

# FM Morefield's Chess Curriculum: Course Review

This PDF is intended to be used as a place to review the topics covered in the course and should not be used as a replacement. Feel free to save, print, or distribute this PDF as needed.

## Section 1: Background Information

### History

- Chess is widely assumed to have originated in India around the seventh century.
- Until the mid-1400s in Europe, chess was known as *shatranj*, which had different rules than modern chess.
- Some well-known authors and chess players from that time period are Greco, Lucena, and Ruy Lopez.
- The Romantic Era lasted from the late 18th century until the middle of the 19th century, and was characterized by sacrifices and aggressive play.
- Chess has widely been considered a sport since the late 1800s, when the World Chess Championship was organized for the first time.

### Other

- Chess is considered a game of planning and strategy because it is a game with no hidden information, where you and your opponent have the same pieces, so there is no luck.
- Studying chess seriously can bring you many benefits, but simply playing it won't make you smarter.

## Section 2: Rules of the Game

### Setting Up the Board

- There are sixty-four squares on the board, and thirty-two pieces (sixteen per player).
- Each player's pieces are made up of eight pawns, two knights, two bishops, two rooks, a queen, and a king.
- There are two players, Black and White. White moves first.
- If you're using a physical board, rotate the board until there is a light square on the bottom right for each player.
- Each player gets a row of pawns on their second rank, everything else is behind it. The rooks go in the corners of the board, the knights next to the rooks, and the bishops next

to the knights. Finally, the queen goes on its own color (white queen on a white square, black queen on a black square) and the king goes on each player's last open square.

### **Notation**

- There are 8 files, from the a-file to the h-file. There are 8 ranks, from the first rank to the eighth rank. Files are vertical (up/down), ranks are horizontal (left/right). If you're playing as White, the first rank is the rank closest to you, and the a-file is the one on the left.
- In simple algebraic notation, you write down your moves by writing the square the piece moved from, a dash, and the square the piece moved to. If the piece is capturing something, replace the dash with an "x". Promotion is the same except the move is followed by an equals sign and a Q, R, B, or N, where the letter represents the new promoted piece.
- In regular algebraic notation, you write down your moves by writing the piece name (Q for queen, R for rook, B for bishop, N for knight, K for king) followed by the square the piece is moving to. If the piece is capturing, put an "x" between the piece and the square, otherwise, don't put anything. If the piece is a pawn, don't put a letter unless it is capturing, then put whatever file the pawn was on as a lowercase letter followed by an "x" and the square it moved to. (For example, if a pawn on b3 took a piece on c4, the move would be notated as bxc4). Promotion works the same as in simple algebraic notation. If two of the same piece can move to the same square, add an extra letter or number to make it clear which piece moved.

### **Regular Piece Moves**

- The pawn moves one square forward when not capturing, unless it's the pawn's first move, in which it can also move two squares forward. Pawns capture one square diagonally, and when they reach the other side of the board, they can promote into a queen, knight, bishop, or rook. Pawns have a special move known as en passant which is in the "Special Moves" section.
- The knight moves in a small "L" shape, moving two squares up, down, left, or right, and then one square to the side. It can "jump over" pieces, but it does not capture them when doing so.
- The bishop moves diagonally as far as it wants.
- The rook moves horizontally or vertically (up, down, left, or right) as far as it wants.
- The queen moves diagonally, horizontally, or vertically as far as it wants like a bishop and a rook combined.
- The king can move one square in any direction, but it cannot move under attack. If the king becomes under attack, it is called "check" and the player must escape from check with their move. If a player is in check and cannot make a move that stops it from being check, that player is in checkmate and they lose.

### **Special Moves**

- Promotion: See 'pawn'.

- En passant: If an enemy pawn moves two squares forward and ends its turn to the left or right of one of your pawns, on the next turn only, you can capture that pawn as if it only moved one square.
- Castling: To castle, move your king two squares to the left or right, and have your rook “jump over” your king onto the square directly next to it. You cannot castle if your king or the rook you’re castling with have already moved, if you would be in check at any time during your turn (including before castling), or if there are any pieces between your king and rook.

### Ending The Game

- A game can end in a win for White, a win for Black, or a draw (where neither player wins or loses).
- There are three ways to win: you checkmate your opponent, your opponent resigns (gives up), or your opponent runs out of time on the chess clock (if you are using one).
- The most common ways for a game to end in a draw are listed below:
  1. Insufficient Material: Not enough pieces for checkmate to be possible
  2. Three-Time-Repetition: The exact same position occurs three times
  3. Stalemate: A player cannot move on their turn but they are not in check
  4. Agreement: Both players agree to end the game as a draw
  5. 50-Move Rule: If 50 moves pass without a capture or pawn move, the game is drawn.
- Two other ways for a game to be drawn are listed in Section 3 as they require a chess clock and are not very common.

