

General military entry: study guide

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Private practice result. Not an official exam certificate, employer decision, hiring signal, admissions decision, or guaranteed outcome. Scores stay on this device unless you export them.

Answer keys and scoring logic stay server-side and are never included in any download or export.

How to use this guide

This file contains the whole study outline for this suite: every skill it draws on, the full lesson for each of those skills, worked examples, practice tips, a glossary, and where each piece of material comes from. Nothing here is a summary of a page you still have to visit.

1. Read the skills section end to end once, without timing yourself.
2. Work the guided practice mode for the suite, using the practice tips as a checklist.
3. Move to the mini-test only when guided practice feels unhurried.
4. Sit the full simulation last, once, in the conditions you expect on the day.

Practice attempts are stored on the device you used, never on an account. Exporting a result is the only way anything leaves that device.

Practice modes and durations

Practice modes for General military entry

Mode	Duration	What it is for
Guided practice	15 minutes	Untimed, with feedback after every item.
Mini-test	18 minutes	A short timed set for checking pace.
Full simulation	45 minutes	Full length and full time, in one sitting.

- Start guided practice:
<https://learn.novusstreamsolutions.com/aptitude/practice/new?bank=apt-019-general-military-entry&mode=guided>
- Start mini-test:
<https://learn.novusstreamsolutions.com/aptitude/practice/new?bank=apt-019-general-military-entry&mode=mini>
- Start full simulation:
<https://learn.novusstreamsolutions.com/aptitude/practice/new?bank=apt-019-general-military-entry&mode=full>

Skills covered, in full

This suite draws on 4 skill constructs. Each one below carries its complete lesson.

Numerical reasoning

Arithmetic, fractions, percentages, ratios, rates, estimation, word problems, and number relationships.

Numerical reasoning is the ability to take a small set of supplied numbers (a price list, a staffing table, a fuel figure), and reach a defensible answer in around ninety seconds without a formula sheet. It is the most widely used quantitative section in graduate, management and public-sector screening, and it appears in banking, retail, armed forces and healthcare entry batteries alike. The arithmetic itself is deliberately ordinary: percentages, ratios, rates and averages. What is actually being measured is whether you pick the right operation quickly, keep the units straight, and answer the question that was asked rather than the one you started computing. Practice here is device-local: no account, and nothing leaves this device unless you export it.

What you should be able to do after this lesson:

1. Move between fractions, decimals, percentages and ratios on sight, and pick whichever form makes a given item fastest (12.5 percent as one eighth, 33.3 percent as one third).
2. Apply percentage change in both directions, including recovering an original figure from a post-increase total, and combine successive changes multiplicatively rather than by adding them.
3. Split a total in a stated ratio by counting parts first, and work backwards from a stated difference between two shares.
4. Solve rate problems (speed, unit price, consumption, combined work rates) by carrying units through every intermediate line so the units of the answer prove the method.
5. Produce a one-significant-figure estimate before computing, and use it to eliminate the distractors built from the common wrong operations.
6. Read a multi-step stem and name, in one sentence, the single quantity the final question asks for before touching the numbers.

Worked examples and pitfalls

Reverse percentages: the item most candidates get backwards: A subscription price rose by 15 percent and now stands at 57.50 pounds. What was it before? The correct move is to divide, not subtract: the new price is 115 percent of the old, so the old price is $57.50 / 1.15 = 50.00$. Check it forwards: 15 percent of 50 is 7.50, and $50 + 7.50 = 57.50$. The tempting wrong answer takes 15 percent of the NEW figure, $0.15 \times 57.50 = 8.625$, and reports 48.88. That distractor is always on the option list because it is what most people do under time pressure, and it is wrong by 2.25 percent, small enough to look plausible. The same asymmetry drives the successive-change item: a price that rises 20 percent and then falls 20 percent does not return to where it started. Multiply the factors: $1.20 \times 0.80 = 0.96$, a net fall of 4 percent. Starting at 500 pounds you get 600 then 480, not 500. Percentages compose by multiplication; they never add.

