Lesson 11: Margin On

Overview

Students learn the meaning, uses, and risks of margin buying and short selling.

Objectives

A. Students describe the process of buying a stock on margin.

B. Students describe the process of selling a stock short.

C. Students explain how margin buying is the "flip side" of short selling.

D. Students identify the risk and potential reward of buying stocks on margin.

E. Students identify the risk and potential reward of selling a stock short.

Vocabulary

Broker: A business or person that buys or sells on behalf of a customer. Customers pay a broker's fee for this service.

Collateral: Property that a borrower must legally turn over to a lender if the borrower cannot repay a loan. In The Stock Market Game, the stocks a team owns are collateral for buying on margin.

Equity: In a brokerage account, equity is the value of all cash and stocks minus any loans from the broker.

Initial Margin Requirement: The minimum amount of equity an investor must have in a brokerage account in order to borrow for short-sell transactions or margin purchases.

Long Position: The condition of owning stocks. The value of a long position is a stock's current share price multiplied by the number of shares owned. The stocks that someone owns are called longs.

Maintenance Margin Requirement: The minimum amount of equity an investor must have in a brokerage account after borrowing money for short-sell transactions or margin purchases.

Margin Account: A brokerage account that allows an investor to borrow money or stocks from a broker.

Margin Agreement: A legal agreement between a customer and a broker to open a margin account.

Margin Buying: Using money borrowed from a broker to buy stocks.

Margin Call: Also known as a maintenance call. A broker's request that an investor add equity to an account that no longer meets the maintenance margin requirement.

Risk: The likelihood of losing money.

Short Cover: Buying stock in order to repay a broker for the shares borrowed when the stock was sold short. A short cover closes (ends) the short position in that stock.

Short Position: The condition of having sold a stock short. The value of a short position is a stock's current share price multiplied by the number of shares sold short. The stocks that someone has sold short are called shorts.

Short Sale: Sale of a stock borrowed from a broker.

Class Activities

Activity 11A: Letters and Loans

Before Class

Make copies for all students of ***Makayla Meets a Margin*** and ***Activity 11A: Letters and Loans***.

Decide if students will complete the activity individually or in small groups.

Make a transparency from the enclosed master, ***Movie Margin***.

During Class

Ask students if they have gone to the movies lately. Ask them how much the tickets, popcorn, and soft drinks usually cost.

Let them know that you have a brief story about someone who wants to take a friend to the movies.

Display the transparency, ***Movie Margin***, and read the story — or have a student read it. After reading the story, point out the term *margin of safety* that appears at the end of the reading. Then write the following definition on the chalkboard:

Margin of safety: An amount beyond the minimum necessary

Explain that Emily's father gave her a few extra dollars so she would have a little more than absolutely necessary. Emily would then have enough money in case something unexpected came up.

Inform the class that you have an opportunity for them to learn how a *margin of safety* relates to the stock market.

If your students are working in groups, please organize them now. Distribute copies of **Makayla Meets a Margin** and ***Activity 11A: Letters and Loans*** to each student. Ask them to read the story and complete the crossword puzzle.

When students have completed the reading and activity, have them share their answers. If you plan Activity 11B for another day, collect and save all copies of ***Makayla Meets a Margin***.

Suggested answers:

Across:

1. *Margin Agreement*
2. *Broker*
3. *Magnify*
4. *Maintenance Margin Requirement*
5. *Risky*

Down:

6. *Margin Call*
7. *Margin Account*
8. *Federal Reserve*
9. *Collateral*
10. *Margin requirement*

Activity 11B: Margin Notes

Before Class

Make enough copies of ***Activity 11B: Margin Notes*** for all students.

This activity is best completed by students in small groups. Please decide how best to form those groups now.

Have on hand the copies of ***Makayla Meets a Margin*** that you saved from the first activity.

During Class

Remind students of the reading ***Makayla Meets a Margin***, which they completed in the first activity. Distribute copies of the reading to each student. If it's been a while since they completed the first activity, have them reread the story.

After they have reread ***Makayla Meets a Margin***, give each student a copy of ***Activity 11B: Margin Notes***. Ask the groups to answer the questions in the activity.
When students have completed the activity, have them review their answers in class.

Suggested answers:

1. Jacob opens a margin account and deposits $4,000 of cash.

   a. What is the value of Jacob's buying power?

$8,000, which is twice his original deposit.

   b. What is the value of Jacob's equity?

$4,000, which is the cash he deposited. He has yet to buy any stocks and has not yet borrowed any money from his broker.

2. Jacob buys 400 shares of a stock at $20 per share.

   a. What is the value of the stocks Jacob bought?

400 shares x $20 = $8,000

   b. How much cash does he have in his account?

None

   c. Has the value of his equity changed?

No. His equity is still $4,000. Market value of stocks minus broker's loan = equity; $8,000 - $4,000 = $4,000.

3. Suppose the value of Jacob's stock rises from $20 a share to $30 a share.

   a. What is the market value of the Jacob's stocks?

400 shares X $30 = $12,000

   b. What is the value of Jacob's equity?

Market value of stocks minus broker's loan = Jacob's equity; $12,000 - $4,000 = $8,000.

   c. If Jacob sold all his stocks and closed the account, how much money would he have?

He would have the amount of his equity, or $8,000.

   d. How much did Jacob gain from his original deposit of $4,000? How much was this gain as a percentage of his original deposit?

