

Better Orienteering



Web linked to
[Betterorienteering.org](https://betterorienteering.org)

Better Orienteering Summary Duncan Bayliss



BetterOrienteering.org

Improve your orienteering skills



Beginner Intermediate Advanced

Videos Skills Tool Kit Free downloads Navigation strategies

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Better orienteering

What is included ?

[New to orienteering](#)



[Basic Navigation Routine](#)

[Plan, Picture, Direction](#)

[How well am I orienteering?](#)

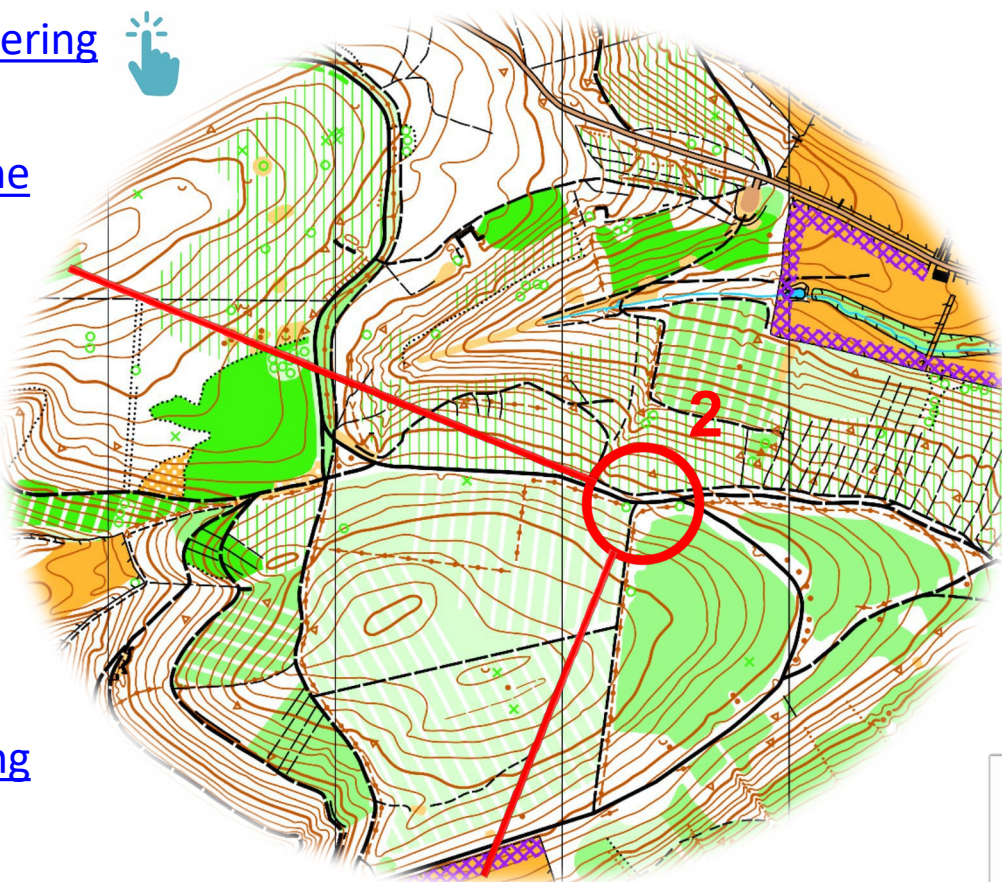
[Skills Tool kit](#)

[Better Orienteering
Navigation model](#)

Click on a heading to
go to that section
In this document



[Race analysis](#)



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[Each info-
graphic
can be
downloaded
separately](#)

Use this summary together with the Betterorienteering.org website

Better Orienteering

Skills are explored in stages from Beginner to Advanced to help you progress



A key principle of Better Orienteering – Orienteering skills are explored in a **visual** way with graphical summaries, diagrams, and videos

Use this summary together with the Betterorienteering.org website

Better Orienteering

Beginner

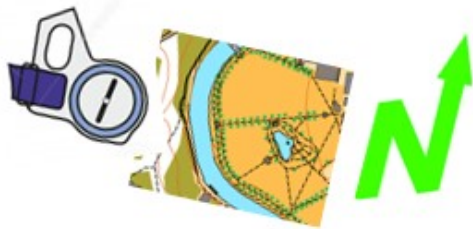
New to orienteering



Try this introductory video first

Better Orienteering

New to orienteering? Here's some tips



Keep the map lined
up to north

scale 1:10000, contours 10m
500m

Know the scale

1:10,000 1cm on map = 100m on the ground
1:7,500 1cm on map = 75m on the ground



Fold the map
Thumb on map
where you are



Know what the symbols mean
(see other side of this card)



It is OK to walk
You can lose more time
by running in the
wrong direction



Dib each control in
order with your timer



Orienteering is not the same as
using a smartphone or road atlas



**When you finish always go to
download so that a search is not
sent out for you**

Duncan Bayliss

betterorienteering.org

Version 4.0 2020

These tips help
beginners understand
the basics they need to
orienteer

If you download them
separately from
Betterorienteering.org
they are scaled for easy
viewing on a
smartphone



Colour coding of courses explained



Easy / Short



Beginners and juniors



Technical courses



Hard / Long

A few symbols you need to know

A full key is on the next page



Start — Control – 50 metre circle



Finish



Small path



Larger path



Road



Contours showing the shape of the land



Open land



Runnable woodland



Thicker woodland



Fence - crossable



Fence – not crossable



Stream



Marsh



Uncrossable area e.g. buildings, gardens



Out of bounds –
Do not enter or you will be disqualified

betterorienteering.org

You don't need to know all the map symbols when you start orienteering

Here are some of the most useful ones for beginners

There is usually a full key on the map

Beginner's courses are planned so that you can follow line features such as paths, tracks and fences

As you try more difficult courses you will build your understanding of other map symbols

ISOM 2017 Orienteering Map Symbols

Land forms

	Contour
	Index contour
	Form line
	Slope line
	Contour value
	Earth bank
	Earth wall
	Ruined earth wall
	Erosion gully
	Small erosion gully
	Knoll
	Small knoll
	Small elongated knoll
	Depression
	Small depression
	Pit
	Broken ground
	Very broken ground
	Prominent landform feature

Water and marsh

	Uncrossable water
	Shallow water
	Waterhole
	Uncrossable river
	Crossable watercourse
	Small crossable watercourse
	Minor/seasonal water channel
	Narrow marsh
	Uncrossable marsh
	Marsh
	Indistinct marsh
	Well, fountain or water tank
	Spring
	Prominent water feature

Man-made features

	Paved area
	Wide road
	Road
	Vehicle track
	Footpath
	Small footpath
	Less distinct small path
	Narrow ride
	Visible path junction
	Indistinct junction
	Railway
	Power line, cableway or skilift
	Major power line
	Bridge/tunnel
	Footbridge
	Wall
	Ruined wall
	Impassable wall
	Fence
	Ruined fence
	Impassable fence
	Crossing point
	Area that shall not be entered
	Building
	Canopy
	Ruin
	High tower, Small tower
	Cairn, Fodder rack
	Prominent line feature
	Prominent impassable line feature
	Prominent man-made feature

Rock and boulders

	Impassable cliff
	Cliff
	Rocky pit, Cave
	Boulder, Large boulder
	Gigantic boulder
	Boulder cluster
	Boulder field
	Dense boulder field
	Stony ground: slow
	Stony ground: walk
	Stony ground: fight
	Sandy ground
	Bare rock
	Trench

Vegetation

	Open land
	Open land with scattered trees/bushes
	Rough open land
	Rough open land with scattered trees/bushes
	Forest: easy running
	Vegetation: slow running
	Undergrowth: slow running
	Vegetation: walk
	Undergrowth: walk
	Vegetation: fight
	Vegetation: impassable
	Forest runnable in one direction
	Cultivated land
	Orchard
	Vineyard
	Distinct cultivation boundary
	Distinct vegetation boundary
	Prominent large tree
	Prominent bush or tree
	Prominent vegetation feature

Overprinting symbols

	Start
	Control point
	Control number
	Marked route
	Finish
	Out-of-bounds boundary
	Crossing point
	Out-of-bounds area
	Out-of-bounds route
	First aid post, Refreshment point

Technical symbols

	Magnetic north line
	Registration mark
	Spot height



These are the symbols you need to refer to as you learn how to read orienteering maps



© Maprunner 2017.

Copies of these map symbols and of the IOF pictorial control descriptions can be downloaded from www.maprunner.co.uk

The ISOM 2017 specification can be downloaded from www.orienteering.org



IOF Control Descriptions 2018

This is a summary of the IOF pictorial control descriptions. Full details can be obtained from the IOF web site at <http://www.orienteering.org>

A	B	C	D	E	F	G	H
1	123	↓	○	■	15 x 5	○	☐

- A Control number
- B Control code
- C Which of any similar feature
- D Control feature
- E Appearance
- F Dimensions/combinations/bend
- G Location of control flag
- H Other information

C - Which Feature

↑	Northern
→	Upper
←	Lower
↕	Middle

D - Control Feature

See below.

E - Appearance

—	Low
—	Shallow
U	Deep
■	Overgrown
□	Open
▲	Rocky, Stony
≡	Marshy
■	Sandy
▲	Needle leaved
☁	Broad leaved
↻	Ruined

G - Location of Flag

○	West Side
○	South East Edge
○	East Part
○	South West Corner (inside)
○	North Corner (outside)
○	North West Tip
○	South East End
○	Upper Part
○	Lower Part
○	Top
○	Foot
○	North East Foot
○	Beneath
○	Between

F - Dimensions

1.5	Height or Depth
5 x 3	Size
1.0 / 2.5	Height on slope
1.5 / 2.5	Heights of two features
×	Crossing
Y	Junction
<	Bend

H - Other Information

+	First aid post
☐	Refreshment point
☐	Manned control

--- 200 m --->△ Distance to Start Triangle from point of timed start

○--- 70 m ---> Follow Taped Route away from control

○--- 90 m ---> Follow Taped Route between controls

○--- 90 m ---> Mandatory crossing point or points

○--- 90 m ---> Mandatory passage through out of bounds area

○--- 20 m ---> Follow Taped Route to Map Exchange

○--- 80 m ---> Follow Taped Route to Finish

○--- 50 m ---> Navigate to Finish Funnel, then follow tapes

○--- 90 m ---> Navigate to Finish, no tapes

These are the symbols used to describe controls, explaining what you are looking for

Beginners courses also have a description in words

Land forms

—	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

—	Cliff, Crag
—	Rock pillar
—	Cave
—	Boulder
—	Boulder field
—	Boulder cluster
—	Stony ground
—	Bare rock
—	Narrow passage
—	Trench

Water and marsh

—	Lake
●	Pond
—	Waterhole
—	River, Stream, Watercourse
—	Minor water channel, Ditch
—	Narrow marsh
—	Marsh
—	Firm ground in marsh
—	Well
—	Spring
—	Water tank, Water trough

Vegetation

—	Open land
—	Semi-open land
—	Forest corner
—	Clearing
—	Thicket
—	Linear thicket
—	Vegetation boundary
—	Copse
—	Prominent tree
—	Root stock, Tree stump

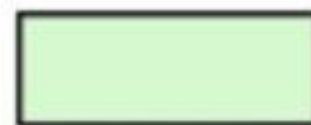
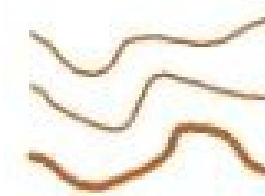
Maprunner
www.maprunner.co.uk
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Man-made features

—	Road
—	Track, Path
—	Ride
—	Bridge
—	Power line
—	Power line pylon
—	Tunnel
—	Wall
—	Fence
—	Crossing point
—	Building
—	Paved area
—	Ruin
—	Pipeline, Bobsleigh track
—	Tower, Pylon
—	Shooting platform
—	Boundary stone, Cairn
—	Fodder rack
—	Platform
—	Monument, Statue
—	Canopy
—	Stairway
—	Out of bounds area

Special features

×	Special item
○	Special item



When people first try orienteering they often worry about - what happens if I get lost?
Beginner's courses are planned so you can succeed, don't worry, enjoy the challenge

What if I get lost?

Don't worry, getting a bit lost is normal. If you can no longer match the map to the terrain around you **STOP** and work out where you are. Here are some basic steps that will help you get back on track.

- 1 **STOP** – don't keep going and make it worse!
- 2 **Review** where you have been and try to trace it on the map
- 3 **Match** large features around you to the map

Then if necessary:

- 4 **Retrace** your steps and try again

Above all, don't panic, because you will usually be no more than 200 metres from your last known point which you can always go back to


On beginner's courses it is OK to ask for help, but try to work out where you are yourself first, it is much more satisfying

When you progress beyond beginner's courses you should not ask for help
Working out where you are is the challenge of orienteering!

This is a summary of the core skills you need to develop as a beginner with links back to the downloads and videos that will help you

Better Orienteering Skills Matrix - Beginner

Note: This skills matrix only indicates key skills at different stages of orienteering development more skills concepts are covered on Better Orienteering

Orienteering skill level	Core navigation skills	Goals	Free downloads on Better Orienteering	Learning Videos Link to videos in Beginner section
Beginner	<div>Understand map symbols</div> <div>Orientate map to north with compass</div> <div>Plan route, use line features</div> <div>Thumb on map as you move</div> <div>Understand scale</div> <div>Understand and use control descriptions</div>	<div>Get round an orienteering course and enjoy it!</div> <div><i>Know how to relate the map to the terrain</i></div> <div><i>Build confidence in navigating</i></div>	<div>Beginners Tips</div> <div></div>	<div>Learning Videos Playlist</div> <div>Newcomer's Guide</div> <div>The map</div> <div>Planning your route</div> <div>Finding your way</div> <div>What is an orienteering map?</div> <div>The 10 Elements of Orienteering</div> <div>Orienteering – more than running</div>

Duncan Bayliss, 2020

Remember - you don't need to understand all this to try orienteering and enjoy a fun challenge!

