O.F.I.
ORIENTEERING
HANDBOOK

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INTRODUCTION

WHAT IS ORIENTEERING?

Orienteering is a thrilling outdoor navigation sport, being a competitive sport that combines navigation and racing through unfamiliar terrain. Participants use a Map and Compass to traverse through predetermined Control Points in a specified order.

It challenges both physical endurance and mental acuity, as Participants must strategize and navigate efficiently to complete the course in the shortest possible time. The Participants have to find a series of checkpoints in a designated area (covered by the special Orienteering Map), competing with others for fastest timing. Each checkpoint (called Control) tests the Competitors ability to navigate through challenging routes and terrains, promoting spatial awareness and physical endurance.

The unique combination of skills makes Orienteering a versatile activity, suitable for individuals of all ages and skill levels, from beginners to experts to veterans. Orienteering has several forms including Foot Orienteering (the most popular), Mountain Bike Orienteering, Ski Orienteering, etc.

HISTORICAL CONTEXT

Orienteering originated in Sweden in the late 19th century as a military training exercise. By 1919, the sport had evolved into a civilian activity, with its first public competition held in Stockholm. Over the years, Orienteering has gained worldwide popularity, governed by the International Orienteering Federation (IOF), established in 1961. Today, Orienteering events are conducted globally, fostering community engagement and promoting physical fitness.

Orienteering is part of International School Games, Police Games, Military Games, Winter Olympics, etc.

ORIENTEERING IN INDIA

In India, Orienteering is promoted, regulated, and developed by the Orienteering Federation of India (O.F.I). The Orienteering Federation of India is a public charitable organization, registered with the Government of India, and also registered as a charitable organization under Section 12A of the Income Tax Act and approved under Section 80G. Various clubs recognized by the O.F.I are organizing events and popularizing this adventure sport. eg. the Western India Orienteering Club, Mumbai.

INTRODUCTION

THE SPIRIT OF ORIENTEERING

Teaches self-reliance and problem-solving in real-world settings. Participants face challenges like navigating through varied terrains, finding optimal routes, and staying oriented—all while competing against the clock.

PURPOSE OF ORIENTEERING

The primary objectives of Orienteering include:

- **Skill Development:**
Enhance participants' navigation, map-reading, and problem-solving abilities.

- **Exploration:**
Encourages outdoor adventures in natural and cultural landscapes.

- **Physical Fitness:**
Encourage outdoor physical activity that improves stamina and overall health.

- **Team Building:**
Promote cooperation, communication, and mutual support in team formats.

- **Environmental Stewardship:**
Instil respect for nature through responsible use of outdoor spaces.

COURSE OVERVIEW

COMPONENTS OF THE COURSE

START POINT:

- Represented by a triangle on the Map.
- Marked with an orange-and-white Flag at the venue.
- Participants' official timing begins as they leave the start point.

FINISH POINT:

- Represented by a double circle on the Map.
- Clearly marked at the venue with orange-and-white Flag.
- Participants' timing ends as they reach this point.

CONTROL POINTS:

- Each control point is normally at a specific feature in the terrain, such as a boulder, tree, gate etc.
- Indicated by a circle on the Map.
- Marked on-site with orange-and-white Flag, positioned exactly as depicted on the Map and the Control Description Chart.
- The Control Code Number (starting from 31 onwards) is mentioned.
- Participants use a Punch (as per traditional method), to register their visit at each control. Now, electronic systems are also used for this purpose.
- At each control point, there is a Punch with which a distinctive mark can be made on the punch card / the score sheet of each Participant, as each Punch makes a different and distinctive mark. So, unless the Participant visits each control point, getting all the distinctive marks on the scoresheet is not possible. Where an electronic system is used, electronic devices by Sportident or Emit are placed at each control point to record the visit of each Participant, who have to wear an electronic Dibber on their middle finger of the hand.

RULES AND REGULATIONS

Orienteering adheres to a strict code of conduct to ensure fairness, safety, and enjoyment for all Participants. These rules apply universally, whether Participants are beginners or experienced competitors.

GENERAL RULES

1. **Control Sequence:**

- Participants must visit all control points in the exact order specified on their Map.
- Skipping or visiting out-of-order controls will incur penalties including disqualification.