He gained an additional $4,000. This gain was 100% of his original deposit.

4. Suppose instead of rising to $30 a share, Jacob's stock falls to $15 a share.

   a. What is the market value of Jacob's stocks?

400 shares x $15 = $6,000.

   b. What is the value of Jacob's equity?

Market value of stocks minus broker's loan = equity; $6,000 - $4,000 = $2,000.

   c. Jacob's broker has a maintenance margin requirement of 30%, yet in no case can equity fall below the minimum of $2,000. Do you think his broker would send him a margin call? Explain.

NO. The minimum maintenance requirement is 30% of the market value of the margined stocks, or $2,000, which ever is larger. 30% of $6,000 equals $1,800. Since this is not larger than the $2,000 minimum, Jacob's equity must equal at least $2,000. His equity equals this minimum, so his broker would not send him a margin call.

   d. What is the percentage decline in the stock's price? What is the percentage decline in Jacob's equity?

The stock declined by $5 a share, which is 25% of the original price of $20 ($5 / $20 = .25 - 25%). Jacob's equity decreased by $2,000, which is a decline of 50% of his original equity of $4,000.

5. Suppose instead of falling to $15 a share, Jacob's stock sinks to only $10.

   a. What is the market value of Jacob's stocks?

400 shares x $10 = $4,000.

   b. What is the value of Jacob's equity?

His equity has disappeared. Market value of stocks minus broker's loan = equity; $4,000 - $4,000 = $0.

c. Jacob's broker has a maintenance margin requirement of 30%, yet in no case can equity fall below the minimum of \$2,000. Do you think his broker would send him a margin call? Explain.

Yes. Jacob must maintain at least \$2,000 of equity in his account. Since his equity has vanished, his broker would send him a margin call.

d. What is the percentage decline in the stock's price? What is the percentage decline in Jacob's equity?

The stock declined by \$10 a share, which is 50% of the original price of \$20 (\$10 / \$20 = .5 = 50%). Jacob's equity decreased by \$4,000, which is a decline of 100% of his original equity of \$4,000. The stock's decline magnified his loss, so he lost all the money he deposited.

Activity 11C: Anthony's Shorts

Before Class

Make copies for all students of ***Short Story*** and ***Activity 11C: Anthony's Shorts***.

This activity is best completed by students in small groups, so decide how best to do this.

During Class

Review with students the meaning of margin buying. Remind them that buying stocks on margin means using their own money as a down payment and then borrowing the rest from a broker.

Inform students that they are now going to learn about another type of borrowing called short selling.

Write the following definitions on the chalkboard:

Margin Buying: Using money borrowed from a broker to buy stocks.

Short Selling: Selling stock borrowed from a broker.

Emphasize that margin buying and short selling both involve borrowing, so both are done in margin accounts. Point out the following difference:

Margin buying means borrowing *money* that must be repaid. Short selling means borrowing *shares* of stock that must be repaid.

Say: *"When buying on margin, you owe a broker a fixed amount of money. When selling short, you owe a broker a fixed number of shares. If the price of those shares changes, the amount of money you'll need to buy and repay the shares also changes."*

Inform students that you have an opportunity for them to learn how short selling works. Have them form small groups, and then distribute copies to each student of ***Short Story*** and ***Activity 11C: Anthony's Shorts***. Ask students to complete the reading and answer the questions in the activity.

When students have completed the reading and activity, have them present and compare their answers in class.

Follow-up:

After students have presented their answers, point out that short selling is the "flip side" of margin buying. Remind them that Queso made this point when explaining short selling to Crackers. Summarize the difference by writing the following on chalkboard.

Margin Buying: Borrowing to buy low today and sell high later.

Short Selling: Borrowing to sell high today and buy low later.

Suggested Answers:

1. Carbobanger's stock is now selling for \$20 a share, and Anthony has \$5,000 of cash (equity) in his margin account. How many shares of Carbobangers can he sell short,

given the initial margin requirement of 50 percent?

He can sell short a total equal to twice his equity of $5,000, or $10,000. At $20 per share, he can sell short a total of $10,000 / $20 = 500 shares.

2. Anthony sells short the number of shares you calculated in question 1, and the proceeds are added to the cash in his account.

a. How much cash did the broker add to Anthony's account?

500 shares x $20 = $10,000

b. How much cash does Anthony now have in his margin account?

The broker added the $10,000 to Anthony's original $5,000, so he now has $15,000 in his account.

c. Anthony has borrowed the shares from his broker in order to sell them short. He will have to buy 500 shares in the future and repay his broker. What is the current value of the shares Anthony owes, given their current market price of $20 a share?

The value of the 500 shares he owes his broker is now $10,000

d. What is the value of Anthony's equity in the margin account?

His equity is the amount of cash less the amount owed to his broker. $10,000 has been added to his original $5,000, so his cash now totals $15,000. The broker's loan is $10,000, so his equity is $5,000.

3. Just as Anthony predicted, the price of Carbobangers' stock drops to $10 a share.

a. How much would Anthony now have to spend to repay the shares he owes his broker?

The 500 shares would now cost $10 each, so he would have to spend $5,000.

b. What is the value of Anthony's equity after the stock's decline?

His equity is the cash in his account ($15,000) less the value of the shares he owes his broker ($5,000). So his equity is $10,000.

c. How much equity must Anthony have in his account to meet he brokers' maintenance margin requirement?

