



The Game of Life

a Math Project about Money

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The Game of Life

Welcome to the Game of Life, a math project about money! By competing in the Game of Life, you will understand the many variables that influence your financial future. You will also use various mathematic skills to increase your chances of succeeding in the Game of Life.

Please note that there are many things in this game that are left up to chance. For example, the amount of grants you earn for college is entirely random in this game. In real life, your academic performance directly influences your grants. In this game, your credit score is assigned according to luck. In real life, your credit score is a direct reflection of your own credit-worthiness. *This is all to say that you could be very unlucky in this game while being very successful in real life!*

Here is what to expect when playing the Game of Life.

Stage 1: Education

You will choose an education they hope will lead to an occupation you desire. Student loans and grants are introduced and calculated.

Stage 2: Occupation

You will choose an (available) occupation and salary. You will calculate all the deductions from your check. State and federal taxes, social security, and Medicare will be calculated as a percent of your paycheck. Health care costs will be assigned randomly.

Stage 3: Shelter

You will choose a house to purchase or rent. You will calculate your monthly payment. You will be assigned credit randomly, and those with bad credit must use a higher interest rate than those with good credit.



Stage 4: Utilities

You must choose between two or more companies for a variety of utility bills. You will try to choose the company that offers the best value.

Stage 5: Shopping

You must make purchases depending on sales and tax information. You will choose the items with the best value by calculating prices after sales and taxes.

Stage 6: Life Events

You will spin the Wheel of Fortune after each of the first six stages is completed. Both fortunate and unfortunate things can happen. Examples include needing car or home repairs, winning money on a lottery ticket, getting unexpectedly sick, or getting a bonus at work. You must figure these unforeseen events into your monthly budgets. You will calculate the probability of certain events occurring.

Stage 7: Budget

You will fill out bank statements for six months. You will write your deposits on the appropriate paydays, subtract a list of bills that will be assigned, and make adjustments from the Wheel of Fortune.

Stage 8: Projection & Reflection

You will project your financial performance out 40 years into the future. You will then reflect on the outcome of living the Game of Life. How has the game affected your expectations of adulthood?

The Game of Life

Before you are able to play the Game of Life, you must grow up. A big part of that is getting an education. Choose the education level you want to attain, keeping in mind the cost of school.



Education

Listed Cost

High School graduate \$0

Pros: You have no school loans, and you get to start making money right away.

Cons: You have limited job opportunities and lower wages.

Associate's degree \$25,000

Pros: School costs less money and takes less time.

Cons: Job opportunities remain limited.

Bachelor's degree \$120,000

Pros: Your job opportunities increase with every degree.

Cons: You have started to take on a sizeable debt to pay for school.

Master's degree \$180,000

Pros: Your job will likely be highly rewarding and even higher paying.

Cons: You have a lot of debt from school and have been in school for 6 more years than some of your peers.

Doctoral degree \$300,000

Pros: You are at the height of education. Your job is highly respected and you are paid handsomely.

Cons: You need that high salary to recover from the mountain of debt you've accumulated.

Education

TUITION: Different universities charge different tuitions. Find out what kind of university you attend. **Roll the University Die.** Use this table to determine your School Cost.

If you roll a...	1	2	3	4	5	6
Your school costs...	50%	60%	70%	80%	90%	100%
...of the Listed Cost.						

GRANTS: Students often earn grants and scholarships that lower the cost of tuition. Find out what grant money you qualify for. **Roll the Grant Die.** Use this table to determine your Grant Amount.

If you roll a...	1	2	3	4	5	6
You earn a grant of...	25%	30%	40%	50%	60%	65%
...of the School Cost.						

SCHOOL LOAN: Use this worksheet to calculate your monthly student loan payments.

A. School Cost | _____ |

B. Grant Amount | _____ |

C. Loan Amount (A - B) | _____ |

D. Interest Rate 6.5%

E. Interest Owed ($C \times D \times 15$) | _____ |

F. Total Owed (C + E) | _____ |

G. Monthly Payment ($F \div 360$) | |

The Game of Life

To earn money, you need to work for a living.

Choose an occupation that appeals to you. Do you prefer to work independently? Does the working environment matter to you? Do you prefer physical labor? Does society's views of your job matter to you?