## Section 3: Tournament Rules and the Chess Clock

### The Chess Clock

- A chess clock is used to dictate how much time each player is allowed to spend thinking over the course of the game. Each player presses the clock after they move, which causes the opponent’s clock to start ticking down.
- If either player’s time reaches zero, with two rare exceptions (see below) that player loses.
- The amount of time you and your opponent are allowed to use over the course of a chess game is called the *time control* . Some time controls are simple, like five minutes per side. Others use increment, delay, or move number bonuses.
- Increment adds a predetermined amount of extra time to your clock every move.
- Delay pauses your clock for a predetermined amount of time every move before it starts ticking down.
- Move number bonuses add time to your clock after your game passes a certain move number, for example, move 40. The number here represents how many moves each player has made, not how many moves were made in total. Here it is 40 for each side.

- The first exception to the earlier rule is that if someone runs out of time but it is impossible for their opponent to checkmate, the game is declared a draw.
- The second exception is extremely rare but if both sides somehow run out of time, the game is declared a draw.

### Tournament Play

- At the time of writing (early 2021), there are three main types of tournaments: online casual tournaments, online rated tournaments, and in-person rated tournaments.
- Online casual tournaments are held on most chess-playing websites and are usually free to enter, but without any prizes aside from digital trophies. All that is required to join is a membership on the website the tournament is being played on.
- Online rated tournaments are also played on many major chess-playing websites, but advance registration with both the national chess federation USCF and the tournament organizers itself is required, often days before the tournament begins. These tournaments are typically stricter than online casual tournaments, with a functional webcam being one common requirement. They also usually cost money to enter, but often give out cash prizes.
- In-person rated tournaments are about as strict as online rated tournaments, except they have an extra rule known as the touch-move rule: if you touch one of your pieces on your move you are required to move it if possible, and if you touch one of your opponent's pieces you are required to take it if possible. You can say "I adjust" or "J'adoube" before touching a piece if you need to adjust it for any reason and don't intend on moving it.
- Every tournament has its own rules and benefits for participating, the above is only a rough guideline. Make sure to read everything about a tournament carefully before you decide to participate!

## Section 4: Chess Tactics and Calculation

### Tactics Vocabulary

- A **pin** occurs when a low-ranked enemy piece is unable or unwilling to move, as it is shielding a high-ranked enemy piece behind it. This is especially effective when the high-ranked piece is the king.
- A **fork** occurs when multiple enemy pieces are attacked by one of your pieces at the same time. Knight forks and pawn forks are the most effective and common: knights because of their unique movement, and pawns because their low value allows them to consider taking protected pieces.
- A **skewer** is the opposite of a pin, where a high-ranked enemy piece is attacked and forced to move, exposing the low-ranked enemy piece behind it. This is especially effective when the high-ranked enemy piece is the king.
- A **double attack** occurs when one of your pieces threatens two enemy pieces at the same time. If one enemy piece can move to defend the other, this becomes ineffective.

- A **discovered attack** occurs when one friendly piece moves away, and a piece that was behind it is now attacking something. This tactic involves two pieces but can often be very effective.
- **Overprotecting** occurs when you protect a piece more than is strictly necessary, defending against a “remove the defender” tactic mentioned later.
- **Interposing** occurs when an opponent is doing a long-range attack on one of your pieces, and you move a piece to block it.
- **Overloading** occurs when an enemy piece is “overworked” (or doing too many things at one time) and you force it to fail at one or more of those things.
- A **decoy** occurs when a piece is defending something, but you force it to move away and stop protecting it.
- A **remove the defender** tactic is like a decoy tactic, except instead of forcing the defending piece to move, you just take it.
- A **zwischenzug** (or **in-between move**) occurs when you do something unexpected in the middle of a bunch of captures, checks, or otherwise forcing moves.
- A **clearance sacrifice** occurs when you really want one piece to be on a square, but a second piece is already on it, so you just sacrifice the second piece.

### Checkmate Patterns

- Checkmate patterns will be learned gradually when solving puzzles and playing games, but the learning process can be accelerated if you pay special attention to them.
- Bishops, rooks, and queens can checkmate from far away, but it is more common to have the queen close to the enemy king.
- Out of all the checkmate patterns, the back-rank mate is one of the most common and useful ones.
- Putting a protected queen right next to the enemy king is another common type of checkmate.

### Vision and Calculation

- **Board vision** is how well you can visualize the chessboard. You can train your board vision by guessing the color of a square, or by regularly attempting to calculate a few moves ahead.
- **Tactical vision** is how well you can see your moves and opportunities in the position in front of you. To train your tactical vision, constantly ask yourself questions about the position in front of you like “Does my opponent have any vulnerable pieces that I can attack?”. Over time, you will develop your tactical vision so that it won’t be necessary to ask these questions anymore and you will instinctively see these things, but to get to that point it takes practice.
- **Calculation** requires you to come up with moves for your opponent as well as yourself, so it can be difficult to calculate more than one or two moves ahead. When calculating, focus on staying organized and remembering what you’ve already looked at. A useful way to improve calculation is to solve puzzles from the sites mentioned in the “Additional Resources” section.