2. **Navigation Tools:**

- Only the provided Map & Control Description Chart and the Participant's Compass may be used for navigation.
- Electronic devices for navigational aids (e.g., GPS) are prohibited unless explicitly permitted for specific categories.

3. **Time Limits:**

- Participants must complete the course within the allotted time.
- Late finishes may result in penalties or disqualification.

ETHICS AND CONDUCT

Fair Play:

- Following or interfering with other participants is not allowed.
- Participants must rely solely on their navigation skills.

2. Environmental Respect:

- Avoid littering or damaging natural surroundings.
- Leave flora and fauna undisturbed.

PARTICIPANT AND INSTRUCTOR EQUIPMENT

FOR PARTICIPANTS

Crucial Items:

- **Map:** Provided by the event organizers, showing all control points and terrain features. Often the Control Description Chart is also included in the sheet having the Map. OFI normally has the Map,the Control Description Chart and the Scoring sheet on the same sheet for convenience.

- **Control Description Chart:** This provides specific location of the control point through specific Orienteering Symbols.
this is on a seperate sheet., but often the Control Description Chart is also included in the sheet having the Map.

- **Punch Card or Scoring Sheet:** On this sheet, markings are made with Punches (with distinctive marking) at each control. Often, the scoring sheet is also included in the sheet having the Map.

- **Control Description Sheet Holder:** Worn on the left forearm to put the Control Description Chart,where it is provided in a seperate sheet.

- **Compass:** Thumb or baseplate compass for navigation.
- **Whistle:** Essential for signalling emergencies.
- **Clothing:** Weather-appropriate, lightweight, and durable attire.
- **Footwear:** Sturdy shoes with non-slip soles suitable for varied terrains.
- **Electronic Dibber:** Worn on the middle finger to register presence at each control point(where electronic system is used).

2. Recommended Items:

- Water bottles or hydration packs.
- Sunscreen and insect repellent.
- Basic first-aid supplies.

FOR INSTRUCTORS

1. Safety Equipment:

- First-aid kits.
- Communication devices (walkie-talkies, whistle etc).

2. Course Management Tools:

- Spare Maps and Control Description Sheets.
- Compass
- Timing equipment (stopwatches, electronic systems etc).

SCORING AND TIMING

TIMING

Timing starts as Participants leave the start point and stops when they reach the finish.

Manual Timing:

- Punch cards or Scoring Sheet, where Participants manually mark their visit to each Control,with the Punch provided there.

With each Punch, a distinctive mark is made on the Scoring Sheet, as each Punch makes a different mark. A Punch card or the Scoring Sheet is often included in the same sheet where the Map and the Control Description Chart are printed

Electronic Timing:

- Devices like Sportident or Emit Dibbers are used for precise recording at control points.

the Dibber is worn on the middle finger by each Participant and the electronic device at each control point records the visit.

SCORING

Control Points:

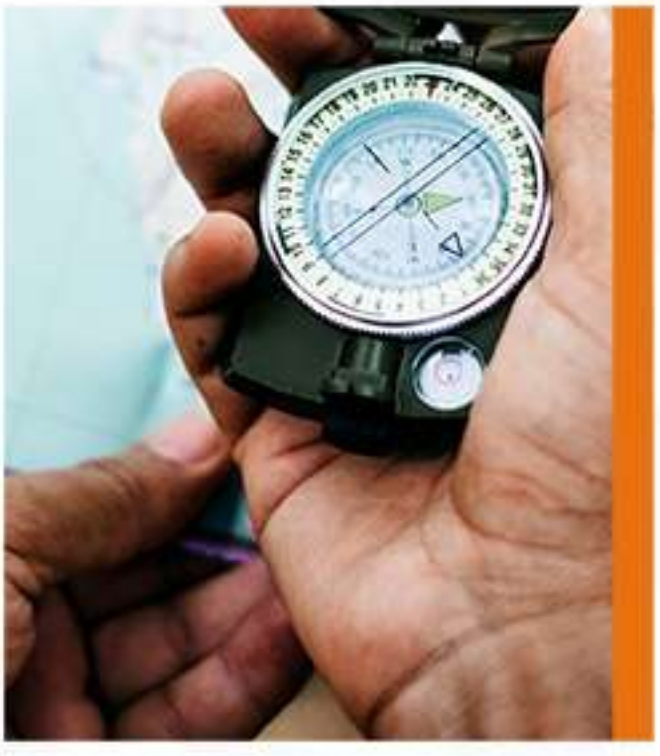
- Each correctly visited control earns points.