Note that you must choose an occupation that requires no more post-secondary education than you earned in the Education stage.

No post-secondary degree needed.

Administrative Assistant \$26,400 a year
Closely supervised, comfortable conditions, regular hours, habitual work, physically easy, organizational and professional skills required

Sanitation Worker \$28,800 a year
Independent work, work outside, regular hours, habitual work, physically taxing, social stigma

Factory Worker \$31,200 a year
Closely supervised, sometimes dirty conditions, regular hours, habitual work, physically taxing, aggressive atmosphere

Occupations

Associate's degree needed.

Mechanic \$31,200 a year
Closely supervised, sometimes dirty conditions, regular hours, habitual work, physically taxing

Salesman \$34,800 a year
Independent work, comfortable conditions, regular hours, physically and emotionally taxing, professional skills required, social stigma

Police Officer \$38,400 a year
Independent work, sometimes dangerous conditions, regular hours, physically and emotionally taxing, professional skills required, socially polarizing

Bachelor's degree needed.

Teacher \$38,400 a year
Independent work, comfortable conditions, regular hours and summers off, creative work, physically and emotionally taxing, professional skills required, social clout

Supervisor \$43,200 a year
Independent work, comfortable conditions, regular hours, creative work, emotionally taxing, must interact with difficult people, professional skills required

Computer Engineer \$48,000 a year
Independent work, comfortable conditions, regular hours, habitual work, physically easy, professional skills required, social clout

The Game of Life

Master's degree needed.

Accountant \$65,100 a year
Independent work, comfortable conditions, flexible hours with busy seasons that demand long hours, habitual and creative work, taxing, attention to detail and strong math skills required

Business Manager \$68,700 a year
Independent work, comfortable conditions, long hours, creative work, emotionally taxing, must interact with difficult people, professional skills required, social clout

Doctorate needed.

Professor \$88,800 a year
Independent work, comfortable conditions, regular hours and summers off, creative work, professional skills required, social clout

Brain Surgeon \$95,100 a year
Independent work, dynamic working conditions, long hours that change often, creative and physical work, high stress situations, professional skills required, social clout



Occupations

HEALTH CARE: Different companies charge different premiums for health care. Find out what kind of health care your company offers.

Roll the Health Care Die. Use this table to determine your Health Care Cost.

If you roll a...	1	2	3	4	5	6
Your health care costs...	\$50	\$100	\$150	\$200	\$250	\$300



PAY CHECKS: Use this worksheet to calculate your semi-monthly pay check amount.

A. Yearly Gross Income | _____ |

B. Semi-Monthly Gross Income
(A ÷ 24) | _____ |

C. State and Local Taxes (B × 5.5%) ... | _____ |

D. Social Security Taxes (B × 6.2%) | _____ |

E. Medicare Taxes (B × 1.45%) | _____ |

F. Federal Taxes (B × 18%) | _____ |

G. Health Care Cost | _____ |

H. Total Income Withheld Per Check
(C + D + E + F + G) | _____ |

I. Semi-Monthly Net Income (B – H) .. | _____ |

The Game of Life

Home is where the heart is.

The choice of where to live says a lot about a person. The cost of where you live also greatly impacts your future financial life.

Choose a home that appeals to you. Do you want to maintain your home or pay another for upkeep? Does the size or style of the home matter to you? Do you want the freedom to move when you want to, or does owning appeal to you?

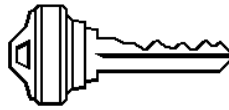
Rent

If you choose to rent, you will not have to pay for home owner's insurance or property taxes. If you spin any fees for home maintenance on the Wheel of Fortune, you will not need to pay for it.

Small Apartment \$575 a month
This small but comfortable two bedroom apartment is clean and well-maintained by the owners. An eat-in kitchen includes access to a large outdoor porch.

Large Apartment \$810 a month
This large four-bedroom and two-bathroom apartment has older appliances, but it offers a lot of space for the money. The landlord tends to ignore your requests for minor repairs.

House \$1,200 a month
This large, four-bedroom and two-bathroom house has newer appliances and an attentive landlord. You have a yard to maintain but it is also yours to enjoy.



To buy a house, you must take out a 30-year mortgage. You will roll the Credit Score die to determine your Interest Rate. The better credit you have, the better interest rate you'll get. You may learn your Interest Rate before choosing a home or choosing to buy or rent.

