

Unit 10

Protecting

Lesson 10B:

Is Insurance Worth Buying?

Rule 10: Protect your plan.

While financial risk is most often associated with investment risk, other risks can also keep you from achieving your financial goals. For example, car accidents, medical issues, house fires, lawsuits, and theft (including identity theft) all represent potential obstacles. These risks can be managed by (i) reducing your potential exposure to identity theft or (ii) buying insurance. These lessons use games featuring random, unwelcome events to help students consider ways to wisely manage risk.

Lesson Description

Students learn about insurance options and possible risks. They play a game where they first choose levels of insurance coverage and then face random events. They track the cost of their insurance choices (premiums plus lost investment income) and the benefit of their choices (loss reduction) based on each event drawn. They determine whether the insurance choices they made were financially beneficial or not and why insurance may be a good idea regardless.

Standards and Benchmarks (see page 256)

Grade Level

9-12

Concepts

Insurance
Opportunity cost
Premium
Risk

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Compelling Question

How can consumers reduce their risk of financial loss?

Objectives

Students will be able to

- define insurance, premium, deductible, copay, and liability;
 - describe the benefits of insurance (loss reduction);
 - describe the costs of insurance (premiums plus other opportunity costs); and
 - explain why buying insurance may be a good idea even if the costs exceed the benefits over a given period.
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Materials

- Visual 10B.1: Risks
 - Handout 10B.1: Managing Risk, one copy for each student (NOTE: For ease of use, copy as separate pages, not back-to-back.)
 - Handout 10B.1: Managing Risk—Answer Key, Part B: My Life Events
 - Handout 10B.2: Assessment, one copy for each student
 - Handout 10B.2: Assessment—Answer Key
 - One regular deck of (52) cards
 - Calculators (optional)
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Time

50 minutes

Procedure

1. Distribute a copy of *Handout 10B.1: Managing Risk* to each student. Refer to Part A: My Insurance Coverage (page 1 of 2) and explain the following:
 - **Insurance** is protection from possible financial loss.
 - Insurance is a product that allows people to pay a fee (called a premium) now to transfer the costs of a potential loss to a third party (an insurance company).
 - Types of insurance include health, automobile, renters, disability, and life.
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- Each type of insurance offers several options with various amounts of coverage, or protection. The handout lists some potential options.
- The payment for insurance is called a **premium**, and it covers you for a specific amount of time. For example, an annual premium covers you for one year.
- As the coverage gets better, the premium is higher because the insurance company would have to pay more for a claim.

2. Review the meaning of each type of coverage as follows:

Health Insurance

- The co-pay is the amount you will have to pay for each office visit to a doctor. The insurance company will pay the rest.
- The hospitalization percentage is the amount of the bill the insurance company will pay if you are hospitalized.

Automobile Insurance

- The deductible is the amount you will have to pay to repair your car if you have an accident. (Comprehensive and collision coverage are combined here for simplicity.) The insurance company will pay the cost above the deductible.
- Liability coverage protects you from having to pay for damage you cause if you have an accident. The insurance company will pay up to the given limit, and you will have to pay the rest.

Renters Insurance

- The deductible is the amount you will have to pay in the event of a loss. The insurance company will then cover—pay—up to the amount shown. Anything above that limit will be your responsibility.

Disability Insurance

- Each unit of coverage will pay a certain amount per month in the event of a long-term injury or illness.

Life Insurance

- Each unit of coverage will pay your beneficiaries a specified amount if you die. That money could be used to cover funeral expenses, personal debts, or simply as income for your beneficiaries.

3. Explain that the students will participate in a game where they will weigh the benefits of insurance coverage against its costs and choose levels of coverage. The benefit of insurance is lower losses (less money to pay) when bad things happen.
4. Display *Visual 10B.1: Risks*. Define **risk** as the chance of loss. Explain that the visual shows potential events and the amount of loss (cost) each would bring. These events will be used in the game.

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5. Divide the class into four to eight groups.