Ratio splits: count the parts before you divide: A 4,830 pound budget is split between three teams in the ratio 3:5:6. Add the parts first: $3 + 5 + 6 = 14$. One part is $4,830 / 14 = 345$. The shares are $3 \times 345 = 1,035$, $5 \times 345 = 1,725$ and $6 \times 345 = 2,070$, and they sum back to 4,830, which is the check you should always run. Two classic failures. The first is dividing by 3 because there are three teams. That gives 1,610 each and ignores the ratio entirely. The second is treating 5 as a fraction and computing five sixths or five fourteenths of something other than the total. The more interesting version of this item gives you a difference instead of the total: 'the second team receives 690 pounds more than the first, what is the whole budget?' The difference between the shares is $5 - 3 = 2$ parts, so one part is $690 / 2 = 345$, and the budget is $14 \times 345 = 4,830$. Same number, reached from the other end, and the arithmetic is trivial once you have made the parts

explicit.

Rates and units: 2 h 15 min is 2.25, not 2.15: A delivery van covers 174 km in 2 hours 15 minutes. Average speed is distance over time, and the time must be in hours: 15 minutes is $15/60 = 0.25$ h, so $174 / 2.25 = 77.3$ km/h. Type 2.15 into the calculator instead and you get 80.9 km/h: an error of roughly 4.7 percent that sits comfortably inside the plausible range and will match one of the options. Now extend it. The van consumes 8.6 litres per 100 km, so the trip needs $174 \times 8.6 / 100 = 14.964$ litres, and at 1.48 pounds per litre that is $14.964 \times 1.48 = 22.15$ pounds. Notice the units doing the work: (km) $\times$ (L / 100 km) leaves litres; (L) $\times$ (pounds / L) leaves pounds. If your intermediate line has km still attached at the end, you have divided when you should have multiplied. Write the unit next to every number and the method checks itself.

Unit pricing: normalise before you compare: Three pack sizes of the same fluid. Pack A: 750 ml for 3.60 pounds. Pack B: 2 litres for 9.40. Pack C: 1.5 litres for 7.20. Convert all three to price per litre. A: $3.60 / 0.75 = 4.80$ per litre. B: $9.40 / 2 = 4.70$. C: $7.20 / 1.5 = 4.80$. So B is cheapest by 10p a litre, and A and C are identical despite looking like different deals. The 'bigger pack is cheaper' heuristic happens to hold here but is not a rule, and test writers know it. Half of these items are built specifically so the largest pack loses. Now add the multibuy that these questions love: pack A is on three-for-two. Three packs give 2.25 litres for the price of two, 7.20 pounds, which is $7.20 / 2.25 = 3.20$ per litre and beats everything. The trap in the multibuy version is dividing by the number of packs paid for rather than the volume received.

Combined work rates: add rates, never times: Printer A completes a 3,000-page run in 50 minutes; printer B completes the same run in 75 minutes. Running together, how long? Convert to rates: A prints $3,000 / 50 = 60$ pages per minute, B prints $3,000 / 75 = 40$ pages per minute, and together they print 100 pages per minute, so the job takes $3,000 / 100 = 30$ minutes. Verify by counting output: in 30 minutes A produces 1,800 pages and B produces 1,200, which is 3,000 exactly. The two wrong answers you will see on the option list are 62.5 minutes (the average of 50 and 75) and 125 minutes (the sum). Both are impossible on inspection: two machines working together must finish faster than the faster machine alone, so any answer above 50 minutes is wrong before you compute anything. The general form is $1 / (1/50 + 1/75)$, and it is worth being able to write that line directly, but the sanity bound catches the error faster than the algebra does.

Estimate first, then compute: killing distractors in ten seconds: 'A department spent 847,300 pounds in 2024. In 2025 the budget fell by 12.5 percent. What was the 2025 spend?' Options: 741,387.50 / 953,212.50 / 105,912.50 / 762,570. Estimate before anything else: 12.5 percent is exactly one eighth, one eighth of roughly 850,000 is roughly 106,000, so the answer is roughly 744,000. That single line eliminates three options. 953,212.50 applied the change upwards. 105,912.50 is the size of the reduction, not the resulting spend: the 'answered the wrong question' distractor, and the most commonly selected wrong option on items of this shape. 762,570 is a 10 percent cut, planted for anyone who misread the rate. Exact working: $847,300 \times 7/8 = 5,931,100 / 8 = 741,387.50$. Doing it as a fraction avoids the decimal multiplication altogether. Learn the fraction equivalents cold (12.5 percent is $1/8$, 16.7 percent is $1/6$, 37.5 percent is $3/8$, 62.5 percent is $5/8$) because a fraction turns most percentage items into one division.