He is required to have the larger of the following:

A) 30% of the current market value of the stocks sold short (which equals 30% x $5,000 = $1,500) or,

B) $5 per share (which is $5 x 500 shares = $2,500).

Since B) is larger, his maintenance requirement is $2,500.

d. Does Anthony have enough equity to meet the broker's maintenance margin requirement?

Yes. He needs $2,500 of equity but his equity is $10,000.

e. How much has his equity changed since he opened his account?

His equity has doubled, from $5,000 to $10,000.

f. How much cash would Anthony have if he repaid the stock he owed his broker?

He would spend $5,000 of the $15,000 of cash in his account, so he would have $10,000 of cash remaining – the amount of the equity in his account.

4. Suppose Anthony was wrong, and the popularity of Carbobangers was not a fad. So instead of falling to $10 a share, the stock rises to $30 a share.

a. How much would Anthony now have to spend to repay the shares he owes his broker?

The 500 shares would now cost $30 each, so he would have to spend $15,000.

b. What is the value of Anthony's equity after the stock's rise?

His equity is the cash in his account ($15,000) less the value of the shares he owes his broker ($15,000). So he has no equity at all.

c. How much equity must Anthony have in his account to meet he brokers' maintenance margin retirement?

He is required to have the larger of the following:

A) 30% of the current market value of the stocks sold short (which equals 30% x $15,000 = $4,500) or,

B) $5 per share (which is $5 x 500 shares = $2,500).

Since A) is larger, his maintenance requirement is $4,500.

d. Does Anthony have enough equity to meet the broker's maintenance margin requirement?

No. He needs $4,500 of equity but has no equity left at all.

e. If Anthony doesn't have enough equity in his account, his broker would issue a margin call. What does that mean?

A margin call would ask Anthony to deposit another $4,500 to increase his equity to the required minimum.

f. How much has his equity changed since he opened his account?

He has lost all his equity, which fell from $5,000 to nothing.

g. How much cash would Anthony have if he repaid the stock he owed his broker?

He wouldn't have any cash at all. Instead, he'd have to use an additional $4,500 to buy all the shares he owes his broker.

Activity 11D: The Margin Game

This optional activity can be fun and challenging for students while also providing a good summary of the lesson. The activity is based on students' understanding of Activities 11B and 11C.

Before Class

Make copies of ***Activity 11D: The Margin Game*** for all students.

This activity requires small groups of students, so plan how you will divide the class.

Use the page entitled, **The Companies,** to make an overhead transparency for use in the classroom. As an alternative, make one copy of **The Companies** for each group and then cut each page into four sections, each presenting a description of one of the companies. You can then hand each group one of these descriptions instead of using a transparency.

Make a copy of ***Transactions and Price Events*** for your own reference in the classroom.

During Class

Let the class know that they are going to play a game about margin buying and short selling. Divide the class into small groups, and give each group a copy of ***Activity 11D: The Margin Game***. Ask the students to read the activity.

Be sure that all students understand the purpose of the game. Explain that there are no right or wrong answers and that the purpose is to end up with the biggest equity at the end of the game.

Briefly review the *How To Use the Summary Sheet* box in the activity. Point out that the example assumes a deposit of only $4,000, while the students will begin the game with $10,000. If they have questions about the game's operations, answer them as best as you can and explain that they'll understand how it works as they begin to play.

Point to the second page of the activity that presents the summary table. Explain that the first row shows where each group begins. Have them look at the remaining rows containing entries for transactions and price events. Explain the terms as follows:

Transactions: An opportunity to buy a stock on margin or sell it short. When you identify a transaction, students decide if they want to stand pat, buy on margin, or sell short. If they buy or sell, they must then record its effects on their answer sheets.

Price Events: A change in the stock price of one of the companies already presented in a transaction. After you identify a price event, students must record its affects, if any, on their summary sheets.

Emphasize that teams can build their equity by buying a stock on margin or selling it short and then having its price change in the direction they expected. If the price changes contrary to their expectation, however, they will lose equity.

Refer to your copy of ***Transactions and Price Events***. Begin the game by identifying transaction 1. If you are using the transparency, display only that part showing the first company, The Bloated Doughnut. If, instead, you have copied and cut out the company's description for each group, distribute to each group its description of The Bloated Doughnut. Have students read the transparency or slip of paper. You might also read the description to them.

Next, ask each group to make a decision. Do they want to buy the company's stock on margin, sell it short, or stand pat? Emphasize that they are competing with other groups, so they will want to keep their decisions private. Give them some time to enter the transaction on their summary sheets. Explain that they will leave this transaction blank if they decide to stand pat.

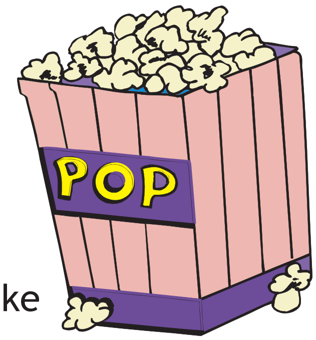
Continue with the second transaction in the same manner. When you come to Price Event A, read the description from your copy of ***Transactions and Price Events***. Give them a moment to record any effects of the price event on their summary sheets.

Continue in this manner with the remaining transactions and price events. When the last event has been completed, have the groups give the values of their ending equities. You may want to write the numbers on the chalkboard.

Have the winning group — the one with the highest equity value — explain its decisions to the class. You may also want to encourage a class discussion of their decisions.