The skills will come clearer as you try a few orienteering races or permanent courses

Better Orienteering

Basic Navigation Routine



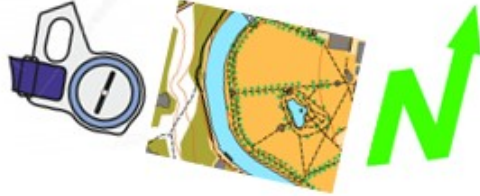
Try this video collection of basic skills



This video demonstrates the basic skills you will need to use consistently to orienteer successfully

Better Orienteering

Basic Navigation Routine



scale 1:10000, contours 10m
500m

Keep the map lined
up to north
(orientate it)

Know the scale,
tune in to it



Keep thumb on map
where you are



Take each leg in sections

Exiting control



Amber – *go steady
careful on direction*

**Route to Attack
Point**



Green – *move quicker to
Attack point*

Finding control



Red – *go carefully in to
control*



Go steady to No. 1
and get into the flow

Once you have
completed a few
orienteering courses
you need to build a
rock solid basic
navigation routine

You need to reliably do
the basics right for
every leg of every
course



Better Orienteering



Its about navigation
more than running



Stay in contact with the
map all the time
Look at it often



If unsure where you are:

STOP

Review where you have been

Match large features to map

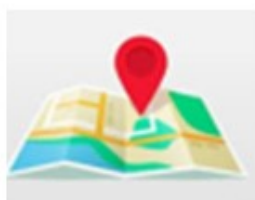
Consider possible errors

Then if you need to

Move out to a firm feature,
and come back in



Walk when the map
reading requires it



Its not the same as using a
road atlas or smartphone -
You **orientate** the map and
zoom in and out of detail

Page 2
Basic Navigation Routine

If you don't get this right
it will hold back for
years

Know your control descriptions

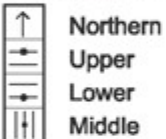
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A	B	C	D	E	F	G	H
1	123	↓	○	⊗	15 x 5	○	⊗

- A Control number
B Control code
C Which of any similar feature
D Control feature
E Appearance
F Dimensions/combinations/bend
G Location of control flag
H Other information

C - Which Feature



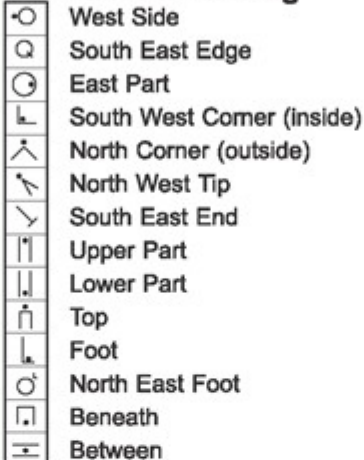
D - Control Feature

See below.

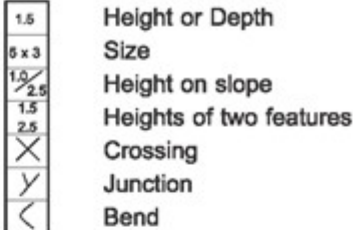
E - Appearance



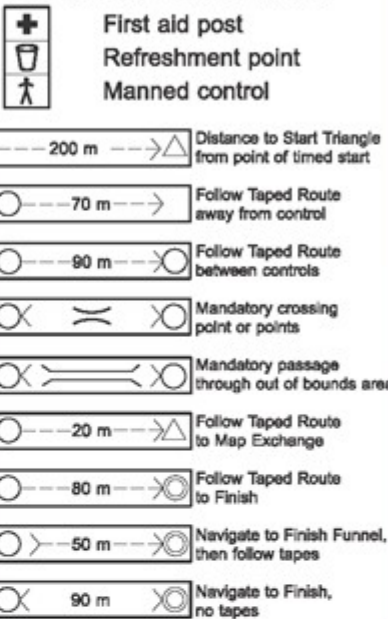
G - Location of Flag



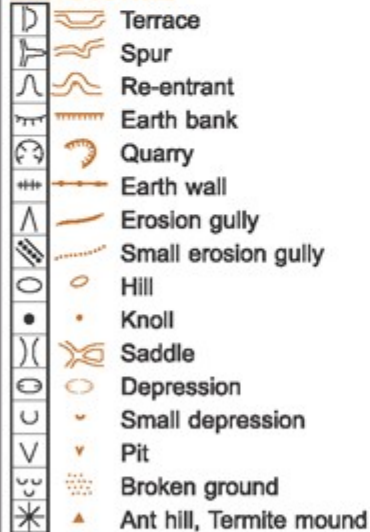
F - Dimensions



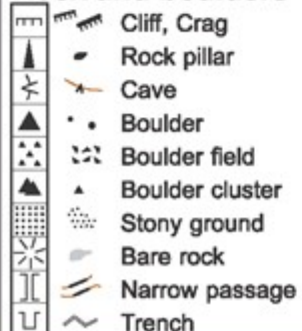
H - Other Information



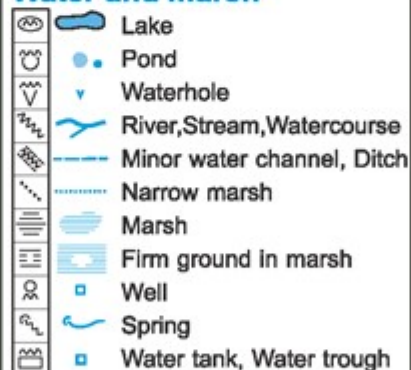
Land forms



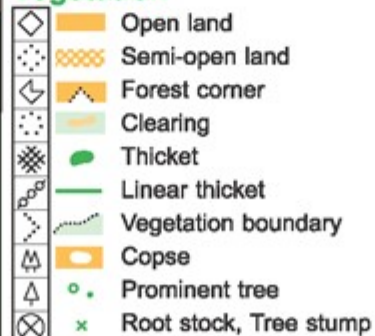
Rock and boulders



Water and marsh

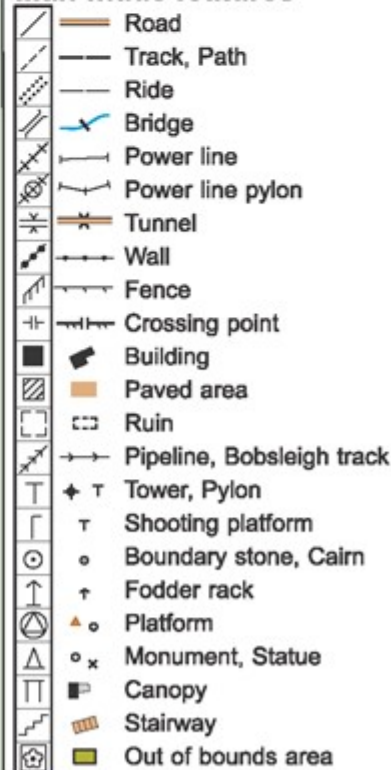


Vegetation

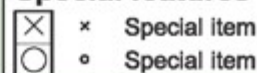


Maprunner
www.maprunner.co.uk
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Man-made features



Special features



Orienteering control descriptions are a world-wide pictorial language to describe what you are looking for

It is important when approaching a control that you know:

What is the feature?

What it will look like?

What size is it?

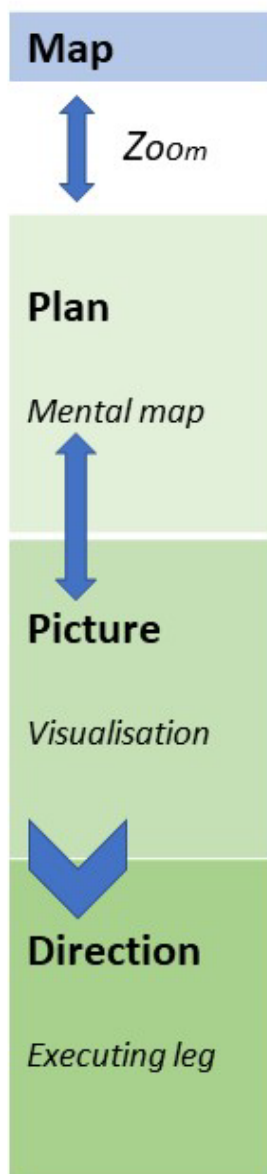
From which direction you should be able to see the flag?

If you don't know what you are looking for you have to rely on spotting the orange and white flag

You can practice learning the descriptions with some [Games](#)

There are some on the Better Orienteering website

Plan Picture Direction



This model is used across skill levels on Better Orienteering

Plan Picture Direction

A model to use when orienteering

Plan, Picture Direction draws on a model by Kris Jones integrated with other elements of navigation on Better Orienteering, Duncan Bayliss, 2019

Plan Picture Direction gives you a simple method to apply your skills to orienteering races

Plan – read the map to work out a route and Attack point

Picture – visualise what you will encounter on route

Direction – follow a routine with map and compass to navigate the leg

Seeing – what you see in the terrain will need to be matched to your Picture of what you expect to see. You then keep updating the details of your Plan and Picture

As your navigation improves you can link this model to more concepts

Think of orienteering like this:

Plan Picture Direction

Navigating in simple steps

Map

Read the map

Plan

Plan a route to get to the next control

Picture

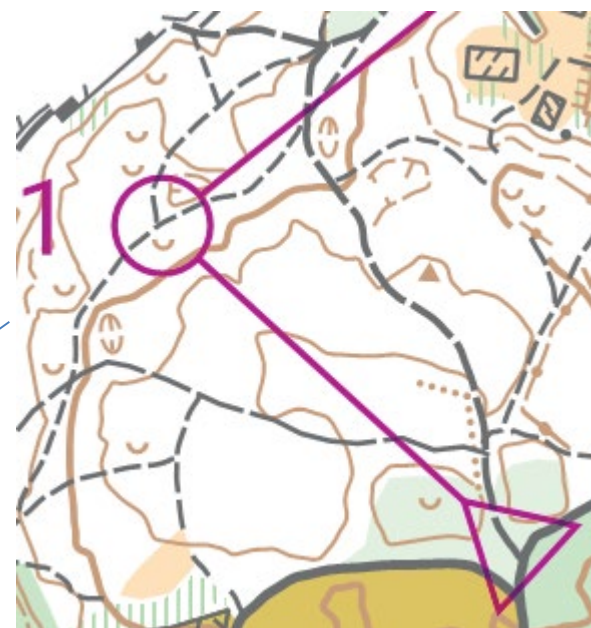
Try to picture what you will be looking for on the route

Direction

Use the map and compass to navigate your route:
Thumb on where you are
Map always oriented to north

Seeing

Match what you see around you to the map as you go









Follow large track
Second left onto path
Control at path junction

An off-road vehicle track
then a small path
In woodland all the way
Heading downhill then across the slope
Control on junction of two similar paths

Map lined up to north
Start in north direction
Track has some curves in it
Flat, then downhill
Watch distance – 300m to turning
Tight turning back to South West
Keep map lined up to north when turning
100m then control
Control code is PZ



O-Ringen School

- 1  **#8 O-Ringen school - staying focused on the map**
oringenofficial 7:40
- 2  **#12 What are the different symbols on the map?**
oringenofficial 10:09
- 3  **#15 Sort away details on the map - Orienteer better**
oringenofficial 8:41
- 4  **#20 O-Ringen school - contours**
oringenofficial 8:37
- 5  **#28 What you need to know on route choices**
oringenofficial 13:24
- 6  **#Testing the route choices from the previous episode**
oringenofficial 31:49

This series of videos O-Ringskolan (e.g. O-Ringen School) includes demonstration of skills that goes from Basic level towards some Intermediate level skills

These episodes are helpful at the Basic Navigation Routine Skills level

Swedish with English sub-titles
Don't be put off if you don't speak Swedish, you are seeing skills demonstrated

Better Orienteering Playlist on You Tube

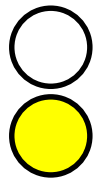
There are some excellent videos by orienteers for orienteers, showing skills in practice. There are also a lot of videos about navigation that are not so helpful for orienteering.