How to practise this skill

- Memorise the fraction-to-percentage table up to eighths and twelfths. Almost every 'nasty' percentage on these tests is a clean fraction in disguise, and the fraction route is two or three times faster than decimal multiplication.
- Write the unit beside every intermediate number, including the ones you keep in your head. Most numerical errors on timed sections are unit errors, not arithmetic errors, and units are the only cheap way to catch them.
- Rehearse reverse percentages as their own drill until dividing by 1.15 feels more natural than subtracting 15 percent. It is a single, identifiable technique that accounts for a disproportionate share of lost marks.
- Before selecting, re-read the last clause of the stem out loud. 'By how much did it fall' and 'what was it after the fall' have different answers, and both are always on the option list.

- Keep an error log with four columns (misread the question, wrong operation, unit slip, arithmetic slip), and tally which one you actually commit. Three sessions is usually enough to show that one column dominates, and that is the column to train.
- Work untimed until your method is stable, then add the clock in stages: generous, then realistic, then 20 percent tighter than the real test. Attempts stay on this device, so a slow first pass costs nothing.

Glossary

Percentage point: The arithmetic difference between two percentages. A rate moving from 4 percent to 5 percent rises by one percentage point but by 25 percent in relative terms; questions specify which they want and the two answers are both on the option list.

Reverse percentage: Recovering an original amount from a figure that already includes a percentage change, by dividing by the multiplier (1.15 for a 15 percent rise, 0.88 for a 12 percent fall) rather than subtracting the percentage from the new figure.

Multiplier (decimal factor): The single number a quantity is multiplied by to apply a percentage change: 1.20 for plus 20 percent, 0.80 for minus 20 percent. Successive changes are handled by multiplying the factors, which is why plus 20 then minus 20 gives 0.96, not 1.

Ratio part: One unit of a ratio split. Dividing the total by the sum of the ratio terms gives the value of one part; every share and every difference between shares is then a whole number of parts.

Unit rate: A quantity expressed per one of something: price per litre, pages per minute, litres per 100 km. Comparisons are only valid once every option has been converted to the same unit rate.

Combined rate: The sum of two or more individual rates working simultaneously. Times cannot be added or averaged; only rates add, and the combined time is the total work divided by the combined rate.

Significant figure estimate: Rounding every input to one meaningful digit to get an approximate answer in a few seconds. Its purpose is not accuracy but elimination: it removes any option that is off by a factor or has the sign of the change wrong.

Distractor: A wrong option written deliberately to match a specific predictable error: subtracting instead of dividing, reporting the change instead of the result, averaging instead of combining rates. Recognising the pattern is often faster than recomputing.

Study this next

- Numerical reasoning skill hub: <https://learn.novusstreamsolutions.com/aptitude/skills/numerical-reasoning>
- Numerical reasoning practice in the Cognitive Skills Lab:
<https://learn.novusstreamsolutions.com/cognitive-skills/numerical-reasoning>
- Data interpretation lesson:
<https://learn.novusstreamsolutions.com/aptitude/skills/data-interpretation/lesson>
- Office numeracy suite: <https://learn.novusstreamsolutions.com/aptitude/tests/office-numeracy>
- Finance, accounting and insurance careers:
<https://learn.novusstreamsolutions.com/careers/families/finance-accounting-and-insurance>
- Numerical reasoning lesson on Novus Learn:
<https://learn.novusstreamsolutions.com/aptitude/skills/numerical-reasoning/lesson>

Where this material comes from

- All worked figures above were written and checked for Novus Learn. Every division, ratio split and rate calculation in this lesson was verified by recomputing it in the reverse direction.
- Conventions only (percentage point, unit rate, significant figures) cross-checked against standard public references such as the Wikipedia articles 'Percentage', 'Ratio' and 'Rate (mathematics)'. No item text is

drawn from any published test.

- Novus Learn aptitude construct registry (catalog seed) for construct scope and suite mapping.
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Verbal reasoning

Drawing conclusions from written information without relying on outside assumptions.

Verbal reasoning is the discipline of answering strictly from a passage: deciding whether a statement is True, False, or Cannot Say on the evidence given, and refusing to import anything you happen to know about the topic. It is the workhorse construct in graduate and civil-service screening, banking and consulting sifts, and language-focused public-service batteries, where a passage about parcel volumes or grant conditions is followed by four statements to classify. The same discipline is what stops a contract review, a grant assessment or an incident summary from quietly acquiring facts nobody wrote down. Practice here is device-local: no account, and nothing leaves this device unless you export it.

