THE EIGHT RANKS METHOD

RANK 8 OF 8

BLACK BELT

STUDENT BOOK

THE EIGHT RANKS METHOD™

Twelve weeks. A capstone written and defended. The eighth rank, earned.



BOOK 8 OF 8 · MASTER TIER

Written by Moheb Girgis, FIDE National Instructor

Chess that produces evidence.

eightranksmethod.com

THE EIGHT RANKS METHOD

Eight ranks. One board. Total mastery.

THE EIGHT RANKS METHOD™

Black Belt

Student Book

Master · Rank 8 of 8 · Book 8 of 8



Written by Moheb Girgis, FIDE National Instructor · FIDE ID 39935400

The Eight Ranks Method · New York

LOOK INSIDE

This book belongs to _____

Site _____

Cycle _____

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Black Belt Student Book
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First edition, 2026 · Version 1.2
10 9 8 7 6 5 4 3 2 1

Every chess position in this book has been checked by a chess engine (Stockfish) or is completely solved.

The Eight Ranks Method is designed to produce evidence aligned to the six attributes of the New York State Portrait of a Graduate.
Not issued, approved or endorsed by the New York State Education Department or any school district. Schools decide how to use its reports.

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How to read a diagram

Every diagram is drawn from White's side: White's pieces start at the bottom, Black's at the top. The letters a to h name the files (the columns) from left to right; the numbers 1 to 8 name the ranks (the rows) from bottom to top. A square is its file letter and its rank number, so the bottom-left corner is a1 and the top-right corner is h8. The small square beside the board shows whose move it is: a white square at the bottom right means White to move, a black square at the top right means Black to move.

Piece	Letter	Symbol
King	K	♔ ♚
Queen	Q	♕ ♛
Rook	R	♖ ♜
Bishop	B	♗ ♝
Knight	N	♘ ♞
Pawn	(no letter)	♙ ♟

A move is written as the piece letter and the square it goes to: Nf3 means a knight moves to f3; e4 means a pawn moves to e4. x means a capture (Bxe5), + means check, # means checkmate, O-O is castling on the king's side and O-O-O on the queen's side, e8=Q means a pawn promotes to a queen. Sometimes the starting square is written too, with a dash: d7-d5 means the pawn on d7 moves to d5, and a plan written b2-b4-b5 means the b-pawn goes from b2 to b4 and then to b5. This is standard algebraic notation, the notation of Appendix C of the FIDE Laws of Chess; the Laws print castling with the figure zero (0-0 and 0-0-0) and promotion without the equals sign (e8Q), and this book uses the letter O and the equals sign, as most English chess books do.

Chess piece drawings by Colin M. L. Burnett, used under the BSD license.

The four courtesies

Handshake: "Good luck" before the first move, "Good game" after the last, whether you won or lost. **Touch-move:** a piece you touch on your turn must move, an enemy piece you touch must be captured if you can, and you say "adjust" to straighten one. **Quiet board:** no talking during a game except "check", "draw?" and "I resign". **Record to the end:** write every move, even when you are losing.

The Eight Ranks Code

Courtesy. Honesty. Perseverance. Self-control. Curiosity.

I show courtesy to every opponent and every teacher. I am honest about my moves, my results and my mistakes. I persevere when a position is hard and when a cycle is repeated. I control my hands, my voice and my clock. I stay curious about every game, every lab and every idea.

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How to use this book

Black belt is the final rank and the first Bar. The five chapters are the five chapters of your Capstone Study: you defend your repertoire tree, you perform alpha-beta pruning by hand and explain it, you write a structure study of thirty games, you replicate your Brown belt experiment by the same method, and you write the queen mate as an algorithm with a termination proof and a reflection on what an algorithm cannot capture. Exercises end each chapter, with answers. The exhibit is the Capstone Study defended orally, with a Season Self-Assessment on all six attributes.

Black belt needs at least two cycles before the First Bar. Cycle 1: the five chapters and labs, Games 1 to 5 and a master-game study, the outreach event, the four Helper sessions, and the Capstone Study, version 1 (outline week 4, draft week 8, final week 11), defended at the first-cycle Rank Day with your first Season Self-Assessment; it ends in a Rank Progress Report. Cycle 2: the chapters again with new positions, five new games and a new master-game study, the engine policy draft, and the Capstone Study, version 2 (the data extended, the draft feedback and the first Defense's questions answered), defended at the Rank Day where the First Bar is possible, with a second Season Self-Assessment.

One cycle is twelve weeks. Take one chapter every two weeks. Read the chapter in the first week and do the Exercises, then check the answers. Do the STEM lab in the second week; at Black belt each lab is one chapter of your Capstone Study. From Chapter 2 on, start each chapter with the Review box. It brings back two ideas from the chapter before and one from Brown belt. If a chapter felt hard, use the Help box. If it felt easy, use the Stretch box. Use the Game Lab pages for your own clocked games, and name the capstone chapter each game feeds. Share the family corner question at home each week. End each chapter with the progress check; you should be able to answer all five items from memory. Hand in your capstone outline in week 4, your draft in week 8, and the final in week 11 of each cycle. Rank Day comes in week 12, with the fifteen-minute Capstone Defense: a report after cycle 1, the First Bar possible after cycle 2. At the first-cycle Rank Day a missing exhibit is reported at level 0; at the Rank Day where the First Bar is possible it is required.

