MVIII SELF · WORKBOOK 02

# STUDY

Learning that lasts


01 Getting started

02 Why rereading feels like learning

03 Turn notes into questions

04 Space it out

05 Mix it up

06 Explain it simply

07 Sleep on it

08 Plan back from the date

09 Practice under test conditions

STUDY · LESSON 01

# Getting started

Getting started and staying focused

> **In five minutes.** Right now, write the first small task on a scrap of paper: "Problems 1 to 3," not "math." Put your phone in another room. Set a timer for ten minutes and start.

## THE METHOD

1. Write the first task small and specific: "Write five questions from chapter 3," not "study biology." It should fit in one 25-minute block.
2. Decide when and where, as an if-then: "When the dinner dishes are done, I sit at the kitchen table and open chapter 3."
3. Put the phone in another room, off or silenced. Close every tab and app the task doesn't need.
4. Set a timer for 25 minutes and work only on that task until it rings. A thought about anything else goes on a scrap of paper.
5. When the timer rings, take five minutes away from the desk. After four blocks, take a longer break.
6. If starting is hard, shrink the first block: ten minutes, one page, one problem. Then decide about the next block.
7. Before you stop, write the first task for next time.

## REMEMBER

- **Write the first task small and specific: "problems 1 and 2," not "math."**
- **Decide when and where: "After dinner, kitchen table, chapter 3."**
- **Phone in another room. Close what the task doesn't need.**
- **Timer: 25 minutes on one task, then a 5-minute break.**
- **Stray thoughts go on paper. Before stopping, write the next first task.**

## TRY IT · 30 MINUTES

### FOR A CLASS

Pick tonight's assignment and write its first task in one line, small enough to finish in 25 minutes. Write when and where you will start. At that time, put your phone in another room, close every tab but one, and set a timer for 25 minutes. Keep a scrap of paper for stray thoughts. When it rings, take five minutes away from the desk. Before you stop, write tomorrow's first task.

### FOR WORK AND LIFE

Pick a task that has waited more than a week: an expense report, a form, a hard email, a chapter of a book for work. Write its first action in one line. Phone in another room, notifications off, one window open. Work one 25-minute block, then take five minutes away from the screen. Afterward, write one line on what the task turned out to need.

# What it looks like done

WORKED ON An evening start on a statistics problem set, ticked off by a student as it went

## WHAT THIS CHECKLIST IS FOR

- Starting the section 6.2 problem set on Tuesday evening, due Thursday.

## CHECKLIST

- First task, written down: problems 1 and 2 from section 6.2. Not "do stats."
- If-then: when the dinner dishes are done, about 7:15, I sit at the kitchen table and open 6.2.
- Phone off, in the bedroom drawer. Laptop: only the homework tab open.
- Calculator, pencil, water, and a scrap of paper for stray thoughts.
- Timer set for 25 minutes. Started at 7:20.
- Stray thoughts, written and left for later: "email the professor about Friday," "buy printer ink."
- 7:45 break, five minutes. Stood up, refilled the water, didn't touch the phone.
- Second block, 7:50 to 8:15: problems 3 and 4 done, problem 5 started.
- Stopped after two blocks. Four blocks earn the longer break.
- Tomorrow's first task, written now: finish problem 5, then 6 and 7.

**CHECK YOURSELF**

1. Why does a small, specific first task help with starting?
2. What is known, and what is unsettled, about phones and studying?
3. Why let a timer decide when to break?

Answers at the back of the workbook.

STUDY · LESSON 01 · PRACTICE

# A checklist

WHAT THIS CHECKLIST IS FOR

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STUDY · LESSON 02

# Why rereading feels like learning

Read, recite, review

> **In five minutes.** Tonight, read one page of something you need to learn. Turn it face down and write every point you remember for three minutes. Then check, and circle what you missed.

## THE METHOD

1. Read one section once, at your normal pace. Mark nothing yet.
2. Close the book, or turn the page face down.
3. Recite. Say or write everything you remember, in your own words, for two to five minutes. Leave a blank where nothing comes.
4. Review. Open the book and check what you said against it. Mark what was missing or wrong.
5. Reread only the parts you missed. Then recite those parts once more.
6. Move on to the next section and repeat.

## REMEMBER

- **Read a section once. Close the book.**
- **Recite what you remember, in your own words, before looking back.**
- **Check against the page. Mark gaps and errors.**
- **Reread only the gaps, then recite them again.**
- **A page that feels familiar has not been tested yet.**

## TRY IT · 20 MINUTES

### FOR A CLASS

Take about two pages of your next assigned reading. Read them once. Close the book and guess what share of it you could write down. Then write for five minutes, from memory. Open the book, check, and circle what you left out. Compare your guess with what the page shows. If there is no reading due, use the second chapter of Seneca's On the Shortness of Life.