(Teacher note: *Having more groups will result in more varied outcomes; however, the activity would take more time since more cards would need to be drawn and reviewed.*)

Explain the game as follows:

- Each round in the game will represent 1 year.
 - Before the game begins, you will fill out *Handout 10B.1, Part A: Your Insurance Coverage* to decide for yourselves how much insurance to purchase for each type of insurance shown. Once chosen, the insurance levels cannot be changed.
 - The letters and numbers on Visual 10B.1 correspond to cards in a regular deck of cards. J is for jack, Q is for queen, K is for king, and A is for ace.
 - For each round, one member of each group will randomly select one card that will determine the life event that occurs for each member of that group that year. For example, if an “8” card is drawn, each person in the group had 10 visits to their doctor costing \$2,000 (\$200 each visit) and a hospital stay costing \$6,000. With no insurance, they would have to pay \$8,000 each. How much each person actually pays will depend on the level of health insurance he or she chose. *(Optional: The expected loss of each event is actually fairly easy to determine. For example, there is a 1 in 13 chance of drawing an “8,” or 0.077. This probability times the loss of \$8,000 yields an expected loss of \$616.)*
 - The two Js, Qs, Ks, and As on Visual 10B.1 (e.g., K-K) indicate back-to-back events. If a group draws a jack, queen, king, or ace and then draws that same type of card in the next round, then back-to-back events have occurred and the double-letter event applies. If a group draws the same type of card for the third time, the single-letter event applies. Drawing back-to-back aces indicates death and is the end of the game for that group.
6. Explain that the benefit of insurance is that it lowers your financial loss when such events occur. Discuss the following:
- What are the costs of insurance? *(Most students will recognize premiums as an important cost, but there are also opportunity costs.)*
 - If you pay \$1,000 in insurance premiums, you lose the opportunity to invest these funds and earn what? *(You lose the opportunity to earn interest, or a rate of return. You also lose the opportunity to spend the \$1,000 on something else.)*
 - If you could earn a 5 percent rate of return on invested funds, what would be your total cost of buying \$1,000 of insurance? *($\$1,050 = \$1,000 [1 + 0.05]$.)*
7. Direct the students to Part A of Handout 10B.1. Instruct them to choose a level of coverage for each insurance category based on the following directions:
- You may spend a total of \$4,000 on insurance.

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- All states require basic liability automobile coverage, so you are required to choose at least option 3 for auto insurance.
 - Your goal is to buy enough on coverage to protect yourself from losses, but not so much that you spend far more on insurance than it is worth.
 - Since you can't know what will happen for sure, there is no way of determining the exact amount of coverage you will need (where the benefits of the insurance exactly offset the costs).
 - Compare the risks and the premiums and make the choices you are most comfortable with.
8. Direct the students to Part B: My Life Events on Handout 10B.1. Explain the following, allowing the students time to complete each part as you go:
- First enter the "Total Annual Insurance Premiums" from the bottom of Part A of Handout 10 B.1 on every line in Column (1) of Part B of Handout 10B.1. This will be your premium payment for every round (year) of the activity—no changes will be allowed.
 - Next calculate the opportunity cost of lost interest due to making the premium payments—5 percent of the total in Column (1)—and enter it on every line of Column (2) of Part B. (So, for example, if a student decided to spend \$4,000 on premiums, he or she would enter \$4,000 in Column (1) and \$200 in Column (2).)
 - Losses without insurance will be entered in Column (3). This is how much the event will cost and will be determined by the card drawn. This amount will be the same for all group members. Everyone is to write it down.
 - Losses with insurance coverage will be entered into Column (4). This is how much you will have to pay yourself and will be based on the insurance coverage you chose. This amount will differ from group member to group member if insurance coverage differs.
9. Provide the following example to illustrate how the game works:
- Suppose your group draws an "8" card.
 - Everyone in your group should record "\$8,000" in Column (3).
 - The amount you enter in Column (4) is how much you have to pay. It will depend on the health insurance you chose as follows:
 - Option 1: You would enter \$100 in Column (4) for 10 office (doctor) visits with a \$10 co-pay each, and \$0 for the hospital stay because the insurance company pays 100% of hospitalization.
 - Option 2: You would enter \$1,400 in Column (4), which is \$200 for 10 office visits with a \$20 co-pay each and \$1,200 for the hospital stay, which is 20% of the \$6,000 hospital bill. The insurance company would pay the other 80%, or \$4,800.

