

Kiwi-O

Orienteering for Schools



For a minimum preparation, minimum equipment, minimum cost orienteering programme in primary and intermediate schools.



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Orienteering is a competitive sport which appeals to all ages. It involves running across unfamiliar country using a map to find your way around a set course.

Orienteering requires physical fitness, skill in map reading, compass work, mental alertness and decisiveness.

Orienteering teaches participants to assess, understand and “read” the countryside, as well as to appreciate the beauty and variety of the terrain they travel over.

WHO SHOULD USE THIS MANUAL?

This manual is intended for anyone teaching orienteering at schools, school camps or in youth groups, for students aged between 8 and 12 (years 4-8). Some exercises and events are also suitable for students aged 5 – 7.

It is intended for use in New Zealand but much of what is recommended is applicable anywhere in the world.

ORIENTEERING

Orienteering is a competitive sport, which appeals to all ages and genders. It involves cross-country running using a map to find your way around a set course.

Competitive orienteering requires physical fitness, skill in map reading, compass work, mental alertness and decision-making.

Orienteering teaches participants to assess, understand and “read” the countryside, as well as to appreciate the beauty and variety of the terrain they travel over.

A standard orienteering course consists of a start, a series of checkpoints called controls at different features in the terrain, which must be visited in order, and a finish. Participants use an accurate, detailed map of the area to find the controls.

While most orienteers also use a compass to keep their map orientated (“turned to fit”), this is not the only way to do so. With the emphasis in school orienteering being on map reading, compass use is not introduced; instead other ways of turning maps are suggested.

Orienteering embodies a wide range of physical and mental skills. The latter include:



- **Fitting map to terrain (and vice-versa)**
- **Decision making (route choice)**
- **Determination (sticking to one’s decision)**
- **Self-confidence (in unfamiliar terrain)**
- **Planning ahead**
- **Adapting the correct navigational technique for the terrain, e.g., aiming off, use of attack points, compass skills, checking distance travelled.**

ORIENTEERING AND THE SCHOOL CURRICULUM

Orienteering is mainly about recognising spatial relationships – relationships of distance and direction. It can be as easily used as part of the school mathematics syllabus as well as the physical education and health syllabus.

The geometry curriculum for students in junior classes includes arranging objects on the floor and outlining the arrangement on paper, taking into consideration size, shape, distance and direction. The Desktop Map game, for example could be regarded as a maths activity and taught in maths class.

The following are part of the maths programme for Year 7 & 8 classes, mapping the:

- Classroom
- Student's home
- Streets between home and school with the route marked.

Gathering information, identifying relationships, considering all factors involved in a given situation and making sound decisions underlie the work of most subjects, particularly social studies. Effective use of these skills is central to success in orienteering.

Orienteering provides opportunities to apply syllabus skills and understanding in a social context, for example:

<i>Social Studies/ Geography</i>	Maps, plans, contours, and landforms land use, urban and rural surveys
<i>Physical Education and Health</i>	Walking and running, agility running off tracks
<i>Mathematics</i>	Plans, spatial relationships, scales, angles, symbols, time, distance, speed, arithmetic, surveying, estimating
<i>Outdoor Education</i>	An essential introduction to any form of Outdoor Education, allowing students to work independently, without constant instructor supervision
<i>Personal Development</i>	Practises planning ahead, problem solving and decision making. Helps develop memory skills, concentration, as well as self-confidence and self-esteem.

Orienteering provides an ideal combination of skill development for health, fitness and intellectual stimulation.

KIWI-O

Kiwi-O introduces FUNdamental skills involved in navigating with a map. These skills include:

- Understanding a map, including key or legend
- Turning a map to fit the ground
- Navigating a simple course, or similar exercise
- Setting your own simple courses

Kiwi-O is suitable for mixed age groups, both girls and boys, for the well-coordinated and for the relatively uncoordinated.

Students from the age of 5 years and some students with intellectual or learning disabilities may need to start with pictorial maps, drawn by an older student or adult, with symbols being introduced when they are ready

Students from the age of 6 years should be able to read simple maps and draw suitable sketch maps.

Kiwi-O is modified so orienteering maps, control flags and clipcards are not needed to introduce the sport to students. It involves students playing a series of activities and taking part in enjoyable events in which they learn and practise basic orienteering skills.

Kiwi-O helps students become confident in their ability to use maps to find places. A map is an orienteer's most valued piece of equipment and when first introducing orienteering to students, the skill of map reading is the first important skill to learn.

These skills are learned and practised in and around school grounds. A description of these skills follows, with exercises or events to develop each skill, and type of map required.

The exercises and events are listed in order of difficulty, ie, those most suitable for younger students come first. Older students will also benefit from doing simpler exercises and activities, but will not need to spend as much time on them as younger students, and students with learning difficulties.

Once students have mastered the skills in and around school grounds, they can then use and develop those skills to orienteer at school camps and in parks, which can be followed by more challenging venues.

Kiwi-O SKILLS

The orienteering skills to be learned and practised are:

- Understanding maps, i.e., knowing a map represents a set area, and what a legend (or key) illustrates
- Turning and thumbing a map – holding it so it fits the grounds and using your thumb to mark your location on the map
- Navigating a simple course – reading the map, deciding on the direction to go, and travelling around a set course shown on the map
- Setting your own simple course

The use of a compass is not part of Kiwi-O. Instead other ways of turning maps to fit the ground are used.

A fuller explanation of these skills follows, along with exercises and events to teach and practice each skill. The type of map needed for each exercise or event is listed.



Orienteering skills

- **Observing features on map and terrain**
- **Relating to distance and direction**
- **Turning the map to fit the ground**
- **Establishing direction of travel**
- **Maintaining direction while travelling**
- **Folding and thumbing the map**
- **Location and relocating oneself on a map**
- **Recognising alternative routes and choosing between them**
- **Copying control circles accurately from the master map**
- **Finding and using handrails**
- **Finding and using attack points**
- **Finding and using catching features**
- **Aiming off**
- **Drawing a mini-map**
- **Planning courses and putting out controls**
- **Recording controls**

SKILL – UNDERSTANDING MAPS

Understanding maps requires looking at the area mapped, noting features in the area and their relative positions to each other. It requires understanding certain symbols represent these features and are used to draw the map and matching them to features in the mapped area. Symbols are usually listed in the legend (or key) printed on the map.

Students need to understand the relationships of distance and direction on a map are the same as those in the area which the map represents because a map is, in many ways, simply a miniature representation of the terrain. Using a variety of maps helps develop map understanding.

Drawing maps is a very good way to learn to understand maps. To draw a map a student has to observe the features in the area, then choose the symbol from the list which matches each feature.

Drawing different maps and undertaking map activities practises and reinforces the understanding of symbols, and matching features and symbols.

A list of symbols for hand-drawn maps is on page.

Exercises and Activities

1. Mini Map (pg 34)*
2. Desktop Map (pg 36)*
3. Treasure Island (pg 37)*
4. Orienteering Island (pg 39)*
5. Individual Orienteering Island (pg 41)*

* All maps to be drawn by the students

SKILL – TURNING THE MAP

Turning the map means turning the map to fit the ground. The map is turned so the layout of features on a map exactly matches the layout of features in the area. Some people, particularly males have less trouble reading a map without turning it to fit. But it is easier to read a map when it is turned to fit the ground, and is less work for the brain.

Some students find turning the map disconcerting at first, because it means any writing on the map, such as the title, will be sideways or upside-down. The writing needs to be ignored when turning the map.

Streets bordering a map can be named to help ensure the map is turned the correct way round.

Thumbing the map is a technique to keep track of where you are on the map. The thumb is used to mark where you are, and to trace your route as you move along.

To accommodate small hands, the map may need to be folded so the thumb can comfortably reach your location on the map

Exercises and Activities

1. Turning the Map (pg 32) – School Grounds map
2. Mini Map (pg 34)*
3. Desktop Map (pg 36)*
4. Treasure Island (pg 37)*
5. Orienteering Island (pg 39)*
6. Individual Orienteering Island (pg 41)*
7. Trying to Trick You (pg 42)– All types of maps

* All maps to be drawn by the students

Folding and thumbing the map

Once the map has been turned to fit the ground the tip of a thumb should be placed on the map immediately below the position where you are standing. As you move along the thumb is moved along, checking off each feature as it is passed. Thumbing helps keep track of where you are on the map.

From time to time it will not be possible to comfortably thumb the map because of the width of the paper and where you need to put your thumb. In that case the map needs to be folded so the thumb can reach your present location on the map. Care has to be taken to fold the map so the areas around where you presently are and where you are going next are visible. As you proceed around the course it will probably be necessary to refold the map to expose the next area the course goes through.



