

INDEPENDENT PRACTICE MATERIAL

Alignment note

US 32406 | Design basis, checks and limits

No cut score is claimed. Use the schedule diagnostically and item by item.	No NZQA endorsement is implied. This is independently authored practice material.	Practitioner review is invited. No current teacher of this standard has yet reviewed the package.
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Purpose and sampling frame

This package is independent practice for US 32406, version 4. The sampling frame uses the current unit standard, the republished March 2026 assessment specification, the Numeracy Learning Matrix, Unpacking Numeracy, and every English US 32406 paper and schedule published for 2025 and 2026 at the time of review.

The intended benchmark is Phase 3 and Phase 4 of the Mathematics and Statistics Learning Area, equivalent to upper Level 4 and lower Level 5 of the 2007 curriculum. Both 2025 exemplar sets, the 2025 interim and full reports, and the 2026 interim report were also reviewed.

Fixed blueprint

Items	34 original items	Contexts	Five everyday contexts
Outcomes	O1: 13 O2: 13 O3: 8	Responses	21 numeric 5 multiple-choice 8 extended

The contexts are a community library, weekend market, household water use, coastal walk and beach clean-up. All wording, values, displays and questions are original. The four additive visual items require reading consequential information from an artefact.

Outcome assignment

Outcome 1	Select or formulate an operation, relationship, representation or method.
Outcome 2	Apply a substantially established procedure or convention correctly.
Outcome 3	State a conclusion, give relevant evidence and connect that evidence correctly.

Item 1(a) is Outcome 1 because the learner formulates an elapsed-interval method from two clock times. Item 4(f) is Outcome 2 because the component durations are supplied and finishing-time execution is the scored demand.

Report-informed emphasis

Recent reports emphasise selecting an approach that answers the question, checking measurement results for reasonableness, interpreting tables, maps and graphs, using rates and ratios, converting metric measures, and supporting explanations with the quantities named in the question. Stronger areas are retained because this is representative parallel practice, not a remediation test.

Intended demand and response design

Included Whole numbers, decimals, fractions and percentages Rates, ratios, a linear rule and metric conversion Area, volume, maps, transformations and a cube net Data displays, simple chance and evidence-based explanations	Excluded Reverse percentages Non-linear or step functions Bearings and circle measurement Sample-to-population inference and theoretical probability experiments
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Outcome 3 decisions follow recent schedules and exemplars. A sufficient response normally states a position or conclusion, gives correct contextual evidence and connects the evidence to the conclusion. Alternative positions are accepted where the interpretation is defensible.

Checks completed

Checked	Every item solved in two passes against its response constraints.
Checked	Outcome and content coverage, units, rounding, graph values, option uniqueness and wording checked.
Checked	Assessment, schedule, worksheets and browser built from one canonical content file.
Checked	PDFs rendered and inspected; browser behaviour checked at phone width and in print.
Checked	The two Brief 05 visual items retain deterministic geometry checks and still await a separate cold attempt.

Differences from the NZQA platform

NZQA CAA	This independent version
Setting Digital-first, supervised and completed in one session.	Setting Untimed practice with no supervisor controls.
Responses Outcome 1 and 2 items are automatically marked; Outcome 3 is panel-marked.	Responses Nothing is marked, submitted, saved or scored.
Accessibility Polly text-to-speech and approved assistive tools are supported.	Accessibility Optional local browser speech is offered when available; it is not Polly.
Interface Live delivery includes platform controls and may randomise options.	Interface One item at a time, neutral response presence and optional item references.

Item mapping

This forwardable PDF follows the web reference: a short summary, structured checks and limits, then the same per-item mapping used beside the browser assessment. O1 means select or formulate; O2 means apply a procedure or convention; O3 means explain with evidence.