Penalties:

- Missing controls or visiting out-of-order incurs penalties.
- Late finishes result in time-based deductions.

TIE-BREAKING:

- The Participant or team with the fastest overall time wins in case of tied scores.



CONTROL DESCRIPTION SHEET

SPECIFIC ORIENTEERING SYMBOLS

The Control Description Sheet is a vital guide for Participants, detailing the features and specific locations of all control points. The sheet uses standardized symbols to ensure clarity and consistency. These symbols are specific Orienteering Symbols and are common throughout the world.

UNDERSTANDING THE CONTROL DESCRIPTION SHEET

The International Orienteering Federation specifies the international specifications for control descriptions for which a booklet is available online. For clarity and ease of use, the Orienteering Federation of India has devised a 2 page chart in which the entire control descriptions appear in the designated columns as per the layout designed by Shri Jayant Misra, the Chairman O.F.I.

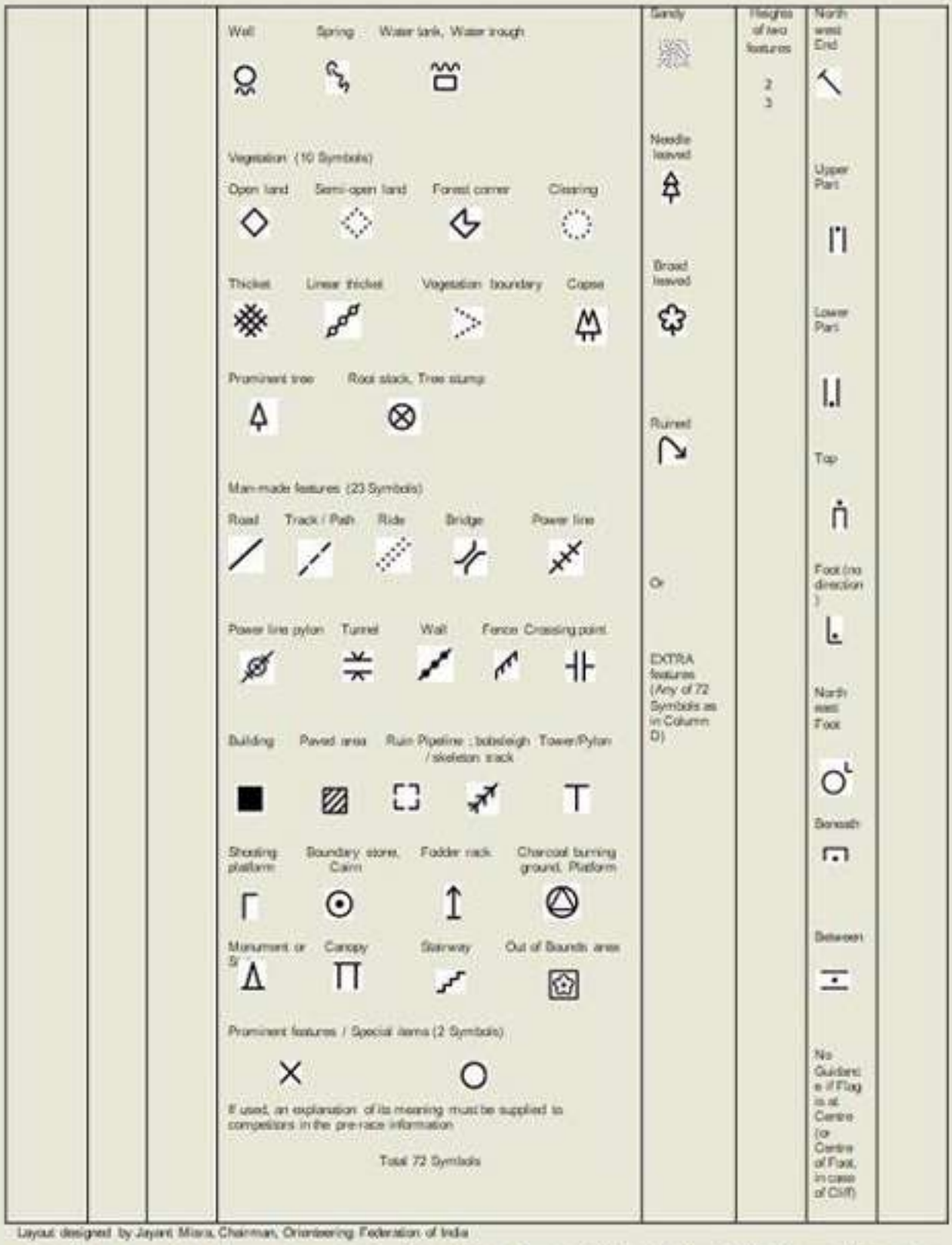
The same appears in the next two pages.

