
COOL,
AWESOME and
EDUCATIONAL!
SILVA
ORIENTEERING
in simple English

# COOL, AWESOME and EDUCATIONAL! Orienteering in simple English

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# CONTENTS



●○● **Lesson by instructor; green, white and yellow level*

# ORIENTEERING in simple English!

*The first version of this booklet was written for people who were new to Sweden. Most of these people fled their homeland because of war and did not understand Swedish and the sport of orienteering. In fact, they had never even heard of it. The initial idea behind this booklet was to allow people to learn some Swedish while learning how to "orienteer" as well. The English version you are currently reading works in exactly the same way and can be used throughout the English speaking world!*

*Previously I worked in a school on subjects such as "Sports and Health" and "Swedish". Sports and Health" required students to be able to know how to "swim and orientate" in order to pass the course. For two years I worked on the project "Skol-Sprinten". In collaboration with the sports teacher, I wrote the Teacher's Guide "Cool, Awesome and Educational!" Thanks to the experience of this work, I got the idea to make "Orienteering in simple Swedish." The idea for this book was to create better conditions for the teaching of orienteering in schools as well as to learn Swedish in a simple way.*

*Why should I learn you may ask? Well, when you arrive in a new country you will have new challenges, with a new place to stay, a new school and a brand new language. These are brand new conditions for your new life and you may find it extremely different from what you are used to. Your first and most important step is then to start learning the language of the country. It is the key to embracing your new society and the faster you learn it, the easier you will find adapting to your new environment. In most cases, this new language is English!*

*This book was primarily written with schools in mind, but all people of all ages are encouraged to read it as well! Especially those in clubs that are interested in orienteering. With the Swedish version of this booklet, I wanted to inspire everyone to a fun and educational learning, both in the Swedish language and in orienteering! And now I am able to impart this knowledge to an even bigger audience with this English booklet that you have in your hands! So go ahead and start learning!*

*Hansbyn, Dala-Husby, Sweden, January 2017*
*Göran Andersson*

# COOL, AWESOME and EDUCATIONAL!

When can I run by myself? Anytime. Start off with an introduction course, then add challenges in between. 40 minutes of fun activity and 60 checkpoints can possibly be found. I'm sweaty but it's fun and I'm happy. This is real Orienteering. I want to go for more! Cool!

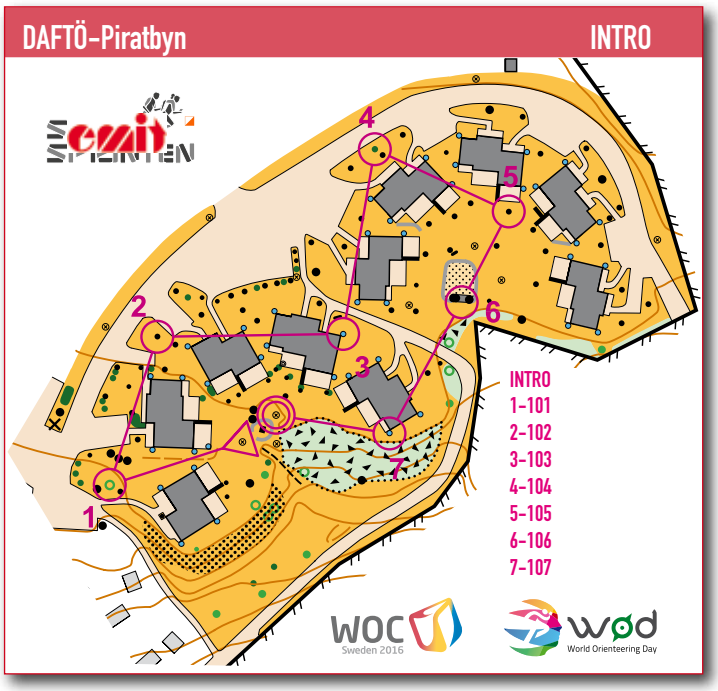
You are running as fast as you can to the first check point. The flash from the tag confirms the location. You orientate the map using red to red – the compass' red needle points at the red edge of the map. What is it pointing to? The boulder on the lawn! The teacher then points east. Where is it on the map? You take a minute to consider. Maybe try rotating the map? You glance at your friend's thumb. "There, there it is!" pointing to a black point. "Good! Anyone else who knows?" Now this is real Orienteering. How does it feel? Awesome!