Question 1: Community library

Item	Outcome · format	Content and demand	Published precedent
1(a)	O1 · numeric	Content ideas: Operations on numbers, Measurement Task: How many minutes is the booking?	2025 Term 2 time calculations and 2025 Term 3 finishing-time items.
1(b)	O1 · numeric	Content ideas: Measurement, Spatial properties Task: What is the greatest number of cushions that fit on the floor?	2025 Term 3 circle-packing item; this version makes the scale drawing, rather than area division, decisive.
1(c)	O2 · numeric	Content ideas: Measurement, Spatial properties Task: What is the real floor area of the room, in square metres?	2025 Term 2 map-scale and volume items; 2026 Term 2 map-scale and rectangle-area items.
1(d)	O2 · numeric	Content ideas: Operations on numbers, Measurement Task: What is the estimated total mass of the books, in kilograms?	2025 Term 2 mass item and 2026 Term 2 price-by-mass items.
1(e)	O3 · extended	Content ideas: Statistics and data Task: Do you agree with the report?	2025 Term 2 and Term 3 time-series explanations; 2026 Term 2 honey-price trend item.
1(f)	O1 · multiple choice	Content ideas: Mathematical relationships Task: Which rule gives the book capacity from the number of shelves?	2026 Term 2 shoe-size rule item and recent linear table/graph items.
1(g)	O3 · extended	Content ideas: Operations on numbers, Measurement Task: Using the average mass as an estimate, can all 48 books be moved in one load?	2025 and 2026 reports emphasise realistic measurement and checking answers in context.

Question 2: Weekend market

Item	Outcome · format	Content and demand	Published precedent
2(a)	O2 · numeric	Content ideas: Operations on numbers, Measurement Task: How much does the bag cost?	2025 Term 2 supermarket rate items and 2026 Term 2 price-by-mass items.
2(b)	O1 · numeric	Content ideas: Operations on numbers Task: How many cups of concentrate are needed for 7.5 cups of water?	2026 Term 2 ratio-scaling item and report emphasis on scalars.
2(c)	O3 · extended	Content ideas: Operations on numbers, Measurement Task: Is the sign correct?	2025 Term 2 cheese unit-rate explanation.
2(d)	O1 · numeric	Content ideas: Operations on numbers, Measurement Task: What area of ground sheet is needed, in square metres?	2026 Term 2 rectangle-area and percentage item; this is not an excluded reverse-percentage problem.
2(e)	O2 · numeric	Content ideas: Probability, Operations on numbers Task: What is the chance of choosing a green token?	2025 Term 2 song-probability item and 2026 Term 2 probability items.
2(f)	O3 · extended	Content ideas: Spatial properties Task: Is the vendor correct?	2025 Term 2 transformation items and 2025 Term 3 symmetry items.

Question 3: Household water

Item	Outcome · format	Content and demand	Published precedent
3(a)	O2 · numeric	Content ideas: Measurement Task: How many litres does the tank hold when full?	2025 Term 2 and Term 3 cuboid-volume and metric-conversion items.
3(b)	O1 · numeric	Content ideas: Operations on numbers, Measurement Task: How many litres of water are used altogether?	2026 Term 2 multi-step rate and capacity items.
3(c)	O2 · numeric	Content ideas: Operations on numbers Task: What is the percentage reduction in water used per flush?	2025 and 2026 percentage-discount items; the original amount is supplied.
3(d)	O3 · extended	Content ideas: Statistics and data Task: Is the notice correct?	2025 and 2026 evidence-based graph-claim items.
3(e)	O1 · numeric	Content ideas: Mathematical relationships Task: How many litres are left after 6 days?	Recent linear relationship items in tables, graphs and word rules.
3(f)	O3 · extended	Content ideas: Operations on numbers, Measurement Task: Is there enough stored water for all 7 days?	2026 Term 2 drink-sufficiency explanation and report emphasis on sensible quantities.
3(g)	O2 · numeric	Content ideas: Measurement, Operations on numbers Task: How many more litres are needed to fill this tank?	2025 and 2026 measuring-scale items; this item adds reading between graduations before a subtraction.