SKILL – NAVIGATING SIMPLE COURSES

Navigating means deciding on which route to take to get around a course. It involves working out the direction to go and which features you will pass as you go along.

Each leg of the course requires a decision as to which direction to go and the best route to take between those two places. A leg is each section of the course, that is: from the start to the first control, each section between each two controls, and the section between the last control and the finish.

Once the direction of travel is established, it is also necessary to maintain that direction while travelling. On simpler courses where there is no route choice you can look ahead to the next feature you are going to. On handrail (linear features such as tracks, fences, and streams) courses it is easy to follow the handrail. Maintaining direction can become more difficult when shortcuts are taken.

Before you start you need to locate your position on the map. While travelling it may be necessary to relocate; that is, if you have lost track of exactly where you are, being able to work out exactly where you are by looking around you to identify nearby features, and to find those features on the map.

The first courses students do should not require decision making as to which is the best way to go.

As students become more experienced, route choice can be introduced. For example, if there is a building or high fence in the way on a leg, is it better to go round to the left or the right of the building or fence? Which is the shortest and quickest route?

Activities

- 1. Mini Map (pg 34)***
- 2. Individual Orienteering Island (pg 41)***
- 3. Circle of Friends (pg 43) – drawn by teacher**
- 4. Indoor Navigation (pg 45)***
- 5. Motala (pg 47), Trivia (pg 49), Cross Country Orienteering (pg 53)**

* All maps to be drawn by the students

SKILL – SETTING OWN SIMPLE COURSES

Getting students to set their own simple courses helps reinforce map reading and navigation skills.

Students choose a start place, 3 or more control sites and a finish place. They need to place the controls in the correct places. Controls should be put by a feature, and not, for example in the middle of grass area or concrete.

Ideally controls should not be placed too close together. Also they should be visible when near them.

Mini Maps

Orienteering is enjoyed most when there is a new challenge to be faced. Most students will be very familiar with the layout of the school grounds.

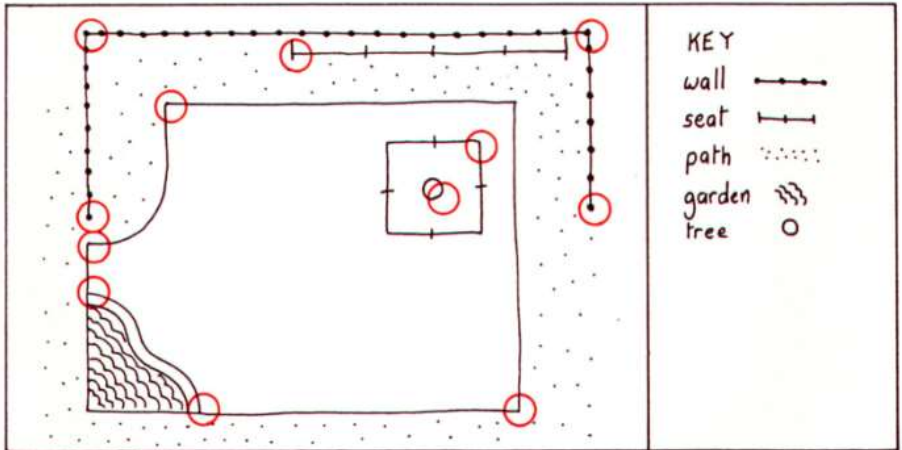
Mini maps are maps of small areas of the grounds; initially provide more of a challenge than a map of the whole grounds. The maps are drawn by students to improve their map understanding and to save teachers preparation time.

Students from the age of 6 are able to draw adequate sketch maps. Usable maps do not need to be strictly accurate. They just have to look right in terms of direction and distance.

The maps should be of a small simple area: a patch of lawn with a few shrubs, or of a larger detailed area: the school buildings.

Representing land features on paper, regardless of size, require understanding of, and some skills with respect to relationships of direction and distance, feature to feature, and map to terrain. Students should find their way successfully from place to place.

The Mini Map activity should be repeated at least once, using new small areas.



Mini Maps may be of small simple areas, a patch of lawn with a few shrubs; or of larger, more complicated parts of the school grounds.

Exercises and Activities

1. Mini Map (pg 34)*
2. Orienteering Island (pg 39)*
3. Individual Orienteering Islands (pg 41)*
4. Cross Country Orienteering (pg 53)– School Grounds Map

* All maps to be drawn by the students

SKILL - MAP MAKING

The first maps used in Kiwi-O are simple maps, hand drawn by the students themselves. See Understanding Maps and Mini Maps.

After this maps of school grounds can be used. Making a simple map of the school grounds is not particularly difficult. It has considerable value as an activity for students. See the following section on Do-it-yourself maps.

Kiwi-O progresses from the school grounds to local parks and school camps. The same principles for mapping a school apply to parks and school camp venues. See the following section on Do-it-yourself maps.

Alternatively, for a professional standard orienteering map of your school, local park or school camps venue, contact your local orienteering club who will probably have a mapper who can assist with preparing a map for a nominal fee.

Orienteering mappers use OCAD (orienteering computer aided design software).

Do-it-yourself maps

Hand-drawn maps are suitable for school grounds, local parks and school camps.

Required

- The map of the school buildings or plan of other area.
- Alternatively, an aerial photograph of the school or other area which can be obtained from your local Council or from online sources (eg. Google maps).
- Tracing paper
- Pen or pencils of different colours for fieldwork
- Fine felt tip pens of different colours or thickness for map-making
- Printer for title and key

Procedure

Decide on an area you wish to use. Resize until it fits an A4 or A3 page.

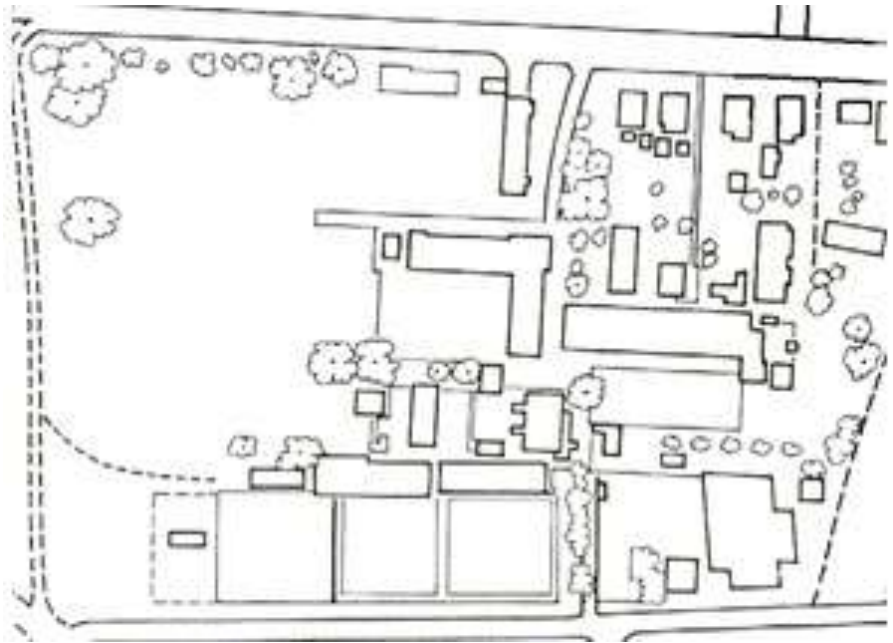
If the base map is a copy of an aerial photo it may not photocopy well. If you are using an online source this may be better suited to enlarging.

Using tracing paper, trace the key elements of the photo onto the paper. Use this as you base for fieldwork.

Use a clean piece of tracing paper, tape on top of the base map and walk around the area drawing what you see onto the new tracing paper.



Google Earth Image



Trace what you can see on the photo to make your base map.

As you walk around the area, mark on the tracing paper any corrections and additions.

Once you have completed your fieldwork review, use a new piece of tracing paper and redraw the map carefully using pen and ruler. Consider using black pens of different thicknesses or different colours.

Add a title, key/legend, date and your name on the map.