CONTROL DESCRIPTION SHEET

ORIENTEERING
Understanding The Control Description Sheet

A	B	C	D	E	F	G	H
ARRAY or ARRANGEMENT in which to visit the Control	BASE Number or Code Number of Control	CHOICE out of similar Features	DESCRIPTION of Control Feature The IOF Control Description Symbols (reproduced in this Sheet) allow Orienteers to clearly understand Control Descriptions, without any translation. Control Descriptions give better visualisation of the location of the Control Feature given by the Map, so the Orienteer can easily locate the Control site.	EXPLANATION regarding Appearance of Feature or EXTRA Feature	FURTHER Information for Feature	GUIDANCE for Location of Flag	ROBOT Interface
CONTROL NUMBER	CONTROL CODE	WHICH OF ANY SIMILAR FEATURE	CONTROL FEATURE	APPEARANCE	DIMENSIONS / COMBINATIONS / BEND	LOCATION OF THE CONTROL FLAG	OTHER INFORMATION
Serial Number of Control (Sequence in which Controls are to be visited). eg. 1. 2. 3. 4. 5. 6. 7. 8. 9. 10.	Code Number has to be from 31 or above given on the Control Unit.	If there are more than one similar Features within Control Circle Arrow shows Direction Northern South Eastern Upper Lower Middle	Landforms (16 Symbols) Terrace, Spur, Re-entrant, Earth bank, Quarry, Earth Wall Erosion gully, Small erosion gully, Hill, Knoll, Saddle Depression, Small depression, Pit, Broken ground, Ant-hill (termite mound) Rock and boulders (10 Symbols) Cliff, Crag, Rock Pillar, Cave, Boulder, Boulder field Boulder cluster, Stony ground, Bare rock, Narrow passage, Trench Water and marsh (11 Symbols) Lake, Pond, Waterhole, River, Stream, Watercourse Minor water channel, Ditch, Narrow marsh, Marsh, Firm ground in marsh	APPEARANCE (A) (11 Symbols) Low Shallow Deep Over grown Open Rocky, Stony Marshy	BEND (B) COMBINATIONS (C) Crossing Junction DIMENSIONS (D) (in Metres) Height or Depth 2.5 Size 8 x 4 Height on slope 0.5/3	Location of the control flag in relation to the feature North east Side South east Edge West Part East Corner (inside) South Corner (outside) South west Tip	First Aid post Refreshment point Manned control

CONTROL DESCRIPTION SHEET



Layout designed by Jayant Misra, Chairman, Orienteering Federation of India

All Control Descriptions and Symbols are as per International Specification for Control Descriptions, 2018 (updated March8, 2019) of International Orienteering Federation