What you should be able to do after this lesson:

1. Classify a statement as True, False, or Cannot Say, and state in one sentence which words in the passage force the classification.
2. Explain the difference that costs the most marks: 'Cannot Say' means undetermined by the passage, while 'False' means contradicted by it.
3. Spot quantifier drift between passage and statement (all, some, most, only, none) and show why 'all A are B' never licenses 'all B are A'.
4. Refuse a causal upgrade: recognise when a passage reports co-occurrence or sequence and a statement claims cause.
5. Separate what a passage asserts from what it reports somebody else asserting, and classify statements about each correctly.
6. Do the small arithmetic hidden inside verbal items - percentage changes, fractions of a stated total - without leaving the passage for outside data.

Worked examples and pitfalls

The three-way rule on one short passage: Passage: 'The Riverton depot handled 4,200 parcels in March, a 12 percent increase on February. A night shift was introduced in January; in March it processed 40 percent of the parcels the depot handled.' Now take four statements. (1) 'The depot handled 3,750 parcels in February.' February is March divided by 1.12: $4,200 / 1.12 = 3,750$ exactly, so this is True - the passage determines it even though the number is not printed. (2) 'The night shift caused the March increase.' Cannot Say. The passage puts the night shift and the increase in the same depot in the same period; it never claims one produced the other, and it never denies it either. Most candidates mark this False, reasoning correctly that correlation is not causation but then choosing the wrong label: False is reserved for statements the passage contradicts. (3) 'The night shift processed more than 1,700 parcels in March.' Forty percent of 4,200 is 1,680, which is not more than 1,700, so this is False - contradicted by arithmetic on the passage's own figures. (4) 'The depot handled more parcels in March than in January.' Cannot Say: January is mentioned only as the month the shift started, and no January volume is given.

Quantifier drift and illicit conversion: Passage: 'All accredited suppliers submit quarterly audits. Some suppliers in the northern region are accredited.' Statement A: 'Some suppliers in the northern region submit quarterly audits.' True, and it is worth seeing why the chain holds: at least one northern supplier is accredited,

and every accredited supplier submits, so at least one northern supplier submits. Statement B: 'Every supplier that submits quarterly audits is accredited.' This reverses the first sentence. 'All accredited suppliers submit' leaves the door wide open for unaccredited suppliers to submit as well - perhaps voluntarily, perhaps under another rule - so the answer is Cannot Say. Turning 'all A are B' into 'all B are A' is called illicit conversion and it is the single most productive trap in this format, because the reversed sentence sounds like a paraphrase. Statement C: 'No unaccredited supplier submits quarterly audits' is the same reversal wearing a negative coat, and it is Cannot Say for the same reason. Statement D: 'All northern suppliers submit quarterly audits' is also Cannot Say: 'some are accredited' says nothing about the rest.

Asserted versus reported: Passage: 'The committee's report claims that the scheme cut waiting times by a third. Two of the four regional boards have disputed that figure.' Statement A: 'The scheme cut waiting times by a third.' Cannot Say. What the passage asserts is that a report claims this; the claim's truth is never settled, and the dispute does not settle it either. Statement B: 'At least two regional boards disagree with the report's waiting-time figure.' True, and note 'at least' - the passage says two disputed it, and two of four disputing is consistent with 'at least two'. Statement C: 'All four regional boards accept the figure.' False, directly contradicted. Statement D: 'The report is wrong.' Cannot Say. This item type appears constantly in policy and diplomacy passages, where a paragraph stacks a claim, a source, and a reaction, and the reader has to keep three different truth-conditions apart. The reliable habit is to underline the reporting verb - claims, argues, estimates, alleges, projects - and remember that everything downstream of it belongs to the source, not to the passage.

Percentages are not symmetric: Passage: 'Membership fell from 8,000 to 6,000 over two years, then recovered by 25 percent in the third year.' Statement: 'Membership at the end of year three was higher than at the start.' The fall is 2,000 on a base of 8,000, which is 25 percent. The recovery is 25 percent of the new base: $6,000 \times 1.25 = 7,500$. That is below 8,000, so the statement is False. The trap is elegant, because a 25 percent fall followed by a 25 percent rise feels like it should cancel. It does not: to get back from 6,000 to 8,000 you need a 33.3 percent rise, since $2,000 / 6,000 = 0.333$. Whenever a verbal item states a change as a percentage, write down what the percentage is a percentage of before you touch it. A related version supplies the recovery as an absolute number instead - 'recovered by 2,000 members' - which does return the total to 8,000, and candidates who answered the first version from memory get the second one wrong.