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- Option 3: You would enter \$2,000 in Column (4) for the office visits only. The hospital stay would be fully covered.
 - Option 4: You would enter \$8,000 in Column (4) because you do not have insurance and would have to pay the full amount.
10. Begin the game. Invite a member of each group to draw a card from the deck (replacing the card each time) to determine that group's event for Year 1. Instruct each group to complete Columns (3) and (4) as described above. Repeat for as many rounds as time allows (but at least four rounds is suggested to give students a better idea of risk over time).
- Teacher note:** *Students may need help determining the cost for Column (4). Typically, other members in their group can help, but it may be helpful for you to summarize the costs for different levels of coverage. See Handout 10B.1: Managing Risk—Answer Key, Part B: My Life Events for costs.*
11. Instruct the students to total the columns on Part B of Handout 10B.1 and complete Part C: Did Insurance Pay?
12. Discuss the following:
- Who is really glad they bought insurance? *(For groups with particularly costly events, those who bought more coverage will likely be glad. In their case, the losses without insurance would have been much greater.)*
 - Who wishes they would have bought a lot less insurance? *(For groups with fairly inexpensive events, those who bought a lot of coverage will likely wish they hadn't "wasted their money." In their case, the losses without insurance would have been much less.)*
13. Explain the following:
- Insurance works like this: Insurance companies collect a relatively small amount of money (premiums) from a large group of policyholders.
 - These premiums are used to create a pool of funds to compensate policyholders who experience a loss.
 - The premium payments of those with minor or no losses help the insurance company cover the losses of those with major losses.
 - Premiums are typically set by insurance companies based on the expected payouts they are likely to make—plus a profit, of course. *(Note: The premiums in the game have been calculated as such.)*
 - Premiums are set so that most people will pay more in premiums than they receive in claims.

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- While some groups in the game may have had more costly events than others, if more rounds were played, the fortunes of the groups could have easily reversed.
- Even if insurance doesn't seem worth it for a given period, it doesn't mean it won't be later.

Closure

14. Review the key points of the lesson by asking the following questions:

- What is insurance? (*Protection against loss*)
- What are common types of insurance? (*Health, life, renters, automobile, and disability*)
- What do we call the payment we make for insurance? (*A premium*)
- What is a co-pay? (*The amount a person with insurance pays for an office visit to the doctor*)
- What is a deductible? (*The amount an insured person pays in the event of a loss*)
- What is the benefit of insurance? (*Loss reduction*)
- What are the costs of insurance? (*The price of the premium plus opportunity costs*)
- Why might buying insurance be a good idea even if the costs exceed the benefits over a given period? (*Things change over time. You can't predict when an accident or natural disaster might occur. So, in the long run, it is better to have insurance.*)

Assessment

15. Distribute a copy of *Handout 10B.2: Assessment* to each student. Allow time for students to work (or assign as homework) and then review answers using *Handout 10B.2: Assessment—Answer Key*.

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Visual 10B.1: Risks**Health Losses**

Card and event	Loss
2 1 office visit	\$200
3 2 office visits.....	\$400
4 5 office visits.....	\$1,000
5 10 office visits.....	\$2,000
6 15 office visits	\$3,000
7 20 office visits.....	\$4,000
8 10 office visits, one hospital stay	$\$2,000 + \$6,000 = \$8,000$
9 15 office visits, two hospital stays	$\$3,000 + \$15,000 = \$18,000$
10-10 20 office visits, major hospital stay	$\$4,000 + \$76,000 = \$80,000$

Automobile Losses

Card and event	Loss
A Minor fender bender	Auto damage: \$1,000 Liability: \$0
J Minor accident.....	Auto damage: \$3,000 Liability: \$0
J-J Major accident.....	Auto damage: \$6,000 Liability: \$20,000
Q-Q Major accident with injury	Auto damage: \$15,000 Liability: \$90,000

Renters Losses

Card and event	Loss
10 Theft of electronics.....	\$1,000
K Major fire.....	\$4,000

Disability Losses

Card and event	Loss
Q 2 months of disability	\$4,000
K-K 1 year of disability.....	\$24,000

Death

Card and Event	Loss
A-A Death	Financial commitments (burial expenses, debts, loss of income, etc.): \$30,000

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Handout 10B.1: Managing Risk (page 1 of 2)

Name: _____

Part A: My Insurance Coverage

Directions: When directed by the teacher, choose your desired level of coverage for each type of insurance. You may spend a total of \$4,000.