Buy

If you choose to buy, you will have to pay for home owner's insurance and property taxes. You will also have to pay for home maintenance required by the Wheel of Fortune.

Condo \$130,000

This condo is a small but comfortable two bedroom apartment in an eight-unit building. Newly built, the décor and appliances are very modern.

Small House \$175,000

This stylish and three bedroom and two-bathroom house is just blocks from the lake in a trendy neighborhood. Just ten years old, maintenance will be a breeze.

Large House \$235,000

This is an older but charming four bedroom house in a revitalized neighborhood. The large yard may require a bit of maintenance, but you have plenty of room to spread out.

The Game of Life

CREDIT SCORE: Banks offer different interest rates depending on your credit score—how good you are at paying off your debts. **Roll the Credit Score Die.** Use this table to determine your Interest Rate.

If you roll a...	1	2	3	4	5	6
Your interest rate is...	5.5%	6%	6.5%	7%	7.5%	8%

For home buyers, use this worksheet to calculate your monthly housing payments. For renters, simply write the monthly rent on line I.

A. Home Price | _____ |

B. Down Payment ($A \times 10\%$) | _____ |

C. Principal (Loan Amount) ($A - B$) | _____ |

D. Interest Rate | _____ |

E. Interest Owed ($C \times D \times 20$) | _____ |

F. Total Owed ($C + E$) | _____ |

G. Monthly Payment ($F \div 360$) | _____ |

H. Monthly Property Taxes and Home
Owner's Insurance ($A \times 0.2\%$) | _____ |

I. Total Monthly Mortgage Payment
($G + H$) | |

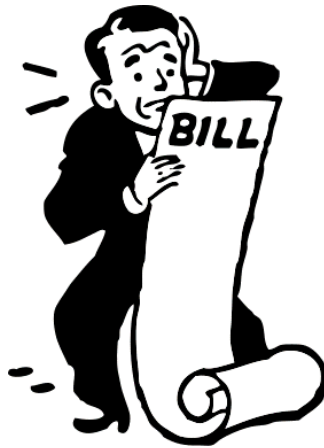
Utilities

A home is no good without running water and working heat.

Everyone, whether you are buying or renting your home, must pay companies to keep the water running, the heat on, the electricity working, the cable TV or internet plugged in, and the telephone or mobile service connected.

Use your understanding of unit rates and critical thinking to determine which utility companies will give you the most value. The less you have to spend on utilities, the more you can spend on other things in your life.

Choose your company and write the total monthly cost for each utility.



The Game of Life

Water Companies

Fresh Co.
0.4¢ per gallon used

Area Water
\$8 a month for 2,500 gallons.
0.5¢ per gallon above 2,500.

Note: You use about 3,500 gallons of water per month.

Water Utility Cost | _____ |

Gas Companies

Daily Air
\$11 per month
+ 57¢ per therm used

Pipes Co.
68¢ per therm used

Note: You use about 220 therms of natural gas per month.

Gas Utility Cost | _____ |

Electric Companies

Lightning Bolt Inc.
13¢ per kW used

Zapco
\$100 a month for 1,000 kW.
20¢ per kW above 1,000.

Note: You use about 700 kilowatts per month.

Electric Utility Cost | _____ |

Utilities

Cable & Internet Providers

Fable Cable

\$59.99 per month

- Basic cable
- Internet

Speedy Wires

\$99.99 per month

- 100+ channels
- Internet

HomeLink

\$139.99 per month

- All channels
- Internet

Note: Choose the company that best fits your needs and budget. You may choose 'none' and enter \$0 for this utility.

Cable Utility Cost

Mobile Phone Companies

Fonez

\$39.99 per month

- 500 texts
(3¢ per text after)
- 1GB data
(\$2 per 0.1GB after)

Mobile Media

\$59.99 per month

- Unlimited texts
- 1. 5GB data
(\$2 per 0.1GB after)

Horizon Wireless

\$99.99 per month

- Unlimited texts
- Unlimited data

Note: You use about 1,000 texts and 2.0GB of data per month.

Mobile Phone Cost

Total Utilities Cost

(Round to the nearest dollar)

The Game of Life

For each item below, apply the sales discount and then add the sales tax to calculate the final price. Then choose the best value.



