of dollars added (or possibly lost) each year. This is the monster coming alive, taking on a life of its own, making them money without any effort from them. Annual returns will begin exceeding their annual savings contributions. Their millionaire plan becomes a money machine, a money making monster.

 Approaching the 40th year means that the millionaire plan should be nearing one million dollars in wealth. It all depends upon the amount and timing of the annual returns drawn. It is possible that a poor return drawn late in the project will cause the plan to miss the million mark by year 40. If this happens, go a couple more years. It will happen.

 In the life happens plan you will want to keep drawing for life events. Stop having babies when appropriate. Keep marriages and divorces going. Add inheritances, raid savings, bump monthly savings up, or do whatever seems appropriate for the age of the students. Some life happens plans will be exceeding the millionaire plans, some life happens plans will be well below the millionaire plans.

 Finish the simulation at year 40 or when the millionaire plan hits one million, whichever comes first. Be sure to discuss with the class what it feels like to be a millionaire, what their lives will be like, what they will do, where they will go, and so on.

**Evaluation of Student Learning**

 As a project-based learning experience, the millionaire plan creates its own deliverable. Students will complete the plan each day and build it into a final submission document. Teacher observation throughout the unit will correct any misunderstandings and lead the student to mastery of the content. A completed plan demonstrates mastery.

It might be a good idea to have periodic submissions of the plan as a way to check understanding. An instructor might choose to check the plan every 10 years or at the half-way point.

Additional assessment may be added, if desired, at completion of the unit. A vocabulary quiz is a good way to check knowledge. A multiple choice quiz with higher-order questions can check application or higher level understanding.

Millionaire Plan Spreadsheet in Excel

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| The Millionaire Plan |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Year |  | 1 | 2 | 3 | 4 | 5 | 6 |
| Age |  | 16 | 17 | 18 | 19 | 20 | 21 |
| Starting Balance | 0 | 0 | 0 | 0 | 0 | 0 |
| Monthly Savings | 0 |   |   |   |   |   |
| Annual Savings | 0 | 0 | 0 | 0 | 0 | 0 |
| Account Balance | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest Rate | 2% |   |   |   |   |   |
| Interest Earned | 0 | 0 | 0 | 0 | 0 | 0 |
| Ending Balance | 0 | 0 | 0 | 0 | 0 | 0 |
|  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| Life Happens |  |  |  |  |  |
| Year |  | 1 | 2 | 3 | 4 | 5 | 6 |
| Age |  | 16 | 17 | 18 | 19 | 20 | 21 |
| Starting Balance | 0 | 0 | 0 | 0 | 0 | 0 |
| Monthly Savings | 0 |   |   |   |   |   |
| Annual Savings | 0 | 0 | 0 | 0 | 0 | 0 |
| Stuff Happens |   |   |   |   |   |   |
| Account Balance | 0 | 0 | 0 | 0 | 0 | 0 |
| Interest Rate | 2% |   |   |   |   |   |
| Interest Earned | 0 | 0 | 0 | 0 | 0 | 0 |
| Ending Balance | 0 | 0 | 0 | 0 | 0 | 0 |

Highlighted areas are student inputs based upon each year’s changes and events. Areas not highlighted are formula based and do not require student input.

In first year the starting balance will be zero. In years that follow the starting balance will be the ending balance from the prior year.

Millionaire Plan Template for Notebook Format

|  |
| --- |
| The Millionaire PlanAmount of savings each month in the plan for the current year. |
|  |  |  |
| Year |  | 1 |
| Age |  | 16Multiply monthly savings x 12. |
| Starting Balance | 0 |
| Monthly Savings | 0Add annual savings to the starting balance. |
| Annual Savings | 0 |
| Account Balance | 0 |
| Interest Rate | 2%Use an interest rate for savings. Use the randomly drawn return from the stock market for investments. |
| Interest Earned | 0 |
| Ending Balance | 0 |
|  |  |  |
|  |  | Multiply account balance times interest rate. |
| Life HappensAdd interest earned to account balance. Carry forward to following year as starting balance. |
| Year |  | 1 |
| Age |  | 16 |
| Starting Balance | 0 |
| Monthly Savings | 0 |
| Annual Savings | 0 |
| Stuff Happens |  For “stuff happens,” add or deduct lump sum amounts for the event drawn. Account balance will then be starting balance plus annual savings plus or minus stuff happens. |
| Account Balance | 0 |
| Interest Rate | 2% |
| Interest Earned | 0 |
| Ending Balance | 0 |