### FOR WORK AND LIFE

Pick a document you will need to act on this week: a policy change, a project brief, the manual for a new tool. Read it once. Close it and write, from memory, the five points a colleague would need from it. Check against the document. The points you missed are the only ones to read again. About 15 minutes.

# What it looks like done

WORKED ON Chapter 1 of the Enchiridion, about 400 words, read once, then recited from memory and checked

### GUESS, BEFORE WRITING

- After one careful read: I could write about 80% of it.

### RECITED FROM MEMORY

- Some things are up to us and some are not.
- Up to us: our opinions, what we want, what we avoid.
- Not up to us: the body, money, reputation, jobs.
- Treat what isn't yours as yours and you get upset and blame people.
- Something about great aims needing more than a small effort?
- (blank: the end of the chapter)

### CHECKED AGAINST THE TEXT

- Missed: "movement towards a thing" in the first list, and the summary, "whatever are our acts."
- Wrong word: "money" is property. "Jobs" is offices, public positions.
- Missed: what is in our power is "by nature free." The rest is "weak, slavish," in the power of others.
- Missed the promise: claim only what is yours and no one can compel or hinder you, and "you will have no enemy."
- Missed the ending entirely: say to every harsh appearance, "You are an appearance," then ask whether it is in our power.
- About half came back, not 80%.

### RECITED AGAIN, THE MISSED PARTS ONLY

- In our power: opinion, movement toward a thing, desire, aversion. Free by nature.
- Not in our power: body, property, reputation, offices. In others' hands.
- Claim only your own, and no one can hinder you.
- A harsh appearance: call it an appearance, then ask whether it is in our power. If not, it does not concern me.

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**CHECK YOURSELF**

1. Why does a second read feel like learning when it may not be?
2. Why recite before checking, instead of checking as you go?
3. When can rereading still help?

Answers at the back of the workbook.

# Questions

QUESTIONS, THEN ANSWERS FROM MEMORY

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STUDY · LESSON 03

# Turn notes into questions

Active recall

> **In five minutes.** After your next class or meeting, write three questions about it on a scrap of paper. Tomorrow morning, answer them without looking, then check your notes.

## THE METHOD

1. After a lecture, chapter or meeting, read through your notes once and turn each main point into a question. Question on the front, answer on the back.
2. Keep one idea per question. Ask why and how, as well as what.
3. Cover the answers. Answer each question from memory, out loud or on paper, before you look.
4. Check every answer. Mark the ones you missed or only half got.
5. Go back over the marked ones until you have answered each correctly once.
6. Come back to the whole set on a later day. The next lesson, Space it out, covers when.

## REMEMBER

- **After each class or meeting, turn every main point into a question.**
- **One idea per question. Ask why and how, as well as what.**
- **Answer from memory before you look. Then check.**
- **Repeat the misses until each is right once.**
- **Come back to the whole set on a later day.**

## TRY IT · 25 MINUTES

### FOR A CLASS

Within a day of your next lecture, spend ten minutes writing eight to ten questions from your notes, one idea each. The next day, answer them on a blank page without looking. Check, and keep the misses in a separate pile for the weekend. To practice first on something short, read chapter 1 of Epictetus's Enchiridion, write five questions, and answer them an hour later.

### FOR WORK AND LIFE

After a training session, a meeting, or a chapter of a book for work, write five questions a colleague might ask you about it. The next morning, answer them from memory before you open your notes. Check each answer. The ones you could not answer show exactly where to look again. About 15 minutes across the two days.

# What it looks like done

WORKED ON Chapter 1 of the Enchiridion, about 400 words, as six question cards written on a Sunday and answered on Monday

### CARD 1

**Q** What does Epictetus say is in our power?

**A** Opinion, movement toward a thing, desire, aversion. In a word, "whatever are our acts."

### CARD 2

**Q** What does he say is not in our power?

**A** The body, property, reputation and offices. Whatever are not our own acts.

### CARD 3

**Q** Why does he call the things in our power free?

**A** By nature no one can restrain or hinder them. The others are in the power of others.

### CARD 4

**Q** What happens to someone who treats what belongs to others as their own?

**A** They will be hindered, lament, be disturbed, and blame both gods and men.

### CARD 5

**Q** Why can't someone aim at the great things and at office and wealth too?

**A** Chasing both, they may miss even office and wealth, and will fail at the things that bring happiness and freedom.

### CARD 6

**Q** What is the first test for a harsh appearance?

**A** Ask whether it relates to what is in our power. If not, be ready to say it does not concern you.

### ANSWERED THE NEXT DAY

- Right: 1, 2, 4, 6.
- Half: 3. I had "free" but not why.
- Missed: 5. I remembered "great things" and nothing after.
- Cards 3 and 5 go in the misses pile for Saturday.