Map anything which:

1. Orienteers may use to navigate by, such as a path across the sports field.
2. May impede the orienteer's progress, like bush, high fences or a creek.
3. Maybe useful as a control site

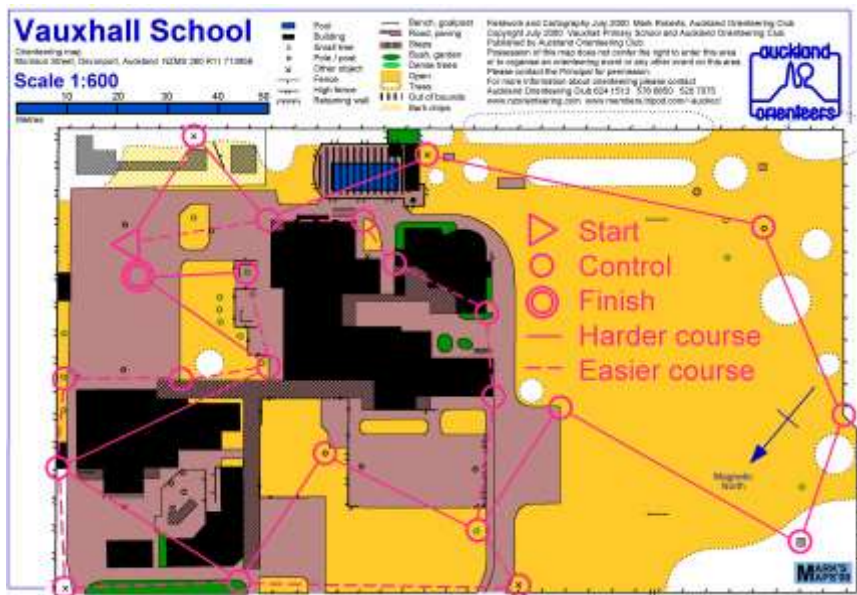
Map what stands out. Don't map detail which may be lost in the noise. Fine detail crammed into a small area is too hard to map. Just map the major features. Consider the students point of view, and what may stand out to them – for example drinking fountains, or play equipment.

Overhead structures are often too hard to include so it may be best to ignore them.

Remember building outlines should be based on ground-level not on aerial photos as they will show overhead structures such as eaves and walkways.

Computer drawn maps

A skilled orienteering mapper uses OCAD to draw maps. OCAD includes the international orienteering symbols but these can be modified to your needs.





























OCAD Orienteering Map

Printing Maps

Printing colour maps is best done on a laser printer and then laminated to protect the maps from frequent use.

We recommend you include the instructions on the back of the laminated map to ensure the instructions and map remain together. Alternatively place the map and instructions inside reusable plastic bags.

Map Symbols for Hand Drawn Maps

	Building		
	Water tank		
	Seat / bench		
	Fence		
	High fence		
	Wall		
	Gate / stile		
	Special (man-made) feature		Start
	Road		Control site
	Vehicle track		Finish
	Footpath / track		
	Paved area		
	Tree		
	Tree stump		
	Log		
	Bushes / garden		
	Sand / bark		
	Marshy area		
	Stream		
	Bridge		
	Large rock / boulder		
	Knoll (small round hill / earth mound)		
	Hill		

SCHOOL GROUND ACTIVITIES

When the students have mastered the basic skills and played some Mini Map activities they can move on to events using a map of the whole school grounds.

Activities

1. **Trying to Trick You (pg 42)**
2. **Motala (pg 47)**
3. **Trivia (pg 49)**
4. **Cross Country Orienteering (pg 53)**

Mapping School Grounds

Simple map-making of the school grounds is not particularly difficult. It has considerable value as an activity for able students. See the section on Map Making on page 15 for more information.

Courses set using the school grounds will:

- Probably have controls which are not visible from one another
- At times include obstacles, e.g., buildings between controls, in order to force route choice
- May lead to attach points, aiming off, and handrails as navigation techniques. See Glossary on page 57 for explanations of these terms.

Alternatively, for a professional standard orienteering map of your school, contact your local orienteering club to see if they have a mapper who will map your school for a nominal fee.

Current club contacts are listed on the Orienteering NZ website

www.orienteering.org.nz

SCHOOL CAMP AND PARK ACTIVITIES

Navigating on a new map in an unfamiliar environment such as a school camp or park may require a higher level of skill than those developed in the familiar area of the school grounds. It is therefore desirable to reinforce and practice turning and thumbing the map: two skills which some students may, till now, have been carrying out almost intuitively and very approximately.



The first visit to an unfamiliar map area should include playing the “Trying to Trick You” activity and a map walk: a group follow-my-leader along line features: roads, tracks, fences, streams and hedges, the students turning their maps and moving their thumbs from feature to feature as they progress.

If several controls have been put out but not marked on the maps, students can be asked to mark the location of the controls as they find them. This enables the leader to check which students really know where they are.

Most activities held on unfamiliar maps will be cross-country orienteering activities.

It is important the courses set are appropriate to the level of skill to the weakest navigator because ALL must succeed in finding all the controls, though some will be faster than others.

It is better to set a series of small courses, rather than one big long course at school camps and in local parks. Students can then complete a number of courses according to their ability, and all achieve success, whether they have done three, five or however many courses.

A series of courses also makes fuller use of the area and the map.

Activities

1. Desktop Map (pg 36)
2. Treasure Island (pg 37)
3. Orienteering Island (pg 39)
4. Individual Orienteering Islands (pg 41)
5. Trying to Trick You (pg 42)
6. Circle of Friends (pg 43)
7. Indoor Navigation (pg 45)



Orienteering Clubs Can Help

Local orienteering clubs can:

- Provide a professional colour map of our school
- Provide maps of local parks and reserves
- Lend you flags, controls
- Welcome schools to their regular events
- Sometimes can organise your event for you

Refer to the Orienteering NZ website for contact details for your local orienteering club.
www.orienteering.org.nz

DIFFERENT LEVELS OF TECHNICAL DIFFICULTY

Orienteering courses are graded according to the level of navigational difficulty. Each level has been given a colour name. There are four levels: White, Yellow, Orange and Red. They range from very easy through to very difficult navigation.

White Courses

The simplest courses are known as **White** or “line feature” courses. They follow roads, tracks, fences, streams, hedges, tree lines, etc., sometimes referred to as handrails, with controls clearly visible at turning points and on features along the way. There should be no route choice: the quickest route is along the handrails.

Where there is no linear feature between two controls the leg should be taped; that is, a tape or cord should be laid between those two controls for the students to follow.

At orienteering club events students aged 10 and under, and older students with little or no orienteering experience do White courses.

Yellow Courses

The next level of course is a Yellow course, which also relies exclusively on handrails to navigate between controls, but allows shortcuts.

Control sites are on or with 50 metres of linear features, but usually not at turning points. This gives the opportunity to follow handrails or to cut across country. There is limited route choice. Control sites should be visible from the approach side by any reasonable route.

The most able students will soon be taking short-cut routes across the corners of handrail courses confidently and effectively. These students are ready to attempt courses which involve travel at some distance from tracks, roads and fences.

Students will need to be shown some new navigating skills. These should be introduced and practised in parks and reserves with clearly defined boundaries.



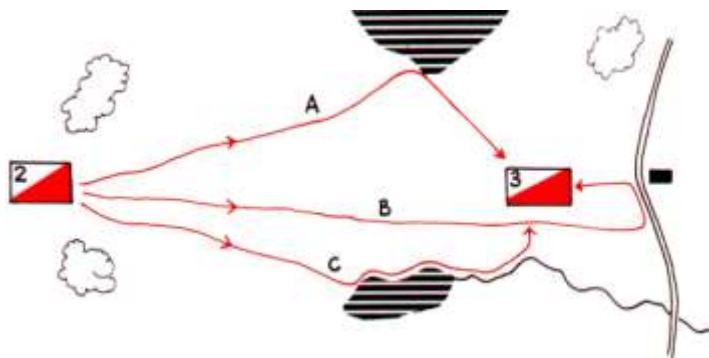
Example of a White course – it follows linear features



Example of a Yellow course – shortcuts can be taken

New Navigation Skills

Identifying and travelling to large features near controls before looking for small control features, that is, using attack points.



Aiming Off, Attach Points and Catching Features

Route (A) uses the corner of a lake as an attack point. Route (C) does better, using first the pond as an attack point, then the stream as a line feature handrail.

Identifying and using line features: **handrails** might help them along part of their route, for instance route (C) from the pond uses the stream.

Aiming off, i.e., deliberately aiming to the left or right of a control on or near a line feature which lies across the path of being travelled.

Route (B) in the illustration aims right to the road-catching feature, moves left to a building/corner attack point and turns left to the control.

Using **catching features**: line features lie across the director of travel. Refer to route (B), which uses the road as a catching feature.

Route choice decisions become increasingly important. “Short Cuts” are more risky and may, indeed, take longer. The choice lies with the orienteer: longer and safer, or shorter and riskier?