## Section 5: Chess Strategy and Ideas

### Strategy Vocabulary

- One of the key strategical ideas is **exploiting weaknesses**: if you find a weakness in your opponent's position, try to attack it or find a way to use it to your advantage.
- Another key idea is **force**, or material: if you have more and/or better pieces than your opponent and everything else is even, you've got the advantage.
- **King safety** is crucial: if you get checkmated, you lose, and if you checkmate, you win. Make sure to keep your king safe, because it doesn't matter if you have an advantage everywhere else if you're getting checkmated.
- **Pawn structure**: See "Pawn Structure".
- **Space** is how much of the board you control. Having more space often means your opponent's pieces are cramped, but it can also backfire: your pieces can become weak if they get too far from home.
- A **tempo** is one move. If you "win a tempo", your opponent wasted a move doing something useless.
- An advantage on **time** on the board means you did more useful things with your moves than your opponent did with theirs, and an advantage on time on the chess clock means you have more time to think than they do.
- The **initiative** usually belongs to the player who is attacking.

### Phases of the Game

- The opening is the first phase of the game. Play here is usually dictated by opening principles and prepared variations.
- The middlegame is the second phase of the game. Play here is dictated by tactics and strategy.
- The endgame is the final phase of the game. Play here is defined by endgame principles and memorized endgames like basic checkmates.

### Pawn Structure

- There are many different types of pawn structure, and each has their pluses and minuses.
- Doubled pawns are two friendly pawns directly in front of each other. They are sometimes useful, but usually it's better to avoid them if you don't have a clear idea in mind.
- Tripled pawns are three friendly pawns directly in front of each other. They are almost always bad.
- Isolated pawns are pawns without any friendly pawns on the file to the left or right of them. Isolated pawns are usually weak, so make sure you get something in return if you decide to take on an isolated pawn.
- Backward pawns are like "budget isolated pawns": technically there can be pawns on the file to the left or the right, but they are so far advanced that the backward pawn can't be

defended by them anyway. These can sometimes be weak but it's often OK to take one on.

- If you can advance a pawn to the promotion square without any enemy pawns being able to capture or block it along the way, that pawn is a passed pawn. If the pawn is protected by another pawn, the pawn is a protected passed pawn.
- A pawn chain is a bunch of pawns in a straight diagonal line defending each other.

## Section 6: Openings

### Opening Principles

- Understanding a few key ideas can help you play well in the opening even without memorizing any. These ideas are listed below:
  1. Control the center
  2. Develop your pieces efficiently
  3. Castle early (if it's safe)
  4. Only move the same piece more than once when absolutely necessary

### Fastest Checkmates

- Most of the fastest checkmates are unlikely to appear in your actual games, but the Queen's Raid/Scholar's Mate (an attempt to checkmate in 4 moves) is an important one to know how to defend against.
- The Scholar's Mate is based on a quick attack on f7 (or f2 if they are playing Black) with the queen and the bishop. To stop the checkmate, either defend f7 or f2, or block the queen or bishop from attacking that square.

### Systems vs Lines

- White has four popular first moves in total, but e4 and d4 are by far the most common at the beginner level, with c4 and Nf3 only making an appearance in higher-level games. Black has about four popular responses to each of these moves. Although other moves do happen, they are rarer and less challenging.
- When developing an opening repertoire, make sure to learn something against each of White's and Black's major tries- essentially, you want to have something ready if your opponent does something common against you.
- An opening system is a set of moves you play against almost anything. For White some examples are the London System, Stonewall, and King's Indian Attack, and for Black some examples are the Stonewall and the King's Indian/Pirc Defense setup. Learning a system can make opening study much easier, but it can also make a lot of your games look the same.
- An opening line is something specific you learn against each popular move your opponent can play. Memorizing important ideas is more important here than with

opening systems, since you play different things against different moves by your opponent.

- Choosing between opening systems and opening lines is a matter of preference, but chess books and videos on said openings are helpful in either case.

## Section 7: Endgames

### Endgame Principles

- Just like with openings, knowing a few endgame principles can help you play better in the endgame. Those principles are listed below:
  1. Focus on promoting a pawn
  2. Activate your king
  3. Watch every remaining piece carefully
  4. Look for chances to go into an endgame you already studied

### Basic Checkmates

- To checkmate with a king and two rooks versus a king, cut the opposing king off one file at a time until it is trapped on the side of the board.
- To checkmate with a king and a queen versus a king, have your queen form a “box” around the enemy king and make it so that the king has only two squares inside the “box” to move around. Then bring your king up and checkmate, because the king is trapped and can’t escape.
- To checkmate with a king and a rook, set up the key position we discussed in the video, and make sure it’s your opponent’s move. They can then do one of three things:
  1. Go in front of your king (you check them and they have to move further back)
  2. Move to the side (you chase their king with yours)
  3. Move back (you cut the king off with your rook so it’s stuck close to the side)
- As with the other checkmates, once you get the enemy king to the side of the board it’s much easier to checkmate.

### Endgames with Low Material

- King and Knight vs King (KNvK) and King and Bishop vs King (KBvK) are both draws, but King and Pawn vs King (KPvK) is sometimes a win.
- In KPvK endgames, focus on obtaining the opposition: either to push your pawn through safely to the other side, or to stop your opponent from doing it.
- Advancing the pawn safely to the seventh rank is not enough: if it doesn’t promote safely, you can’t win!