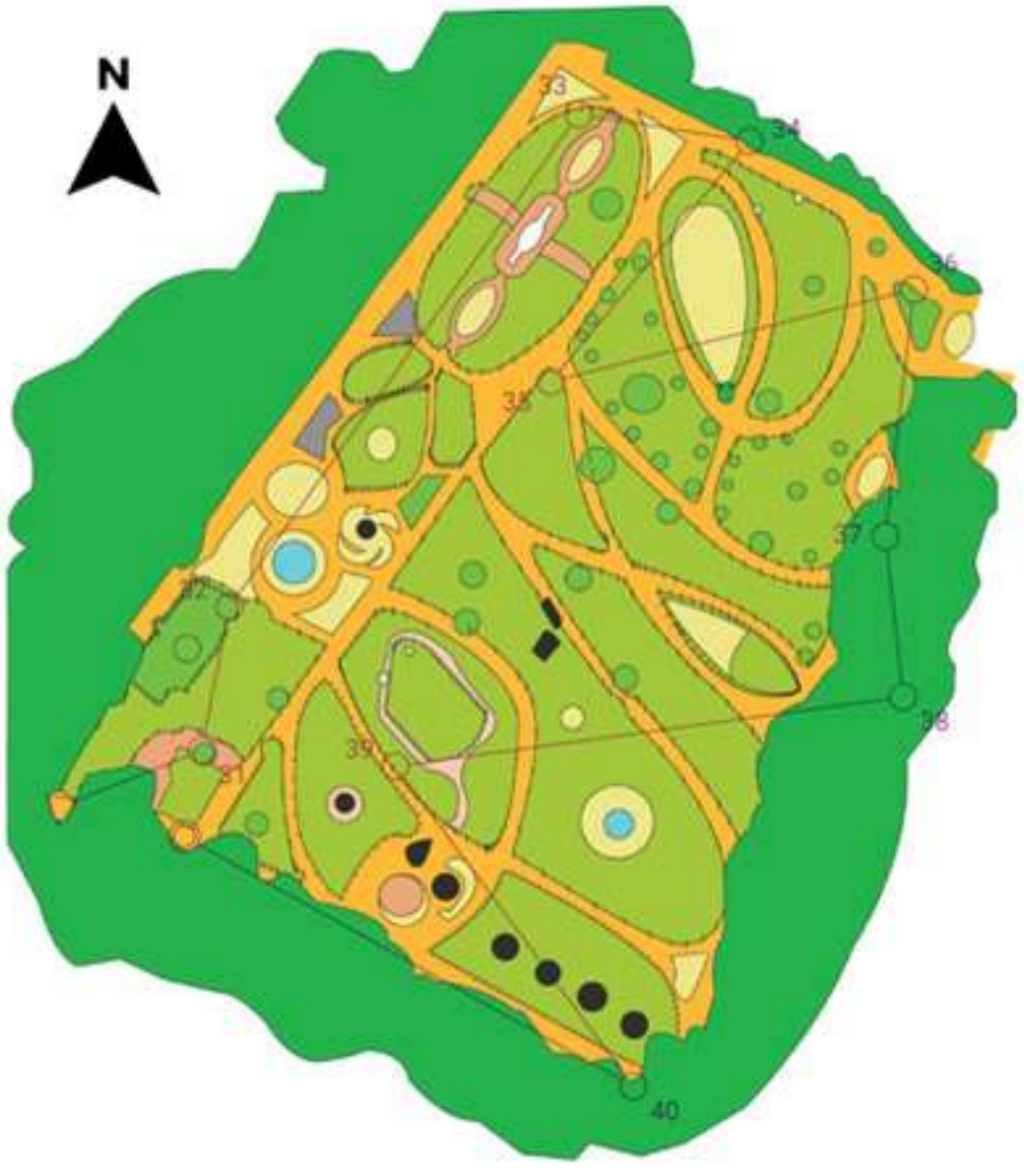
ORIENTEERING MAP

- The Map is the most essential element of Orienteering.
- The start point, all the Control Points (which have to be visited and presence marked by each participant) and finish point are marked on the Map.
- A triangle shows the start point, a circle shows each control, a double circle shows the finish point.
- Since the Circle, Double Circle or Triangle are relatively quite large, the Participant has to visualize the exact location of the Control on the ground as in the exact center of the Circle, Double Circle or Triangle.
- On the Map, a line joins the triangle (start point) to the first circle (first control) and then to the second circle (second control) onwards upto the Double Circle (Finish point) on the Map provided to the Participants. However, the Participant can decide on the basis of the Map, the terrain and his/her navigation skill, what path to take to the next control.
- As the direction is very important for navigation, North is always shown on each Map with an Arrow. North to South lines or grid are also provided on Map.
- On the Map, Black colour is used to denote manmade structures such as Buildings, fences, roads etc. Blue is used for water features such as streams, ponds, lakes, sea etc. Open areas can be shown in yellow with vegetation being depicted from White to Green to Dark Green depending upon density of vegetation. Brown is used for contour lines and elevation features.
- The Control Description Chart, having 8 columns and having specific Orienteering Symbols, is very useful in deterrmining the precise location on the ground. This Control Description Chart can be on a separate sheet (independent of the Map) and in such case, it is put in the Control Description Sheet Holder, which is worn on the left forearm. However, for convenience, the Control Description Sheet is often printed on the same sheet as the Map (on one side of the sheet).
- The Scoring Sheet or Punch Card is used to make the marks at each control by the Punch provided there (each Punch makes a separate distinctive mark). This Mark can be on a separate sheet but for convenience it is often printed on the same sheet as the Map (at the bottom of the Sheet).