Health Insurance (Office visits, hospitalization)\$ _____

- Option 1: Premium: \$3,600 annually
Coverage: \$10 office visit co-pay, 100% hospitalization
- Option 2: Premium: \$2,800 annually
Coverage: \$20 office visit co-pay, 80% hospitalization
- Option 3: Premium: \$2,100 annually
Coverage: 100% hospitalization only
- Option 4: No coverage

Automobile Insurance (Collision and comprehensive [CC], liability)\$ _____

- Option 1: Premium: \$1,100 annually
Coverage: \$250 deductible on CC, up to \$100,000 liability
- Option 2: Premium: \$950 annually
Coverage: \$500 deductible on CC, up to \$75,000 liability
- Option 3: Premium: \$500 annually
Coverage: Up to \$50,000 liability only
- Option 4: No coverage

Renters Insurance (Fire, theft)\$ _____

- Option 1: Premium: \$350 annually
Coverage: \$250 deductible on all losses up to \$5,000
- Option 2: Premium: \$250 annually
Coverage: \$500 deductible on all losses up to \$3,000
- Option 3: No coverage

Disability Insurance (Long-term injury, illness)\$ _____

- Option 1: Premium: \$240 annually
Coverage = \$1,500/month (\$18,000/year)
- Option 2: Premium: \$160
Coverage: \$1,000/month (\$12,000/year)
- Option 3: Premium: \$80
Coverage: \$500/month (\$6,000/year)
- Option 4: No coverage

Life Insurance (Death)\$ _____

- Option 1: Premium: \$180 annually
Coverage = \$30,000 coverage
- Option 2: Premium: \$120 annually
Coverage = \$20,000 coverage
- Option 3: Premium: \$60 annually
Coverage = \$10,000 coverage
- Option 4: No coverage

Total Annual Insurance Premiums\$ _____**Making Personal Finance Decisions**

Handout 10B.1: Managing Risk (page 2 of 2)

Name: _____

Part B: My Life Events

Year	Card	(1) Total annual insurance premiums	(2) Opportunity cost: Column (1) times 0.05	(3) Losses without insurance	(4) Losses with chosen insurance coverage
1					
2					
3					
4					
5					
6					
7					
8					
TOTALS					

Part C: Did Insurance Pay?

1. Add the totals for Columns (1), (2), and (4) to calculate your total costs with insurance.\$ _____
2. What was the total cost of losses without insurance? (Column 3).....\$ _____
3. Did insurance pay (lower your costs)?

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Handout 10B.1: Managing Risk—Answer Key**Part B: My Life Events, Column (4) Possible Outcomes**

Card	Option 1	Option 2	Option 3	Option 4
2	\$10	\$20	\$200	\$200
3	\$20	\$40	\$400	\$400
4	\$50	\$100	\$1,000	\$1,000
5	\$100	\$200	\$2,000	\$2,000
6	\$150	\$300	\$3,000	\$3,000
7	\$200	\$400	\$4,000	\$4,000
8	\$100	\$1,400	\$2,000	\$8,000
9	\$150	\$3,300	\$3,000	\$18,000
10	\$250	\$500	\$1,000	NA
10-10	\$200	\$15,600	\$4,000	\$80,000
A	\$250	\$500	\$1,000	\$1,000
A-A	\$0	\$10,000	\$20,000	\$30,000
K	\$250	\$1,500	\$4,000	NA
K-K	\$6,000	\$12,000	\$18,000	\$24,000
Q	\$1,000	\$2,000	\$3,000	\$4,000
Q-Q	\$250	\$15,500	\$55,000	\$105,000
J	\$250	\$500	\$3,000	\$3,000
J-J	\$250	\$500	\$6,000	\$26,000

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Handout 10B.2: Assessment

Name: _____

1. What is the benefit of health insurance?

2. What are the costs of health insurance?

3. Last year, a family with the following health insurance had five office visits, which would have cost \$200 per visit without insurance. Had they invested the money instead, they would have earned 5 percent interest.