**CHECK YOURSELF**

1. Why does answering from memory help more than reading the answer again?
2. Why keep one idea per card?
3. Why check every answer?

Answers at the back of the workbook.

STUDY · LESSON 03 · PRACTICE

# Question cards

Cut along the lines. Question on the front, answer on the back.

QUESTION

ANSWER, ON THE BACK

QUESTION

ANSWER, ON THE BACK

QUESTION

ANSWER, ON THE BACK

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ANSWER, ON THE BACK

QUESTION

ANSWER, ON THE BACK

STUDY · LESSON 04

# Space it out

Spaced repetition

> **In five minutes.** Write five question cards tonight. Answer them tomorrow, again three days later, and again a week after that. Each time, answer before you turn the card.

## THE METHOD

1. Write your material as question cards, one idea each, as in the previous lesson.
2. Set up four boxes, or four decks: review box 1 daily, box 2 every three days, box 3 weekly, box 4 every two weeks.
3. Start every new card in box 1.
4. Answer each card from memory before turning it. Right: move it up one box. Wrong: move it back to box 1.
5. Fit the gaps to the date. For a test a week away, leave a day or two between reviews. To keep something for a year, leave several weeks.
6. Add a few new cards a day so the daily review stays short. Software such as Anki does the scheduling for you.

## REMEMBER

- **One idea per card. Answer from memory before turning it.**
- **Right: the card moves up a box. Wrong: back to box 1.**
- **Box 1 daily, box 2 every three days, box 3 weekly, box 4 every two weeks.**
- **Test a week away: gaps of a day or two. Keep it a year: gaps of weeks.**
- **Add a few new cards a day.**

## TRY IT · 15 MINUTES

### FOR A CLASS

Take one lecture's worth of questions, or write 15 new ones. Make three piles on your desk: today, in three days, in a week. Answer the today pile now and move each card by the rules above. Put the next two review dates in your calendar. Ten to fifteen minutes to set up, five a day after. To practice on something short, write five cards from chapter 1 of the Enchiridion.

### FOR WORK AND LIFE

Pick something you will need for months: 20 colleagues' names and roles, terms for a certification, phrases for a trip. Make 20 cards in Anki or on index cards. Review them on days 1, 2, 4, 8 and 15, answering from memory each time. On day 15, count how many you still miss.

# What it looks like done

WORKED ON The six Enchiridion cards from the previous lesson, kept in four boxes for two weeks: box 1 daily, box 2 every three days, box 3 weekly, box 4 every two weeks

### SET

- Enchiridion 1, six cards. Written Sun Nov 1. First answered Mon Nov 2.

### CARDS 1, 4 AND 6

- First, Mon Nov 2: right. Box 2.
- Thu Nov 5: right. Box 3.
- Thu Nov 12: right. Box 4. Next: Thu Nov 26.

### CARD 2

- First, Mon Nov 2: right. Box 2.
- Thu Nov 5: right. Box 3.
- Thu Nov 12: missed. Named body and property, forgot offices. Back to box 1.
- Fri Nov 13: right. Box 2. Next: Mon Nov 16.

### CARD 3

- First, Mon Nov 2: half right, counted as missed. Stays in box 1.
- Tue Nov 3: right. Box 2.
- Fri Nov 6: right. Box 3.
- Fri Nov 13: right. Box 4. Next: Fri Nov 27.

### CARD 5

- First, Mon Nov 2: missed. Box 1.
- Tue Nov 3: missed again. Box 1.
- Wed Nov 4: right. Box 2.
- Sat Nov 7: missed. Back to box 1.
- Sun Nov 8: right. Box 2.
- Wed Nov 11: right. Box 3. Next: Wed Nov 18.

### WHERE IT STANDS, MON NOV 16

- Box 4: cards 1, 3, 4, 6. Box 3: card 5. Box 2: card 2, due today.
- Card 5 took six reviews. Cards 1, 4 and 6 took three each.

**CHECK YOURSELF**

1. Why does a gap between reviews help?
2. Why does a missed card go back to box 1?
3. How long should the gaps be?

Answers at the back of the workbook.