It's possible that some groups may end up with negative equities or equities that fall below the maintenance requirement. If so, point out that this would require a margin call from their brokers.

Movie Margin



Emily's best friend is having a birthday in a few days, so Emily wants to get her a special gift. She thought and thought about what to get and finally hit upon a great idea. My friend loves to go to the movies, thought Emily, so I'll take her to see the new movie she was talking about.

Of course, going to the movies isn't cheap these days. Tickets, popcorn, and drinks add up in a hurry. So Emily checked her cash and discovered that she had just enough — and not a penny more.

When Emily told her father about the planned present for her friend, her father wondered if she had enough money. Emily explained that she had enough for exactly two tickets, two small popcorns, and two small soft drinks.

"Well, things don't always go exactly as you plan," said her father. What if your friend asks for a larger popcorn or a bigger soft drink? Or what if the ticket price is higher?"

"I'll just hope that doesn't happen," answered Emily.

"Here," said Emily's father, handing her a few extra dollars. "Why don't you take something extra just to be safe."

"Thanks, Dad," said Emily. "I don't plan on spending the extra money, so I'll probably give it back to you. But I feel better now knowing I have a **margin of safety**."

Makayla Meets a Margin

I hope this message keeps many of you from making the same mistake I made," wrote 19-year-old Makayla on an Internet message board." Here's what she wrote.

Borrow and Buy

When I started working full-time, I began to invest in some stocks. A few months ago I bought shares of a fast-growing company. Sure enough, the stock went up. I wanted to buy more shares, but I didn't have enough savings.

That's when I heard about buying stocks on margin. I opened a **margin account** with my broker, signed a **margin agreement**, and deposited the minimum requirement of $2,000. The margin account then enabled me to double the **buying power** of my original deposit. So I was able to use my original $2,000 deposit to buy $4,000 worth of stock.

Let me explain. You see, the **initial margin requirement** is 50 percent, which meant that I could buy two dollar's worth of stock for each dollar of my own money. My broker loaned me the other dollar, so I was able to buy twice as many shares. The shares I bought with my own money backed the loan. My broker called the shares **collateral** because the broker could sell them if I couldn't repay the loan.

Sure, I had to pay interest on the loan and would also have to pay back the borrowed money. But I figured it was worth it because any increase in the stock's price would go to me, not to my broker. That would be true for the shares I bought with my own money and also for the shares I bought with my broker's loan. So I could use the broker's money to magnify my gains.

What Goes Up ...

But I failed to look at the other side of the margin coin. Just as I would receive all the gains if my stock went up, so also would I receive all the losses if it went down. I forgot that margin buying could magnify losses, just as it can magnify gains.

I remembered this when my "winning" stock suddenly sank. I thought of the margin agreement I had signed when I opened the account. Regulations of the federal government and the stock markets require that margin accounts always have enough **equity** in them.

Equity is the value of all cash and shares in my account minus the broker's loan. The **maintenance margin requirement** meant that the equity in my account must always equal a certain percentage of the current market value of the stocks bought on margin. Some brokers set this percentage at 25 percent. Mine requires a minimum of 30 percent equity for the stock I bought. But in no case can it fall below the legal minimum of $2,000.

Who's Calling?

I didn't have any cash left in my margin account, so the equity in my account consisted entirely of the shares I bought with my own money. When my "winning" stock became a loser, my equity shrank like a new

Did You Know?

If a customer can't provide additional cash, a broker can sell shares in the account, even without the knowledge or consent of the customer. If other stocks are in the account, the broker may sell these shares in place of, or in addition to, the shares of the falling stock.

pair of jeans in a hot dryer. It was even worse. Imagine opening the dryer and discovering that your jeans had shrunk away to nothing. That's what happened to me. In what seemed like a nanosecond, a huge decline in the stock wiped out every penny of my equity.

So my broker sent me a **margin call**, which asked me to rebuild my equity by depositing more cash in my account. But I didn't have any cash, so my broker had to sell my shares to repay the loan.

Pluses & Minuses

Makayla wishes she had been more careful when buying on margin. The margin is the amount an investor must deposit to provide a margin of safety when borrowing from a broker to buy stock. For example, Makayla wanted to buy $4,000 worth of stock on margin. She first had to deposit $2,000 of equity (cash) before her broker would loan her the other $2,000. In a sense, the margin is like a minimum down payment that helps to make borrowing a little safer.

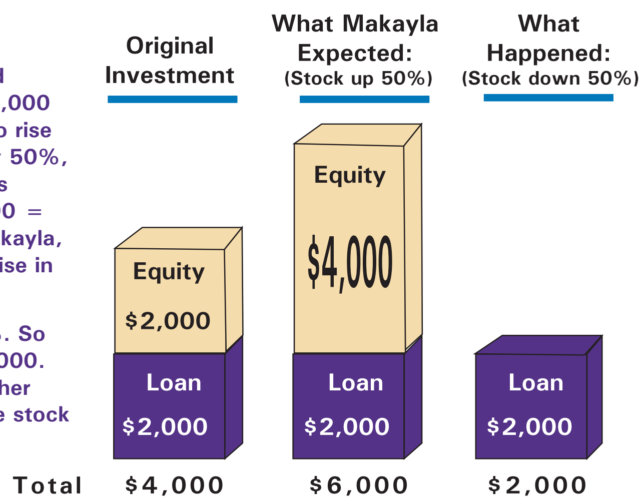
The Federal Reserve sets this minimum, which today requires investors to provide 50 cents of equity for each dollar of stock bought on margin. Since 50 cents is half of a dollar, the initial margin requirement is one-half or 50 percent. For this reason, buying on margin means buying stock by putting in at least 50 percent of the total as your own money and borrowing the rest from a broker.