ORIENTEERING MAP

WORLD ORIENTEERING DAY 2023
HANGING GARDEN, MALBAR HILL, MUMBAI, INDIA

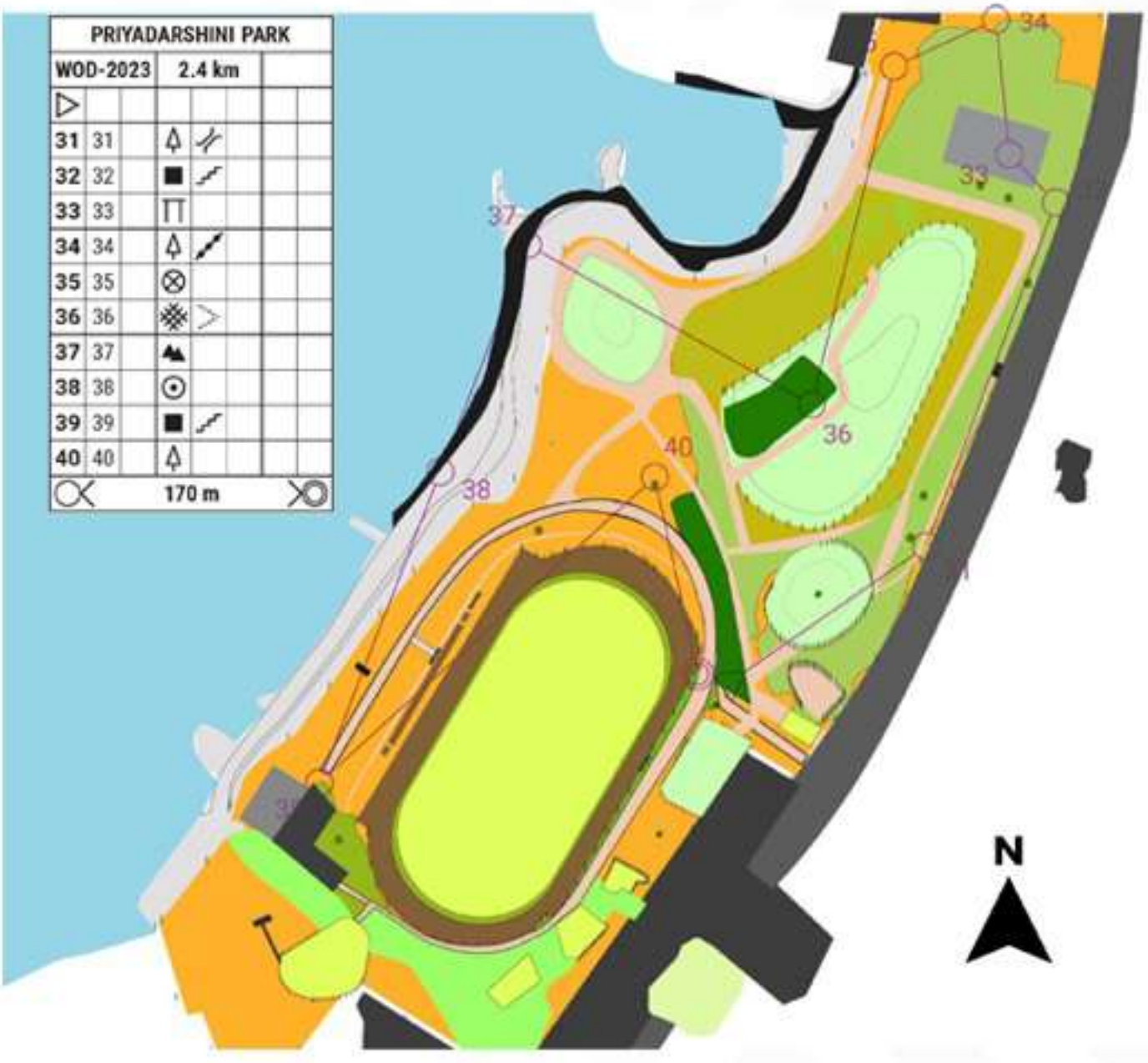
WOD 2023 Hanging Garden		
wod 2023	3.5 km	
31	31	
32	32	
33	33	
34	34	
35	35	
36	36	
37	37	
38	38	
39	39	
40	40	
	500 m	