Better Orienteering Playlist draws together the most helpful orienteering learning videos, starting with a short overview to help you find the right videos for your level (you can skip this if you wish)

The videos are then ordered from the beginner through to Advanced videos

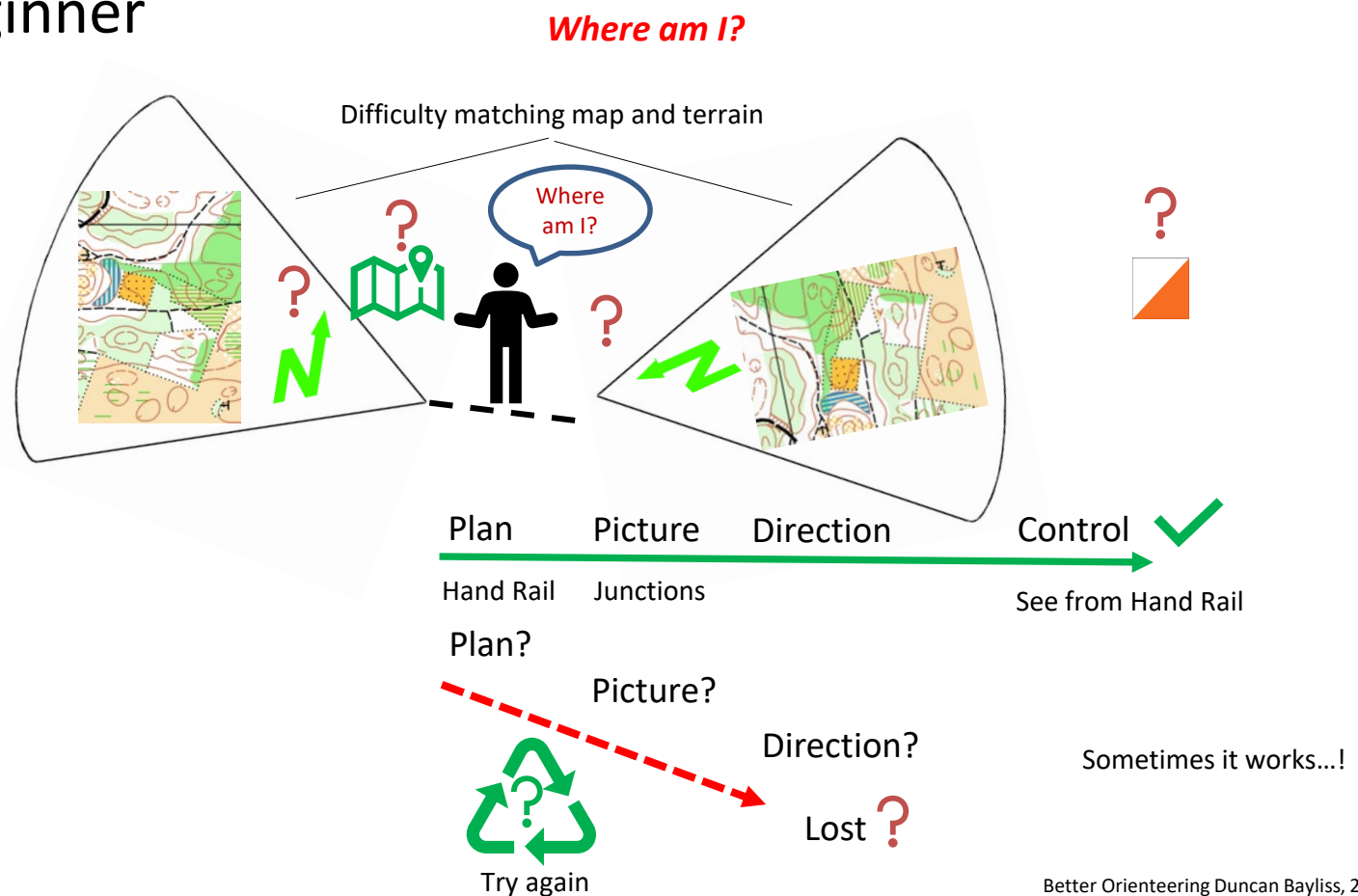


When you first start orienteering it is natural to focus on - *Where am I?*



Yellow and
White courses

Beginner



Better Orienteering Duncan Bayliss, 2020

Your Plan and Picture of where you are going will be very basic.

If you need to relocate you will focus on thinking back over where you have been and matching large features to the map. If necessary you retrace your steps to a known point

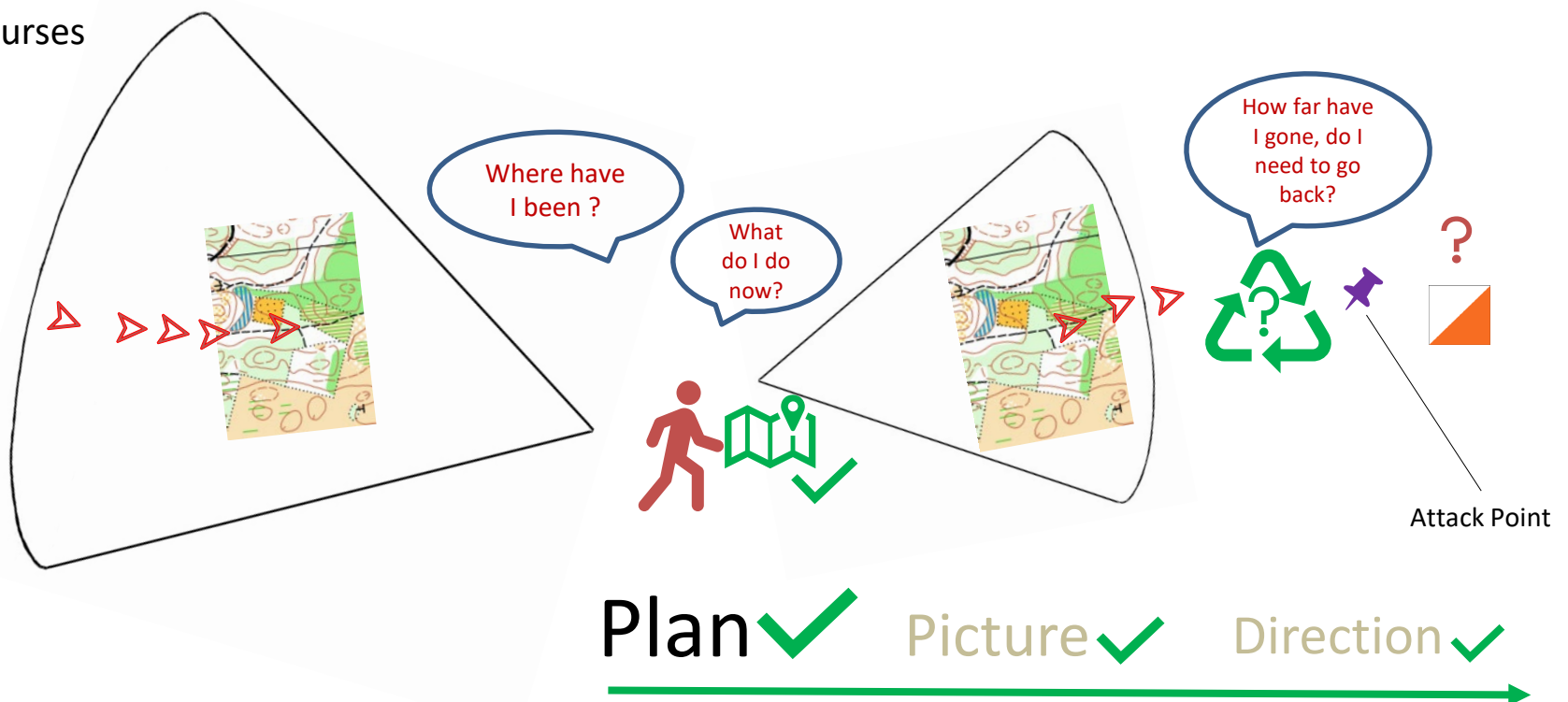
Once you have the basics of navigation working reliably you should be clear on where you have been and where you are trying to go next

Someone at a basic level is able to use the map and compass reliably to plan a route and maintain direction, but they will still be developing only a very basic picture in their mind of what is coming next. Navigating like this can be reliable but tends to be slow



Basic navigation

Orange courses



Plan ✓

Picture ✓

Direction ✓

A basic plan -
Attack Point
Route

Some Picture

Accurate direction but slow

Better Orienteering Duncan Bayliss, 2020



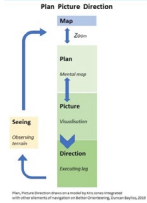
The step up to an Intermediate level is very much about improving your Plan and Picture so that you can be more forward focused and move through the terrain with confidence.

Your navigation must move from *Where am I?* and *Where have I been?* to *Where am I going?*

You need to be confident with these skills to navigate reliably and consistently

Better Orienteering Skills Matrix – Basic Navigation

Note: This skills matrix only indicates key skills at different stages of orienteering development more skills concepts are covered on Better Orienteering

Orienteering skill level	Core navigation skills	Goals	Free downloads on Better Orienteering	Learning Videos Link to videos in Basic Navigation section
Basic Navigation Routine	<p>Learn a Basic Navigation Routine applied to every leg</p> <p>Use Plan, Picture, Direction</p> <p>Know control descriptions</p> <p>Understand contours</p> <p>Route planning- break legs into sections</p> <p>Simplify, Route choice, Accurate Direction, Attack point</p> <p>Using thumb compass- Rough compass Accurate compass</p> <p>Relocation</p>	<p><i>Learn a routine for using the map and compass as a foundation for all orienteering navigation</i></p> <p><i>Understand all the basic elements of orienteering</i></p> <p><i>Understand what skills you need to develop to progress – looking ahead to Intermediate level</i></p>	<p>Basic Navigation Routine Tips</p>  <p>Better Orienteering Summary</p>  <p>Plan, Picture, Direction</p> 	<p>Learning Videos Playlist</p> <p>The 10 Elements of Orienteering</p> <p>How to use your compass on a yellow course</p> <p>Setting the map</p> <p>Using the compass</p> <p>Map contact</p> <p>O-Ringen School</p> <p>Duncan Bayliss, 2020</p>

What to look at next

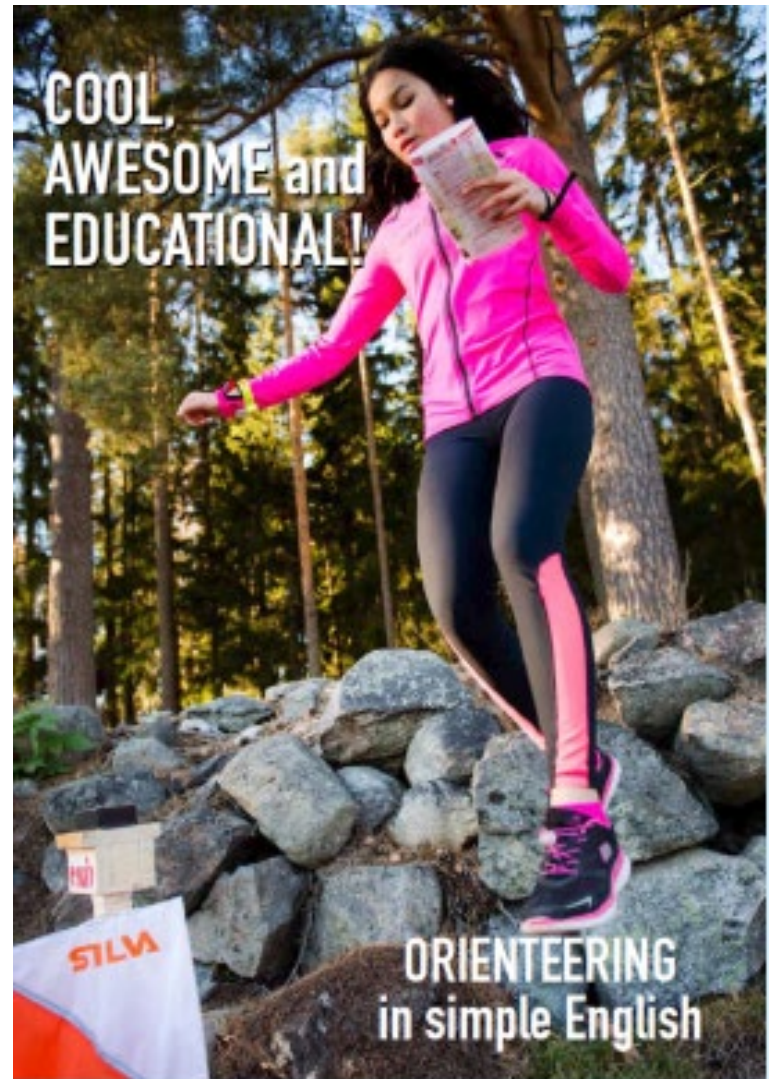
Here are a couple of very helpful short books to buy or view for free on Issuu



Göran Anderson (2020)
['Cool, Awesome, Educational
Orienteering at school ages 6-15'](#)

See Göran's website for details of how to order copies of either book <http://www.byorienteering.se/>

Both books by Göran Andersson are free to view on [Issuu](#).



Göran Andersson (2017)
['Cool, Awesome, Educational –
Orienteering in Simple English'](#)



Better Orienteering



How well am I
Orienteering?



A self diagnostic test



Photo: Steve Rush

This summary should be used together with the Betterorienteering.org website

How well am I orienteering? 3 self-diagnostic questions

Try to honestly measure yourself against these 3 statements of orienteering ability

1. *I have a solid basic navigation routine that helps me avoid regularly repeating errors such as:*

- *exiting the control in the wrong direction*
- *failing to identify and navigate in from an Attack Point*
- *failing to reliably estimate distance*

NO

Review your basic routines and practice applying them reliably.
Be aware of other techniques but focus on delivering the basics right every time
FOCUS ON BASIC TECHNIQUES

MOSTLY

Reinforce your basic routines but explore which other techniques you could use more often
EXPLORE INTERMEDIATE TECHNIQUES

2. *I am running within my thinking ability, not forcing errors with oxygen debt or rushing
My route choices are good and I reliably execute them
I am able to deliver good control flow most of the time
I am able to confidently move through terrain without following linear features*

NO

Be aware of Advanced Techniques but
FOCUS ON IMPROVING INTERMEDIATE TECHNIQUES

YES

Systematically identify where you are losing time
Practice different mixes of techniques to see where your strengths and weaknesses lie
REINFORCE ADVANCED TECHNIQUES

3. *I understand all the Advanced Techniques. I can use them as needed and can join them up consistently and reliably*

NO

Try exploring HOW TO JOIN IT ALL UP. Use the suggestions on visualisation and psychology to help you process the Advanced Techniques in race conditions

YES

Congratulations you are orienteering beyond the remit of this guide!
Please do contribute suggestions on further content to include in this guide to help others follow your success.