Question 4: Coastal walk

Item	Outcome · format	Content and demand	Published precedent
4(a)	O2 · multiple choice	Content ideas: Location and navigation Task: Which letter is at coordinate (4, 3)?	2025 Term 2 latitude/longitude items and 2026 Term 2 grid-location item.
4(b)	O1 · numeric	Content ideas: Measurement, Location and navigation Task: What is the real route distance, in kilometres?	2025 Term 2 and 2026 Term 2 map-scale items.
4(c)	O1 · numeric	Content ideas: Operations on numbers, Measurement Task: How many minutes does the walking take?	2025 Term 3 speed items and 2026 Term 2 speed-conversion item.
4(d)	O2 · multiple choice	Content ideas: Location and navigation Task: Which direction best describes the path from B to C?	2025 Term 3 map-direction item; bearings are not used.
4(e)	O3 · extended	Content ideas: Probability, Operations on numbers Task: Do you agree?	2026 Term 2 comparison of rain probabilities in unlike forms.
4(f)	O2 · numeric	Content ideas: Operations on numbers, Measurement Task: What time does the group finish?	2025 Term 2 and Term 3 elapsed-time items.
4(g)	O2 · numeric	Content ideas: Measurement, Operations on numbers Task: About how many years separate the shell marker and the fish marker?	2025 and 2026 measuring-scale items; this item requires measurement from an unequal-layer diagram before a metric conversion and rate calculation.

Question 5: Beach clean-up

Item	Outcome · format	Content and demand	Published precedent
5(a)	O2 · numeric	Content ideas: Operations on numbers Task: How many plastic items are collected?	2025 and 2026 fraction and part-whole ratio items.
5(b)	O1 · multiple choice	Content ideas: Statistics and data Task: Which statement is correct?	2025 report emphasis on dot plots, median, spread and graph interpretation.
5(c)	O2 · numeric	Content ideas: Operations on numbers, Measurement Task: What is the total mass of the sacks, in grams?	2025 report emphasis on decimals and metric conversion.
5(d)	O3 · extended	Content ideas: Statistics and data, Operations on numbers Task: Is the organiser correct?	2025 and 2026 category-frequency claims and Outcome 3 exemplars.
5(e)	O1 · numeric	Content ideas: Probability, Statistics and data Task: Based on these results, what is the estimated chance that the next event is cancelled?	2026 Term 2 probability from historical frequencies.
5(f)	O1 · multiple choice	Content ideas: Spatial properties Task: Which net will fold to make the cube?	2025 Term 2 net item and report emphasis on anticipating net viability.
5(g)	O1 · numeric	Content ideas: Measurement Task: About how long is the driftwood, in centimetres?	Recent estimation and measurement items; this item adds comparison with a familiar reference object.

Primary source key

US 32406 version 4: <https://www.nzqa.govt.nz/nqfdocs/units/pdf/32406.pdf>

2026 assessment specification:

<https://www2.nzqa.govt.nz/assets/NCEA/LitNum/Assessment-specifications/32406-spc-2026.pdf>

Numeracy Learning Matrix: <https://ncea-live-3-storagestack-53q-assetstorages3bucket-2o21xte0r81u.s3.amazonaws.com/s3fs-public/2021-08/Numeracy%20Learning%20Matrix%20%28A4%29.pdf>

Unpacking Numeracy: <https://ncea-live-3-storagestack-53q-assetstorages3bucket-2o21xte0r81u.s3.amazonaws.com/s3fs-public/2021-08/Unpacking%20Numeracy%20%28A4%3B%20Page%206%20is%20A3%29.pdf>

US 32406 resource index, including all 2025 and 2026 papers, schedules, exemplars and reports used:

<https://www2.nzqa.govt.nz/ncea/subjects/past-exams-and-exemplars/litnum/32406/>

NZQA marking guidance: <https://www2.nzqa.govt.nz/ncea/subjects/litnum/marketing/>

NZQA assessment delivery: <https://www2.nzqa.govt.nz/ncea/subjects/litnum/assessment/>

NZQA text-to-speech guidance: <https://www2.nzqa.govt.nz/ncea/subjects/litnum/text-to-speech/>

NCEA co-requisite information: <https://ncea.education.govt.nz/literacy-and-numeracy-assessment-information>

A complete URL-to-local-file register is retained in [working/source-register.md](#).