Backpack

Regular price: \$44

Discount: 15%

Sales tax: 5%

Final price: _____

OR

Regular price: \$38

Discount: 10%

Sales tax: 6%

Final price: _____

Coat rack

Regular price: \$45

Discount: 35%

Sales tax: 5%

Final price: _____

OR

Regular price: \$29

Discount: 20%

Sales tax: 7%

Final price: _____

Dress pants

Regular price: \$45

Discount: 5%

Sales tax: 6%

Final price: _____

OR

Regular price: \$85

Discount: 50%

Sales tax: 5%

Final price: _____

Fondue pot

Regular price: \$92

Discount: 45%

Sales tax: 6%

Final price: _____

OR

Regular price: \$75

Discount: 20%

Sales tax: 6%

Final price: _____

Shopping

Gold necklace

Regular price: \$55

Discount: 20%

Sales tax: 6%

Final price: _____

OR

Regular price: \$95

Discount: 60%

Sales tax: 6%

Final price: _____

Hooded sweatshirt

Regular price: \$42

Discount: 5%

Sales tax: 5%

Final price: _____

OR

Regular price: \$65

Discount: 25%

Sales tax: 5%

Final price: _____

Juice blender

Regular price: \$89

Discount: 20%

Sales tax: 5%

Final price: _____

OR

Regular price: \$101

Discount: 30%

Sales tax: 8%

Final price: _____

Knit sweater

Regular price: \$65

Discount: 30%

Sales tax: 5%

Final price: _____

OR

Regular price: \$45

Discount: 10%

Sales tax: 7%

Final price: _____

Total Shopping Bill

(Round to the nearest dollar)

The Game of Life

Life is full of surprises.

The only sure things in life, as they say, are death and taxes. Will fortune smile on you, increasing your wealth? Or will a dark cloud follow you, costing you precious savings?

You must spin the Wheel of Fortune six times. The results will affect your bottom line, as you must include them in your monthly budget (one per month).

Here are the events included on the Wheel of Fortune.

1. You need to make car repairs (-\$160)
2. You need to make home repairs (-\$370)
3. You need unexpected dental work (-\$140)
4. You need unexpected medication (-\$40)
5. You need to replace a stolen cell phone (-\$210)
6. You must pay a bank fee (-\$30)
7. You win money on a lottery ticket (+\$200)
8. You get a bonus at work (+\$500)
9. You win a bet with a friend (+\$100)
10. You sell some old toys on eBay (+\$90)
11. Your uncle sends you a check for your birthday . (+\$100)
12. Your bank credits you for an error (+\$60)



Note: If you do not have a spinner, here are two alternatives.

You can roll a 6-sided die and flip a coin. Heads will add 6 to the die roll.

You can draw from a deck of cards, in which A=1, J=11, Q=12, K=draw again

Life Events

Answer the following questions about the probability of the Wheel of Fortune. Assume that each of the twelve outcomes has an equal probability.

1. What is the probability of winning the lottery?
2. What is the probability of needing to make repairs?
3. What is the probability of gaining more than \$99?
4. What is the probability of needing to spend money?
5. What is the probability of gaining money?
6. If every event happened to you once, how much money would you gain?

The Game of Life

Complete this budget for six full months.

Month	1	2
Initial Balance	\$1,000	
Income (1 st)	+	
Income (15 th)	+	
School Loan Payment	-	
Rent/Mortgage Payment	-	
Utilities	-	
Shopping	-	
Life Event	+/-	
Remaining Balance		



The Game of Life

Imagine carrying such spending habits further into the future. If you continued in your current path for 40 years, what would your accumulated wealth be like?

Take the remaining balance from the sixth month on the previous page and multiply it by 80.

Have you squirreled away enough to retire comfortably? Or will you still be forced to pinch pennies when you're 60 years old?

40-year Projected Wealth



Reflection

Reflect on your findings. Here are some questions to consider.

- What did you do well?
- What might you change if you could do this project again?
- How do little choices now affect your future wealth?
- Do you think making sacrifices now is wise for your future wealth? Why?
- How much did luck factor in to your success?
- What are some other financial factors that weren't included in this project (ex: cars, food)?
- What did doing this project teach you about your financial future?
- What is one thing you might do differently in your own life now that you've completed this project?

