THE EIGHT RANKS METHOD

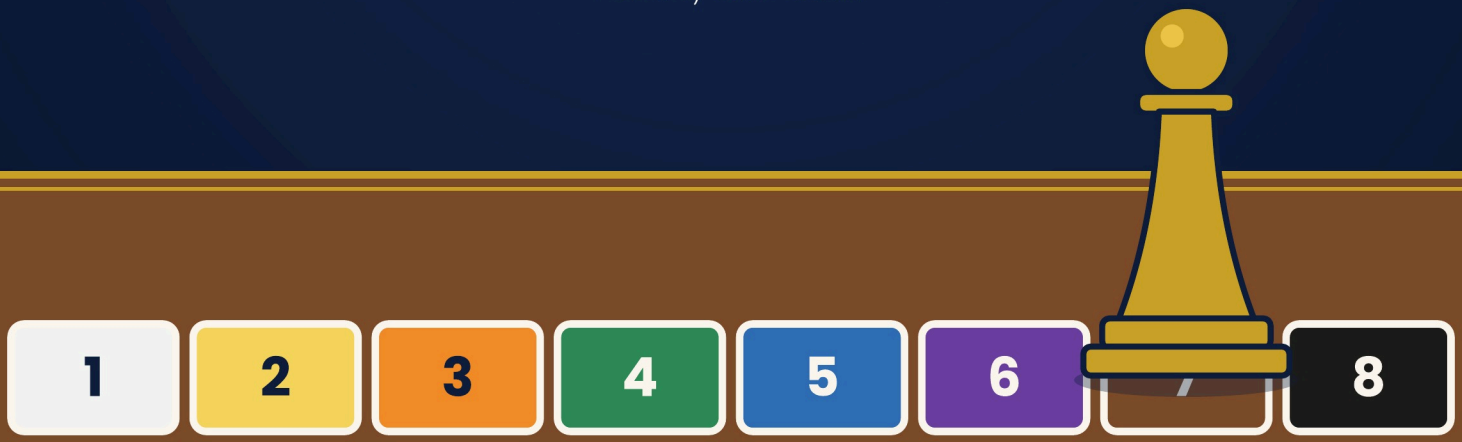
RANK 7 OF 8

BROWN BELT

STUDENT BOOK

THE EIGHT RANKS METHOD™

Twelve weeks. A structure studied, a lesson taught. A seventh rank, earned.



BOOK 7 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™

Brown Belt

Student Book

Master · Rank 7 of 8 · Book 7 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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Brown 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

Brown belt is the first Master rank. You draw your repertoire as a tree and prune it; you learn how an engine thinks and measure yourself against it; you write a structure study across twenty games; you pre-register a performance experiment; and you write the rook mate as an algorithm with a termination proof. Exercises end each chapter, with answers. Your exhibit is Teach a Lesson: a 30-minute lesson, taught with your instructor in the room to a group you may teach (page 47), with pre- and post-check data, in each cycle.

One cycle is twelve weeks, and Brown belt needs at least two cycles. Cycle 1: Chapters 1 to 5, the five labs, Games 1 to 5 and a master-game study, the club event, the four coaching sessions and your first Teach a Lesson; it ends in a Rank Progress Report. Cycle 2: the chapters again with new positions and the areas the report names, five new games and a new master-game study, the AI discussion, and a second Teach a Lesson designed from the first lesson's misses; promotion is possible at the Rank Day after cycle 2.

Week plan for each cycle: weeks 1 and 2, Chapter 1 and Lab Br1.1; weeks 3 and 4, Chapter 2 and Lab Br2.1; weeks 5 and 6, Chapter 3 and Lab Br3.1; weeks 7 and 8, Chapter 4 and Lab Br4.1; weeks 9 and 10, Chapter 5 and Lab Br5.1; week 11, write-ups, the event report and the logs; week 12, the Rank Day: a report after cycle 1, promotion possible after cycle 2. Play a Game Lab game in weeks 2, 4, 6, 8 and 10.

Work through one chapter every two weeks, in order. Read the chapter in the first week and do each exercise as you reach it. In the second week do the STEM lab for that chapter and bring the pages to class. Answer the Review box before you look back; it brings ideas from earlier chapters and from Purple belt. If a chapter felt hard, use the Help box. If it felt easy, use the Stretch box. End each chapter with the progress check and fix what you missed. Use the Game Lab pages for your own clocked games, with the engine's depth next to every number. The family corner gives your family one question to ask you. Your exhibit, Teach a Lesson, comes in every cycle: plan due in week 6, lesson taught in weeks 7 to 9, write-up draft in week 9 and final write-up in week 11 (at the first-cycle Rank Day a missing exhibit is reported at level 0; at the promotion Rank Day it is required). Bring everything on the Rank Day checklist at the back of this book.