These skills are needed for the next level: Orange courses. Orange and Red courses are beyond the Kiwi-O orienteering level, and only described briefly.

Orange Courses

Courses have route choices with big attack points near the control sites and/or catching features (e.g., a track or forest edge) less than 100m behind.

Control sites can be fairly small point features and the control markers are not necessarily visible from the attack point.

The best exit route from the control should be different to the entry route, so other orienteers approaching aren't helped to find the control.

Simple navigation by contours and rough compass, with limited judgement of distance travelled required.

Red Courses

Navigation is as difficult as possible with small contour and point features as preferred control sites (no obvious attack points, no handrails, etc). Controls are placed in areas rich in detail, and before, and not close to, a large catching feature.

Route choice is an important element in most legs.

Only experienced orienteers should attempt Red courses.

Compasses not Used in Kiwi-O

Kiwi-O should take place in a visually open environment so students can see when their map is turned to fit the ground. The use of a compass is neither necessary nor desirable in school grounds, urban parks, reserves or farmland.

The skill of turning a map using a compass is not part of the Kiwi-O teaching.

Compass work WITHOUT maps is NOT Orienteering

ORIENTEERING FOR STUDENTS WITH DISABILITIES

Trail-O – Internationally

Trail orienteering is an orienteering discipline centred around map reading in natural terrain and has been developed to offer everyone, including those with limited mobility, a chance to participate in a meaningful orienteering competition.

Manual or electric wheelchairs, walking sticks, and assistance with movement etc. are permitted as speed of movement is not part of the competition.

Trail orienteers must identify on the ground control points shown on the map. As this is done from a distance, both able-bodied and participants with disabilities compete on level terms. Proof of correct identification of the control points does not require any manual dexterity, allowing those with severely restricted movement to compete equally. Most trail orienteering events have classes open for everyone.

Students with Physical Disabilities

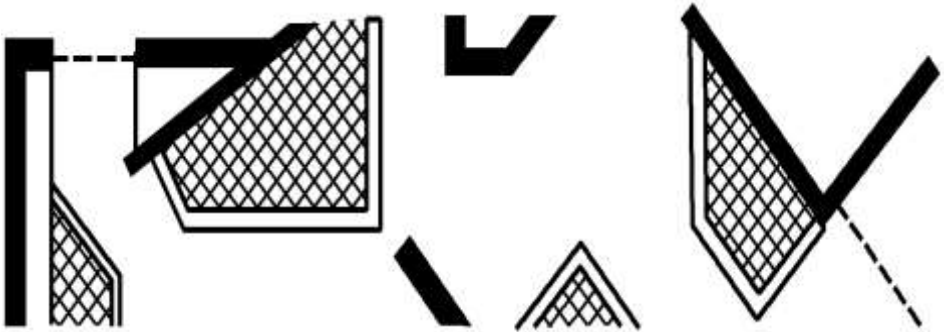
Students with physical disabilities can actively participate in the sport because orienteering is as much an intellectual as physical sport,

Pair up students so one can do the map reading and navigation while the other may undertake the physical component of the course if not easily reached by the other student. This may require students to separate, but it is important to include all students in the event within their ability and utilising their skills.

Students with Visual Impairments

Students with visual impairments can participate in orienteering if tactile maps are available.

Tactile maps can be easily modelled from balsawood using raised sections to represent the different map sections, such as buildings or trees; and pins to represent control markers.



Tactile map has raised features to identify areas and pins for control markers.

Students with Intellectual Disabilities

Students who are not yet able to understand the use of symbols may understand pictorial maps. If students are unable to draw their own maps then a teacher or another student can draw it for them.

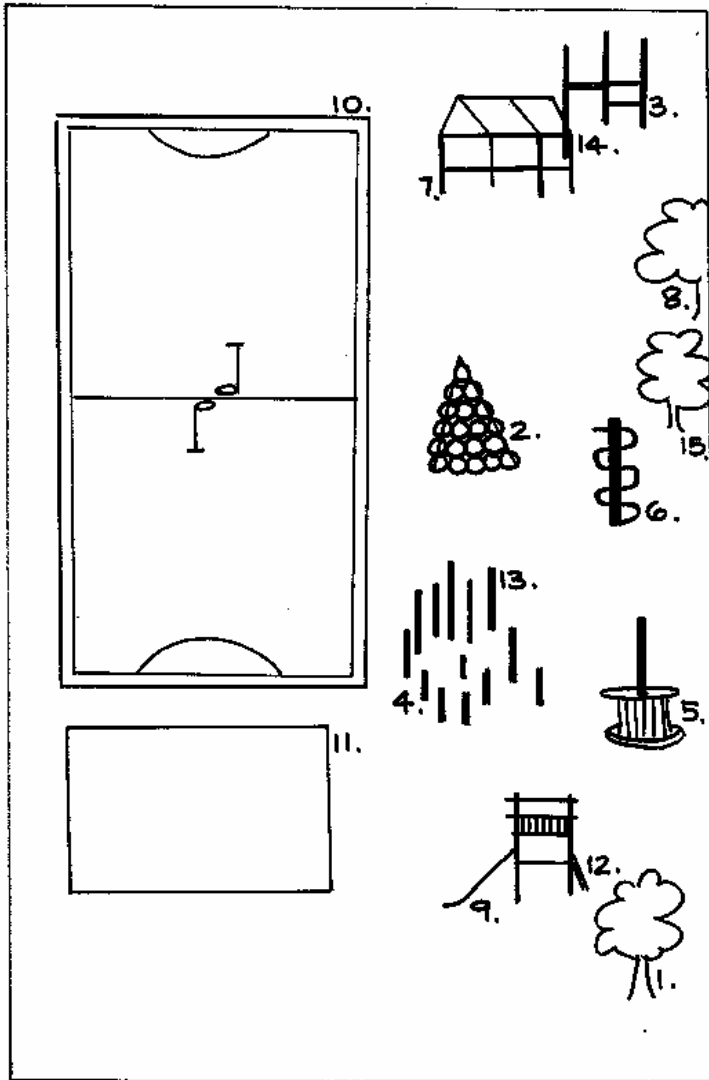
“String” courses can be used for all students who are unable to map read. Use a rope – 100m+ long – to lay out a course around trees, through playgrounds and under benches etc.

Pictorial controls and markers (eg crayons) are placed at intervals along the course. Students are given a checking sheet which has small versions of the pictures.



String course clip card

At each control the student matches and marks the picture at the control with the one on their clipping sheet.



Pictorial map of school playground

If students are at the pre-map reading stage, buddy them with other students but give them their own recording sheet/clip card.

EXERCISES & ACTIVITIES



Map activities can be played indoors, in the classroom, library, etc, which practise navigational skills. Several activities are described in the following pages, which involve activities which are part of the school curriculum.

These exercises and activities can be a useful lead-in to orienteering.

Exercise : Turning the Map

Purpose

- To give practice in turning the map accurately.

Required

- Class set of maps of a familiar area.

Procedure

- Take students to a place on the map.
- Tell them to turn their maps to fit the ground.
- Talk with them about how they did it.
- Ask questions such as “how do you know it’s turned to fit the ground?”
- Establish a good to do this is to look around and find 1 or 2 features which they think should be on the map. Ask everyone to do that. Look for a fence line, building, footpath or road.
- Ask them to look at their maps and find big features, to put a thumb on the map to show where they are standing. Then turn their maps until the big feature on their maps is on the correct side of their thumb, i.e., on the same side as the real thing.
- Next, they should check the second big feature is also on the correct side of their thumb. They may need to turn their maps a little.
- Once the map is turned, the students should then be led to look about and check other features fit too.
- Repeat this practice at a different place on the map, preferable on the opposite side of a given building.



Exercise : Turning, Folding and Thumbing

Purpose

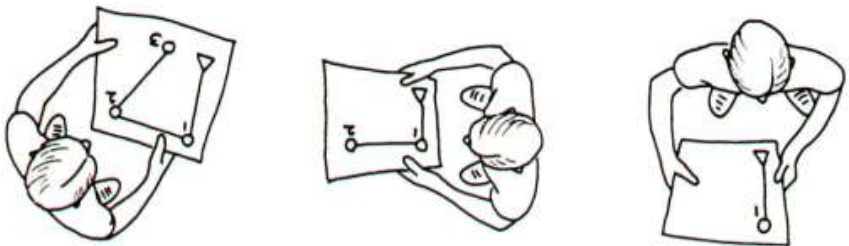
- Turning the map to fit the ground at each change of direction.
- Determining the direction of travel using the lines from control to control as a guide.
- Maintaining contact with the map by moving the thumb from feature to feature along the line of travel while progressing.