STUDY · LESSON 04 · PRACTICE

# A review schedule

Write the date in each box when you review. Missed it? Count from the day you did.

| SET | FIRST | NEXT DAY | A FEW DAYS | A WEEK | TWO WEEKS | A MONTH |
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STUDY · LESSON 05

# Mix it up

Interleaving

> **In five minutes.** Take six problems from two recent homework sections and shuffle them. Before solving each one, write which method it needs and why. Then solve and check.

## THE METHOD

1. List the kinds of problem or category you are learning: four kinds of geometry volume, five painters, three contract clauses.
2. Learn each kind first, with at least one worked example of each.
3. Build practice sets that mix the kinds, so no two items in a row use the same method.
4. Before solving each item, write which kind it is and why.
5. Check your answers and note which kinds you confuse with each other.
6. Keep vocabulary and word lists in their own blocks or on spaced cards.

## REMEMBER

- **Learn each kind once, with a worked example.**
- **Then practice them mixed, never two of a kind in a row.**
- **Name the kind before you solve it.**
- **Expect lower scores in practice and better ones later.**
- **Keep word lists in blocks or on spaced cards.**

## TRY IT · 30 MINUTES

### FOR A CLASS

Take the last three homework sections in a math or science course. Pick four problems from each and write each on its own card. Shuffle the twelve. Work through them in the shuffled order, and before each one, write the name of the method it needs. Mark which ones you misnamed. About 30 minutes.

### FOR WORK AND LIFE

Pick three or four things that are easy to confuse in your work or hobby: types of support ticket, bird calls, wine grapes, chess openings, painters in a museum guide. Gather five examples of each, remove the labels, and shuffle them. Sort them into kinds, then check. Repeat a few days later with new examples.

# What it looks like done

WORKED ON Six percent problems of three kinds, mixed: percent of a number, percent change, and finding the original amount

## QUESTIONS

1. A $48 jacket is 25% off. What is the sale price?
2. A town grew from 12,500 to 14,000 people. By what percent?
3. After a 20% raise, pay is $54,000. What was it before?
4. A stock fell from $80 to $68. What was the percent change?
5. What is an 18% tip on a $65 bill?
6. A phone costs $391 including 15% sales tax. What was the price before tax?

## ANSWERS, KIND NAMED FIRST

1. Percent of a number. The 25% is of the price I have. 0.25 × 48 = 12. 48 − 12 = $36.
2. Percent change: new minus old, over old. (14,000 − 12,500) ÷ 12,500 = 1,500 ÷ 12,500 = 0.12. Up 12%.
3. First try, percent of a number: 0.20 × 54,000 = 10,800, so $43,200. Wrong. The 20% is of the old pay, not the new. Original amount: new = old × 1.20, so old = 54,000 ÷ 1.20 = $45,000. Check: 45,000 × 1.20 = 54,000.
4. Percent change. (68 − 80) ÷ 80 = −12 ÷ 80 = −0.15. Down 15%.
5. Percent of a number. 0.18 × 65 = $11.70.
6. Original amount. The $391 already includes the tax. 391 ÷ 1.15 = $340. Check: 340 × 1.15 = 391.

## KINDS I CONFUSED

- Original amount, read as percent of a number (problem 3).
- The clue I missed: the percent is of a number the problem doesn't give me.

## CHECK YOURSELF

1. Why does mixed practice help on a mixed test?
2. Why expect lower scores while practicing mixed?
3. When is mixing the wrong choice?

Answers at the back of the workbook.

# Questions

QUESTIONS, THEN ANSWERS FROM MEMORY

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STUDY · LESSON 06

# Explain it simply

Explain it simply

> **In five minutes.** Pick one idea from today. Explain it in five plain sentences, on paper, to someone who has never heard of it. Circle the sentence where you got stuck.

## THE METHOD

1. Pick one idea, process or argument. Write its name at the top of a blank page.
2. Explain it in plain words to an imagined smart person who has never studied it. Define any term you can't avoid.
3. Give an example. Say why each step follows from the one before it.
4. Circle every place where you stumble, skip a step, or reach for a term you can't unpack.
5. Go back to the source for the circled places only. Then explain those parts again.
6. Give the explanation to a real person, out loud, and answer their questions.

## REMEMBER

- **Name one idea at the top of a blank page.**
- **Explain it in plain words, with an example, as if to someone new.**
- **Say why each step follows from the last.**
- **Circle every stumble. Check those places in the source.**
- **Explain it again, out loud, to a real person.**

## TRY IT · 20 MINUTES

### FOR A CLASS

After a lecture on a process or argument, put your notes away and write a one-page explanation for a first-year student. Fifteen minutes. Circle the stumbles, check them in the textbook, and rewrite those lines. To practice on a hosted text, read William James's The Laws of Habit, then explain in plain words why James thinks habits form and why he thinks teachers should care.