Makayla's experience shows the risk and potential reward of margin buying. If margined stocks go up, gains are magnified. If they go down, losses are magnified too.

Magnifying Margin

Makayla deposited $2,000 and borrowed another $2,000 from her broker to buy $4,000 of stock. She expected the stock's price to rise by 50%. If the price of a share goes up by 50%, the total value of all the stock in Makayla's account will rise by $2,000 (50% x $4,000 = $2,000). All of that gain will belong to Makayla, so her equity will rise to $4,000. A 50% rise in the stock made her equity rise by 100%.

But the stock's price went DOWN by 50%. So the total value of all the shares fell by $2,000. The loss belonged entirely to Makayla, so her equity shrank to nothing. A 50% fall in the stock made her equity fall by 100%.



Short Story

You may not believe the following story, but it comes from a reliable source. The events took place late at night, high in an office building near the New York Stock Exchange. It was quiet – except for a soft noise that sounded like … someone chewing on cheese.

Small Talk

"Stocks can talk," said a mouse named Crackers. Crackers was sitting on a desk, munching on a morsel of Swiss cheese from someone's leftover sandwich.

"Don't be ridiculous!" said another mouse called Queso. Queso was lying on the desk with both feet propped up on a computer keyboard.

"But I heard them!" insisted Crackers. "Last night a couple of stock certificates were in the next office, sitting on the windowsill and peering out at the lights below. They had a long discussion about someone selling them short that day. I'm not sure what they meant. Maybe they meant that someone was underestimating their smarts or something."

"Not exactly," answered Queso. "Let me explain what selling short means in the stock market. Remember the shares you almost bought a while ago of Ratzo Toy Company? What if you had made the investment? How could you have earned any money?"

"It's simple," answered Crackers. "Buy low and sell high. I like toys, and Ratzo looked like a good company. I had thought about buying shares and holding them for a long time. Later, I could have sold them at a higher price and earned some money. But I'm glad I didn't buy the stock because its price went down, not up."

What Comes First?

"What if you had sold the stock short?" said Queso. "Instead of buying low and selling high later, you could have sold high and bought low later. "

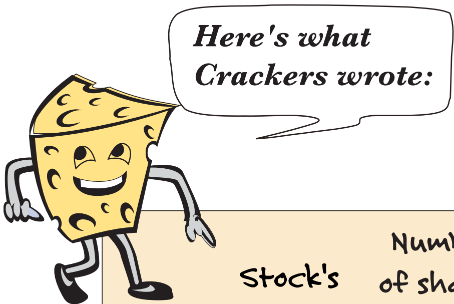
"Impossible!" snapped Crackers. "How could I have sold shares of Ratzo if I hadn't bought any in the first place? I can't sell what I don't own."

"But you can," answered Queso. "You borrow shares of Ratzo from a stockbroker and have the broker sell them for you. Later, you buy shares of Ratzo and pay back the stockbroker. You would have earned money because the stock's price dropped between the time you sold them short and when you bought them to pay back the broker."

"Let's figure it out," continued Queso. The agile mouse then turned on the computer sitting in front of him and began dancing about on selected keys. "There, I'm on the Web," said Queso, who then skipped about on more keys to navigate to a stock market site. "Here are Ratzo's stock prices. Write them down on your note pad and let's see how much you would have earned by selling short 100 shares."

"Let's see," said Crackers. "If I had sold 100 shares short last year, I would have received

$2,000. Later, I could have paid the broker back by buying 100 shares this year. But those shares would have cost only $1,100, so I would have kept the difference, or $900.



	Stock's price		Number of shares of Ratzo		Total value
Last Year					
Borrow and Sell	$20.00	x	100	=	+ $2,000
Today					
Buy and pay back	$11.00	x	100	=	- $1,100
Difference I keep					$ 900

"Not bad!" squeaked Crackers. "I'm going to look for stocks that are overpriced and are about to fall. Then I'll sell them short and earn a bundle."

In Short, It's Risky

"Hold on," cautioned Queso. "Don't forget you'd have to pay a fee for your broker's services. And short selling is very risky. You could end up losing your money. For example, what have stock prices generally done over many years?"

"They've gone up," answered Crackers. "So what?"

"So plenty!" answered Queso. "The only way you'd make money by selling short is to pick stocks that go down, not up. So you'd be bucking the stock market's long-run upward trend. Besides, picking stocks that are overpriced and are going to drop is harder than biting into a hard chunk of stale cheese. "

"Ouch!" remarked Crackers. "I don't want to lose my teeth—or my money.”

“But suppose you sold a stock short and its price started to go up instead of down?"

"Would I keep my teeth but lose my money?" asked Crackers.

"Right," answered Queso. "When repaying the borrowed stock, you'd pay more to buy the stock than you got when selling it. And the higher the stock price went, the more you'd lose. I bet you'd be scared out of your whiskers."

Crackers frowned. "But if short selling is so risky, does it do any good in the stock market?"

"Sure," said Queso. "Short selling can protect you against losing money on a stock you already own. Say you had bought the shares of Ratzo you told me about and wanted to keep them for a long-term investment. Then you start worrying that the stock's price might fall, so you wish you could protect your investment somehow. If you don't want to sell the stock, what could you do?