Verbal analogies: name the relation as a sentence: Item: 'ANTISEPTIC is to INFECTION as ____ is to ____.' Options: (a) vaccine : immunity, (b) insulation : heat loss, (c) medicine : illness, (d) bandage : wound. Write the stem relation as a full sentence first: 'An antiseptic is applied in order to prevent an infection from occurring.' Now test each option against that exact sentence. Option (a) runs the other way - a vaccine is given to produce immunity, not to prevent it. Option (c) is the right family but the wrong specificity: medicine typically treats an illness that has already started. Option (d) is applied after the wound exists. Option (b) fits precisely: insulation is applied in order to prevent heat loss from occurring. The general method is the same on the simpler item types. 'BOOK is to LIBRARY as PAINTING is to ____' has canvas (the material), artist (the maker), and gallery (the place a collection is kept and shown) among its options; all three are genuine relations to 'painting', and only the third matches the stem sentence. Options in analogy items are chosen to be true statements about the words, just not the stated relation.

Two premises with 'some' prove nothing: Argument: 'Some depot managers are qualified engineers. Some qualified engineers hold a rigging certificate. Therefore some depot managers hold a rigging certificate.' This is invalid, and the way to prove it is a counter-model rather than an argument. Let the depot managers be Ana and Ben; let the qualified engineers be Ben and Cara; let the certificate holders be Cara alone. Premise one holds: Ben is a manager and an engineer. Premise two holds: Cara is an engineer with the certificate. The conclusion fails: neither Ana nor Ben holds the certificate. Since a single consistent world makes both premises true and the conclusion false, the argument cannot be valid, so in a True / False / Cannot Say framing the conclusion is Cannot Say. Two premises that both begin 'some' never combine into a conclusion, because 'some' gives you an overlap without telling you where the overlap sits. Contrast a valid pair: 'All

accredited labs are inspected annually. No inspected facility is exempt from the fee.' Every accredited lab is inspected, and no inspected facility is exempt, so no accredited lab is exempt - True.

How to practise this skill

- Answer from the passage even when you know the subject. Candidates with a background in the topic score worse on verbal items than they expect, because their own knowledge quietly supplies the missing premise that turns a Cannot Say into a True.
- Run the two-worlds test on every candidate 'Cannot Say': can you imagine a world where all the passage's sentences hold and the statement is true, and another where they hold and it is false? If both, it is Cannot Say. If only the false world exists, it is False.
- Underline the quantifiers and hedges in the statement (all, some, only, most, may, must, likely) and find their counterparts in the passage. Roughly half of the wrong answers in this construct come from a single word swapped between the two.
- Budget about 25 to 30 seconds per statement rather than per passage, and read the passage once for structure before touching the statements. Re-reading the whole passage for each statement is what causes candidates to run out of time on the last set.
- Keep a wrong-answer log with one label per error: quantifier, causation, reported-versus-asserted, arithmetic, outside knowledge. A clear pattern almost always emerges within about forty items, and it is usually a single label.
- Work untimed until the three-way rule is automatic, then add the clock. Attempts are stored on this device only, so a slow first pass through a passage set costs you nothing but the time you spend on it.

Glossary

Entailment: A statement is entailed by a passage when it cannot be false while every sentence of the passage is true. Entailment is the only thing that earns a 'True' in this format; being plausible, likely, or well known does not.

Cannot Say: The verdict for a statement the passage neither entails nor contradicts. It is a claim about the passage, not about the world, which is why a statement you know to be true in real life can still be Cannot Say.

Quantifier: A word fixing how much of a group a claim covers: all, most, some, few, none, only. Swapping one quantifier for another changes the logical content completely while barely changing how the sentence reads.

Illicit conversion: The invalid move from 'all A are B' to 'all B are A', or from 'if P then Q' to 'if Q then P'. It preserves the words and destroys the logic, which is why converted sentences make such effective wrong answers.

Counter-model: A concrete, consistent scenario in which the premises hold and the conclusion fails.

Producing one is the fastest possible proof that an argument is invalid, and it takes two or three named individuals.

Hedge: A qualifier such as may, could, is expected to, or is associated with. A hedged sentence in a passage cannot support an unhedged statement, and an unhedged passage sentence is not weakened by a hedged statement.