### FOR WORK AND LIFE

Before a meeting where you will present a decision or a new process, explain it in writing to an imagined new hire, in under 200 words and with one example. Circle the parts you glossed over. Fill those in from the source, then say the explanation out loud to a colleague and note the first question they ask.

# What it looks like done

WORKED ON Chapter 1 of the Enchiridion, about 400 words, explained to a friend who has never read any Stoic philosophy

### WHAT I'M EXPLAINING

- Epictetus, Enchiridion chapter 1: what is in our power and what is not.

### EXPLAINED IN PLAIN WORDS, TO SOMEONE NEW TO IT

- Epictetus sorts everything into two piles. One pile is yours: what you think of things, what you go after, what you want and what you avoid. The other pile isn't: your body, your things, what people think of you, your position. The first pile is (circled: free?). The second is not. If you treat the second pile as yours, you end up frustrated and blaming people (circled: why?). So when something hits hard, he says to call it an (circled: appearance) and ask which pile it is in. If it's the second pile, (circled: it does not concern you).

### WHERE I GOT STUCK OR REACHED FOR JARGON

- "Free": I used it without saying free from what.
- Why claiming the second pile leads to blame. I said it and didn't explain it.
- "Appearance": I used his word and couldn't say what it means.
- "Does not concern you": does he mean stop caring about your own body?

### WHAT I LOOKED UP

- Free: "not subject to restraint or hindrance." No one can block an opinion or a desire. Others can block my body or my property.
- Blame: the second pile is "in the power of others." Treat it as mine and others keep blocking me, so I blame them.
- Appearance: how a thing first strikes me. He says to tell a harsh one, "You are an appearance."
- He says "does not concern you" of the harsh appearance, once tested. The chapter says nothing about neglecting the body.

### EXPLAINED AGAIN, SHORTER

- Some things answer to you: your judgments, your wants, what you avoid. No one can block those. Others don't: your body, your things, your reputation, your position. Other people can block those. Claim them as yours and you keep getting blocked, and you blame someone. So when something hits hard, first ask which kind it is. If it isn't yours to control, be ready to say it isn't your concern.

**CHECK YOURSELF**

1. Why do the stumbles matter more than the smooth parts?
2. Why explain to someone new to the subject?
3. What happened when people in studies tried to explain how everyday devices work?

Answers at the back of the workbook.

STUDY · LESSON 06 · PRACTICE

# Explain it in plain words

WHAT I'M EXPLAINING

EXPLAINED IN PLAIN WORDS, TO SOMEONE NEW TO IT

WHERE I GOT STUCK OR REACHED FOR JARGON

WHAT I LOOKED UP

EXPLAINED AGAIN, SHORTER

STUDY · LESSON 07

# Sleep on it

Sleep and memory

> **In five minutes.** Tonight, an hour or two before bed, quiz yourself on ten things you studied today. Sleep your usual night. Tomorrow, before opening anything, write down what you remember.

## THE METHOD

1. Put the review you most want to keep in the evening, a few hours before your usual bedtime, and test yourself on it.
2. Sleep your usual full night after it.
3. The next morning, before opening your notes, recall what you studied. Then check.
4. Before a test, plan the calendar so the night before is a normal night's sleep.
5. If a big learning day is coming, such as a first day at a job or a long lecture, protect the night before it too.
6. Plan new material for days that follow a normal night. Use a day after a short night for review.

## REMEMBER

- **Review what matters most in the evening, and test yourself on it.**
- **Sleep a normal night after.**
- **Recall it in the morning before looking. Then check.**
- **Plan the calendar so the night before a test is a full night.**
- **New material after a normal night. Review after a short one.**

## TRY IT · 10 MINUTES

### FOR A CLASS

Pick 15 questions from one course. In the evening, go through them until you can answer each once. Sleep. The next morning, before looking, answer all 15 and count. Another week, learn 15 different questions in the morning and test yourself that evening, twelve hours later. Compare the two counts. Ten minutes each time.

### FOR WORK AND LIFE

Before a presentation or an interview, rehearse it once in full the evening before. Sleep. In the morning, before looking at your notes, run through it from memory and write down anything that did not come back. Check only those parts. Ten minutes.

# What it looks like done

WORKED ON One week's review page, kept by a nursing student with a pharmacology quiz the following Monday

### THE WEEK OF

- November 9. Pharmacology quiz Monday, November 16, at 10 a.m.

