

Title	Navigate a transect line in good visibility and poor visibility using a map and GPS for pest control operations		
Level	3	Credits	8

Purpose	People credited with this unit standard are able to: demonstrate knowledge of map features and navigation tools; navigate a transect line in good visibility; and navigate a transect line in poor visibility; for pest control operations.
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Classification	Pest Management > Pest Control
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Available grade	Achieved
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Guidance Information

- 1 Legislation and codes relevant to this unit standard includes but are not limited to:
 - Animal Welfare Act 1999;
 - Health and Safety at Work Act 2015;
 - Hazardous Substances and New Organisms Act 1996;
 - *Leave No Trace: Care Codes* available from the Department of Conservation, <http://www.doc.govt.nz>; and any subsequent amendments.

- 2 Definitions

Aiming off – deliberately aiming to one side of a point on a linear feature.

Attack point – an interim navigation goal.

Back bearings – compass bearings that are the reverse of the direction of travel.

Catching features – indicate to the navigator they have gone too far.

Good visibility – where the horizon is visible.

Handrails – the linear features to follow.

Horizon – where the sky meets the terrain. Examples of this could include river, ridgeline, and cliff.

Poor visibility – where the horizon is not visible.

Predator refers to mustelid, rodents, and feral cats

Rural pest animal refers to possums, rabbits, predators and avian pests.

Transect line may be a trap line or a bait station.

Workplace procedures are the documented policies and practices for safety and procedures within a particular worksite and are consistent with equipment manufacturers' guidelines; site signage; and company health and safety plans. This includes all best practice guidelines and Standard Operating Procedures (SOPs) as set out by industry groups such as – Environmental Protection Authority (EPA), and Department of Conservation (DOC).

- 3 *NZMS 260 maps* are topographical maps published by Land Information New Zealand and available from map selling agencies throughout New Zealand.

- 4 For the purposes of assessment:
- evidence for the practical components of this unit standard must be supplied from the workplace.
 - evidence must be presented in accordance with workplace procedures.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of map features and navigation tools for pest control operations.

Performance criteria

- 1.1 Identify map features and their functions on a variety of maps.
- Range features include but are not limited to – scales, symbols, grid lines, contours, shading;
maps may include but are not limited to – park, NZMS 260, orienteering;
evidence of one type of map is required.
- 1.2 Fix an accurate position on a topographical map using a six-figure grid reference and map number.
- 1.3 Describe navigation techniques in terms of how and when they are most effectively used.
- Range navigation techniques include but are not limited to – aiming off, attack points, handrails, catching features, back bearings.
- 1.4 Describe navigation techniques in terms of the difference between magnetic and grid bearings.
- 1.5 Complete a route card for a given route that contains at least three legs.
- Range information for each leg must contain but is not limited to – correct grid reference of departure and finish point, description of leg, accurate distance, vertical height gain or loss as indicated by contours, estimated time.
- 1.6 Describe navigation tools in terms of their uses and limitations.
- Range navigation tools must include – altimeter, map, compass, route card, GPS;
navigation tools may include but are not limited to – leap-frogging, use of rope, sun, stars, winds, vegetation;
evidence of four is required.

Outcome 2

Navigate a transect line in good visibility for pest control operations.

Range at least two different locations using NZMS 260 maps.

Performance criteria

- 2.1 Orientate the map using surrounding natural features.
- 2.2 Identify the position of the transect line to within 100 metres using map and surrounding features as references.
- 2.3 Reach a predetermined point at the start of the transect line, following a route using map to ground techniques and navigating around hazards.
- 2.4 Take accurate compass bearings for the transect line from a map and follow with a compass.
- 2.5 Identify present position on the map by taking a resection using three features.
- 2.6 Identify factors that impact on the time taken to get from one point to another on the transect line.

Range factors may include but are not limited to – bridges, river crossings, obstacles, up-hill, rest stops, size of group, injury.
- 2.7 Estimate the amount of time required to walk from one given point to another on the transect line in a variety of tracked terrain and justify the variation to the actual time taken.

Outcome 3

Navigate a transect line in poor visibility for pest control operations.

Range at least two different locations above or below the bush line.

Performance criteria

- 3.1 Orientate a map to north in a given location on the transect line using a range of navigation tools.

Range navigation tools may include but are not limited to – map, surrounding natural features.
- 3.2 Identify position on the transect line to within 100 metres using navigation tools.

Range must include but is not limited to – map, compass.

3.3 Reach a predetermined point on the transect line following a route using navigation techniques and navigating around hazards.

Range navigation techniques may include but are not limited to – pacing, timing, aiming off, attack points, handrails, bypassing obstacles, following a compass bearing, using map to ground techniques, catching features, back bearings; evidence of at least four techniques is required.

3.4 Estimate the amount of time required to travel from one given point to another in a variety of terrains on the transect line and justify any variation to the actual time taken.

3.5 Estimate the travel distance from one given point to another in a variety of terrains on the transect line and justify the variation to the actual distance.

3.6 Demonstrate navigation techniques to bypass obstacles on the line of travel.

Outcome 4

Navigate a transect line using a GPS, and store and retrieve data.

Performance criteria

4.1 Set up the GPS in preparation for navigating a transect line.

Range includes but is not limited to – position format, map datum, track log recording.

4.2 Calibrate the compass.

4.3 Add, remove, and save data from the GPS.

4.4 Use the calendar to check how the number of points deployed on a given day.

4.5 Measure distances and display old track logs.

4.6 Edit waypoints in a transect line.

Planned review date	31 December 2025
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 March 2021	N/A

Consent and Moderation Requirements (CMR) reference	0052
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact the Primary Industry Training Organisation standards@primaryito.ac.nz if you wish to suggest changes to the content of this unit standard.