Reporting verb: A verb such as claims, argues, estimates, or alleges that attributes the following content to a source. Everything downstream of it is the source's assertion, and the passage takes no position on it.

Analogy relation: The specific link between the two stem words in an analogy item - tool and user, item and container, action and purpose. Naming it as a full sentence before reading the options removes almost all of the guesswork.

Study this next

- Verbal reasoning skill hub: <https://learn.novusstreamsolutions.com/aptitude/skills/verbal-reasoning>
- Practise the verbal reasoning bank:
<https://learn.novusstreamsolutions.com/cognitive-skills/verbal-reasoning>
- Critical thinking lesson: <https://learn.novusstreamsolutions.com/aptitude/skills/critical-thinking/lesson>
- Reading comprehension lesson:
<https://learn.novusstreamsolutions.com/aptitude/skills/reading-comprehension/lesson>
- General civil-service aptitude suite:
<https://learn.novusstreamsolutions.com/aptitude/tests/general-civil-service-aptitude>
- Verbal reasoning lesson on Novus Learn:
<https://learn.novusstreamsolutions.com/aptitude/skills/verbal-reasoning/lesson>

Where this material comes from

- Worked items written for Novus Learn. Every passage, statement set and figure above is original and invented for this lesson; no published or copyrighted test item is reproduced.
- Terminology follows standard, widely published usage in introductory logic and assessment writing - entailment, quantifier, illicit conversion, counter-model.
- Novus Learn aptitude construct registry (catalog seed) for the construct scope and the suite mapping shown in the related links.
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Safety judgment

Hazard recognition, safe sequencing, escalation, and risk controls.

Practise recognizing hazards and choosing a safe, proportionate response: protect people, control immediate exposure, use the correct reporting path, and verify that the control is effective.

What you should be able to do after this lesson:

1. Separate a hazard from the likelihood, severity, and exposure that shape its risk.
2. Choose an immediate control that stays within the person's training and authority.
3. Recognize when work should pause and when a supervisor, emergency process, or qualified specialist is needed.

Worked examples and pitfalls

Worked scenario: a damaged machine guard: A guard is loose before a scheduled run. Do not operate the machine or improvise a repair beyond your authorization. Keep people away, isolate or label the equipment only as procedure permits, report the defect to the responsible person, and wait for an approved inspection or repair. A deadline does not remove the hazard.

Risk-triage questions: Ask: what can cause harm, who is exposed now, how severe could the outcome be, what control is available, and who has authority to apply it? The safest answer is not always the most dramatic option; it is the option that controls the real exposure without creating a new hazard.

How to practise this skill

- Treat warnings, permits, isolation rules, and personal protective equipment as parts of a system, not interchangeable shortcuts.

- Do not ask an untrained person to investigate a hazard simply because they are nearby.
- In real work, site procedures and qualified safety direction override any general preparation heuristic.

Glossary

Hazard: A source or situation with the potential to cause harm.

Risk: A judgement about possible harm that considers likelihood, severity, and exposure.

Control: A measure that removes a hazard or reduces exposure to it under an approved process.

Study this next

- Occupational safety and health:
<https://learn.novusstreamolutions.com/search?q=Occupational%20safety%20and%20health>
- Hazard: <https://learn.novusstreamolutions.com/search?q=Hazard>
- Risk assessment: <https://learn.novusstreamolutions.com/search?q=Risk%20assessment>
- Safety judgment lesson on Novus Learn:
<https://learn.novusstreamolutions.com/aptitude/skills/safety-judgement/lesson>

Where this material comes from

- Novus Learn original safety-critical, hazard-recognition, and operational suite scenarios.
- Novus educational framework: identify the hazard, protect people, control exposure, report, and verify.

Educational preparation only. Novus Learn does not administer official exams and does not guarantee scores or hiring outcomes.

Attention and concentration

Sustained focus, selective attention, and accuracy under time pressure.

Attention and concentration is the skill of still noticing on minute forty of a checking block as reliably as you did on minute two, and of pointing the noticing at the right thing when two things compete. It has three distinguishable parts - selective attention, sustained attention or vigilance, and divided attention - and assessments load them differently: cancellation and checking tasks load vigilance, conflict tasks load selection, and dispatch-style monitoring loads division. It is the construct that decides whether a records clerk, a dispatcher, an air-side controller or a quality inspector catches the one wrong digit in a shift. Practice here is device-local, with no account and nothing uploaded.