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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	203, 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	8 rook 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	66 chess words explained
Practice quiz	20 questions in the four Rank Day forms, with answers
Exhibit of Evidence	Teach a Lesson

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 and rank at the ceremony. This book is yours to write in and keep.

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CHAPTER 1 · PILLAR 1 · OPENINGS AND DEVELOPMENT

The repertoire tree

By the end of this chapter you will be able to

- Draw your repertoire as a tree, with a branch at each reply you must know.
- Compute the branching factor, the depth and the number of lines, and show why lines grow so fast.
- Prune the tree to the lines you will really learn, and write a plan for the rest.

Launch This chapter ends with STEM Lab Br1.1: The Repertoire Tree.

LAUNCH

I can: draw my repertoire as a tree; compute branching factor and depth; show that lines grow exponentially (multiplying at every step); prune to what I will actually memorize.

1.1 Branching and depth

A repertoire tree starts at the first move and branches at each reply you must know. If you prepare three replies at each of ten branch points, you must know three to the tenth power, 59,049, lines; nobody does. Count your real branching factor (how many replies you prepare at each point) and your depth (how many branch points deep), and the number of lines is the branching factor raised to the power of the depth: 2 replies at 8 points is 2 to the 8th power, 256 lines. Then prune: keep the lines that appear in your games and in the explorer's top three (the three replies the explorer shows most often), and write a plan for the rest.

1.2 Storing the tree

Keep the tree in a spreadsheet or an outline tool, one row per node: the moves to reach it, the plan, the last time you played it, the result. The lab (Br1.1) builds it and counts it. A tree you can see is a tree you can prune.

Worked example. You play 1.e4 and prepare two Black replies, 1...e5 and 1...c5: that is branch point 1. Against each you prepare two Black choices at move 2 (branch point 2) and two more at move 3 (branch point 3). Branching factor 2, depth 3: 2 × 2 × 2 = 2 to the 3rd power = 8 lines. A fourth branch point makes 16: every new point doubles the tree.

1.3 Exercises

1. Branching factor 2, depth 8: how many lines?
2. Your tree has 40 lines; you have played 9 of them in the last year. What do you do with the other 31?
3. For your main White opening, write the three branch points where Black most often leaves your preparation.

Answers: 1. 2 to the 8th power, 256. 2. Keep the 9 as lines with moves; replace the 31 with one plan each (a sentence) and revisit only the ones that appear in your games or in the explorer's top three; a line unplayed for a year is a plan, not a memory. 3. From your tree.

HELP · IF THIS FELT HARD

Reread 1.1 and find two numbers for your own White opening: the branching factor and the depth. Then redo Exercise 1 and check that 2 to the 8th power gives 256. A tree of ten nodes that you understand beats a tree of a hundred that you do not.

STRETCH · IF THIS FELT EASY

Build the tree for your Black repertoire too, and mark the deepest node you have reached in a real game. Then find one branch point where the explorer's top three replies do not match the replies you prepared, and decide what to do about it.

PROGRESS CHECK · CHAPTER 1

1. What is the branching factor, and what is the depth?
2. You prepare three replies at each of ten branch points. How many lines is that, and why does nobody learn them all?
3. When you prune, which lines do you keep, and what do you write for the rest?
4. Explain in your own words why a tree you can see is a tree you can prune.
5. Your tree has 4 replies at each of 3 branch points. How many lines? Which would you cut first, and why?

Answers are in the back of the book.

FAMILY CORNER · WHAT TO ASK YOUR LEARNER THIS WEEK

How many lines are in your opening tree, and how many of them have you actually played?

A good answer sounds like: Two numbers and a reason: 'My tree had 40 lines. I have played 9 of them, so the other 31 became one-sentence plans.'

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CHAPTER 2 · PILLAR 2 · TACTICS AND CALCULATION

How engines think

By the end of this chapter you will be able to

- Explain minimax and an evaluation function in plain words.
- Say why an engine searches forcing moves first.
- Measure your average centipawn loss over five games, and compare your depth with the engine's.

Strike This chapter ends with STEM Lab Br2.1: How Engines Think.

REVIEW · THREE QUESTIONS FROM EARLIER

1. Chapter 1 of this book You prepare three replies at each of ten branch points. How many lines?
2. Chapter 1 of this book A line in your tree has not appeared in a game for a year. Is it a memory or a plan?
3. Purple Belt, Chapter 2 Name the three conditions for the Greek gift sacrifice.

