

College Guild

PO Box 696, Brunswick, Maine 04011

Logic, Puzzles, and Games

Unit 4 of 6

Games**Welcome back to Logic, Puzzles, and Games.**

Competition against family, friends, strangers, or even ourselves helps us to push ourselves and often enjoy ourselves regardless. Games and sports allow us to develop social skills such as communication, teamwork, overcoming hardship, dealing with loss, and celebrating our victories in a dignified manner. Developing and carrying out a winning strategy also can make us feel clever, improving our self esteem. In this unit we will focus on **gamesmanship**, which is the art and strategy of gaining an advantage in a competition. Let's start with two games in particular that you might be familiar with.

Glossary of Terms: In order of appearance**Gamesmanship** - the art of winning games using strategy**Etiquette** - acceptable rules of behavior, these rules can change depending on the environment**Taunting** - to provoke or challenge someone with insults or gestures**Etiquette**

The amount of fun in a game has probably more to do with the players than the game itself. **Etiquette** is the proper code of behavior that one must have in a specific environment. These codes are generally agreed upon and often unspoken, but they help keep even tricky social interactions polite and pleasant. . Without etiquette, even polite and thoughtful people can make social errors, spoiling the game for themselves and others. There are many ways you can show mutual consideration and respect to the others in competition. Here are a few examples.:

Before the Game

- All players should understand the time commitment involved
- The game should match the skill and age of its players
- Teams should be made fairly
- The room and playing surface should be clean
- Expectations should be set for the game, whether you are playing for fun or for high stakes

1. Which of the pre-game rules of etiquette do you think is most important? Explain what is the likely result if the rule isn't followed.

During the Game

- Help new players
- Follow the rules of the game
- Praise good moves that your opponent makes
- Recognize the fine line between playful joking and taunting/teasing

2. Can you think of more in-game etiquette that's not mentioned above?

3. Describe the emotions that are created when the behaviors above are not followed.

After the Game

- Win and lose gracefully
- Discuss what happened in the game, certain turning points that swung the outcome a certain way
- If money was wagered, honor the arrangement
- A handshake or simply saying "good game," is a cordial way to end a game
- Arrange for the next time to play,
- Ask for feedback on how to make it a better experience for next time
- Don't hold grudges for what happened in the game.

4. What are some examples of things you can say after winning a game that make you a respectful player? Is there an appropriate amount of happiness you can show outwardly after winning?

5. What are some examples of things you can say after losing a game that make you a respectful player? Is there an appropriate amount of disappointment you can show outwardly after losing?