What you should be able to do after this lesson:

1. Count occurrences of a target in a dense string without double-counting or losing your place, using a fixed scan path rather than free looking.
2. Separate hits, misses and false alarms in your own results and work out whether you are set too eager or too cautious for the scoring rule in force.
3. Predict where in a long block your error rate will rise, and schedule micro-resets against that curve instead of pushing through it.
4. Recognise a transposition error, the class that survives a same-characters gist check and is therefore missed most often.
5. Explain why an automatic process such as reading interferes with a controlled one, and use that to anticipate which distractors will actually cost you time.
6. Run a two-stream monitoring task by alternating on a fixed cadence rather than attempting genuine simultaneity.

Worked examples and pitfalls

A cancellation count you can actually check: Count every 7 in this row: 4 7 1 7 7 3 9 7 2 8 7 5 7 6 0 7.

Working left to right and tapping once per hit: hits at the second, fourth, fifth, eighth, eleventh, thirteenth and sixteenth positions. That is seven sevens. Two error modes produce nearly all the wrong answers. The first is the adjacent pair - the 7 7 at positions four and five gets counted once, because the eye takes a repeated character as one perceptual object. The second is losing the place after the 9, where the visually similar 9 and 7 force a moment of re-checking and the scan restarts a character early, producing an over-count of eight. The defence for both is a fixed scan path with a physical anchor: a fingertip or cursor moving one character at a time, never jumping back. Re-scanning to check is the thing that creates the double-count, so if you must verify, verify by counting a second time from the RIGHT-hand end and comparing totals, never by re-reading part of the row.

Hits, misses and false alarms: the eager candidate loses: A checking batch contains 300 records, 40 of which are genuinely faulty. Candidate A flags 46 records and 36 of them are truly faulty. Hits 36, misses 40 minus 36 equals 4, false alarms 46 minus 36 equals 10. Candidate B flags 38 and 34 are truly faulty: hits 34, misses 6, false alarms 4. On hit rate alone A wins, 36 out of 40 which is 90 percent against B's 34 out of 40 which is 85 percent. Now apply the scoring rule that most checking tasks actually use, where a false alarm cancels a hit: A scores 36 minus 10 equals 26, B scores 34 minus 4 equals 30. B wins by four despite catching two fewer faults. This is why 'flag anything that looks odd' is bad advice on a scored checking task, and why the first thing to read on a checking item is whether wrong flags are penalised. Your response criterion - how much evidence you demand before flagging - is adjustable, and it should be set from the scoring rule, not from your temperament.

The transposition that passes every gist check: Compare these two lines and decide whether they match. Invoice 4820-7391-06. Invoice 4820-7931-06. They do not: the middle group reads 7391 in the first and 7931 in the second, with the 3 and the 9 swapped. Transpositions are the most-missed error class in record checking for a structural reason - the character SET is identical, the length is identical, the first and last characters of the group are identical, so every fast check the visual system runs comes back clean. Substitutions and omissions change the character inventory and get caught; transpositions do not. Two habits raise the catch rate. Read digits in fixed groups of two rather than as a whole number, so 73-91 against 79-31 becomes a mismatch at the first group instead of a subtle difference somewhere in a four-digit blur. And check groups in a deliberately non-natural order - last group, first group, middle group - because reading left to right lets the confirmation you built at the start carry you through the middle, which is exactly where the swap is usually planted.

Conflict: why reading fights you: The classic demonstration is Stroop's, published in 1935: the word RED printed in blue ink, with the instruction to name the ink colour. Naming takes measurably longer, and errors go up, because reading a familiar word is automatic and cannot be switched off, so the automatic response has to be suppressed before the controlled one can be produced. The same conflict has a numeric version you can test on yourself in a second: how many characters are in the string 4 4 4? The answer is three, and the digit 4 pulls at you the entire way. In an assessment this appears wherever the salient feature and the asked-for feature come apart - a chart where the tallest bar is not the answer to the question, a form where the highlighted field is not the one being verified, a row where the bold total is not what the stem requested. The practical move is to name the target feature out loud before you look - 'ink colour', 'character count', 'the value for March' - because pre-loading the target biases selection before the automatic reading response gets a chance to win.