Required

- Class set of map with a 3 or 4 control cross-country course.
- Controls placed.

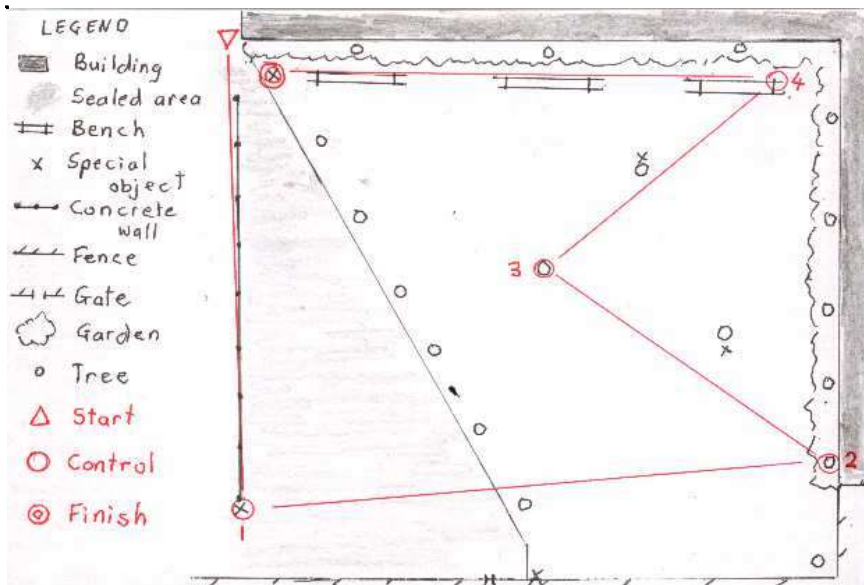
Procedure

- The student stands at the start.
- Puts the map on the floor or on the ground as turns it to fit the ground.
- Stands behind the triangle so they can look along the line from the start triangle to the number 1 control.
- Looks further along the line in the same direction to where control 1 really is.
- Picks up the map, holds it turned the right way around, puts their thumb on the triangle, and walks in the direction shown by the line on the map to the first control. Their thumb is moved along the map following the direction taken.
- Having reached the first control, they repeat the procedure from control to control until the course is completed.
- Time permitting, repeats the process travelling the course in reverse order, holding the map in their hand instead of placing it on the ground.



The map should remain orientated to surrounding features. The orienteer turns.

Exercise : Mini Map



Example of a Mini Map course

Required

- Clipboard or something similar for resting paper on for each student
- Unlined paper, pencil, rubber
- List of symbols to be used (see Glossary pg 57)
- Set of mini controls, e.g., coloured bottle tops (see page 59 for ideas)

Procedure

Choose two small adjacent outside areas bounded by clearly defined features, such as a wall, a fence, concrete curb, hedge or path.

The areas should have at least 10 suitable places to use as control sites, such as single trees, posts, rubbish tin, path junction, path corner, building corner, permanent seat or table.

Take the students step-by-step through drawing:

- The boundary features
- Features easy to relate by distance and direction to those already mapped
- Add the key (legend) to the map.

The best map can be photocopied for those students having difficulty with map drawing.

Talk about suitable places to put controls: the end of something, the corner of something, or something small, e.g., not the centre of a long thing, not hidden, not high up like in a tree.

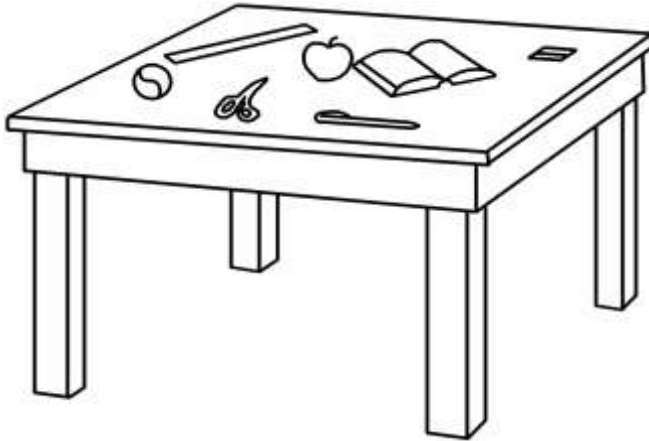
Organise students in pairs. One partner of each pair draws a map of one area, and the other draws the second area. Each student takes 4 – 6 mini controls and chooses places to put them.

Each should mark circles on their map to show the location of each control. Circles should be numbered in the order to be visited. (The number should be beside each circle, not in the circle as that could hide the feature to be found). Start and finish places should be chosen and marked on the map.

Each student gets their partner who does the course, starting as the Start, going around the course, collecting the controls as they go. The “course setter” should follow the “orienteer” to offer help if there are any problems.
The students then reverse roles.

Students who finish the activity early could set out another course for another partner.

Activity : Desktop Map



Purpose

- Continue the introduction of map reading and drawing
- Practice relating maps to the areas they represent.

Required

- Items at each student's desk.

Procedure

Ask students to arrange a few items on their desktop, e.g., pen, rubber, notebook, ruler, and calculator. Tell them to try and arrange them differently to their neighbours.

Students draw the layout of the items on their desk. Do not get them to name their maps.

Ask the students to go outside the classroom and give you their map as they go. Shuffle the maps, and ask the students to return to their classroom, taking a map from you as the return. Ask them to try and identify the desktop drawn on the map.

Activity : Treasure Island



Set the mood by reading a pirate or treasure island story to the students.

Purpose

- Introduce the drawing and use of picture maps
- Practise turning the map "to fit"
- Work out ways to go (routes)
- Practise giving and following directions

Required

- Items such as those listed below for constructing the island
- Clipboard, pencil, rubber and unlined paper for each student
- A miniature toy person/pirate
- Black and blue vivid markers or crayons
- Yellow stickers

Procedure

Make a miniature treasure island – fewer features for younger students and a more complex island for older ones.

Use a sheet of blue paper or plastic for the sea. Cut an island shape from a piece of cardboard (A4 or bigger), and place in the sea. Use a bottle top (blue if possible) filled with water for a lake. Make a river by drawing a line from the lake to the sea. Draw 2 or 3 tracks in black. Draw a hut (a square with windows and a door).

Use some sand to make 2 or 3 hills, and maybe an area of “quicksand”. Use some bluetack to hold up some leafy twigs for trees. Make a bush or hedge with something like sprigs of parsley. Add a manmade feature such as a tyre off a toy car. A stone can be a rock and a piece of bark can be a log. Staples can be used for a bridge.

Ask a few students to :

- describe the island – the shape and the relationship of the features on it, e.g., what is behind the hut? What is beside the tyre? What is between the log and hill? What is the closest thing to the bridge? What is next to the log? What is on top of the hill?
- draw a picture of the island – a pirate’s map. Some students will be faster than others. Suggest when they finish thinking of a name for their island.

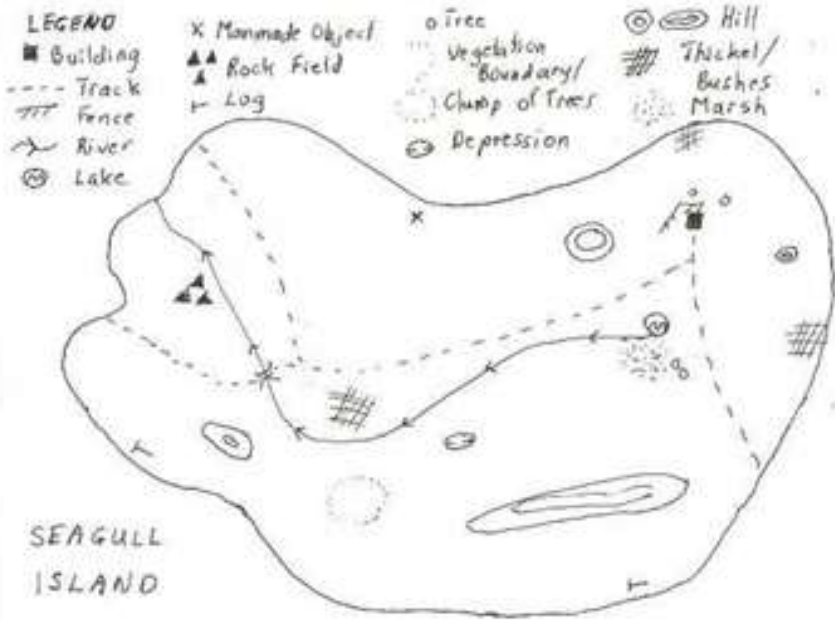
Tell the students they are will have a turn at hiding some treasure and finding it. Show them the “gold” - a yellow sticker, and how to hide the treasure. Choose a student’s map and show how to mark where you have hidden the treasure.