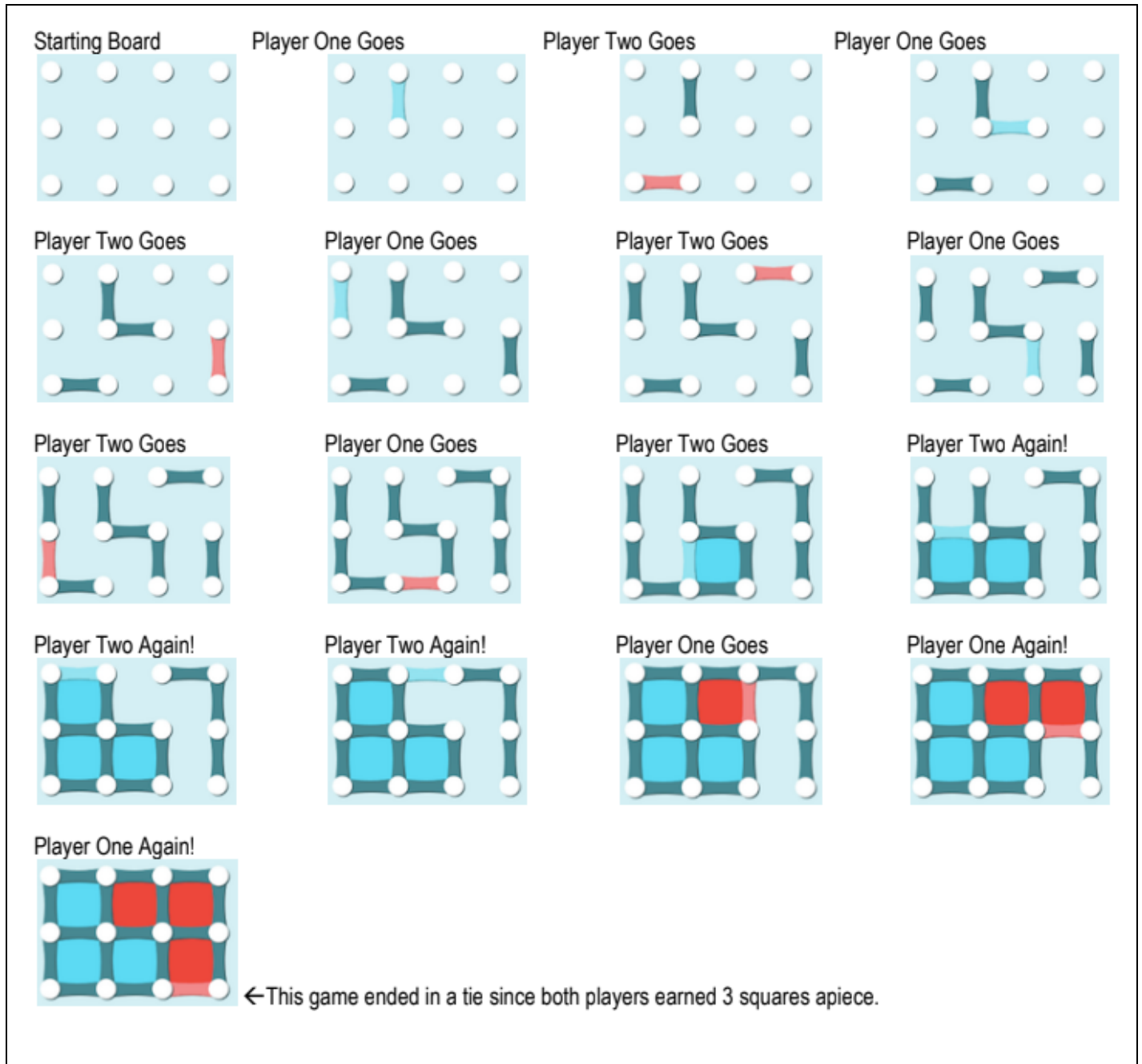
Game Time

There is a fun and super inexpensive game to play called Dots and Boxes. Typically it is played as a two-player game, where players take turns adding small segments, either horizontally or vertically, to a grid of dots. The grids can be made to any size; the example game is three dots by four dots. Once a player forms a small square, that player captures that square and earns a point. Typically that player writes their first initial in the square to claim it. Anytime a player captures a square, they immediately must take another turn. Whenever a small square cannot be formed the next player takes their turn. The game ends when all the squares are claimed. The player with the most squares claimed at the end wins. Below is an example of a game being played out with a small game board.

The following page shows an example of a game being played to its completion. Look over the example shown before answering the following questions.

6. Play the game Dots and Boxes with an opponent or play the role of both players. Play the game several times on the smaller 3 dot by 4 dot board, then play several times on a larger board such as a 5 dot by 6 dot board. You may discover that the strategy in this game is not so easy to figure out.

7. Once you have played a handful of games you might recognize what situations in the game to avoid or which situations to create during your turn. If so, describe them. If you played with an opponent, report on the etiquette of your games.