### WHAT I LEARNED

- Mon 8 p.m.: 15 cards on the chapter 4 drug classes, until each was right once. Bed at 11.
- Tue 7 a.m., before notes: 13 of 15. Missed the two dosing-interval cards.
- Thu 8 a.m.: 15 cards on chapter 5, until each was right once.
- Thu 8 p.m., same day, no notes: 10 of 15.
- One week, one comparison. The night between seemed to help.

### WHAT I'LL TEST MYSELF ON

- Friday evening: the 2 misses from chapter 4 and the 5 from chapter 5.
- Sunday evening: all 30 cards. Monday morning: all 30 again, before notes.

### WHAT SLIPPED, AND WHAT I'LL CHANGE

- Tuesday: up until 1:30 a.m. finishing a lab report. Moved Wednesday's new chapter to Thursday and only reviewed on Wednesday.
- Next lab report: start it on the weekend so it doesn't take a weeknight.

### NEXT WEEK

- Sunday: last review in the evening, no new material, bed at 11.
- Monday 7 a.m.: recall before notes, check only the misses. Quiz at 10.

**CHECK YOURSELF**

1. Why put the most important review in the evening?
2. Why keep new material away from the day after a short night?
3. What does the morning check show?

Answers at the back of the workbook.

STUDY · LESSON 07 · PRACTICE

# A review page

THE WEEK OF

WHAT I LEARNED

WHAT I'LL TEST MYSELF ON

NOTES TO CONNECT OR REWRITE

WHAT SLIPPED, AND WHAT I'LL CHANGE

NEXT WEEK

STUDY · LESSON 08

# Plan back from the date

Backward planning

> **In five minutes.** Write your next deadline at the bottom of a page. Above it, write the step that must be done the day before. Keep going up, one step at a time, until you reach today.

## THE METHOD

1. Write the exam or deadline date at the bottom of a page or calendar.
2. Work backward. Name the last step before the date, such as a full practice test two days before. Then the step before that, and so on, back to today.
3. Give each step a date, a time and a place: "Tuesday, 7 p.m., kitchen table, chapter 3 questions."
4. Look at how long a similar job took last time. Stretch your estimates to match that, not your hopes.
5. Leave two or three empty days before the date as a buffer.
6. Check the plan once a week. Move the steps that slipped, and keep the date fixed.

## REMEMBER

- **Write the date at the bottom. Plan up from it to today.**
- **Last step first: a full practice test two days before.**
- **Every step gets a date, a time and a place.**
- **Check estimates against how long the last similar job took.**
- **Leave buffer days. Check the plan weekly.**

## TRY IT · 25 MINUTES

### FOR A CLASS

Take your next exam date. Starting from it, count back: a full practice test two days before, a session on its misses the day after, spaced reviews of each chapter's questions, and one first pass per chapter. Put every session on a dated calendar with a time and place. Then compare the total with how long your last exam's preparation really took. About 25 minutes.

### FOR WORK AND LIFE

Pick a deadline: a report, a certification, a launch, a move. Write the date, then the step that must be done the day before, then the one before that, back to today. Give each a date. Then look up how long the last similar project took from start to finish, and compare it with your plan's total. Adjust the steps or the scope.

# What it looks like done

WORKED ON A study calendar for a biology midterm on chapters 5 to 8, built on Monday, November 16, from the exam date back

### THE DATE IT IS DUE, AND WHAT IT IS

- Thursday, December 10, 9 a.m. Biology 101 midterm, chapters 5 to 8.

### WEEK 1

- Thu 10: Midterm, 9 a.m. A normal night's sleep before it.
- Wed 9: 7 p.m., kitchen table. The practice test's misses. Bed by 11.
- Tue 8: 7 p.m., library, second floor. Full practice test, timed, 75 minutes.
- Mon 7: 7 p.m., kitchen table. All cards, chapters 5 to 8.

### WEEK 2

- Sat 5 and Sun 6: empty. Buffer.
- Thu 3: 7 p.m., library. Chapter 8 cards.
- Tue 1: 7 p.m., library. Chapter 7 cards.
- Mon 30: 7 p.m., kitchen table. Chapters 5 and 6 cards.

### WEEK 3

- Wed 25 to Sun 29: away for Thanksgiving. Nothing planned.
- Tue 24: 7 p.m., library. Chapter 8 first pass. Write its cards.
- Mon 23: 7 p.m., kitchen table. Chapter 7 first pass. Write its cards.

### WEEK 4

- Sun 22: 4 p.m., kitchen table. Chapter 6 cards, first review.
- Sat 21: 10 a.m., library. Chapter 6 first pass. Write its cards.
- Thu 19: 7 p.m., kitchen table. Chapter 5 cards, first review.
- Tue 17: 7 p.m., kitchen table. Chapter 5 first pass. Write its cards.
- Mon 16: this plan.