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Everything for one cycle

One book carries one twelve-week cycle. Here is what is inside it, counted.

Chapters	5, one for each pillar, each with its exercises, a Help box, a Stretch box and a progress check
Review boxes	4, one at the start of Chapters 2 to 5
STEM labs	5, one for each chapter, each with its seven parts and its standards footer
Diagrams	206, every one drawn from a verified position
Model games	9, real games played through move by move with questions
Annotate it yourself	3 classic games with no notes, for your own annotations
Find the move	20 positions from the model games of the whole ladder
Textbook endings and studies	12 named endings and classic studies, each with its method and a line to play
Mate drills with the rook and the queen	8 rook and queen mates with the exact number of moves, completely solved
Puzzle practice and endgame drills	120 positions: 114 completely solved, 6 engine-verified (Stockfish)
Game Lab pages	5 game records to fill in with your own games
Family corners	5, one question for each chapter (one every two weeks) for the adult at home
Glossary	59 chess words explained
Practice quiz	20 questions in the four Rank Day forms, with answers
Exhibit of Evidence	Capstone Study and Season Self-Assessment

The licensed site provides: the instructor, the boards and sets, the clocks, the Rank Day papers (the Knowledge Quiz and the Puzzle Set, seen only on Rank Day), the scoring, the Rank Progress Report within two weeks of Rank Day, and the certificate at the ceremony. This book is yours to write in and keep.

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CHAPTER 1 · PILLAR 1 · OPENINGS AND DEVELOPMENT

Defending the tree

By the end of this chapter you will be able to

- Present your repertoire tree to a group and say why each kept line is kept.
- Defend each pruning cut with a number from the explorer or from your own games.
- Answer a challenge with evidence, then decide: keep the cut, reverse it, or study further.

Launch This chapter ends with STEM Lab BI1.1: Defending the Tree.

LAUNCH

I can: present my repertoire tree to a group, defend each pruning choice with data, and answer challenge questions with evidence.

1.1 Defending a choice

A choice is defended with three things: the explorer's numbers in large samples, your own results in the line, and the plan you can state at the end of it. "I pruned 6.Bg5 because it appears in 2 of my 40 games and the plan after 6.Be2 is one I can explain" is a defense; "I like it" is not. In Diagram 1.1 (the Najdorf Sicilian after 5...a6), White's sixth move is a branch point with at least four serious choices; your tree keeps one or two and gives a plan for the rest.



Diagram 1.1. A branch point, White to move: choose the sixth move. How many choices does your tree keep here, and why?

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1.2 Exercises

1. Write a one-sentence defense for keeping two sixth moves in Diagram 1.1 rather than four.
2. A group member asks: "What if Black plays something not in your tree?" Write the answer a Black belt gives.
3. List the three sources you cite for every pruning decision.

Answers: 1. "Two moves cover 70 percent of master games in the explorer and all 11 of my own games in this line; the other two get a plan sentence each." 2. "Then I play by the structure: I know the plans for both sides in the resulting pawn formation, and I use the Safety Check and the tree method at the board." 3. The explorer (large sample), my own game record, and the plan I can state.

HELP · IF THIS FELT HARD

Reread the first section and the three things a defense needs. Pick one cut in your tree and write one sentence for it with one number in it. One defended cut is a real start, and every other cut follows the same pattern.

STRETCH · IF THIS FELT EASY

Write a fourth challenge that the lab's challenge list does not include, and answer it with a number. Then find a transposition that joins two branches of your tree and mark it. Record whether either task changed a cut.

PROGRESS CHECK · CHAPTER 1

1. What three things defend a pruning choice?
2. In Diagram 1.1, how many serious sixth moves does White have? How many does your tree keep?
3. Explain in your own words why 'I like it' is not a defense.
4. A group member asks: 'What if Black plays something not in your tree?' What does a Black belt answer?
5. A skeptic says your kept line scores under 40% in your games. Name the three decisions you can make.

Answers are in the back of the book.

FAMILY CORNER · WHAT TO ASK YOUR LEARNER THIS WEEK

Ask: 'Why did you keep that opening line and drop the others?' Then ask for one number.

A good answer sounds like: A count from the explorer or from their own games, plus a plan in one sentence. 'I like it' does not count as an answer.

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CHAPTER 2 · PILLAR 2 · TACTICS AND CALCULATION

Alpha-beta by hand

By the end of this chapter you will be able to

- Explain minimax and the alpha-beta shortcut in your own words.
- Run alpha-beta by hand on a small tree and count the leaves you never had to look at.
- Write a one-page explanation of alpha-beta with an example from one of your own games.