You can use these diagnostic questions at any time

Try to gauge where you are on your orienteering journey

and identify what you need to focus on next

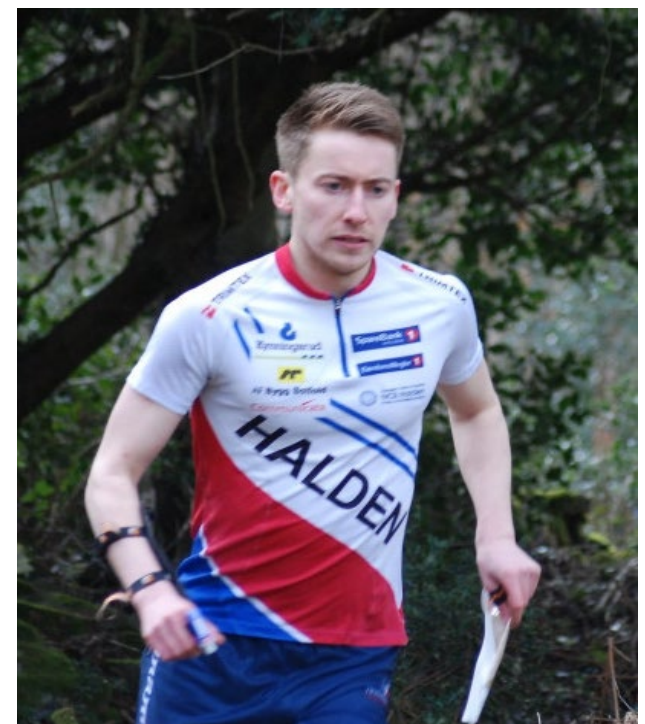


Photo: Steve Rush

Better Orienteering

Intermediate A Skills Tool Kit



These 9 videos cover Intermediate to Advanced skills

Use this summary together with the Betterorienteering.org website

Better Orienteering Navigation model – pictorial version



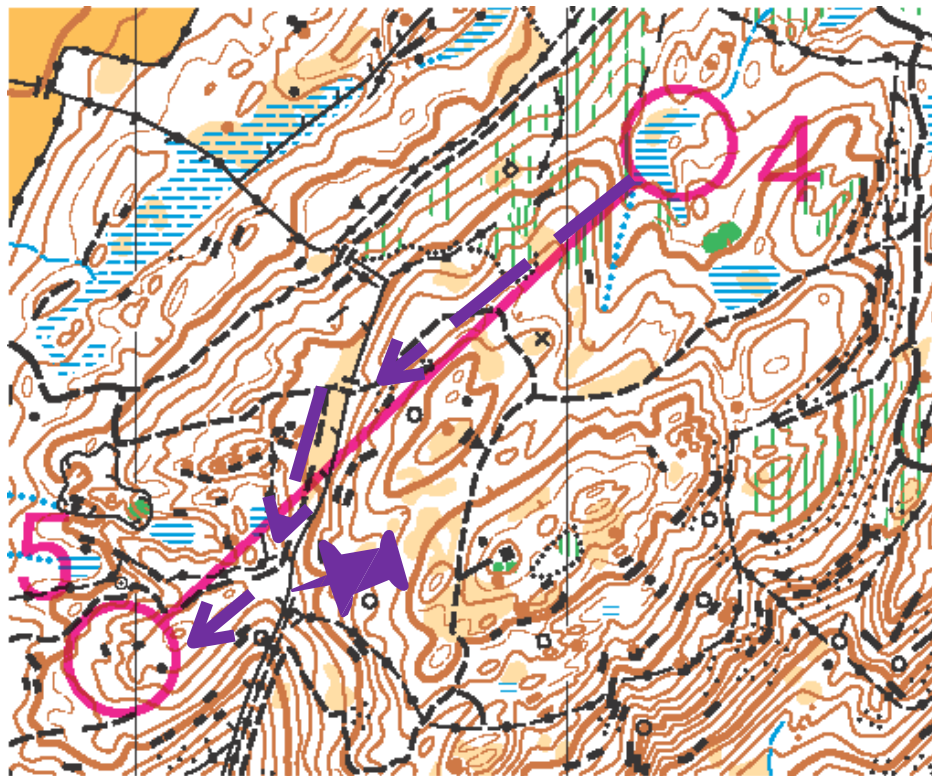
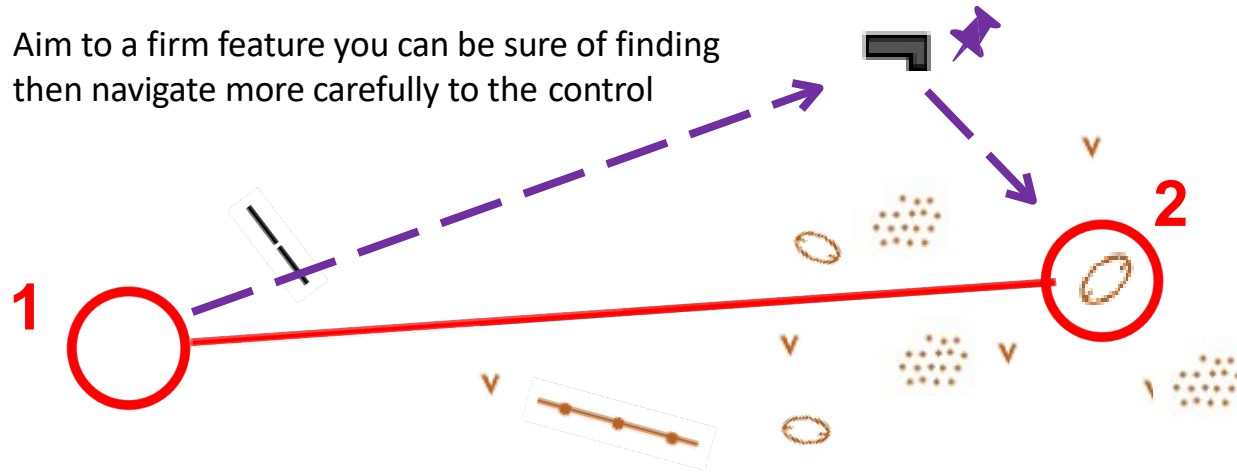
Skills Tool Kit


Basic Intermediate Advanced

Once you have a good **Basic Navigation Routine** (see separate summary), you can use a **Tool Kit of skills** and apply them flexibly as needed. These skills interact with each other and operate at all levels of orienteering from Basic to Advanced with varying levels of complexity.

Attack Point

Aim to a firm feature you can be sure of finding then navigate more carefully to the control



Head to fence, follow to the saddle where the path turns west for firm **Attack Point** 

then head south west along spur

The **Attack Point** is confirmed by the fence, the path turning and the saddle contour shape

part of Summerhouse Knott
copyright Warrior OC 2019
map by
martinbagness@aol.com

The Skills Tool Kit illustrates a set of core concepts you can use to navigate

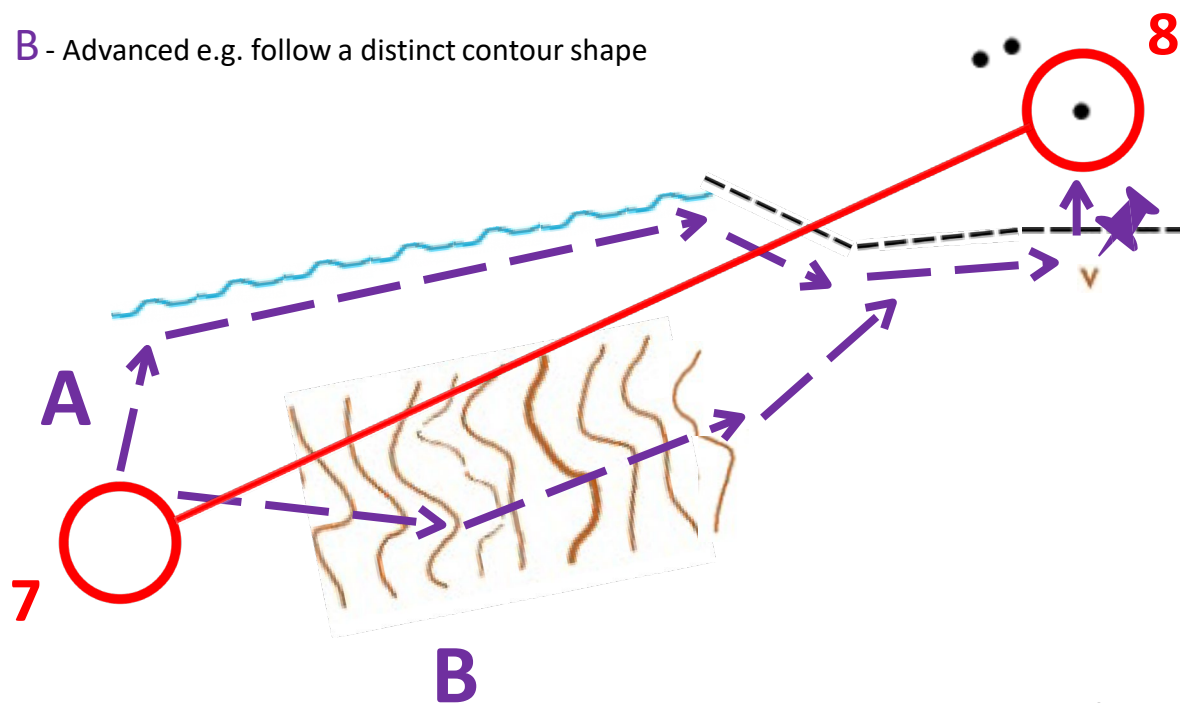
You can 'mix and match' these skills on a flexible basis

Hand rail

Follow a linear feature to move quickly towards the next control

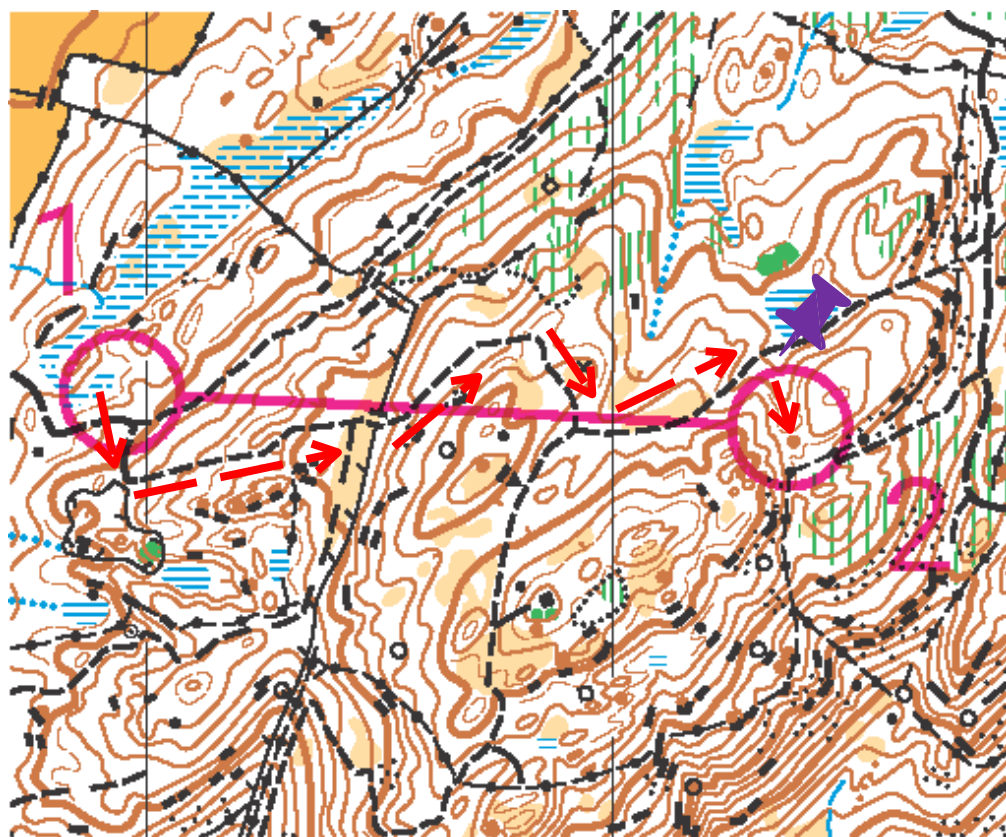
A - Basic e.g. follow a path or stream

B - Advanced e.g. follow a distinct contour shape



These skills concepts can be used at a range of levels from intermediate right up to elite level

They are skills every orienteer needs to know



Simple Hand Rail:

Follow paths

Attack point is where re-entrant goes up to the right

Route on ground →

The easiest courses allow you join up **Hand Rails** as your route

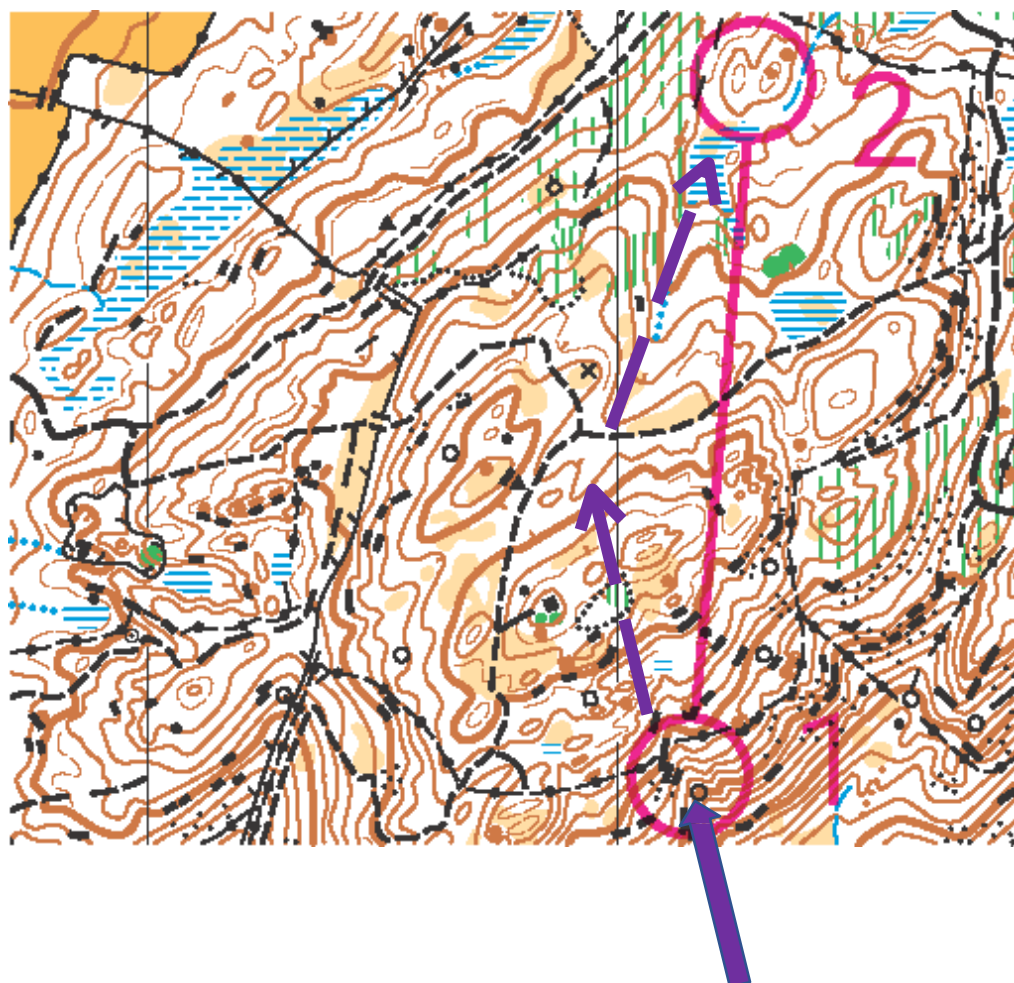
part of Summerhouse Knott
copyright Warrior OC 2019
map by
martinbagness@aol.com