### AGAINST LAST TIME

- Last midterm: 7 sessions, all in the final 8 days. One chapter never got a second look.
- This plan: 12 sessions over 24 days, two buffer days, and every chapter reviewed at least twice.

## CHECK YOURSELF

1. Why plan back from the date instead of forward from today?
2. Why compare the plan with how long the last similar job took?
3. Why give each step a date, a time and a place?

Answers at the back of the workbook.

STUDY · LESSON 08 · PRACTICE

# A study calendar

THE DATE IT IS DUE, AND WHAT IT IS

Start at the bottom, the week of the date, and fill upward.

| | MON | TUE | WED | THU | FRI | SAT | SUN |
|---|---|---|---|---|---|---|---|
| WEEK 4 | | | | | | | |
| WEEK 3 | | | | | | | |
| WEEK 2 | | | | | | | |
| WEEK 1 | | | | | | | |

# Practice under test conditions

Practice testing under exam conditions

> **In five minutes.** Pick ten questions from your notes. Set a timer for ten minutes, put the notes and your phone in another room, and answer every question before you check any.

## THE METHOD

1. Get or build a practice test in the real format: past papers, a question bank, or your own cards made into a timed set.
2. Set the real conditions. The real time limit, no notes, no phone, a cleared desk, and the time of day of the real test if you can.
3. Take the whole test in one sitting, start to finish, without stopping to look anything up.
4. Mark it strictly. Sort each miss as "didn't know it," "knew it but couldn't recall it in time," or "misread the question."
5. Study the misses by type. Take a fresh practice test a few days later.
6. For a talk or interview, rehearse standing, out loud, timed, with someone asking questions if possible.

## REMEMBER

- **Use the real format: past papers or your own cards as a timed set.**
- **Real conditions: the time limit, no notes, no phone, one sitting.**
- **Mark it strictly and sort each miss by kind.**
- **Study the misses, then take a fresh test days later.**
- **For a talk or interview: standing, out loud, timed, with questions.**

## TRY IT · 45 MINUTES

### FOR A CLASS

Find a past exam, or write 20 questions in the format your exam will use. Set a timer for the real length, up to 45 minutes. Sit at a cleared desk with your notes in another room and your phone off. When the timer ends, stop. Mark it, sort each miss into the three kinds in the method, and list what to study first.

### FOR WORK AND LIFE

Before a presentation, an interview, or a certification, run the whole thing once under real conditions: standing, out loud, timed, in the clothes and the room if you can. Ask a colleague or friend to interrupt with two hard questions. Record it on your phone. Note where you stalled, and rehearse only those parts again.

# What it looks like done

WORKED ON A timed practice run of a statistics final, set up and marked by a student a week before the exam

## WHAT THIS CHECKLIST IS FOR

- A full practice run of the Stats 200 final. Real exam: Saturday, December 12, 9 to 11 a.m. Practice: Saturday, December 5, the same hours.

## CHECKLIST

- The 2024 final printed. Answer key sealed in an envelope in the hall closet.
- Only what the real exam allows: calculator, two pencils, one formula sheet.
- Notes in the bedroom. Phone off, in a kitchen drawer.
- Desk cleared. Water. Timer set for 120 minutes.
- Start at 9:00. No stopping to look anything up.
- Stop at the timer. Unfinished questions stay blank.
- Mark strictly with the key. Partial credit only where the key gives it.
- Sort every miss: didn't know it, knew it but couldn't recall it in time, misread the question.
- Result: 31 of 40. Didn't know it: 5, all on confidence intervals. Couldn't recall in time: 3. Misread: 1.
- Next: confidence intervals on Sunday and Monday. A fresh past paper Wednesday, December 9, 9 to 11 a.m.

**CHECK YOURSELF**

1. Why practice in the same format as the real test?
2. Why sort each miss by kind?
3. Why not look anything up partway through?

Answers at the back of the workbook.

STUDY · LESSON 09 · PRACTICE

# A checklist

WHAT THIS CHECKLIST IS FOR

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STUDY · ANSWERS

# Check yourself: answers

## LESSON 01 · GETTING STARTED

1. **Why does a small, specific first task help with starting?** Unpleasant tasks are the ones people put off most, and tasks that need many decisions wait too. A small, concrete first step is less unpleasant, and it leaves no decision about where to begin.
2. **What is known, and what is unsettled, about phones and studying?** Using a phone or laptop for other things while studying lowers learning. Whether a phone merely lying nearby costs attention is unsettled. One study found it did, and later studies found little or no effect.
3. **Why let a timer decide when to break?** In one study, students on fixed breaks felt less tired and more focused than students who chose their own breaks, and finished as much in less time.