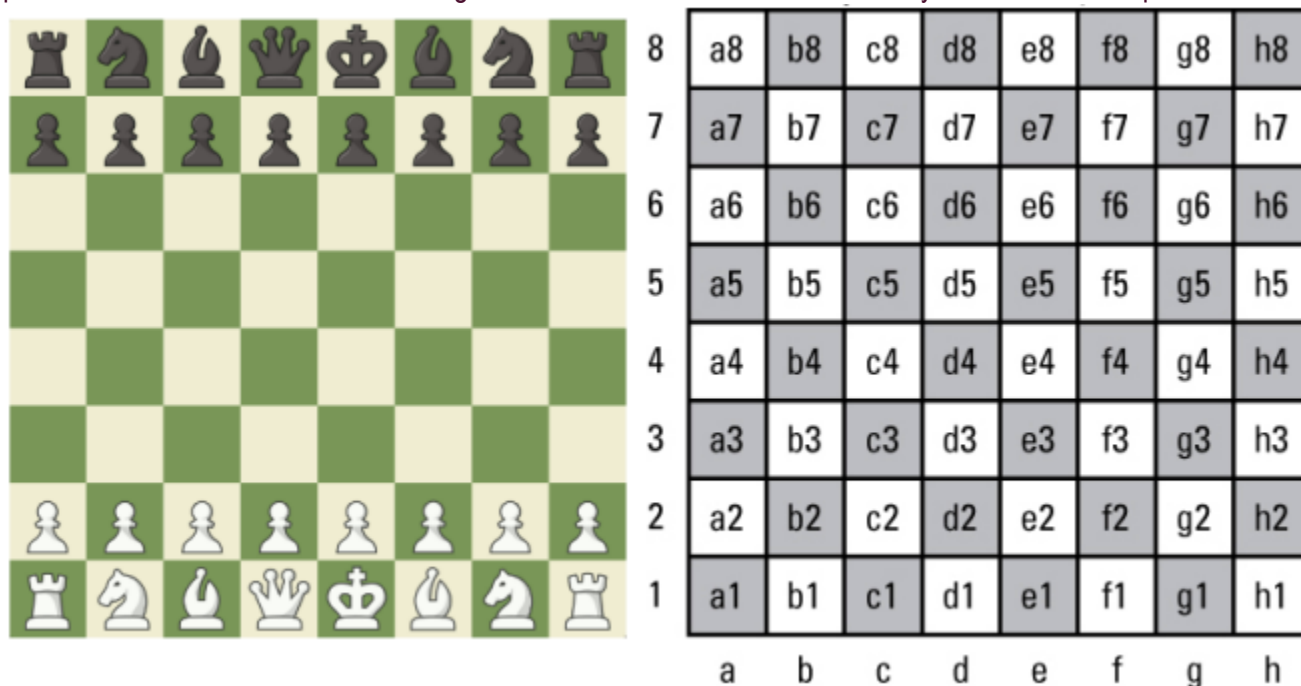


Chess

Chess is arguably the most popular board game ever. The Persians who ruled parts of the Middle East and Asia played the first recorded version of a chess-like game they called Chatrang. Played on the same modern sixty-four square board, the goal of this 7th century game was identical to the modern game, to capture the shah or king. Since not all are familiar with the game, a brief introduction to the basics of the game is in order.

The modern game of chess is played on the checkered board with the black team versus the white. The game is

played in alternating turns that include a single move. White begins the game. Each piece has its own rule about the direction and number of squares moved in a turn. The letter-and-number grid to the right is a helpful way to describe positions on the board. You will be using these letters and numbers to describe your moves in the questions that follow.



The Rules

- The goal of chess is to capture your opponent's pieces.
- Each player starts the game with eight **pawns**, the foot soldiers that are in rows 2 and 7 to start the game. Pawns can move forward one space, but if they haven't moved in the game they can begin by moving two spaces forward. In general, they can move only one space forward to occupy an empty square. However, pawns may move two spaces forward if you choose, but only on their very first motion. The pawn is allowed to move diagonally forward to capture an opponent's piece. Pawns cannot jump over another piece. As a reward for surviving, a pawn that reaches the first row of an opponent's board will become any piece you want.
- The **rooks** (castle towers) on the board begin in the corners of the board. They can move as many spaces as they want forward, backwards, left, or right. They cannot jump over another piece. The rooks can capture any opponent's piece that it can travel into as it moves. This rule of capturing applies to all the pieces that follow as well.
- The **knights** are the horse shaped pieces. These move in an L-shaped pattern of two squares forward and then one square to the right or left. You can find a diagram of the knight's movement patterns in the Knight's Tour puzzle from Unit 3. The knight is the only piece on the board that can move over other pieces as they travel on the board.
- The **bishops**, "pope hats", start the game at c1, f1, c8 and f8. They are quite similar to the rooks in that they can travel as many squares as they want per turn. They however have to travel diagonally and cannot jump over any pieces. They capture the other team's piece as they move in this diagonal route.
- The **queens**, which have the four-pronged crowns, are perhaps the most powerful pieces. They are a rook and bishop combined, moving forward or backwards, or along a diagonal path. They also cannot hop over pieces in the game.
- The **king** piece is often shown as a crown with a single cross atop. It is the most important piece. You must guard your king from being captured while trying to capture your opponent's king. A king can move one space in any

direction, capturing any piece that it moves into. But be careful. Any move that lets your king get captured leads to you losing the game.