31	32	33	34	35	36	37	38	39	40

ORIENTEERING MAP

WORLD ORIENTEERING DAY 2023
PRIYADARSHINI PARK, MALBAR HILL, MUMBAI INDIA



31	32	33	34	35	36	37	38	39	40

BUILDING AN EXCELLENT TEAM

STEPS TO BUILD A STRONG TEAM

1. Skill Development:

- Conduct regular training sessions focused on navigation and fitness.
- Use simulated courses to practice relocation and route choice.

2. Team Culture:

- Celebrate individual achievements like completing courses or improving times.
- Encourage peer mentoring to build confidence among beginners.

3. Competitions:

- Participate in local and regional meets to gain experience.
- Organize intra-team challenges to simulate competitive environments.

GLOSSARY OF ORIENTEERING TERMS

TERM	DEFINITION
Attack Point	A prominent feature near a control point used for precise navigation.
Catching Feature	A landmark that indicates if you've gone too far.
Handrail	A linear feature (e.g., a trail or stream) used as a guide.
Relocation	The process of finding your location after being lost.
Thumbing	Using your thumb to track your position on the Map.
Aiming off	Deliberately aiming off to one side of a linear feature (eg stream, path, wall).
Collecting Feature	Prominent feature along a route that can be noted or ticked off as they are passed or crossed.
Obstacle Negotiation	Dodging around obstacles (eg patches of thick scrub, fallen timber) to make best use of open going and then re-positioning to original course within a short distance.
Back Bearing	Current position on a Map can be determined by known points of reference, provided some are visible.Triangulation with three known features on the Map will show the current position.

EMERGENCY PROTOCOLS

KEY CONTACTS

To be specified for particular event

Procedures for Emergencies:

For Injuries:

First aid available on-site.

Use the emergency whistle if further assistance is required.

For Lost Participants:

Follow the safety bearing: “Move south to reach the main path.”

Instructors and volunteers conduct a search if a participant fails to report back.

Nearest Hospital

On-Site Medical Team

MISCELLANEOUS

MAP COLORS

Brown:

Contour lines and elevation features.

Black:

Man-made structures like buildings and fences.

Blue:

Water features, including streams and lakes.

Green: Vegetation density, with darker greens indicating denser areas.

Yellow:

Open areas, such as fields and meadows

SAFETY CHECKLIST

- Whistles, Compasses, first-aid kits, and hydration must be availabel.
- Emergency contact numbers should be accessible to all Participants.

HOW TO USE A COMPASS

The Compass is an indispensable tool in Orienteering. Proper understanding and application of its components ensure accurate navigation across the course.

Below are the detailed steps for using a compass.

UNDERSTANDING THE COMPASS

Parts of a Compass:

- **Baseplate:** A flat, transparent surface with scales and rulers, used to measure Map distances and align the Compass with the Map.
- **Direction-of-Travel Arrow:** This arrow on the baseplate indicates the direction you need to travel.
- **Rotating Bezel:** The circular dial, marked with 360 degrees, is used for taking and setting bearings.
- **Magnetic Needle:** The red end of the magnetic needle always points to the magnetic north. Orienting Lines and Arrow: Inside the bezel, these lines help align the Compass with the Map's north-south grid.