Strike This chapter ends with STEM Lab Bl2.1: Alpha-Beta by Hand.

REVIEW · THREE QUESTIONS FROM EARLIER

1. Chapter 1 of this book Name the three sources you cite for every pruning decision.
2. Chapter 1 of this book In Diagram 1.1, how many sixth moves does your tree keep, and what do the others get?
3. Brown Belt, Chapter 2 What does minimax do, and why does an engine search forcing moves first?

Answers are in the back of the book.

STRIKE

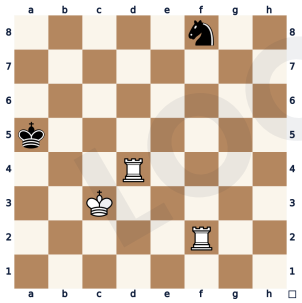
I can: perform alpha-beta pruning on a small game tree by hand and write a one-page explanation of it with a chess example.

2.1 Alpha-beta

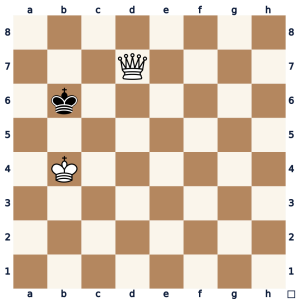
Alpha-beta is minimax with a shortcut: once you know a branch cannot improve on a result you already have, you stop searching it. If your first candidate leads to a position worth plus 2, and in the second candidate the opponent has one reply that leaves you with plus 1, you need not look at the opponent's other replies in that second branch: it is already worse than the first. Human players do the same when they say "that line loses a pawn, so I do not need to look further." The lab (Bl2.1) walks through a tree with numbers; your written explanation uses one of your own games.

Worked example. White to move has two candidates, A and B. Under A, Black's two replies leave White +2 and +4; Black picks the smaller, so A is worth +2. Under B, Black's first reply leaves White +1. Stop: B is now worth at most +1, below the +2 that A already guarantees, so B's second reply is never looked at. At the cut, alpha (the best White can guarantee) was +2 and beta under B was +1: a cut happens when beta is at or below alpha. Leaves looked at: 3 of 4.

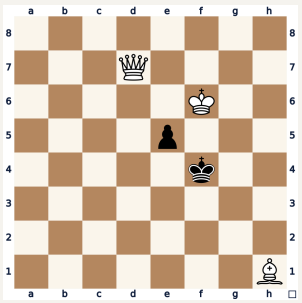
2.2 Exercises (White to move; completely solved; one key each; the key may be a quiet king move)



Exercise 4. White to move: mate in two, against a knight.



Exercise 5. White to move: mate in three.



Exercise 6. White to move: mate in three, against a pawn.

Answers: 4. 1.Rb4! Whatever Black does (four knight moves or 1...Ka6), 2.Ra2#. 5. 1.Kc4! Black has two moves: 1...Ka5 2.Qa7# (2.Qb5# also mates); 1...Ka6 2.Kc5 Ka5 (the only move) 3.Qa7# (3.Qb5# also mates). Note: 2.Qc7 after 1...Ka6 stalemates, so its value is a draw (0), and minimax rejects it. Alpha-beta goes further: once 2.Kc5 is found to force mate, nothing can beat it, so every other second move for White is cut without being searched. 6. 1.Qh3! Black's only move is 1...e4; then 2.Bg2 e3 (the only move) 3.Qh4# (3.Qf3# also mates). Keys unique by complete search.

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HELP · IF THIS FELT HARD

Reread the alpha-beta section and its plus 2 and plus 1 example. Redo Exercise 5 and say out loud why the queen move Qc7 is rejected and what alpha-beta then cuts. The lab tree feels slow the first time for everyone, and the counting gets fast by the third run.

STRETCH · IF THIS FELT EASY

Build a second tree from one of your Game Lab games: three candidates, two replies each, one answer to each reply. Run alpha-beta with your strongest candidate first, then with it last, and count the leaves each time. Explain the difference to a Blue belt in three sentences.

PROGRESS CHECK · CHAPTER 2

1. What shortcut does alpha-beta add to minimax?
2. Use the chapter's plus 2 and plus 1 example. When can you stop looking at the second candidate?
3. In Exercise 5, after Kc4 and the reply Ka6, why is the queen move Qc7 rejected?
4. Explain in your own words how a human player prunes at the board.
5. Your first candidate is worth +3. In the second, the first reply leaves you +1. How many of that candidate's other replies must you look at?

Answers are in the back of the book.

FAMILY CORNER · WHAT TO ASK YOUR LEARNER THIS WEEK

Ask: 'How does a chess engine decide to stop looking at a move?'

A good answer sounds like: Once a line is already worse than one it has, it skips the rest of that line. Your learner may call this pruning or alpha-beta.

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