How to Win

When you move a piece and it places the opponent's king in danger of being captured on your next turn, you announce the word "check" to your opponent. This custom is perhaps a polite way to get your opponent to know they are in trouble. "Checkmate" is what you call out when your opponent cannot save their king. Many believe the word checkmate comes from calling someone your mate, or friend. It actually is quite grim, it comes from the Persian phrase "shah mat" meaning the king is dead.

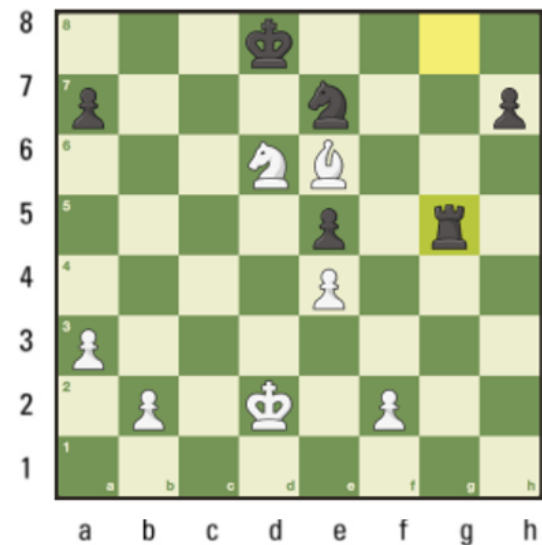
8. Let's give you a bit of training on how to make decisions in chess. The top board on the right is in the middle of a game. Black has just moved its rook from g8 to g5. What move should white make on this turn so that they'll capture a piece on their next turn? Use the letters and numbers to help you name the spaces on the board.

9. The bottom board on the right shows an example of another game in progress. Black just made a critical error moving their rook from f8 onto d8. Why do you think they moved their rook to this square and what single move by white's queen will put the black king in check leading to white's inevitable win? Explain.

Throughout the years chess fans have modified the pieces, rules, and board to create different versions of chess. There are over two thousand variations to the game. Cuban Jose Raul Capablanca, who was the world chess champion from 1921 to 1927, was one of many who tinkered with a redesign of the traditional rules. Known for his quick thinking and amazing skill at finishing off his opponents, Capablanca is regarded as one of the top chess masters of all time. Believing that advancements in the game could soon reach its peak, he created a new version of the game that now bears his name, Capablanca Chess. The game was played on a slightly wider board with 80 squares in total. It also featured two new pieces. Each player got a chancellor piece that moves as a rook and knight, and an archbishop piece that acts as a knight and a bishop. Capablanca also had an interest in a game called Double Chess, played on a board with 192 spaces.

10. If you could create your own piece for the game of chess, what would it be? Give it a name, draw a sketch of what it would look like and describe how it would move. Maybe base the concept of the piece from a character in a book or movie that you enjoy.

11. Draw a sketch of a different chess board that might lead to a new and exciting version of the game. Let your imagination loose and think of the possibilities of how the board could be redesigned to spark renewed interest in the game.



Here is an amusing chess related puzzle that is usually told in story form. The tale is different depending on where you have heard it, but it goes something along these lines:

There once was a king named Chester, who was the greatest chess player in the land. One evening a knight named Gladys traveled into the kingdom with a challenge for Chester. Gladys announced, "Beat me in a chess game and I will give you this treasure chest of gold. If I win, which I surely will, I would like a bag of rice." With such a strange wager, and not wanting to be swindled, the king wanted to know the size of the bag of rice the bold knight had in mind. "The amount of rice will be determined by this simple method." Gladys explained. "Place one grain of rice on the first square on the chessboard, and then two grains on the second square, four grains on the third square and so on, doubling the amount each and every time until all sixty-four spaces are filled." He agreed to this bet and just as Gladys had predicted she was victorious. The king was a sore loser, but being a man of his word he wanted to pay his debt in rice, or at least Chester tried.

12. Pretend that Chester has asked for your help in collecting the rice. How much rice would be on each of the sixty-four squares? List as many to the totals as possible. You will soon believe that this is quite a reward.

Another chess puzzler nicknamed The Eight Queens Problem can be very satisfying to solve. Beginning with an empty standard 64 square board, and only eight queens, place all eight queens down in a way such that each queen is safe from the others.

13. Solve the Eight Queens Problem and demonstrate your answer by writing down a sketch of your solution. Just as any endeavor, take your time with this and even come back to it if you can't get the answer immediately.