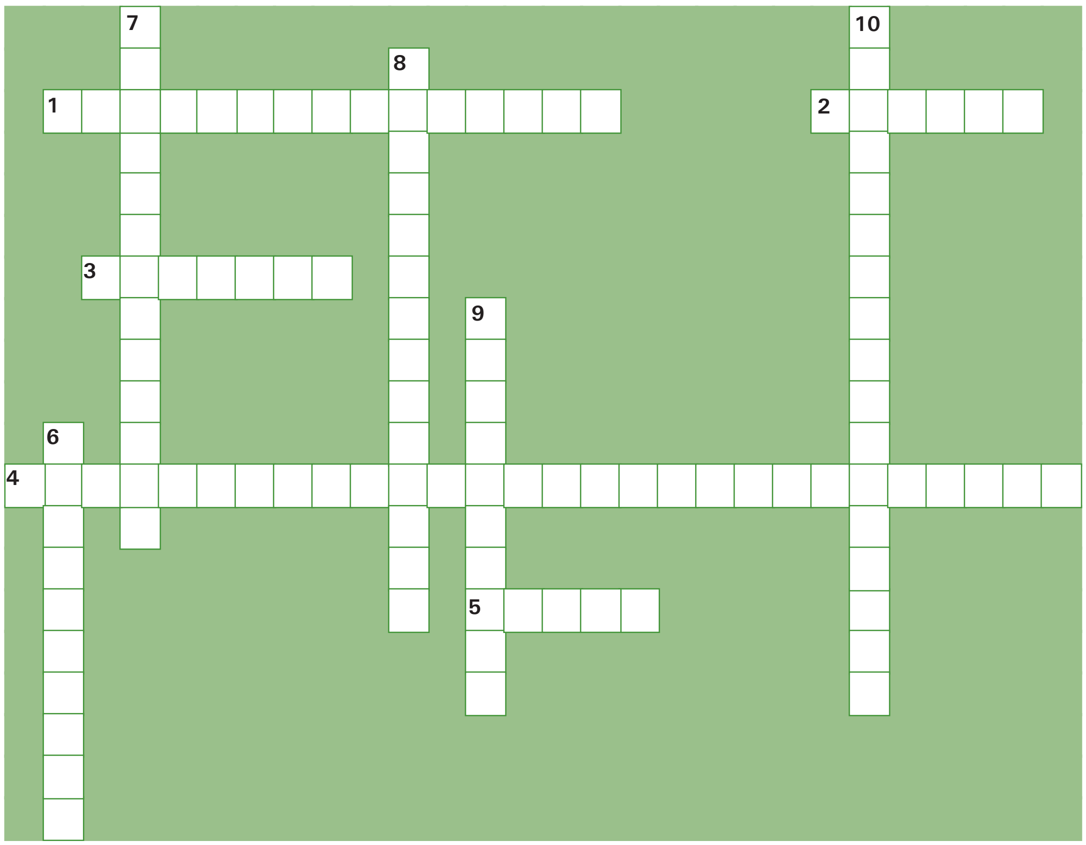
"Could I sell the stock short?" asked Crackers.

"Yes," answered Queso. "If its price does fall, you'd earn money on the shares you sell short. These earnings would then offset money you lose from a lower price on the shares you own."

"I like that," smiled Crackers. " Maybe I'll pick another business and buy its stock. What company makes Velveeta?"

Activity 11A: Letters and Loans

Directions: Customers open margin accounts because they want to obtain loans from their brokers. The following crossword puzzle presents some of the important terms that customers find when they open and use such accounts. Use the reading, ***Makayla Meets a Margin*** to complete the puzzle.



Across

1. What an investor signs when opening a margin account.
2. When an investor buys a stock on margin, who provides the extra money?
3. Investors hope that margin buying will do this to their earnings.
4. After buying stocks on margin, you always have to satisfy this.
5. Buying stocks on margin is certainly this.

Down

6. Brokers send this to customers who don't have enough equity in their margin accounts.
7. You must open one of these to buy stocks on margin.
8. The government agency that sets the initial margin requirement.
9. This provides security to a broker when lending money to a customer.
10. Because of this, you have to provide 50 cents of your own money for every dollar spent to buy stocks on margin. (Hint: ignore the first word of this term.)

Activity 11B: Margin Notes

Directions: After reading ***Makayla Meets a Margin***, answer each of the following questions on a separate sheet of paper. Be sure to show all your calculations.

1. Jacob opens a margin account and deposits $4,000 of cash.
   a. What is the value of Jacob's buying power?
   b. What is the value of Jacob's equity?

2. Jacob then buys 400 shares of a stock at $20 per share.
   a. What is the value of the stocks Jacob bought?
   b. How much cash does he have in his account?
   c. Has the value of his equity changed?

3. Suppose the value of Jacob's stock rises from $20 a share to $30 a share.
   a. What is the market value of Jacob's stocks?
   b. What is the value of Jacob's equity?
   c. If Jacob sold all his stocks and closed the account, how much money would he have?
   d. How much did Jacob gain from his original deposit of $4,000? How much was this gain as a percentage of his original deposit?

4. Suppose instead of rising to $30 a share, Jacob's stock falls to $15 a share.
   a. What is the market value of Jacob's stocks?
   b. What is the value of Jacob's equity?
   c. Jacob's broker has a maintenance margin requirement of 30%, yet in no case can equity fall below the minimum of $2,000. Do you think his broker would send him a margin call? Explain.
   d. What is the percentage decline in the stock's price? What is the percentage decline in Jacob's equity?