Advanced Hand Rail

The contour features can be used as a **Hand Rail** to complete most of the leg

Head north following up small re-entrant to saddle

By staying within the re-entrant shape it can be followed up to the top of the hill
the only detail that matters is following the re-entrant and the top of the hill



part of Summerhouse Knott
copyright Warrior OC 2019
map by
martinbagness@aol.com

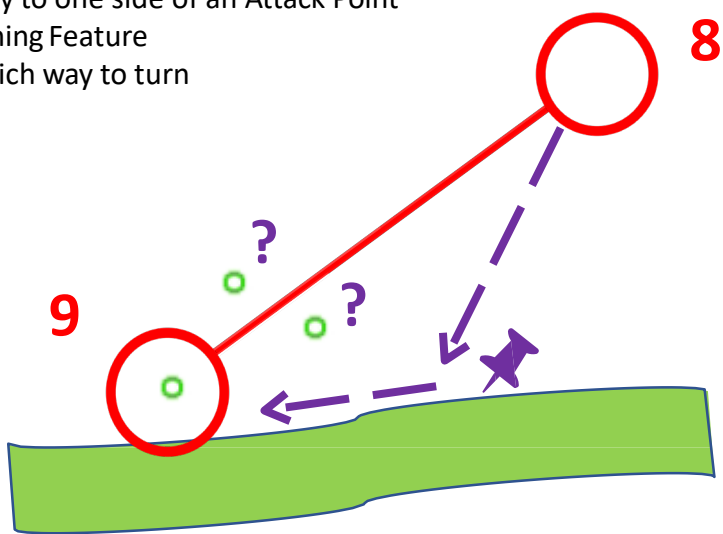
descend on Rough Bearing
the path junction will be seen to the left,
cross path follow re-entrant as **Hand Rail** to where it levels to marsh
onto small hill to control


The exact line on the ground down re-entrant will not matter because the flat ground
with a marsh splits either side of the low hill with the control on it

As your orienteering progresses you will understand the interaction between these different skills and other concepts such as simplification and visualising the shape of terrain

Aiming off


Aim off deliberately to one side of an Attack Point or Control or Catching Feature then you know which way to turn



Aim Off to path, turn right. Follow stream to where the wall and stream cross the path as Attack Point. 

Then head SW parallel to the stream and under the small spur to crag.

Going straight it would be easy to be very uncertain of your location and not have a firm Attack Point
Aiming Off allows certainty in finding firm features

Potential route on the ground 

part of Skelghyll Woods
copyright Warrior OC 2018
map by
martinbagness@aol.com

The Skills in this Tool Kit can be combined

This concept -

Aiming Off

can often be used in conjunction with the next one -

Catching Feature

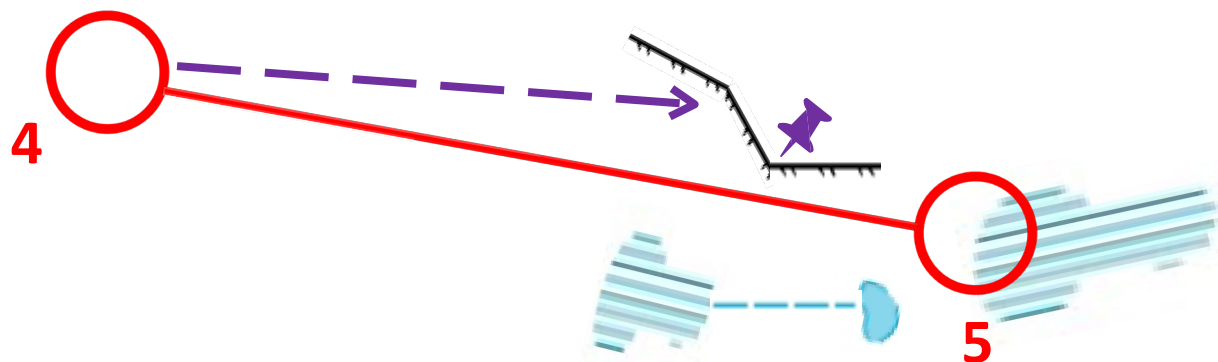
Catching feature

Simplify the level of detail you are reading and move quickly to a firm feature

Use Rough Compass to give direction

Note features on route but relocate on the catching feature.

Then more careful navigation to the Attack Point or control



Combine Aiming Off with moving quickly to path which acts as **Catching Feature**

Aiming for a Catching Feature can help you simplify the amount of detail you need to follow as you move through the terrain towards the next control

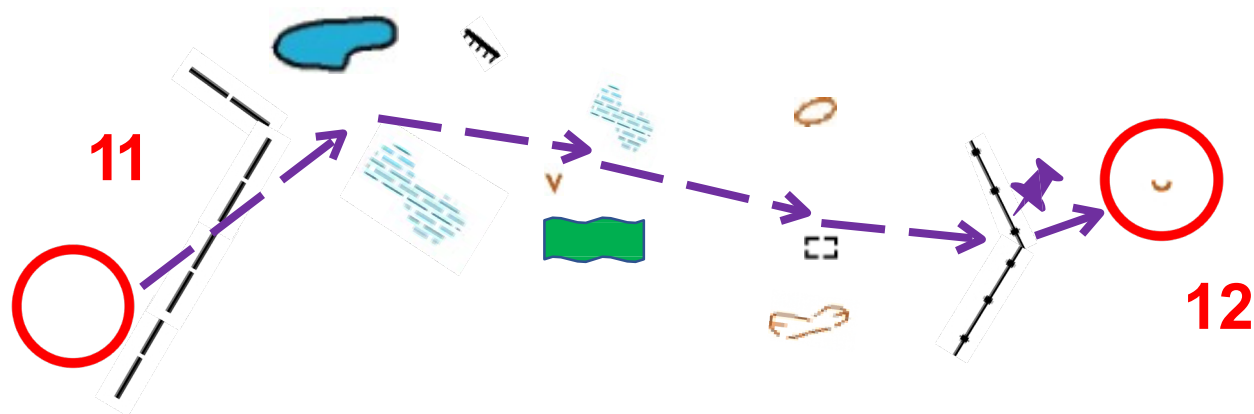
Path bend beneath crag gives Attack Point

Your route on the ground will not be a straight line

part of Esthwaite Intake
Copyright Warrior OC
Map by
martinbagness@aol.com

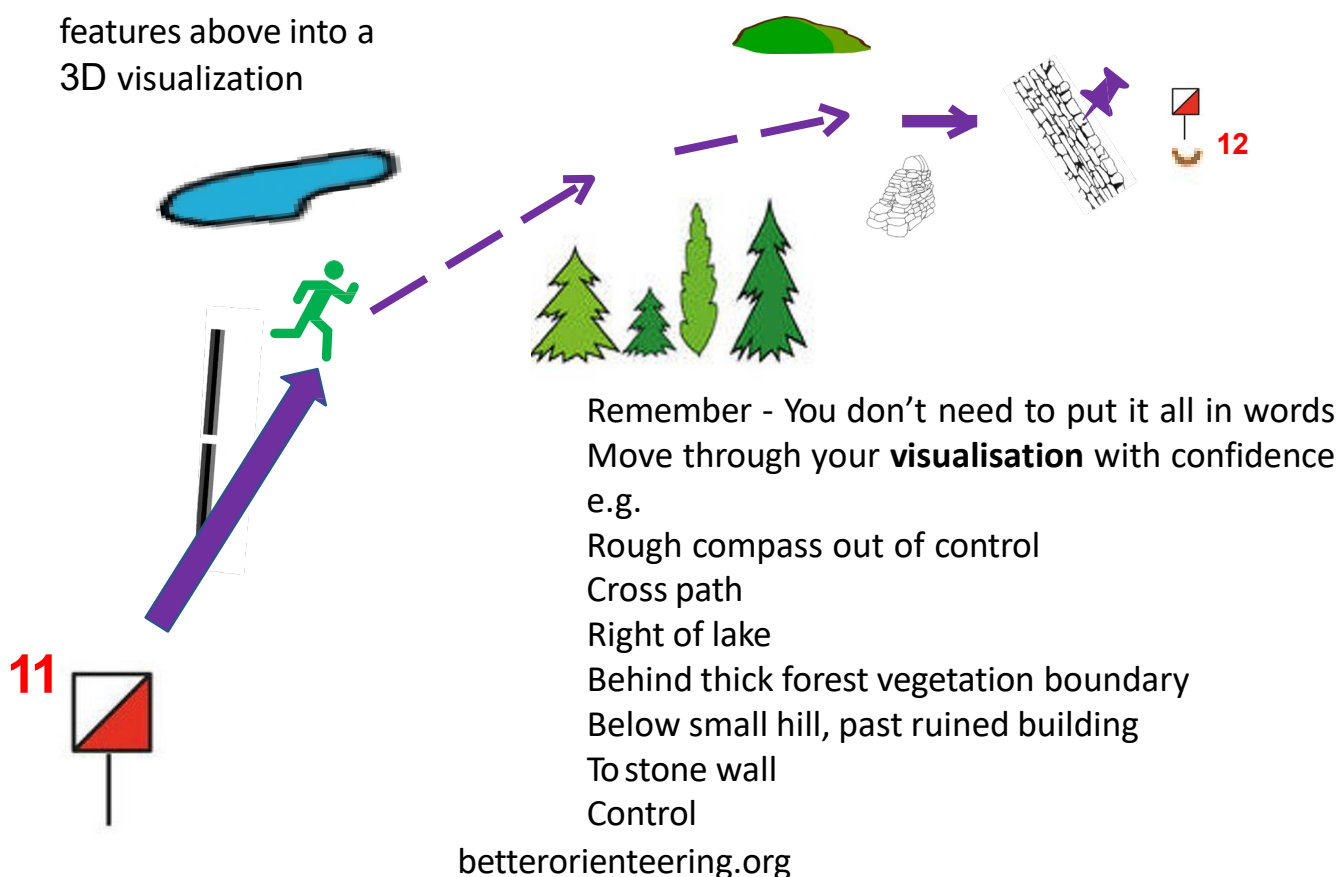
Corridor

Instead of following a series of linear features as hand rails to get close to the control identify a **corridor** of features to move through



Visualize notable features – go from 2D to 3D

See a terrain map in your mind
Use **notable features** to turn the 2D features above into a 3D visualization



betterorienteering.org

Beginners will tend to follow line features such as paths or fences

As you progress you can identify a corridor of features to move through without needing a line feature to follow

With time you will get better at visualising what these feature will look from what you see on the map

Relocation - Intermediate Relocation

Relocation happens at small and larger scales
Unsure of where you are? Stop. **Relocate** straight away

Orienteer map

How big a circle of uncertainty are you in?

The sooner you **relocate**, the smaller the circle

Look for large notable features

Still uncertain?