Where the errors actually appear in a 45-minute block: Errors in a long checking block are not spread evenly. Mackworth's 1948 clock-watching study established the pattern that gives the effect its name: detection declines over a prolonged watch, with the sharpest deterioration early rather than at the very end. Practically, on a 45-minute self-timed checking block, expect your per-minute error rate in minutes 20 to 45 to run visibly above minutes 1 to 20 even though nothing about the material changed, and expect the subjective sense of

effort to lag the actual decline, so it will not feel like you are getting worse. Two things work against it. Break the block into three fifteen-minute segments with a ten-second reset between them - look away, unfocus, breathe out - which costs thirty seconds of a 45-minute block, about one percent of the time, and buys back more than that in caught errors. And score your practice by segment rather than as one number, because a single overall accuracy figure hides exactly the information you need: whether your problem is skill, which shows as flat error rate, or endurance, which shows as a rising one.

Two streams: alternate on a cadence, do not try to merge: A dispatch-style monitoring task: keep a running total of the numbers announced on channel one while watching channel two for the code word AMBER. Genuine simultaneity is not available - the two tasks compete for the same control resource - so the choice is not whether to alternate but whether to alternate deliberately or accidentally. Deliberate looks like this: fix the arithmetic to a rhythm, updating the total only at each announcement and holding a single number between updates, which frees the gaps for channel two. If the total is 34 and the next announcement is 7, you spend under a second reaching 41 and then you are free again. Accidental looks like re-deriving the running total from the beginning because you did not trust it, which locks up the whole window and is when AMBER goes past unheard. The measurable failure of divided attention is almost never a failure to hear the target; it is a failure to have any spare capacity at the moment it arrived. The related phenomenon worth knowing is inattention blindness, illustrated by Simons and Chabris in 1999: an unexpected and perfectly visible event is missed entirely when attention is committed to a counting task.

How to practise this skill

- Fix your scan path before you start, and never re-scan backwards to double-check. Backward re-scanning is what produces both double-counts and lost places; if you need to verify a count, run it again from the other end and compare.
- Read the scoring rule before the first item. Whether false alarms are penalised changes the correct strategy completely, and a criterion set for the wrong rule costs more marks than slow reading does.
- Check numeric strings in fixed groups of two or three and in a deliberately shuffled group order. Transpositions are the errors that survive whole-string comparison, and they are the ones planted on purpose.
- Time your practice in segments and log accuracy per segment, not per session. A flat error rate means you need speed; a rising one means you need endurance and breaks, and the two problems have opposite fixes.
- Name the target feature out loud before each conflict item. Pre-loading the relevant dimension is the cheapest available defence against the salient-but-wrong answer.
- Practise with an actual distractor present rather than in silence. A test hall has movement, coughing and page-turning, and attention practice in perfect quiet trains a condition you will not meet.

Glossary

Selective attention: Prioritising one source or feature while suppressing competing ones. It is what fails when the visually salient element of a display captures the response instead of the requested one.

Sustained attention (vigilance): Maintaining detection performance over a long, low-event period. It is the capacity that checking, monitoring and inspection tasks are really sampling.

Vigilance decrement: The decline in detection performance over a prolonged watch, typically steepest early in the block. Mackworth's 1948 clock test is the standard public reference.

Divided attention: Handling two streams that compete for control. Performance is best modelled as fast alternation with a switch cost, not as genuine parallelism.

Hit, miss, false alarm, correct rejection: The four outcomes of any detection decision: flagging a real fault, missing one, flagging a clean record, and correctly leaving a clean record alone. Any honest accuracy claim

needs at least the first three.

Response criterion: How much evidence you require before flagging. Shifting it trades misses against false alarms without changing your underlying sensitivity, which is why it must be set from the scoring rule.

Stroop interference: The slowing that occurs when an automatic response, such as reading a word, conflicts with the requested response, such as naming its ink colour. Named for Stroop's 1935 experiments.

Inattentional blindness: Failing to notice a fully visible, unexpected event because attention is committed elsewhere - the effect Simons and Chabris demonstrated in 1999 with a counting task.

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- Character strings, invoice comparisons, batch counts and monitoring scenarios above are written for Novus Learn. All figures are original and no published test item is reproduced.
- Terminology and directions of effect follow widely published work: Mackworth (1948) on the vigilance decrement, Stroop (1935) on response conflict, Simons and Chabris (1999) on inattentional blindness, and the standard hit/miss/false-alarm framing from signal detection theory. Concepts only; no result figures are attributed to those studies.
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