5. Suppose instead of falling by $5 a share, Jacob's stock sinks by $10 a share – to only $10.
   a. What is the market value of Jacob's stocks?
   b. What is the value of Jacob's equity?
   c. Jacob's broker has a maintenance margin requirement of 30%, yet in no case can equity fall below the minimum of $2,000. Do you think his broker would send him a margin call? Explain.
   d. What is the percentage decline in the stock's price? What is the percentage decline in Jacob's equity?

Activity 11C: Anthony's Shorts

Directions: After reading ***Short Story***, answer the following questions on a separate sheet of paper.

Anthony was interested in selling a stock short, but he first needed a margin account. So he opened a margin account with his broker and deposited $5,000 of cash.

He had been closely following a company named Carbobangers, which is a small chain of fast-food restaurants offering special foods for people trying to lose weight. The stock had risen as sales soared at the company's restaurants, but Anthony believed this was only a fad that would soon fade. The stock is now selling at $20 per share, but Anthony figured it was about to sink – maybe all the way to $10 a share.

Short sales are subject to the same requirements that apply to margin buying. First is the initial margin requirement. This means the equity in a customer's margin account must equal at least 50 percent of the value of the stocks sold short (and must not fall below $2,000). Second is the maintenance margin requirement, which means a customer's equity must always equal a minimum percentage of the market value of the stocks sold short. Short sales also have an added requirement. All sales of stock priced at $5 per share or more have a maintenance margin requirement equal to the larger of the following two alternatives:

A) 30% of the stocks' market value, or

B) $5 per share.

1. Carbobanger's stock is now selling for $20 a share, and Anthony has $5,000 of cash (equity) in his margin account. How many shares of Carbobangers can he sell short, given the initial margin requirement of 50 percent?

2. Anthony sells short the number of shares you calculated in question 1, and the broker adds the cash to his account.

   a. How much cash did the broker add to Anthony's account?

   b. How much cash does Anthony now have in his margin account?

   c. Anthony has borrowed the shares from his broker in order to sell them short. He will have to buy 500 shares in the future and repay his broker. What is the current value of the shares Anthony owes, given their current market price of $20 a share?

   d. What is the value of Anthony's equity in the margin account?

3. Just as Anthony predicted, the price of Carbobangers' stock drops to $10 a share.
    a. How much would Anthony now have to spend to repay the shares he owes his broker?
    b. What is the value of Anthony's equity after the stock's decline?
    c. How much equity must Anthony have in his account to meet the maintenance margin requirement?
    d. Does Anthony have enough equity to meet the maintenance margin requirement?
    e. How much has his equity changed since he opened his account?
    f. How much cash would Anthony have if he repaid the stock he owed his broker?

4. Suppose Anthony was wrong, and the popularity of Carbobangers was not a fad. So instead of falling to $10 a share, the stock rises to $30 a share.
    a. How much would Anthony now have to spend to repay the shares he owes his broker?
    b. What is the value of Anthony's equity after the stock's rise?
    c. How much equity must Anthony have in his account to meet the maintenance margin requirement?
    d. Does Anthony have enough equity to meet the maintenance margin requirement?
    e. If Anthony doesn't have enough equity in his account, his broker would issue a margin call. What does that mean?
    f. How much has his equity changed since he opened his account?
    g. How much cash would Anthony have if he repaid the stock he owed his broker?

Activity 11D: The Margin Game

Your objective is to build your equity as high as possible. The team ending with the highest equity is the game's winner.

Your team begins with a margin account containing $10,000 of cash. Since you have yet to borrow from your broker, your equity consists only of the $10,000 of cash. You can use the account either for margin purchases or short sales. (There are no purchases for cash only; all purchases are margin purchases.) The initial margin requirement is 50%, and the maintenance margin requirement is 30%, but can never fall below $2,000.

During the game, you will have five opportunities for market transactions. At each opportunity, you must make one of the following three decisions.

A. Stand pat and do nothing at all

B. Buy on margin (You decide how many shares.)

C. Sell short (You decide how many shares.)

As the game proceeds, you'll also encounter a series of price events. These events will report changes in the stock prices of the companies *after* your decision to buy them on margin, sell them short, or ignore them. As each price event occurs, you'll record the effects, if any, on your Summary Sheet. Here is an example, which uses a smaller initial deposit of only $4,000.

How To Use the Summary Sheet — An Example

	Total Cash	Market Value of All Stock Bought on Margin	Market Value of All Stock Sold Short	Total Owed to Broker	Your Equity	Maintenance Margin Requirement
	(1)	(2)	(3)	(4)	(5)	(6)
A)	$4,000				$4,000	$0
B)	$2,000	$4,000		$2,000	$4,000	$2,000
C)	$6,000	$4,000	$4,000	$6,000	$4,000	$2,400
D)	$6,000	$6,000	$4,000	$6,000	$6,000	$3,000
E)	$6,000	$6,000	$2,000	$4,000	$8,000	$2,400

Minimum of $2,000

Note: Equity is the sum of columns 1 and 2 minus column 4; The margin requirement is 30% of the sum of columns 2 and 3 but can never equal less than the minimum of $2,000. In each case above, your equity exceeds the maintenance requirement shown in the far right column.