Answers are in the back of the book.

STRIKE

I can: explain minimax and an evaluation function in plain language; say why forcing lines are searched first; measure my average centipawn loss across five games and compare my calculation depth with the engine's.

2.1 Minimax

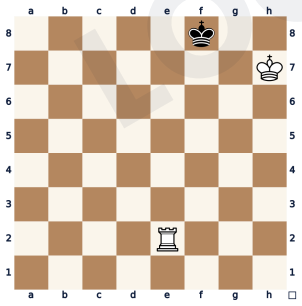
An engine assumes you will play the move that is best for you and it will play the move that is best for it, all the way down the tree to a depth it can afford; then it scores the end positions with an evaluation function (material plus many small terms) and passes the scores back up, choosing the branch whose worst case is best. That is minimax: maximize your minimum. Forcing moves are searched first because they narrow the tree: after a check there are few replies, so the engine sees further along that branch.

2.2 Measuring yourself

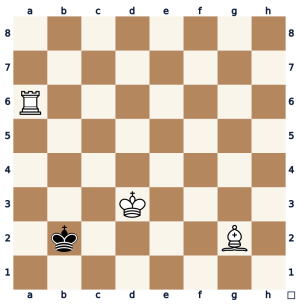
Analyze five of your games with a free engine and read the average centipawn loss (how much, on average, each of your moves lost compared with the engine's best, in hundredths of a pawn). Then look at three critical moments and write how deep you calculated and how deep the engine's main line goes. The lab (Br2.1) records both.

Worked example. White to move has two candidate moves. After A, Black's two replies score +1.0 and −2.0; after B, Black's two replies score +0.5 and +0.3. Minimax takes each move's worst case: A is worth −2.0, B is worth +0.3. The engine plays B, even though A has the best single line (+1.0).

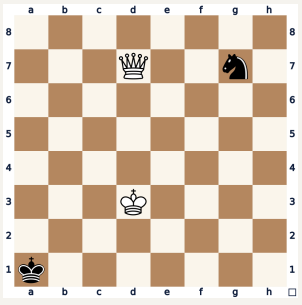
2.3 Exercises (White to move; completely solved; one key each; a key may be a quiet king move, and the answers say so)



Exercise 4. White to move: mate in two.



Exercise 5. White to move: mate in three.



Exercise 6. White to move: mate in two, against a knight.

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Answers: 4. 1.Kg6! (a king move) Black's only move is 1...Kg8, and 2.Re8# follows. 5. 1.Bd5! Black has two moves: 1...Kc1 2.Rb6 Kd1 (the only move) 3.Rb1#; 1...Kb1 2.Kc3 Kc1 (the only move) 3.Ra1#. 6. 1.Kc2! (a king move) Whatever Black does (four knight moves or 1...Ka2), 2.Qa7# (2.Qa4# also mates). Keys unique by complete search. A note on minimax: in Exercise 5 the engine's tree after 1.Bd5 has two branches at depth one, one reply each at depth two, and mate at depth three; the key is quiet (no check), but it leaves Black only two moves, and after each White reply Black has one: a narrow tree is quick to search, and checks and captures, which usually narrow it, are what engines search first.

HELP · IF THIS FELT HARD

Reread 2.1 and say minimax in one sentence: the engine keeps the branch whose worst case is least bad for it. Then analyze one game, not five, and write down two things: your average centipawn loss and the depth the engine used. The number is not a grade; it is a starting point you will measure again.

STRETCH · IF THIS FELT EASY

Draw the whole tree of Exercise 5 after 1.Bd5 as boxes and arrows, with the mates at the leaves. Then find one critical moment in your own games where the engine's first choice is a check or a capture, and count how many replies your opponent had.

PROGRESS CHECK · CHAPTER 2

1. What does minimax mean, in plain words?
2. What is an evaluation function, and how does its score reach the top of the tree?
3. In Exercise 5, after 1.Bd5, why is the engine's tree so small?
4. Explain in your own words what average centipawn loss measures.
5. Two moves: A scores +0.40 and B scores −0.20 at the same depth. You played B. What is your centipawn loss for that move?

Answers are in the back of the book.

FAMILY CORNER · WHAT TO ASK YOUR LEARNER THIS WEEK

When you write down an engine's number, why do you also write the depth?

A good answer sounds like: 'The score changes as the engine searches deeper. A number at a low depth can flip at a high depth, so a number without its depth means little.'

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