## LESSON 02 · WHY REREADING FEELS LIKE LEARNING

1. **Why does a second read feel like learning when it may not be?** The page is familiar, so it reads smoothly, and smooth reading feels like knowing. Familiar and remembered are different things. Only recall with the book shut shows which one you have.
2. **Why recite before checking, instead of checking as you go?** Recall with the page out of sight is the practice that makes material last. A glance turns it back into reading. The check afterward catches gaps and errors so a wrong version doesn't stick.
3. **When can rereading still help?** After a gap of days, and on the parts you missed. A second read straight after the first helped on a test that day, and the advantage was gone two days later.

## LESSON 03 · TURN NOTES INTO QUESTIONS

1. **Why does answering from memory help more than reading the answer again?** Pulling an answer out without the notes is what makes it last. In studies, recalling a passage beat rereading it on tests a week later, even though rereading looked better minutes after.
2. **Why keep one idea per card?** A long answer gets half-recalled and marked right. With one idea per card, each answer is clearly right or wrong, so the misses show exactly what to study again.
3. **Why check every answer?** Recall without feedback can keep a wrong answer alive. Checking against the notes corrects it before the next review.

## LESSON 04 · SPACE IT OUT

1. **Why does a gap between reviews help?** Coming back after a gap, once the answer has started to fade, is what makes it last. In studies, the same reviews spread over days were remembered far longer than the same reviews in one sitting.
2. **Why does a missed card go back to box 1?** A miss shows the gap is too long for that card for now. Box 1 brings it back daily until it holds, so hard cards get many reviews and easy ones few.
3. **How long should the gaps be?** It depends on when you need the material. The best gap grows with how long the memory must last: a day or two for a test next week, weeks for something kept a year.

## LESSON 05 · MIX IT UP

1. **Why does mixed practice help on a mixed test?** In a block, the method is known before the problem is read. A mixed set makes you decide which method each problem needs, and that decision is the first job on every exam question.
2. **Why expect lower scores while practicing mixed?** Choosing the method each time is harder than repeating one. In one math study, mixed practice scored lower during practice and far higher on a test a week later.
3. **When is mixing the wrong choice?** For word lists, where blocked study did better, and before any kind has been learned. Mixing pays off most for similar things that are easy to confuse.

## LESSON 06 · EXPLAIN IT SIMPLY

1. **Why do the stumbles matter more than the smooth parts?** A smooth explanation can hide gaps. Each stumble, skipped step or unexplained term marks where understanding runs out, so it shows exactly where to go back to the source.

2. **Why explain to someone new to the subject?** Jargon can stand in for understanding. A newcomer needs every term defined and every step said, and the steps that can't be said are the gaps.
3. **What happened when people in studies tried to explain how everyday devices work?** They rated their own understanding lower afterward. Before trying, they believed they understood things like zippers and locks better than they did.

LESSON 07 · SLEEP ON IT

1. **Why put the most important review in the evening?** In studies, people recalled more after a period of sleep than after the same hours awake. An evening review, with a self-test, puts a night's sleep right after the material.
2. **Why keep new material away from the day after a short night?** In lab studies, a night without sleep before learning made new material harder to remember. Reviewing what is already learned is the better use of that day.
3. **What does the morning check show?** What held overnight. Recalling before opening the notes tests it, and the misses become that day's short list.

LESSON 08 · PLAN BACK FROM THE DATE

1. **Why plan back from the date instead of forward from today?** Forward planning asks what to do first, and the calendar runs out. Working back asks what must be done before each step. That turns up missing steps, and in studies backward plans allowed more time.
2. **Why compare the plan with how long the last similar job took?** People predict their own tasks will finish sooner than they do. In one study, connecting the prediction to how long similar past tasks really took removed that optimism.
3. **Why give each step a date, a time and a place?** "Study chapter 3" leaves the decision open every day. A step with a when and a where is already decided, and plans like that help people act on goals they already hold.

LESSON 09 · PRACTICE UNDER TEST CONDITIONS

1. **Why practice in the same format as the real test?** Practice tests help in any format, and somewhat more when practice and final test match. A rehearsal in the real format also moves surprises about timing and wording to a day that doesn't count.
2. **Why sort each miss by kind?** Each kind needs a different fix. "Didn't know it" calls for study, "couldn't recall it in time" for more timed recall, and "misread the question" for slowing down on the wording.
3. **Why not look anything up partway through?** Looking up an answer turns the test back into study, and the score stops showing what you can do alone against the clock. Finish first, then check.