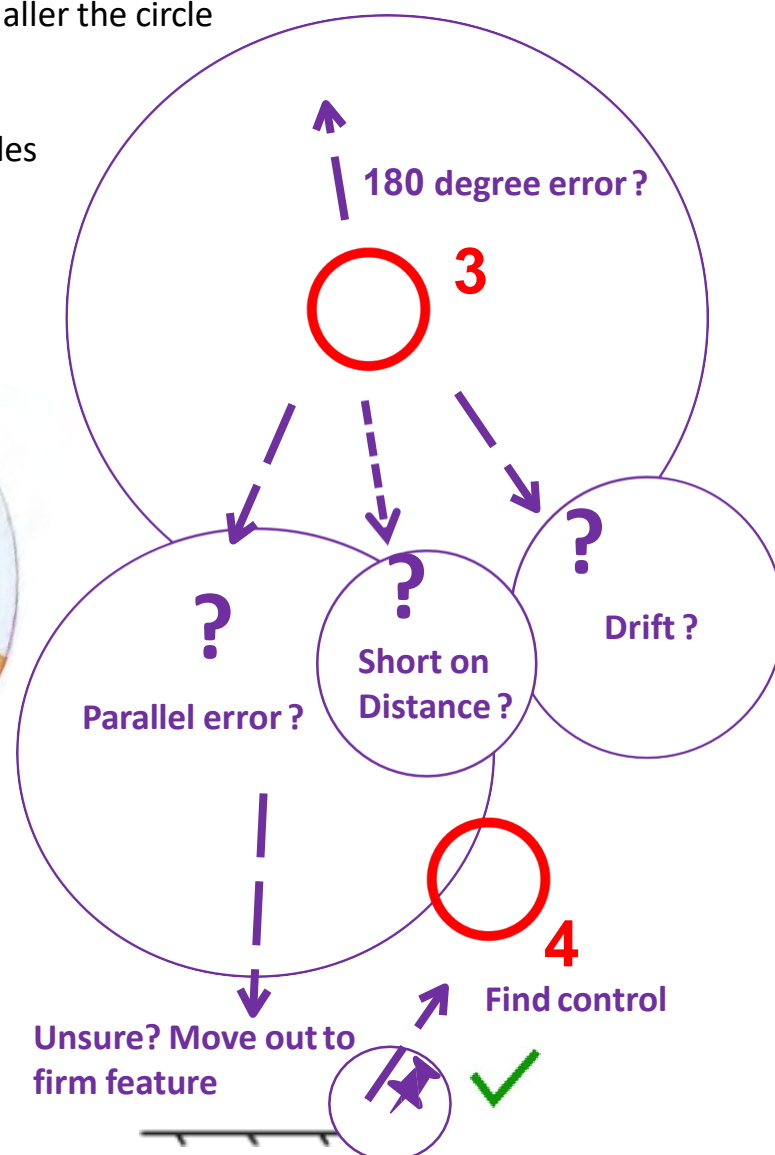
Don't just stand still or go in circles

Move out to a firm feature

Come back in with certainty



In this example the leg is contained within field boundaries



○ = how certain you are of your exact location

Advanced Relocation - more complex courses and longer legs

If you are unsure exactly where you are, do you know where you are going?

Will you be able to pick up a more accurate location as you move on through the terrain? Are you on line to a more certain feature that will locate you?

Near to control needs greater certainty

Or, has the map stopped matching the ground too much and you need to **relocate** now? An element of **Relocation** can even be a deliberate part of a route choice

betterorienteering.org

Mistakes will happen

Learning how to relocate quickly and effectively is essential

There is a lot to think about and do when navigating at speed

This explanation and the info-graphic that follows summarise the many things you will be doing when navigating a leg between controls

You will need to complete a lot of orienteering races to be able to draw together all these elements

More detail on Better Orienteering.org

The following schematic diagram, Route choice and executing a leg, captures a lot of the thought processes in navigating a leg. It combines strategies to employ such as identifying an Attack Point and Corridor to move through, with a series of processes you need to undertake throughout the leg.

Level of certainty



The purple circles are indicative of a sense of the level of certainty you will need of your exact location at varying points through a leg – in the same way that a circle on a smartphone or GPS changes size depending on how certain it is of your location.

Route choice A

With Route Choice option A, following a Hand Rail, the purple circles are small indicating that you could know with a high degree of certainty where you are when on a path.

Route choice B

With Route Choice option B, moving through a Corridor of features you might have less certainty of your exact location but be confident of where you are going, heading for a Catching Feature and the circle placing you is larger.

Flexibility

The permutations of skills and processes for different legs are endless, so you will need to follow a Basic Navigation Routine and then flexibly draw from a Tool Kit of Skills as needed on route.

Speed



The orange, green and red runner symbols remind you to consider the appropriate speed for different parts of a leg and the navigation challenges they present and to think of the leg in sections – red= slow, orange = moderate speed, green = faster. Remember some legs are best taken slowly all the way between controls. Some other legs allow a section of much faster progress.

Route choice and executing a leg

Strategies

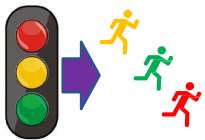
Exiting control

Plan – Attack Point
then route

Route to Attack
Point

Visible features

Corridor or
hand rail ?



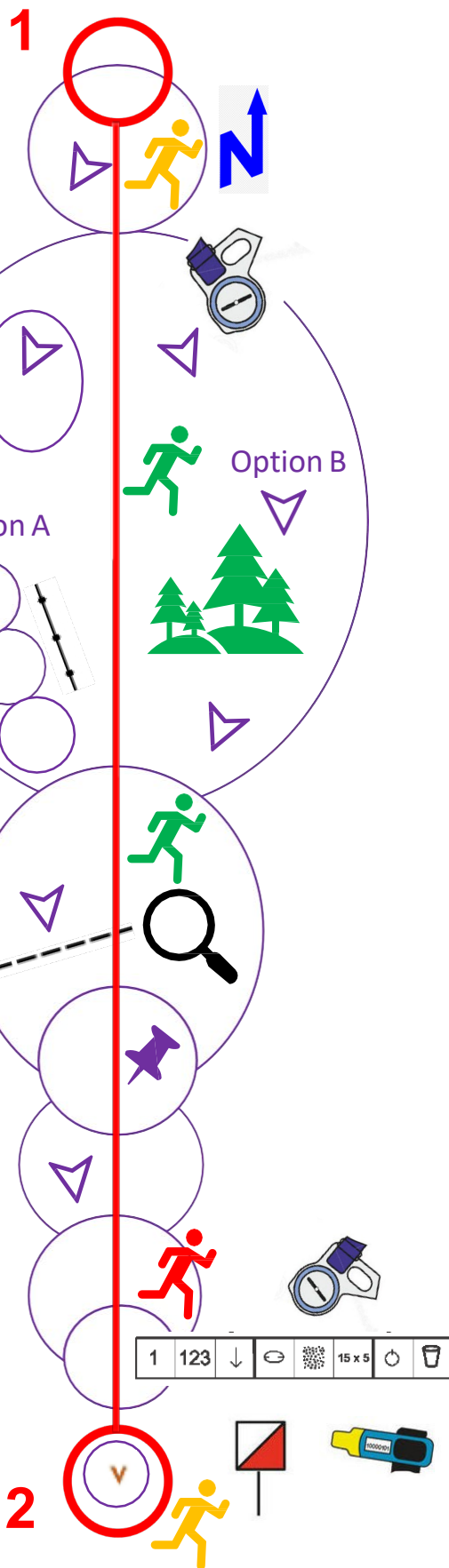
Catching feature ?

Attack Point

Finding control

Fine navigation

○ = how certain of
exact location



betterorienteering.org

Processes

Orientate map

Rough Compass

Read description

Simplify

Move quickly

Visualize
notable features

Plan ahead
plan control exit

Re-focus on detail

Slow down

Accurate compass

Check control
description

Punch control

Control flow –
exit smoothly

It takes a lot of practice
to integrate all your skills

Be aware of all these
elements

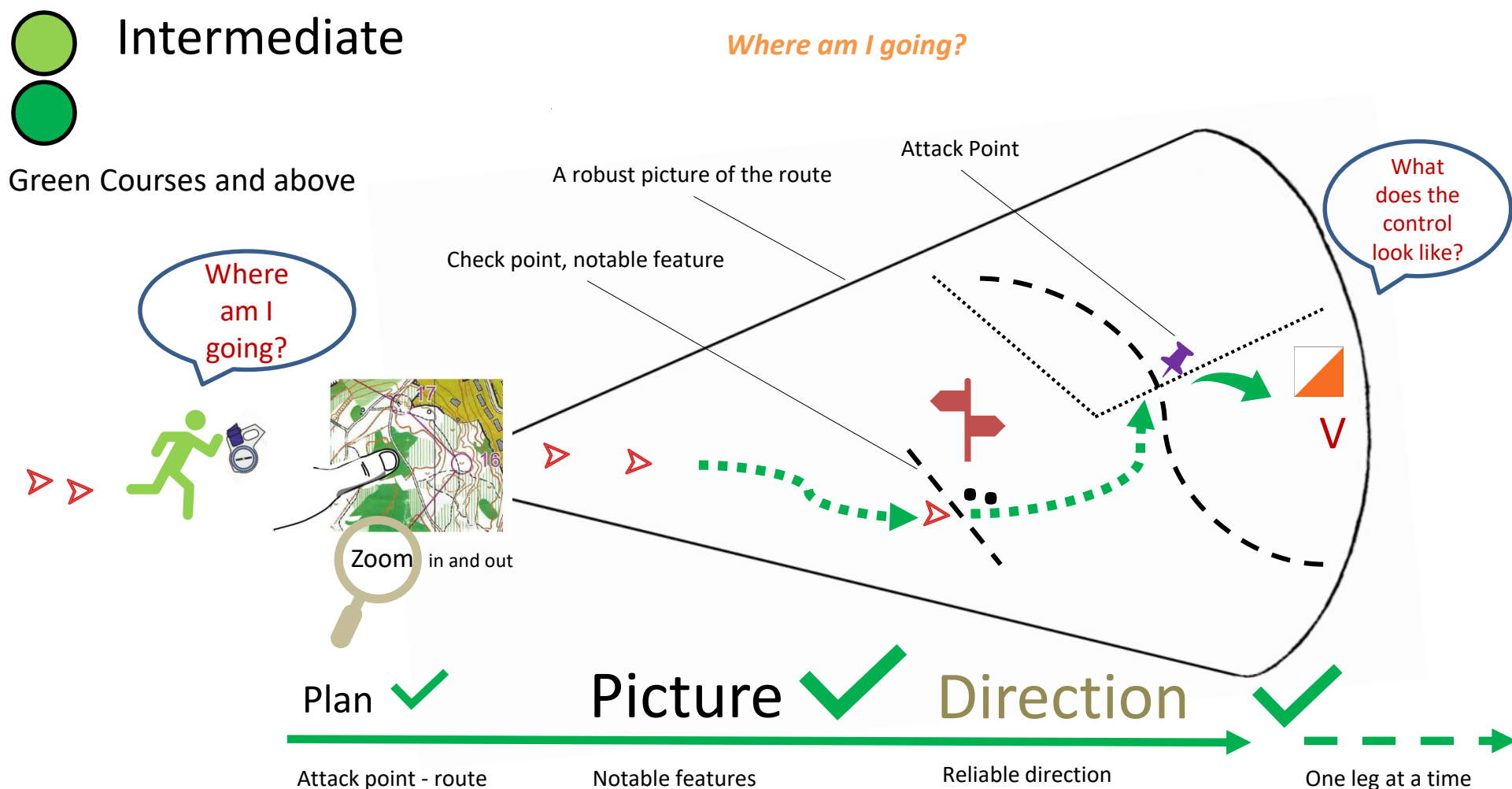
Then review legs from
your races

How well were you able
to join these ideas up?

At an Intermediate level you should not be struggling with *Where am I?* or *Where have I been?* but be focused on *Where am I going?*

This requires using a wide **Tool Kit of skills** in route choice, making an effective **Plan** and being able to visualise or **Picture** what will be coming up, and executing the plan reliably








Better Orienteering Duncan Bayliss, 2020



You now understand navigating as a process of selecting an effective route and picturing ahead of yourself what you will see and do




Learn to orienteer
with Janne Troeng
- a series of videos
from O-Ringen TV

- 1  **#3 Learn orienteering in Lunsen with Jan Troeng**
oringenofficial 7:54
- 2  **#7 Learn orienteering using the big details with Janne Troeng**
oringenofficial 6:37
- 3  **#11 How to make a difficult leg "easy" in Lunsen**
oringenofficial 8:42
- 4  **#16 Short legs in Lunsen**
oringenofficial 9:23
- 5  **#19 A really hard leg in Lunsen**
oringenofficial 8:32
- 6  **#23 "Albin Ridefelt would probably not approve of my route choice"**
oringenofficial 8:54
- 7  **#27 You need to know these terrain objects in Lunsen**
oringenofficial 22:04

These videos from
O-Ringen TV
cover skills from
Intermediate to
Advanced level

Better Orienteering Skills Matrix - Intermediate

Note: This skills matrix only indicates key skills at different stages of orienteering development more skills concepts are covered on Better Orienteering

Orienteering skill level	Core skills (Not an exhaustive list)	Goals	Free downloads on Better Orienteering	Learning Videos Link to videos in Intermediate section
Intermediate	<p>Understand and apply a Toolkit of skills:</p> <p>Attack point Handrail Aiming off Catching feature Corridor Notable features From 2D to 3D Relocation Executing a leg in stages</p> <p>Plan, Picture, Direction in more detail: Zoom, Mental map, Visualising, Relocation strategies</p> <p>Route choice Simplification Post-race analysis</p>	<p><i>Understand a wide range of orienteering skills and apply them flexibly</i></p> <p><i>Improve ability to picture the terrain from the map</i></p> <p><i>Apply Plan, Picture, Direction to process of every leg</i></p> <p><i>Get better at handling mistakes and relocating</i></p> <p><i>Understand where it went wrong and how to get it right next time</i></p>	<p>Skills Tool Kit</p>  <p>Learning Videos Playlist</p> <p>Compass bearing and Attack point on an orange course</p> <p>Simplification</p> <p>Sort away details, orienteer better</p> <p>Route choice</p> <p>Large contour features</p> <p>Testing route choices</p> <p>Aiming off</p> <p>How to make a difficult leg easy</p>	<p>Learning Videos Playlist</p> <p>Compass bearing and Attack point on an orange course</p> <p>Simplification</p> <p>Sort away details, orienteer better</p> <p>Route choice</p> <p>Large contour features</p> <p>Testing route choices</p> <p>Aiming off</p> <p>How to make a difficult leg easy</p>

Duncan Bayliss, 2020

At an Intermediate level you understand a wide range of skills and can mix and match them to apply them to any leg