A) Account opened and $4,000 of cash is deposited. No transactions have occurred yet, so total equity consists only of the cash deposited.

B) You buy 200 shares of Stock A on margin at $20 per share. The total purchase equals $4,000, only half of which comes out of your cash. Your broker loans you the other $2,000.

C) You sell short 200 shares of Stock B at $20 per share. The total sale equals $4,000, which is then added to your cash. You now owe your broker 200 shares of Stock B, which is worth $4,000 at its current price. This loan of stock, now valued at $4,000, is then added to the $2,000 you borrowed in transaction A. So you now owe your broker at total of $6,000.

D) A price event occurs in which Stock A rises from $20 to $30 a share. As a result, the value of the 200 shares bought on margin rises from $4,000 to $6,000. Your equity then rises by $2,000.

E) A price event occurs in which Stock B falls to $10 a share. The market value of the 200 shares you owe your broker falls from $4,000 to $2,000, so you now owe $4,000 instead of $6,000. Your equity rises by an equal amount because you now owe your broker less money.

Summary Sheet

Transaction or Price Event	Total Cash	Cumulative Value of Stock Bought on Margin	Cumulative Value of Stock Sold Short	Total Owed to Broker	Your Equity	Maintenance Margin Requirement
Open Account	$10,000				$10,000	$0.00
Transaction 1						
Transaction 2						
Price Event A						
Transaction 3						
Price Event B						
Transaction 4						
Price Event C						
Price Event D						

Transactions: After your teacher identifies a transaction, you must decide if you're going to stand pat, buy on margin, or sell short. If you buy or sell, then you must also decide how many shares. Finally, you must then show the effects of the purchase or sale on your summary sheet.

Price Events: After your teacher identifies a price event, you must show its effects (if any) on the summary sheet.

The Companies

The Bloated Doughnut

The Bloated Doughnut is a chain of popular stores across the United States. Sales at existing stores have swelled like a doughnut filled with crème, so the chain is opening new franchises nearly every week. The company's stock has been immensely popular and has soared over the last few months. It's now selling for $40 a share. Some analysts think the company's doughnuts are only a fad and that the stock is overpriced; it now has a price/earnings ratio of 61. Others think the company has great growth potential, and they don't want to miss out on a sweet deal.

Skunky Cosmetics Inc.

Skunky Cosmetics has struggled in recent years to gain greater recognition among young consumers. Its new line of lipsticks, Pungent Tones, has yet to catch on, but analysts think the endorsement of the product by a popular star in a soon-to-be-released movie will suddenly make the oddly named product the word on everybody's lips. The company's stock has hovered near its current level of $5 a share for many months. Some analysts expect the stock to soar after the release of the new movie. But many skeptics think the new lipstick line will be a blemish on the company's sales and earnings.

Otto Parts Co.

Otto Parts seems to be running on all cylinders in its competition with major auto parts suppliers. While relatively small, the company has found a market niche by emphasizing its online Search-and-Serve Service. Here, customers use the web to locate products, get advice, and place orders. The orders are then filled and delivered within the hour by delivery messengers that remind one of Dominoes. Analysts are divided on the future of the company. Some see Otto Parts as the wave of the future, especially for younger customers. They expect the stock to soar as the company increases its market exposure. At $10 a share, they see Otto Parts as a real bargain. Unconvinced, other analysts think the company will go the way of all the online grocery stores that flew and flopped a few years ago. They expect the stock to sink and the company eventually to go bankrupt.

Clothes Line Inc.

Clothes Line has become a sizeable company in recent years by edging out major competitors in the retail clothing market. Its Now & Then outlets offer a unique combination of clothing for teenagers and seniors and have put young and old shoppers in the same store. At first thought ridiculous by experts in the clothing industry, the idea caught on a few years ago and has grown in popularity. Combining both young and old markets has also restrained the extreme ups and downs in clothing sales. When teens curb their buying, seniors often increase theirs. And when seniors curtail their purchases, teens often increase their buying. Analysts have been pleased with the company's stability and growth. The stock now sells for $25 a share.

Transactions and Price Events

Transaction 1 The Bloated Doughnut

Do you want to stand pat, buy on margin, or sell short? If you buy or sell, you must decide on the number of shares.

Transaction 2: Skunky Cosmetics

Do you want to stand pat, buy on margin, or sell short? If you buy or sell, you must decide on the number of shares.

Price Event A

The Bloated Doughnut reports weak sales, and investors reappraises the company's likely growth. Most conclude the stock is overvalued, so its price tumbles to $25 a share.

Transaction 3: Otto Parts

Do you want to stand pat, buy on margin, or sell short? If you buy or sell, you must decide on the number of shares.

Price Event B

Sales and earnings at Skunky Cosmetics soar after the release of the movie featuring its Pungent Tones lipsticks. The stock's price doubles to $10 a share.

Transaction 4: Clothes Line, Inc.

Do you want to stand pat, buy on margin, or sell short? If you buy or sell, you must decide on the number of shares.

Price Event C

Otto Parts surprises everyone when it reports hefty increases in its sales and earnings. Its online ordering proves very popular with customers, and its home delivery of parts proves to be surprisingly quick and efficient. The stock soars to $25 a share.

Price Event D

Clothes Line Inc. has run into unsuspected trouble attracting youthful customers to its stores. Despite changes in its clothing line and new members in its management team, sales and earnings are droopy. The stock's price falls to $20 a share.