MISCELLANEOUS

HOW TO TAKE A BEARING

Taking a bearing involves determining the direction between two points, whether on the Map or on the terrain. This is an essential skill for navigating control points accurately.

FROM MAP TO GROUND:

- Place the Compass on the Map, with the baseplate edge connecting your current position to your destination.
- Rotate the bezel until the orienting lines inside the bezel align with the Map's north-south grid lines. Ensure the orienting arrow points north on the Map.
- Lift the Compass and hold it flat in your hand.
- Rotate your body until the magnetic needle aligns with the orienting arrow. The direction-of-travel arrow now points to your destination.

FROM GROUND TO MAP

- Point the direction-of-travel arrow at the landmark you want to identify on the Map.
- Rotate the bezel until the magnetic needle aligns with the orienting arrow.
- Note the degree marking on the bezel. Match this bearing to the Map to locate the feature.

ADJUSTING FOR DECLINATION

Magnetic declination is the angle difference between true north and magnetic north. In India, this value is minimal but can still impact navigation accuracy:

If the declination is east, subtract it from the Compass bearing.
If the declination is west, add it to the Compass bearing.

USING MAP AND COMPASS TOGETHER

The combination of Map and Compass allows for precise navigation, especially in complex terrains.

ORIENTING A MAP WITH A COMPASS

Orienting a Map means aligning it with the terrain. This can be done visually but is prone to errors. Using a Compass is more accurate:

Rotate the Compass bezel until N or 360 degrees aligns with the direction-of-travel arrow.
Place the Compass on the Map, with the edge along one of the north-south grid lines, ensuring the direction-of-travel arrow points north.

Rotate the Map and Compass together until the magnetic needle matches the Orienting arrow.
The Map is now oriented and aligned with the terrain.

SETTING A COURSE

Identify your starting point and destination on the Map.

Place the Compass on the Map, with the baseplate edge connecting the two points.

Rotate the bezel until the orienting lines align with the north-south grid lines on the Map.

Follow the bearing as explained earlier,

keeping the magnetic needle aligned with the orienting arrow.

JUDGING DISTANCE ON THE GROUND

Accurately judging distances is vital for determining your location and deciding your route.

TECHNIQUES FOR MEASURING DISTANCE

Pacing:

- Determine your average number of steps to cover 100 meters on flat terrain.
- Adjust pacing for uphill or downhill areas. For instance, you may take shorter steps uphill.

Using Map Scale:

- Measure the distance between two points on the map using the Compass ruler or a piece of string.
- Convert the map distance to ground distance using the scale.

Time Estimation:

- Note the time it takes to cover 100 meters at various speeds (walking, jogging, running). Use this data to estimate longer distances during the course.

ORIENTEERING TECHNIQUES

Advanced techniques help participants navigate efficiently and avoid errors.

Key Techniques

- **Basic Technique:** Keep the Map lined up to North.Keep thumb on Map where you are.
- **Handrails:** Use linear features such as trails, rivers, or fences as guides.
- **Attack Points:** Use large, identifiable features near the control point to simplify the final approach.
- **Catching Features:** Identify landmarks beyond a control point to signal that you've overshot.
- **Aiming Off:** Intentionally aim slightly to one side of the control point. This ensures you know which direction to turn upon reaching a feature.
- **Relocation:** Stop and assess your surroundings if you become disoriented. Use visible features to reorient your Map and Compass.

ADAPTATIONS FOR INDIAN TERRAIN

Orienteering in India often involves diverse terrains, ranging from dense forests to hills. Here's how to adapt to these conditions to help Participants navigate efficiently and avoid errors.

Dense Vegetation:

- Plan routes that avoid heavily vegetated areas when possible.
- Use handrails such as trails or streams to simplify navigation.

Climate Considerations:

- Carry sufficient water and wear sun protection to cope with high temperatures.
- Prepare for sudden weather changes, especially in monsoon-prone areas.

EXCERCISES

Exercise 1: Map Orientation

- Participants to take a Map and Compass.
- Have them practice aligning the map with the terrain.

Exercise 2: Bearing Walk

- Set up targets at known bearings. Participants must follow the bearing to reach the target.

Exercise 3: Control Navigation

- Create a short course with 5-6 controls. Participants must navigate sequentially using their Maps and Compasses.