Use one sheet for each year. Next year, carry forward the ending balance for the new beginning balance. Use the section to the right to make any notes or to keep track of what happened that year, like a journal.

|  |
| --- |
| **The Millionaire Plan** |
|  |  |  |
| Year |  |   |
| Age |  |   |
| Starting Balance |   |
| Monthly Savings |   |
| Annual Savings |   |
| Account Balance |   |
| Interest Rate |  |   |
| Interest Earned |   |
| Ending Balance |   |
|  |  |  |
|  |  |  |
| **Life Happens** |  |  |
| Year |  |   |
| Age |  |   |
| Starting Balance |   |
| Monthly Savings |   |
| Annual Savings |   |
| Stuff Happens |  |   |
| Account Balance |   |
| Interest Rate |  |   |
| Interest Earned |   |
| Ending Balance |   |

Historical stock market rates of return (cut out for random drawings). Source: New York University Stern School of Business

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 5% | -9% | -7% | 7% | 5% |
| 6% | 23% | 7% | 10% | -37% |
| 18% | 16% | 19% | 1% | 26% |
| 31% | 12% | 32% | 37% | 15% |
| 24% | -10% | -5% | 23% | 2% |
| 18% | 24% | 20% | 33% | 16% |
| -1% | 11% | 22% | 28% | 32% |
| 53% | -8% | 6% | 21% | 27% |
| 33% | 4% | 31% | -9% | 24% |
| 7% | 14% | 18% | -12% | 30% |
| -10% | 19% | 6% | -22% | 16% |
| 44% | -14% | 17% | 28% |  |
| 12% | -26% | 31% | 11% |  |
| 0% | 37% | -3% | 5% |  |

Life Happens Cards

|  |  |  |
| --- | --- | --- |
|  Years 1-6 | Years 7-25 | Years 25-40 |
| Raid your millionaire planLose ½ your savings | Raid your millionaire planClass decides how much | Raid your millionaire planClass decides how much |
| Stop savingZero savings for the current year | Stop savingZero savings for the current year | Stop savingZero savings for the current year |
| Extra money$300 in birthday money! | Extra money$1000 x date of month | Extra money$1000 x date of month |
| Save moreSave $20 extra each month | MarriageClass decides impact on the plan | MarriageClass decides impact on the plan |
| Save moreSave $30 extra each month | DivorceClass decides impact on the plan | DivorceClass decides impact on the plan |
| Extra money$2000 from a rich uncle | BabyClass decides how much it costs | DivorceClass decides impact on the plan |
| Wild CardClass decides what happens | Wild CardClass decides what happens | Wild CardStudents decide what happens |
| InheritanceDraw a rate of return to set amount | InheritanceDraw a rate of return to set amount | InheritanceDraw a rate of return to set amount |
| Unexpected lossDraw a rate of return to set amount | Unexpected lossDraw a rate of return to set amount | Unexpected lossDraw a rate of return to set amount |

Use these “Life Happens Cards” to draw events for the life happens section of the millionaire plan. Cut out the cards and randomly draw. Create your own cards, add more cards, have fun.

For “Draw a rate of return to set amount,” randomly draw one of the rates of return, take the digits only, multiply by $1000. For example, a draw of -28% might result in an inheritance of $28,000.

For “Class decides” cards, let the class decide what will happen. This generates lots of discussion and creates some interesting teachable moments. For example, divorce should probably cost at least ½ of the plan balance but students may want to allow for a reconciliation by voting.