Explain the map must be “turned to fit the ground”. Now describe the route the pirate who gets the map is going to take. Tell where the pirate will land, and what they will see as they make their way to the buried treasure. For example, “I’m going to land by the log. I’ll turn left and follow the coast until I come to a track. I’ll follow the track. On my right side I see a mountain”.

After you have described the route use the toy pirate to “walk” the route and dig up the treasure.

Choose a student to hide the treasure while the other students shut their eyes. The student marks on their map where they have hidden the treasure. Choose a student to read the map and give directions of the route to a third student who will “walk” the toy pirate along the route. Repeat until each student has had at least one turn at one of the roles.

Activity : Orienteering Island



Purpose

- Introduce orienteering symbols
- Practise drawing maps using orienteering symbols
- Practise short orienteering courses on the island, deciding on ways to go

Required

- The island used for Treasure Island game
- Clipboard, pencil, rubber and unlined paper for each student
- Black and white orienteering map symbols list
- 3 or 4 miniature orienteering controls

Procedure

Tell the students they are now orienteers.

Orienteering is similar to using a pirate's map to look for treasure, except instead of reading a map to find treasure, orienteers read a map to find controls, and the controls should be easily seen when close to them.

Display the list of orienteering symbols and explain they are to be used on their maps. Each student draws a map of the island using the symbols, and listing the symbols used in a legend on their map.

Students take turns at setting a short orienteering course, reading the map and doing the course.

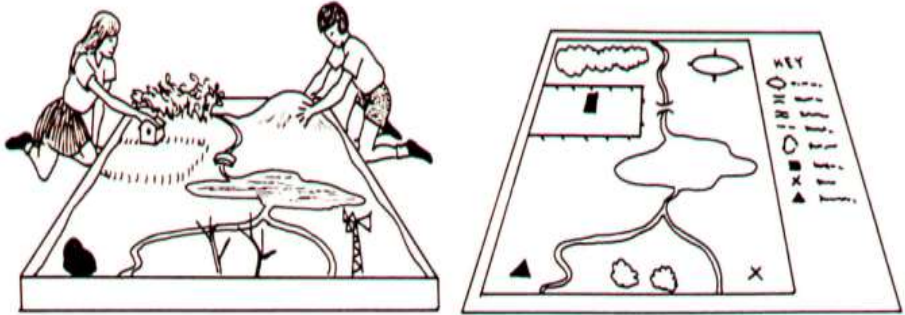
Demonstrate how to choose a start and finish place and orienteering controls, and how to draw a course on a map. Mark on the map a start place with a red triangle, 3 or 4 control places (using a red circle) and number the order to visit, and a finish place (double red circle).

Describe the route you are going to take, including where you will start and what you will look for as you make your way to each control. After you have described the route use the toy pirate to "walk" the route.

Select a student to be the Course Setter whose job it is to plan a course, including start, finish and control places.

Choose a student to read the map and give directions of the route to a third student who will "walk" the toy pirate along the route. Repeat until each student has had at least one turn at one of the roles.

Activity : Individual Orienteering Islands



Purpose

- Practise drawing maps using orienteering symbols
- Practise reading orienteering maps
- Practise using orienteering maps and deciding which way to go

Required

- A collection of items used for Treasure Island game
- Clipboard, pencil, rubber and unlined paper for each student
- 3 or 4 miniature orienteering controls per student

Procedure

Each student constructs an Orienteering Island on their desk.

They set a course using 3 or 4 controls, start and finish places and draw a map using the symbols. A legend should be put on the map showing the symbols used.

Students can “visit” other islands and use the map to do the orienteering course.

Continue until students are competent at turning the map to fit the ground, recognising the symbols, matching them to the features, and doing the course on each map.

Activity : Trying to Trick You

This activity practises the skill of turning a map the right way round (orienting the map). This game can be played every time a new map is introduced.

Students stand in the mapped area and look around to see the features in the area. Features may be: area of grass, netball court, footpaths, building, trees, bushes, gardens, fences, etc.

Ask students:

- What is close to them?
- What is far away?
- What features are close together?
- Can they see everything in the area?

It is important students observe what they can see around them so they can work out on the map where they are.

Give each student a map of the area and ask them to turn their map to fit the ground. Check everyone's map is turned to fit. Advise students to ignore any writing when the map is turned.

Tell students you are going to try and trick them to turn the map the wrong way around. Walk part way around the group until they are side on to you. Ask the students to turn to face you.

Some will keep the map turned the right way as they turn, changing their hold on the map. Others will turn and the map will also turn, but will realise their map no longer fits and will correct it. Some will need prompting to turn their map. Other may try and swivel their map without moving their feet.

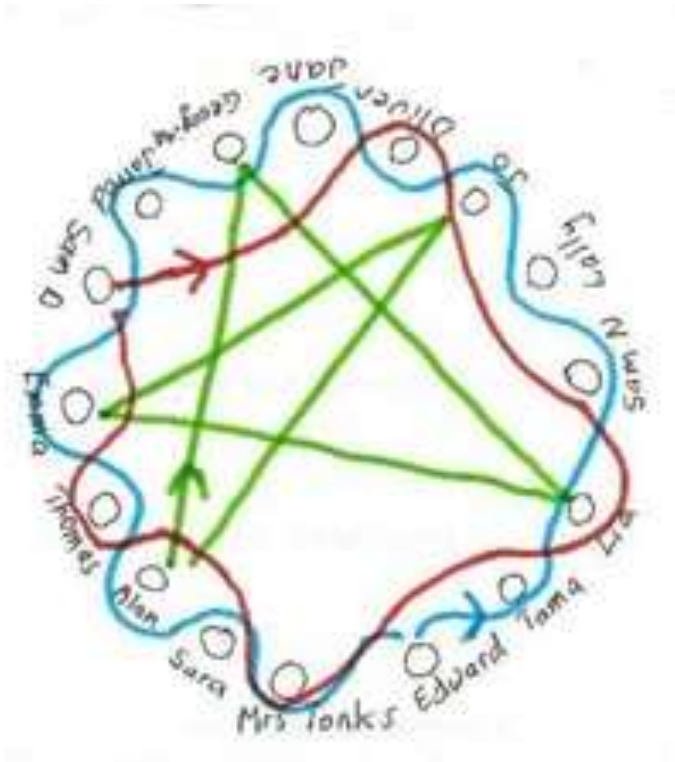
There may be a few who do not grasp the concept and will not be able to turn the map the right way.

Walk around behind the students and ask them to turn to face you. This time you will notice more students will keep their map turned.

Move to different positions around the group a few more times until most students are automatically keeping their map turned.

If any students have difficulty turning the map to fit and turn their bodies instead, try this method. Get the students to turn the map correctly, then place the map on the ground and move themselves around the map to face the required direction before picking up the map.

Activity : Circle of Friends



Purpose

- Introduce map reading and drawing
- Demonstrate the importance of turning a map the right way round before doing any map reading
- Give the instructor the opportunity to learn a few names when working with a new group or class
- Introduce following a marked route

Required

- A2 paper, eg., newsprint
- Several different coloured vivid markers or crayons

Procedure

The students and instructor sit in a circle. Leave space to walk between every second student.

If there are more than 16 students, divide them into pairs with 1 student sitting on a chair and the other on the floor in front of them.