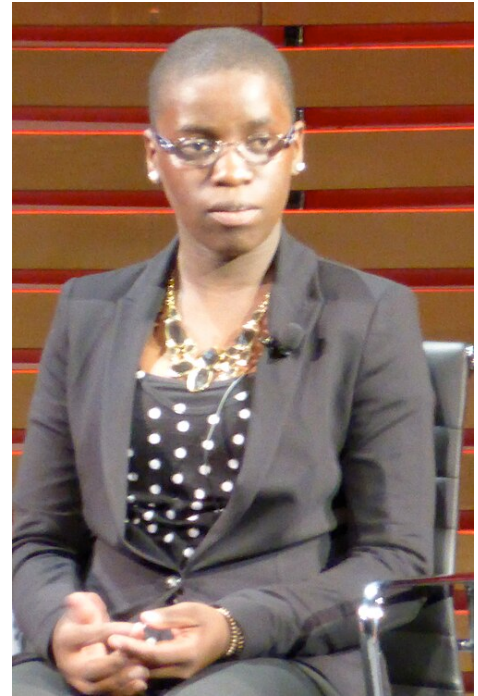
The mental stamina, creativity, and ever-evolving game of chess attracts people from around the world to gather and compete. Through the years several players have caught the public's attention for their ability and the circumstances that have earned them the title of chess champion. Regarded by many as the best chess player of all time, Soviet Garry Kasparov dominated the chess community for many decades. In what is considered the best chess game of all time, he outplayed his fellow countryman, the incredible Anatoly Kasparov. Strangely enough, Kasparov is well known for a game that he lost in 1996, his opponent, Deep Blue. If you are thinking that this is an unusual name for someone, you are right! Deep Blue is not a person, but a supercomputer built by IBM with the sole purpose of taking down the greatest minds in chess. Kasparov's defeat was the first time a computer had defeated a reigning world champion. The machine had an incredible advantage in this historic game. Kasparov did not have any knowledge of Deep Blue's prior games or ability, however the computer had a record of every game he had played stored in its database. The Russian did prevail in the match winning four of six games, but this marked a turning point in history when computers began to rival mankind.



14. If computers start making important decisions for us—like what news we see, how we travel, or even who gets hired for a job—what worries or hopes would you have about this change?

15. Do you think it's possible for computers or robots to truly understand human feelings, or will there always be something special about the way people connect with each other? Why do you think that?

Many chess superstars are discovered at an early age. Often rising from obscurity as teenagers, they travel all over the world to compete. Recently one such player, Phiona Mutesi, emerged from very humble origins, a slum in Katwe Uganda. Losing her father to AIDS, and older sister to unknown causes, she had to drop out of school at nine because her family could not afford to send her. Working in a marketplace she was drawn to a Christian outreach mission where she learned to play chess. In her first match she lost to the “Foolsmate Sequence”, which is a way to get beat in only two moves. Her creative mind quickly devised a counter-strategy and the next day she turned-the-tables on her unexpected foe. Under the guidance of Robert Katende, a casual chess player at the mission, she accelerated her understanding of the game, playing an aggressive style of chess. Her game was relentless and she would not accept defeat. This powerful combination propelled her to victory at the Ugandan Woman's Junior Tournament at the age of 14, earning her a place at a first of many Chess Olympiads. Her Cinderella-esque story was told in an ESPN The Magazine article. Soon after came a book titled, The Queen of Katwe. Then, in 2016, Disney released a movie about her journey with the same title. Her acclaim as a chess master and the royalties to her story have pulled Mutesi and her family out of poverty. To this day she continues to inspire people from around the world.



16. If you were a journalist who was assigned to interview Phiona Mutesi, what are three thoughtful questions that you would ask her to answer?

Self-reflection Exercise

17. What was the most interesting thing you learned about in Unit 4 Games?

18. Did you find anything overwhelming difficult from the unit ?

Remember: First names only & please let us know if your address changes

<https://commons.wikimedia.org/wiki/File:Kasparov-8.jpg>

<https://en.wikipedia.org/wiki/Chess>

<https://www.espn.com/espn/news/story?page=Mag15gameofherlife>

<https://www.chess.com/learn-how-to-play-chess>

https://commons.wikimedia.org/wiki/File:Phiona_Mutesi_2013.jpg