Health Insurance (Office visits, hospitalization)

Premium: \$3,600 annually

Coverage: \$10 office visit co-pay, 100% hospitalization

- a. What was the family's annual cost of health care, including their opportunity cost?

- b. What would their annual cost of health care have been without health insurance?

- c. For last year, which would have cost that family less money, Option 1 or no coverage?

- d. Why might it still be wise for the family to carry health insurance in future years?

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Handout 10B.2: Assessment—Answer Key

1. What is the benefit of health insurance?

Insurance provides protection from possible financial loss—that is, you will have to pay less if you become sick or injured.

2. What are the costs of health insurance?

The annual premiums plus the opportunity costs—the lost opportunities to spend the money on other goods and services or the lost opportunity to invest the money and earn interest

3. Last year, a family with the following health insurance had five office visits, which would have cost \$200 per visit without insurance. Had they invested the money instead, they would have earned 5 percent interest.

Health Insurance (Office visits, hospitalization)

Premium: \$3,600 annually

Coverage: \$10 office visit co-pay, 100% hospitalization

- a. What was the family's annual cost of health care, including their opportunity cost?

$\$3,600 \text{ (premium)} + \$180 \text{ (interest)} + \$50 \text{ (co-pays)} = \$3,830$

- b. What would their annual cost of health care have been without health insurance?

$5 \text{ (office visits)} \times \$200 = \$1,000$

- c. For last year, which would have cost that family less money, Option 1 or no coverage?

No coverage

- d. Why might it still be wise for the family to carry health insurance in future years?

Answers will vary, but should be similar to the following: Insurance is meant to protect people against possible finance loss. Things change over time. One year without high health care costs does not mean that costs will remain that low. You can't predict when sickness or an accident might occur. So, in the long run, it is often better to have insurance.

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Standards and Benchmarks

National Standards for Financial Literacy

Standard 6: Protecting and Insuring. People make choices to protect themselves from the financial risk of lost income, assets, health, or identity. They can choose to accept risk, reduce risk, or transfer risk to others. Insurance allows people to transfer risk by paying a fee now to avoid the possibility of a larger loss later. The price of insurance is influenced by an individual's behavior.

- **Benchmarks: Grade 8**
 1. Personal financial risk exists when unexpected events can damage health, income, property, wealth, or future opportunities.
 2. Insurance is a product that allows people to pay a fee (called a premium) now to transfer the costs of a potential loss to a third party.
 3. Insurance companies analyze the outcomes of individuals who face similar types of risks to create insurance contracts (policies). By collecting a relatively small amount of money, called a premium, from each policyholder on a regular basis, the company creates a pool of funds to compensate those individuals who experience a large loss.
 4. Self-insurance is when an individual accepts a risk and saves money on a regular basis to cover a potential loss.
 5. Insurance policies that guarantee higher levels of payment in the event of a loss (coverage) have higher prices.
 6. Insurance companies charge higher premiums to cover higher-risk individuals and events because the risk of monetary loss is greater for these individuals and events.
 7. Individuals can choose to accept some risk, to take steps to avoid or reduce risk, or to transfer risk to others through the purchase of insurance. Each option has different costs and benefits.
- **Benchmarks: Grade 12**
 2. Individuals vary with respect to their willingness to accept risk. Most people are willing to pay a small cost now if it means they can avoid a possible larger loss later.
 4. People choose different amounts of insurance coverage based on their willingness to accept risk, as well as their occupation, lifestyle, age, financial profile, and the price of insurance.
 9. Disability insurance is income insurance that provides funds to replace income lost while an individual is ill or injured and unable to work.
 10. Property and casualty insurance (including renters insurance) pays for damage or loss to the insured's property and often includes liability coverage for actions of the insured that cause harm to other people or their property.
 11. Life insurance benefits are paid to the insured's beneficiaries in the event of the policyholder's death. These payments can be used to replace wages lost when the insured person dies.

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