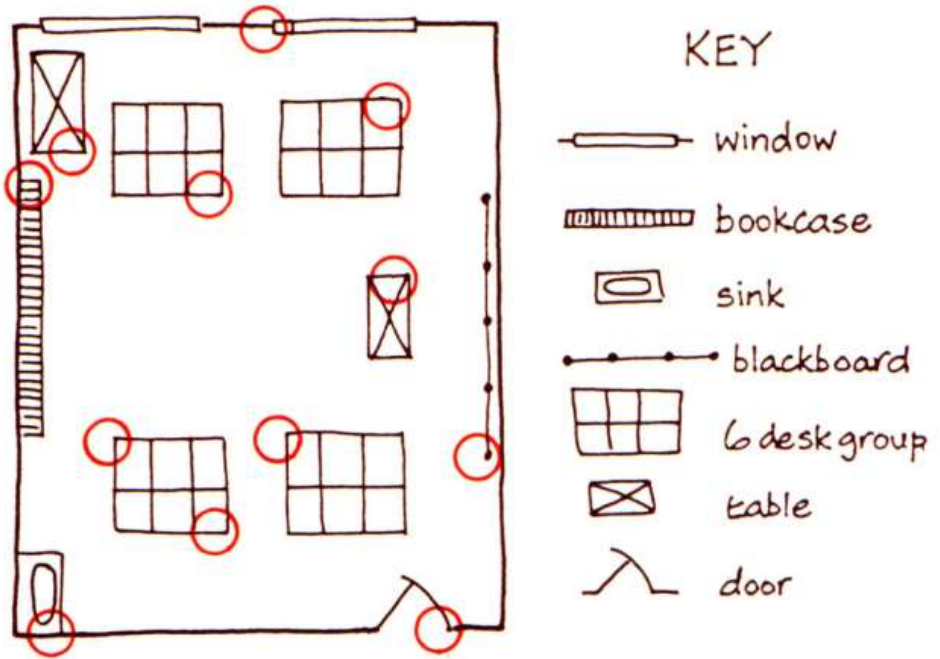
Draw a “map” of the (inner) circle and put your name next to the symbol representing you on the map. Fill in 2 or 3 other names by pointing to a symbol on the map and asking who it is.

Turn the map upside down and ask the students for a few more names. The students usually twist their bodies or heads to make the map fit the ground again. This is a good demonstration of how awkward it is when the map is not oriented the same way as the features.

Draw a route for a student to follow, e.g., across the circle, around the student opposite and back to their spot.

Draw some other routes for different students to follow, simple at first, then gradually becoming more complicated. Use different colours for different routes.

Activity : Indoor Navigation



Purpose

- Introduce map reading and drawing
- Practise putting out control markers
- Practise reading the map and finding control markers

Required

- A2 paper, A5 or similar paper and pencils
- Black and red vivid markers or crayons
- Mini controls – coloured stickers

Procedure

Students can work individually or in pairs for this activity.

Draw a simple map of the classroom on a sheet of paper. Draw a few items in the room and get a few students to go and touch these items. Ask what has been left off the map. Ask the students to show you where to put them on the map. Set rules about what you feel is too small to include on the map.

Draw a red circle around a feature on the map, eg., a desk corner. Ask a student to put a sticker at the exact location of the centre of the circle you have drawn on the map. Repeat this a few times until the students understand the circle on the map represents a sticker on an item in the room.

Give everyone or pair a sticker. Tell them to write a letter or symbol on it, and then find a location in the room to stick it. Outline basic rules about how hidden the stickers can be.

Also give every student or pair a number, i.e., 1, 2, 3 etc, which will identify their circle when drawn on the map. Do not write on the sticker.

After students have placed their stickers, they draw on the map where they have put their sticker. The circle's centre should be the exact location of their sticker. Ensure they do not write their chosen letter or symbol they put on their sticker on the map because this is the answer the other students have to find.

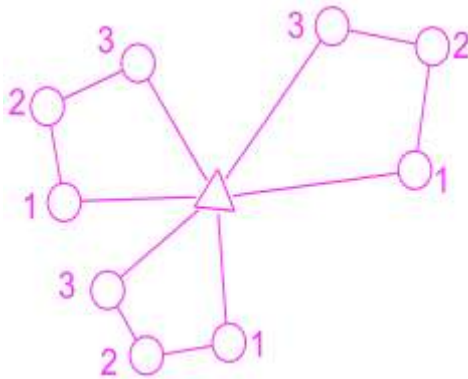
Students should list the number of stickers on a piece of paper to make an answer sheet.

The game is to find as many locations of stickers as possible and to copy the letter or symbol answer next to the number on their answer sheet. This way students relate the locations drawn on the map to actual locations in the classroom.

After a set time students are asked to disclose the letter or symbol they had on their sticker, and what number it was on the map, so they can check answers at the end.

Frustrations about stickers not being in the place shown on the map and stickers being too hidden can be discussed. A small mistake can make a potentially successful session into a disappointing experience, and possibly put students off orienteering and navigational activities.

Activity : Motala



A Motala Event consists of several small courses completed one after the other

3 to 5 loops work well. Copies of each loop are needed, e.g., for 3 loops and 30 students you will need 10 copies of each loop.

Required

- Class set of maps with 3 or more different short courses.
- Class set of recording sheets.
- The necessary controls placed.

	1	2	3	4	5	6	7	8
<i>Pat</i>	<i>Z</i>	<i>N</i>	<i>P</i>	<i>O</i>	<i>Q</i>			

Example of a recording sheet

Procedure

The class set of maps is laid out on a table inside or on a bench or area of the grounds outside.

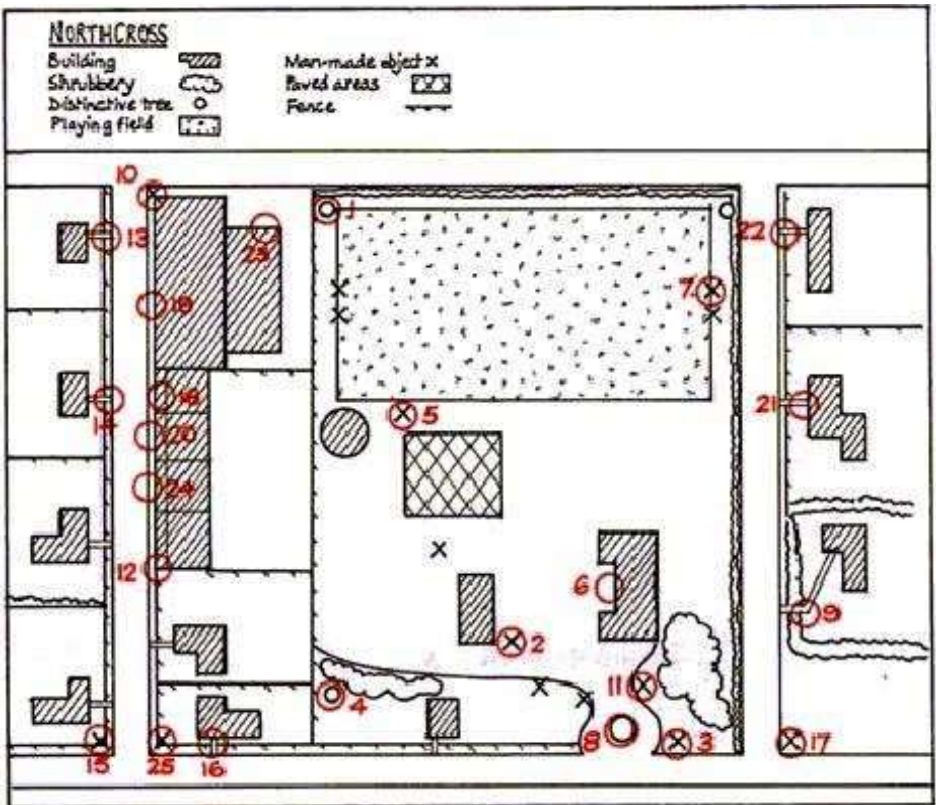
Students are situated at a place apart from the maps.

At "GO" each student goes to the maps, takes one, completes the course on the map recording on the record sheet, returns, replaces the map and takes a second one, does the course repeating the procedure until the three courses have been completed.