Better Orienteering

Advanced Strategies

How to join it all up

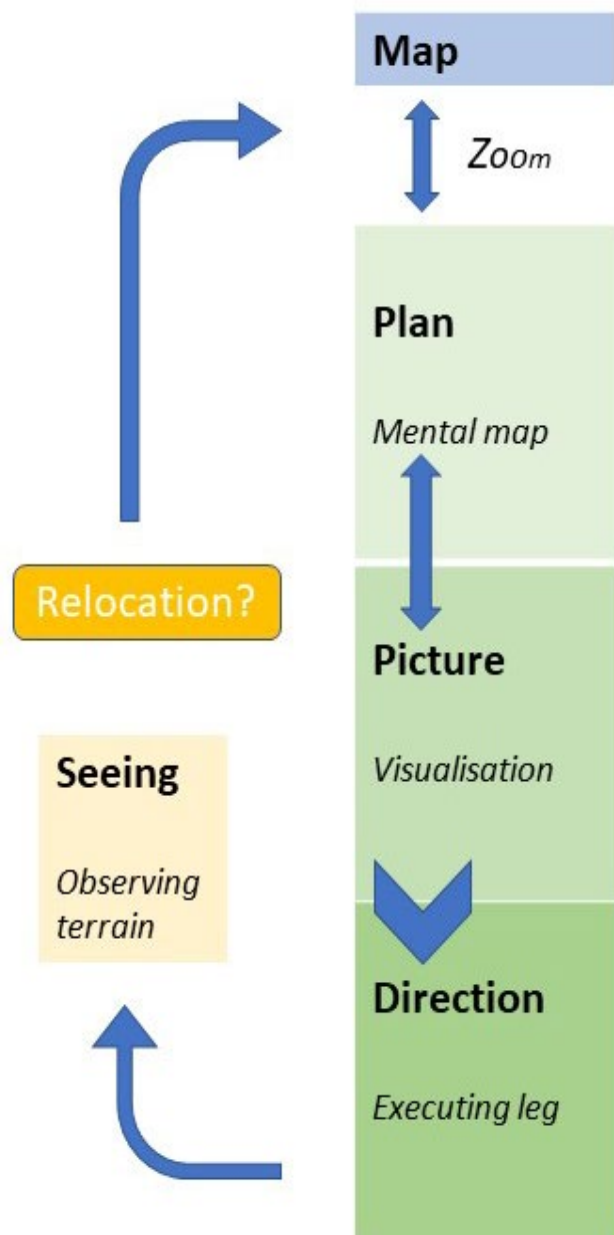
And

Beyond Advanced

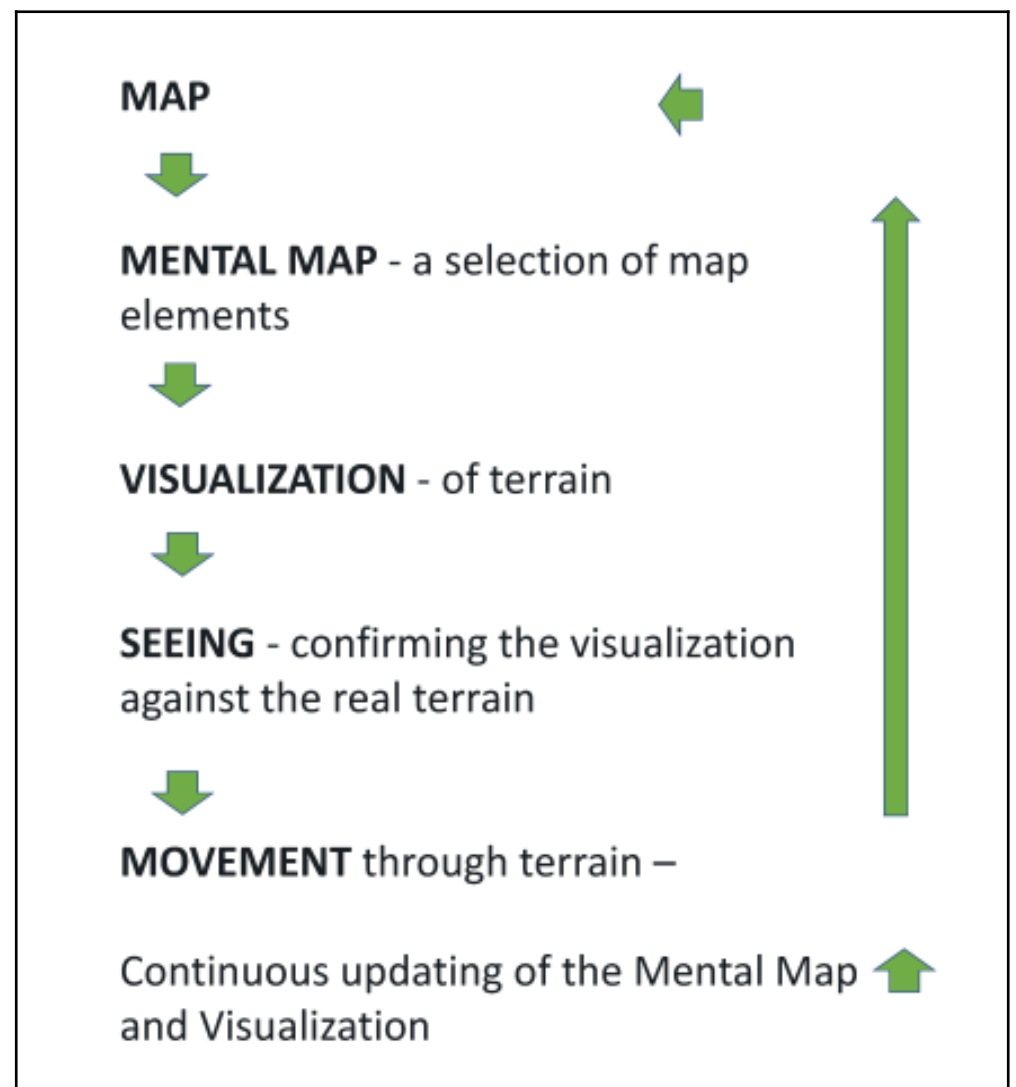


Be inspired by this video

This summary should be used together with the Betterorienteering.org website



Improve your mental maps and visualisation



Plan Picture Direction

Plan Picture Direction can be considered in more detail:

Identify which features on the map you need to use to navigate the leg

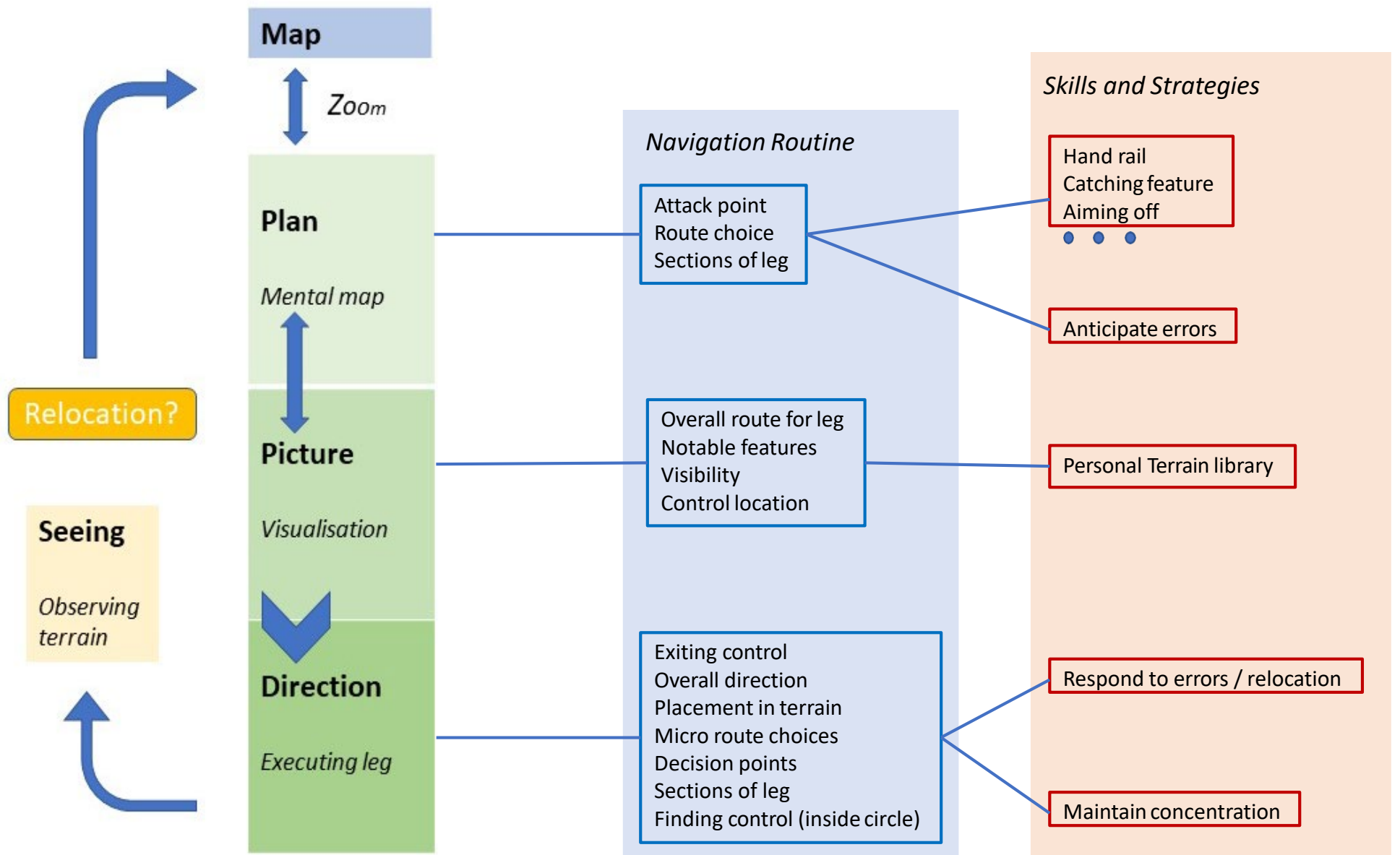
Build an effective simplified mental map and route

Improve how you visualise those features – build a Terrain library from experience

Keep your visualisation updated and always ahead of you

Run into your visualisation confidently

Plan Picture Direction



Plan, Picture Direction draws on a model by Kris Jones integrated with other elements of navigation on Better Orienteering, Duncan Bayliss, 2019

This info-graphic summarises what successful orienteering navigation is built on

As your orienteering improves you can work through the ideas in all the sections of Better Orienteering and link them to the basic navigation model -
Plan Picture Direction

The model is then linked in your mind to a range of routines, skills and strategies to use when competing

Better Orienteering Navigation Model - systematic description

The elements Better Orienteering uses to help you build successful navigation

Routines

Pre-race

Research the map
Start well

Basic Navigation Routine

Map to north
Know scale
Thumb map
 Exiting control
 Route to next control
 Finding control
Break leg into sections
Steady to No.1
Map contact
Relocate promptly
Relate speed to navigation
Zoom in and out on map

Post race

Record route
Identify losses
Track trends
Plan to avoid repeating errors

Concepts

Tool Kit of skills

Attack point
Handrail
Aiming off
Catching features
Corridor
2D to 3D
Simplification
Notable features

Advanced

Advanced Visualisation
Library of terrain experience
Catalogue of errors

5 Key Principles

Route choice

Plan

Direction

Picture / visualisation

Execution

Strategies

Integration and implementation

Intermediate

Minimise losses maximise gains
Positive attitude to mistakes
Every leg a new beginning
Ignore other people
Look at options then commit
Simplify appropriately

Advanced

Style - don't get stuck in a rut
Control Flow
Virtual corridor
Planning ahead
Bigger picture in mind
Categorize legs by type
Right approach for course
Evaluate certainty of features
Improve distance estimation

Beyond Advanced

Total immersion
Not all in words
Improve mental maps and
visualisation
Feelings and the terrain
Extended race routine
Plan your own training

The content of Better Orienteering is mapped here across the 3 main themes –
Routines, Concepts, Strategies

The items listed are all sub-headings or sections of Better Orienteering.org

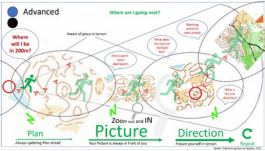
[illegible]

This info-graphic maps some of the main sections of Better Orienteering against the cycle of pre-race, race, post-race, training

There are downloads related to each of those steps on Better Orienteering

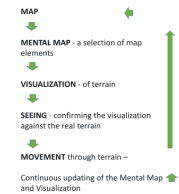
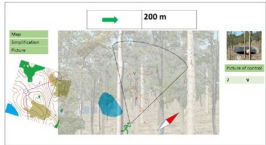
Better Orienteering Skills Matrix – Advanced Strategies

Note: This skills matrix only indicates key skills at different stages of orienteering development more skills concepts are covered on Better Orienteering