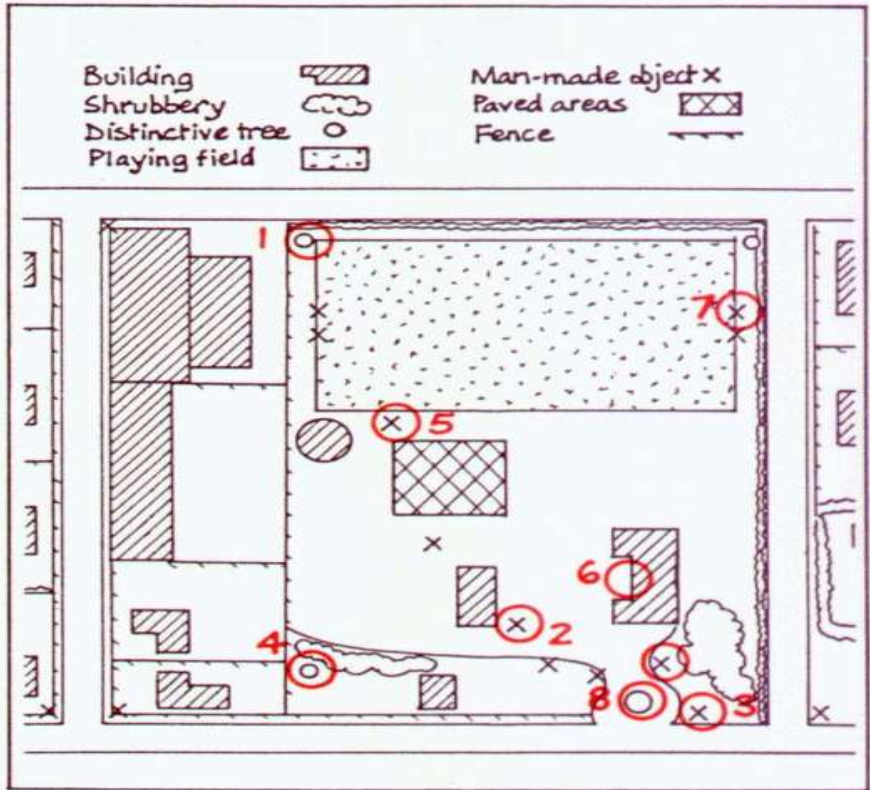
Activity : Trivia

A Trivia activity is an orienteering event where participants answer questions about a series of features, rather than using a control. It saves time not having to put out controls for each event.

A master Trivia map is needed. Teacher or student walks around the area with a map of the school grounds, identifying features which provide an opportunity to ask questions, marks each location on the map, numbers each feature, and writes down a question about the feature.



A Master Trivia Map (above)



Trivial Event Map: A question at each control

Questions should be simple. It is the navigation which is being tested, not the Trivia knowledge.

1 How many main branches?	2 Who made this feature?
3 What holds this up?	4 What kind?
5 How many bolts?	6 when?
7 Made by?	8 Bricks or concrete?
9 Message?	10 Who says?
11 Not allowed?	12 When?
13 Who?	14 Number?
15 Speed?	16 Colour?
17 Made of?	18 Owner?

Different courses can be made using different combinations, say 7 to 12 features.

Different courses can add variety to fitness runs and training for cross-country competitions.

Required

- Map of the school grounds
- Make a class set of maps, with control circles, questions and space for answers

Procedure

- Issue maps
- Students visit controls in random order to obtain answers and record them on their maps.

To prevent queues at the nearest controls number the students and instruct them to start with the control of their number, so distributing the load on those controls. Thereafter, they have free choice

Extension

- Place several maps with control locations and questions in a readily accessible places, for instance on a wall or on barbecue tables.
- Issue a sheet of paper to each student.
- Run the activity as a memory event. Students memorise one or more control sites and questions, visit the sites to get the answers and return to memorise further control sites and questions until the map course is completed.

If a little time is spent preparing a master map with a lengthy list of questions the list can be drawn upon as required for a succession of events or directed fitness runs.

Activity : Cross Country Orienteering

Regular orienteering events are cross-country events; which are the controls are visited in numbered order. Orienteers doing the same course have staggered start times.

Staggered start times will not work for a class of students when each is doing the same course, even with one-minute intervals. With a class of 20, for example, and one student starting every minute, it will be 20 minutes before the last student starts.

This problem can be overcome by having a variety of courses, so each student does a different course. Motala and Rogaine activities have students starting within a few minutes or at the same time.

Another way is for students to set courses for others to do.

Before the session the teacher puts out a set of controls, for example cards with a code marked on them, around the school grounds, taping the cards to suitable features. Choose a start and finish place and mark it with the Start/Finish symbol. See the section of Symbols for hand drawn maps on page 19.

At the start of the session display the master map showing the 20 control sites to the class and get the students to make their own course using 6 – 8 controls.

Required

- Set of 20 controls, e.g., plastic covered cards with a control code put out around the school grounds (see Making Controls page 59)
- Map of the school grounds showing the 20 control sites
- A box to hold the maps
- 1 copy of the master map without controls per student
- Red pens or pencil per student
- 1 checking sheet per student

	1	2	3	4	5	6	7	8		
Jenni A										
Karl D										
Lisa F										
Chris F										
Marquita G										

Example of a checking sheet, with the names of all the children in the class in the left hand column



Example of an Orienteering map

Procedure

Each student chooses 6-8 control sites from the ones shown on the displayed map, and marks them on their own map. Copy the Start/finish place, and number the controls 1 – 6/8 in logical order. They should also write their name on the map.

The class goes to the Start/finish place, place their maps face down in the box, and line up behind the box. Each student should have a checking sheet and a pen or pencil.

At “GO”, in turn each student picks up a map and completes the course, copying the code from each control into the appropriate box on the clipping sheet. When the course has been completed they return the map to the box and pick up another map.

The number of courses completed will depend on the time available. Other courses can be done at different times such as morning or lunch breaks.

One objective of orienteering in the curriculum is to prepare students to successfully, confidently and enjoyably complete a cross-country activity in an unfamiliar environment – alone.

Final events in a series should provide for students to start at timed intervals so they start alone. If the class number is large, and students start at 2 minute intervals, this can take a long time.

It is not essential for all students to navigate the same course. It is desirable the students, as they navigate, think they are on a different course from others, so they are not tempted to follow others.

To encourage the students to navigate themselves, and so you can start several students at one time, place 2 alternative controls at selected control sites or at every 2 or 3 controls. It is possible to draw several courses, each slightly different from the others.

Activity : Rogaine

A Rogaine is similar to a Trivia activity, except controls are used instead of questions. 10 to 20 controls can be set out around the school grounds. See Glossary, page 57 for suitable types of controls.

Each control is allocated a number of points. The ones closest to the start could be worth 10 points, those a little further away and harder to find could be worth 20 points and those furthest away and hardest to find could be worth 30 points.

There is a set time in which to find as many controls as possible. 10 to 20 minutes could be the time allowed, depending on the size and complexity of the school grounds, and the ages and abilities of the students.

Some students will not read their maps to see where the controls are. Instead they will run around looking for them and watching where the other students go. This can be partially overcome by having no identifying codes on the control so students have to read the map and control description to identify which circle on the map matches the control.

Rogaines can be held at school camps, and at smaller open parks where the boundaries are very obvious, and there is no danger to students running around the park.

Description	Points	Control Mark
1 Building corner	10	
2 Special feature	10	
3 Distinctive tree	10	
4 Fence end	10	
5 Stile	20	
6 Row of trees, end	20	
7 Boulder	20	
8 Door	20	

Example of Rogaine checkpoint list

GLOSSARY

Aiming Off Deliberately aiming to the left or right of a control on or near a line feature which lies across the path of the orienteer.

Attach point A large easily found feature near a control.

Catching feature A line feature which lies across the direction of travel.

Control circle



A circle drawn around a feature on a map to indicate the site at which a control marker is located. The marker should be located at the exact centre of the circle. There should always be a readily identified and mapped feature at the control site.

Control card



Clip card or recording sheet. A separate piece of paper upon which the controls are listed and can be marked off.

Control marker



A marker used to identify the control site.

Control master map

A map with control circles marked to show the exact location of all the control markers on the ground. Used for reference purposes and tasks such as control placement, collection.

Finish symbol



A double circle, or sometimes a triangle in a circle to show where the Start and Finish coincide.

Following

Following other competitors is regarded as unsporting. It is probably also unwise!

Handrail

Line features such as roads, tracks, fences and streams which may be followed to assist reaching a control marker.

Start symbol



A triangle, or sometimes a triangle inside a circle marking where the Start and Finish coincide.

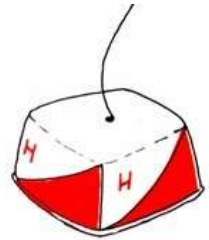
No matter where you are or in which direction you are running, it is the orienteer who changes direction, not the map.

Making Controls

Stickers of varying sorts can be used inside.

Milk bottle or other coloured drink tops can be used inside and out. These work especially well for the mini map event where the student racing the course collects them.

Crayons or coloured marker pens can be used to colour in circles on the map.



For outdoor courses, plastic containers (such as ice cream containers) with a distinguishing code printed on each one can be used.

Traditionally, orienteering controls are an orange/white triangle flag.

Credits

Laurie Baxter of North West Orienteering Club created the original edition of this manual as part of the KiwiSport programme in 1990 with the assistance of the Hillary Commission.

Mark Roberts and Robyn Davidson revised various sections of this manual.

Updated 2014.

Illustrations by Geoffrey Cox, Mark Roberts and Robyn Davidson.

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