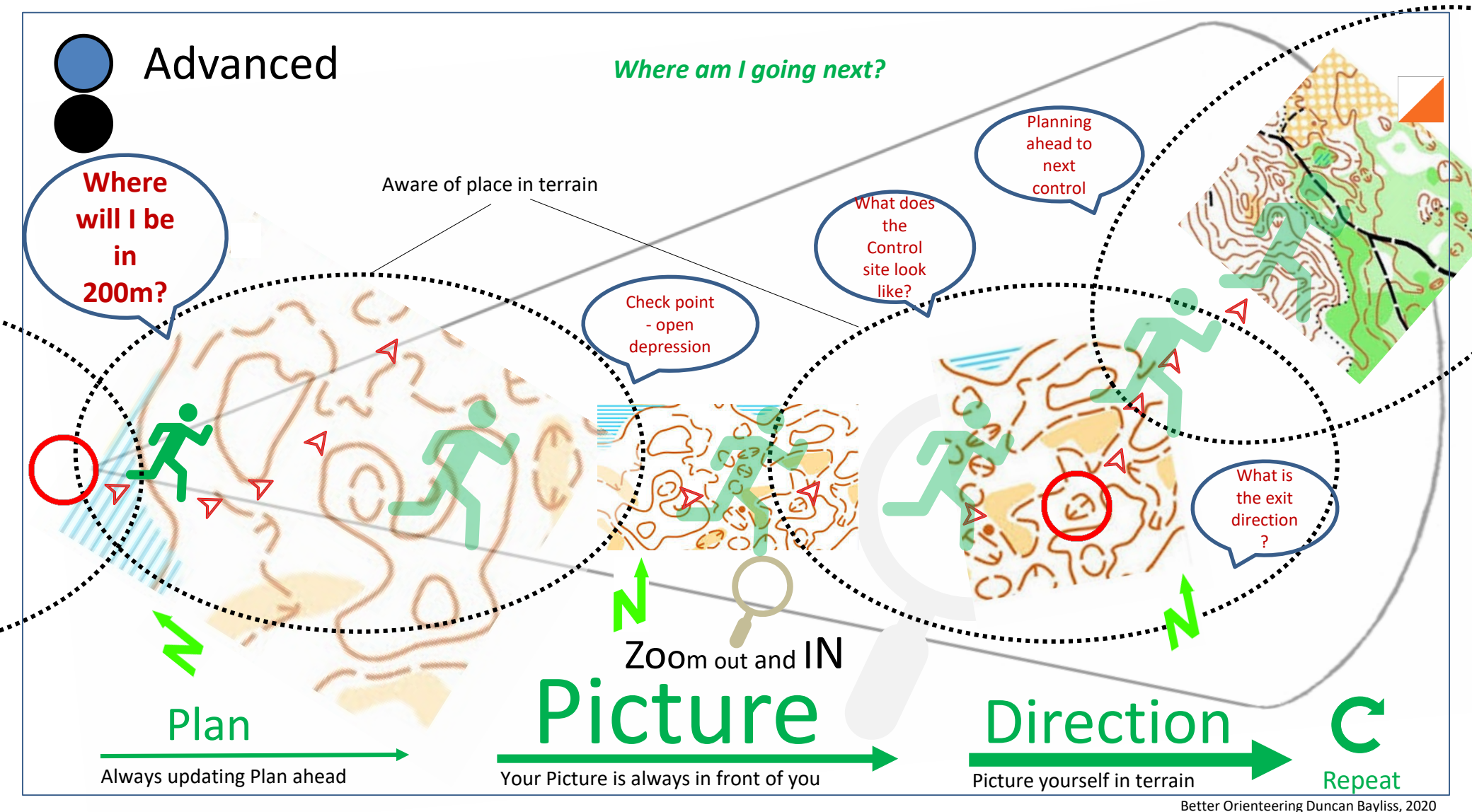
Orienteering skill level	Advanced skills – Routines, Concepts, Strategies	Goals	Free downloads on Better Orienteering	Learning Videos Link to videos in Advanced section
Advanced Strategies	Advanced visualisation Reviewing Routines, Concepts, Strategies linked to - Plan – Picture – Direction Control Flow Planning ahead Dynamic Zoom map reading Adapting approach to terrain Orienteering style – adapting navigation to personal strengths Categorising legs and recognising the planner’s challenges Improved distance estimation Getting more value from the compass Advanced Post-race analysis	<i>Visualise reliably and consistently</i> <i>Develop good flow</i> <i>Respond well to different types of leg and navigation challenges and terrain</i> <i>Systematically identify weaknesses and plan training to improve on them</i>	Plan, Picture, Direction in more detail Map reading and visualisation diagrams 	Learning Videos Playlist A really hard leg in Lunsen This is what a long leg can look like Learn to orienteer with Janne Troeng What has happened to maps since 1965? <div>Duncan Bayliss, 2020</div>

Better Orienteering Skills Matrix – Beyond Advanced towards Elite

Note: This skills matrix only indicates key skills at different stages of orienteering development more skills concepts are covered on Better Orienteering

Orienteering skill level	Skills in an integrated approach – training, preparation, race, post-race analysis	Goals	Free downloads on Better Orienteering	Learning Videos Link to video or playlist containing the video
Beyond Advanced towards Elite	<p>Joining it all up: Working with your psychology</p> <p>Improving mental maps and visualisation Personal Terrain Library</p> <p>Developing extended race routine: Preparation and research, Mind set Start well Managing concentration Post-race analysis Planning training</p> <p>Learning from elite competitors</p> <p>A continuous cycle of learning and improvement</p>	<p><i>Integrating: fitness, psychology, preparation, handling pressure, health and navigation skills - setting yourself up to succeed</i></p> <p><i>Joining up all your skills at race speed</i></p> <p><i>Minimising all small losses</i></p> <p><i>Build your Terrain Library</i></p> <p><i>Always having a robust visualisation ahead of you – knowing where you will be in 200m</i></p> <p><i>All navigation done while running</i></p> <p><i>Understanding how to analyse your orienteering effectively</i></p>	<p>Mental map to visualisation</p>  <p>The runner’s eye view</p>  <p>Further articles on skills</p>	<p>Learning Videos Playlist</p> <p>Albin Ridefelt would probably not approve of my route choice</p> <p>Follow me by Tero</p> <p>WOC Long Qual headcam</p> <p>You need to know these terrain objects in Lunsen</p> <p>Intricate contours</p> <p>Last run of the king</p> <p>Duncan Bayliss, 2020</p>

You will use different types of navigation technique for the challenges at different points in a course

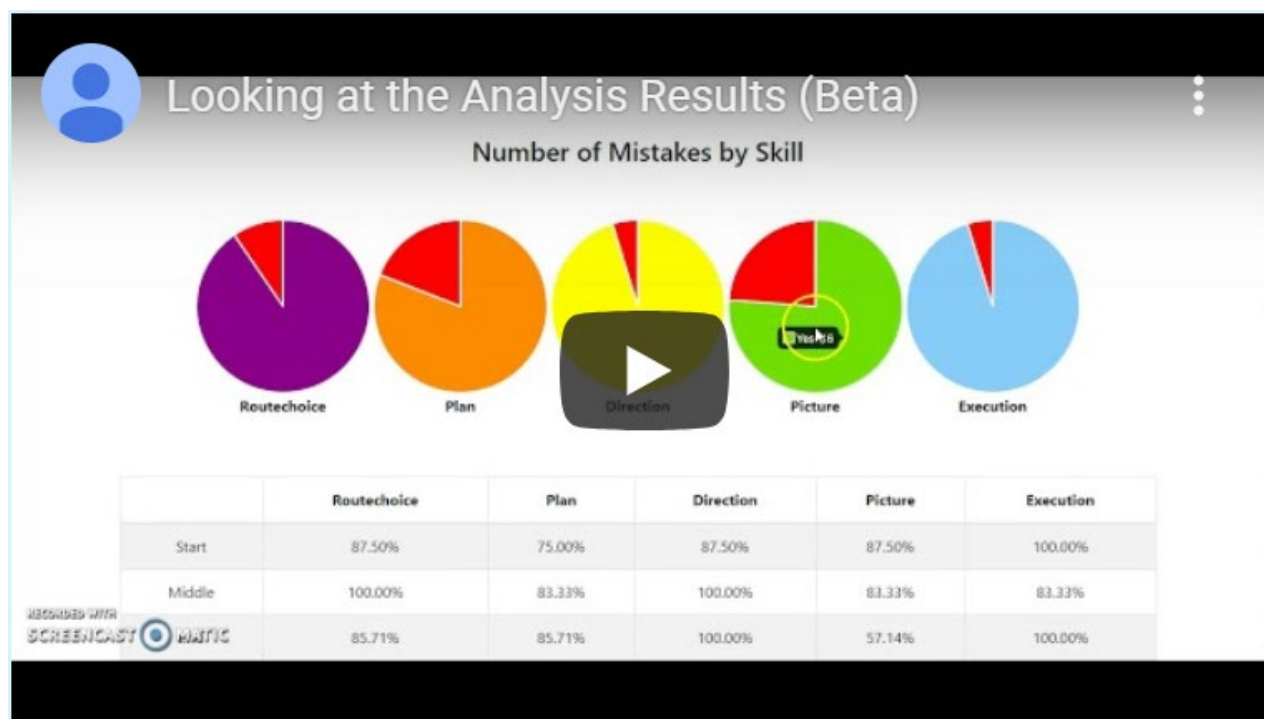


You add new notable features to your Picture as you move as well as more detail when needed. You no longer think just one leg at a time. Your Picture or visualisation is always ahead of you. You know what the control will look like and your exit direction

Better Orienteering

Post-race analysis

What went well ?
What went wrong ?
What are my priorities
for improvement ?



Consider trying this web analysis tool at elevate.run

This summary should be used together with the Betterorienteering.org website

Race Analysis Checklist

Routines, concepts, strategies		Event name/date		Event name/date
	Yes/No secs/mins lost	Comments		Comments
BASIC NAVIGATION ROUTINE				
Map to north				
Exiting right direction				
Attack point				
Finding accurately				
Map read correctly				
CONCEPTS USED				
Aiming off				
Hand rail				
Distance estimation accurate				
Catching feature				
Rough compass bearing				
Accurate compass bearing				
STRATEGY				
Steady to No 1				
Route appropriate to skill level				
Running within thinking				
ERRORS TOTAL	Mins/secs			

As a minimum, after each race:

- 1 Draw your route on your map
- 2 Estimate where you lost time
- 3 Keep your maps in date order
- 4 Look back over them to see if you keep making the same mistakes

You can also try more detailed analysis such as with this table

INTERMEDIATE STRATEGY				
No talking				
Ignored other runners				
Anticipating possible errors, planning for them				
Relocating quickly				
Treating every leg as a new beginning				
Good control flow				
Committing to route choice				
Varying speed to fit terrain / navigation				
Simplifying confidently				
ERRORS TOTAL	Mins/secs			
ADVANCED CONCEPTS				
Simplifying and seeing notable features on map and ground				
Identifying corridors				
Planning ahead				
Overall shape of terrain visualised				
Categorising types of leg and responding appropriately				
Recognising certainty of features				
Using less words				
Quick and accurate terrain visualisation – Mental Map				
Optimum route choice?				

Race Analysis table

Maybe try this type of more detailed analysis for a few races to see where your weaknesses are

You can also try a more interactive analysis tool at

elevate.run



Photo: Steve Rush

EXTENDED RACE ROUTINE				
Researched map and courses				
Calm mind set				
Good sleep, eating well				
Started well				
Positive emotional response to challenges				
Managed and maintained concentration				
Statistics				
Distance				
Time				
Mins/ km				
Placing				
Potential placing minus errors				



Photo: Steve Rush

Do remember that orienteering requires a continual process of fine tuning your skills

You will never reach a point where you have got it all sorted and needing no improvement !

There is much more material available on the Betterorienteering.org website

I hope that using Better Orienteering has been helpful and enjoyable way to explore orienteering navigation and develop your skills

Duncan Bayliss, 2019

Resources and Books section of Better Orienteering

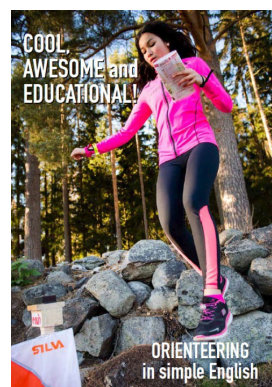
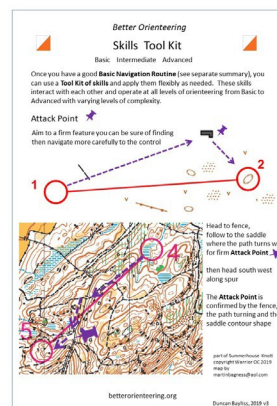
This is an overview of the types of resources contained on Better Orienteering.org – graphical summaries, videos, discussion of skills, links to free downloads and more!

The website contains more material than is in this summary

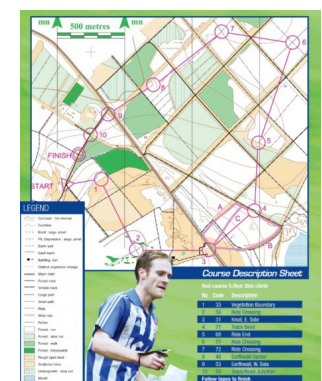
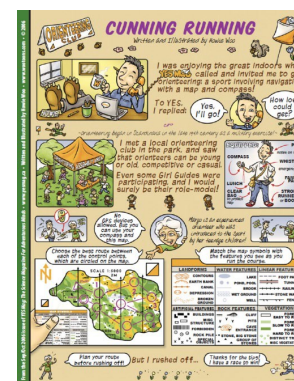
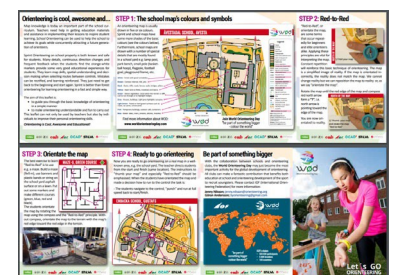
Better Orienteering - Download, Links, Resources, Books

The resources Better Orienteering connects you with to improve your orienteering

Videos



Rules, concepts, strategies	Event name/date	Event name/date
BASE NAVIGATION ROUTINE	Yes/No and Notes	Comments
Map to go		
Timing right direction		
Follow path		
Following accurately		
Map read correctly		
CONCEPTS USED		
Timing of		
Speed of		
Accurate distance measurement		
Following accurately		
Route compass		
Timing		
Accurate compass		
DETAILED		
Yes/No		
Map to go		
Timing appropriate to task		
Following within direction		
CRACK TOTAL	Minutes	



Free resources and downloads

Suggested Books

McNeill (2010) Orienteering: skills, techniques, training

Ferguson and Turbyfill (2013) Discovering orienteering

Gueorgiou (2019) The winning eye



Better Orienteering

Map extracts in
Skills Tool Kit
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Warrior OC 2018
maps by
[martinbagness@
aol.com](mailto:martinbagness@aol.com)

Annotation by
Duncan Bayliss

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