Second checkpoint now. "Where are we going now"? "That way!" "Ok, then we'll see you there." Running at high speed again. Someone takes the lead, you find a checkpoint. Some others hesitate. You view the map, red to red. Wrong control. Darn! Re-orientate. Change direction and find the correct control. This is real Orienteering. You learnt something. Educational!

Can I run one more course? Did I get the correct check points? Did I run faster than the last lap?" These questions come quick and fast. "I want to start orienteering!" You speak to your teacher. "Sure! Come to our training tonight. We are here, at the same place. But with new courses!" "See you tonight!" Skol-Sprinten has arrived. This is real orienteering. Cool, Awesome and Educational!

Map knowledge today is an important part of the school curriculum. The students need help to learn navigation and this booklet can be the key to understand maps and compasses. The aim of this booklet is to provide students an educational tool to learn both orienteering and simple English.

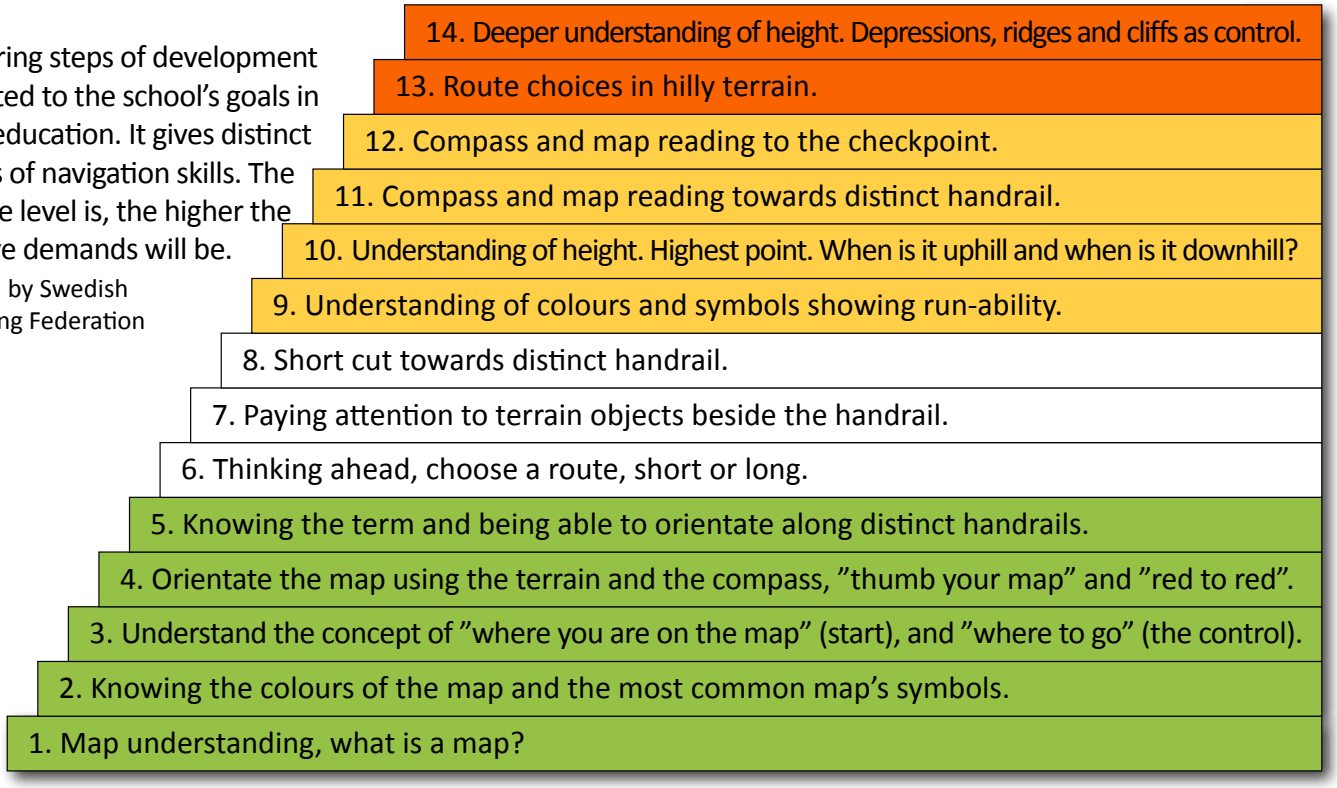
Welcome to a new world of maps and compasses!




# STEPS OF DEVELOPMENT

Orienteering steps of development are adapted to the school's goals in physical education. It gives distinct examples of navigation skills. The higher the level is, the higher the qualitative demands will be.

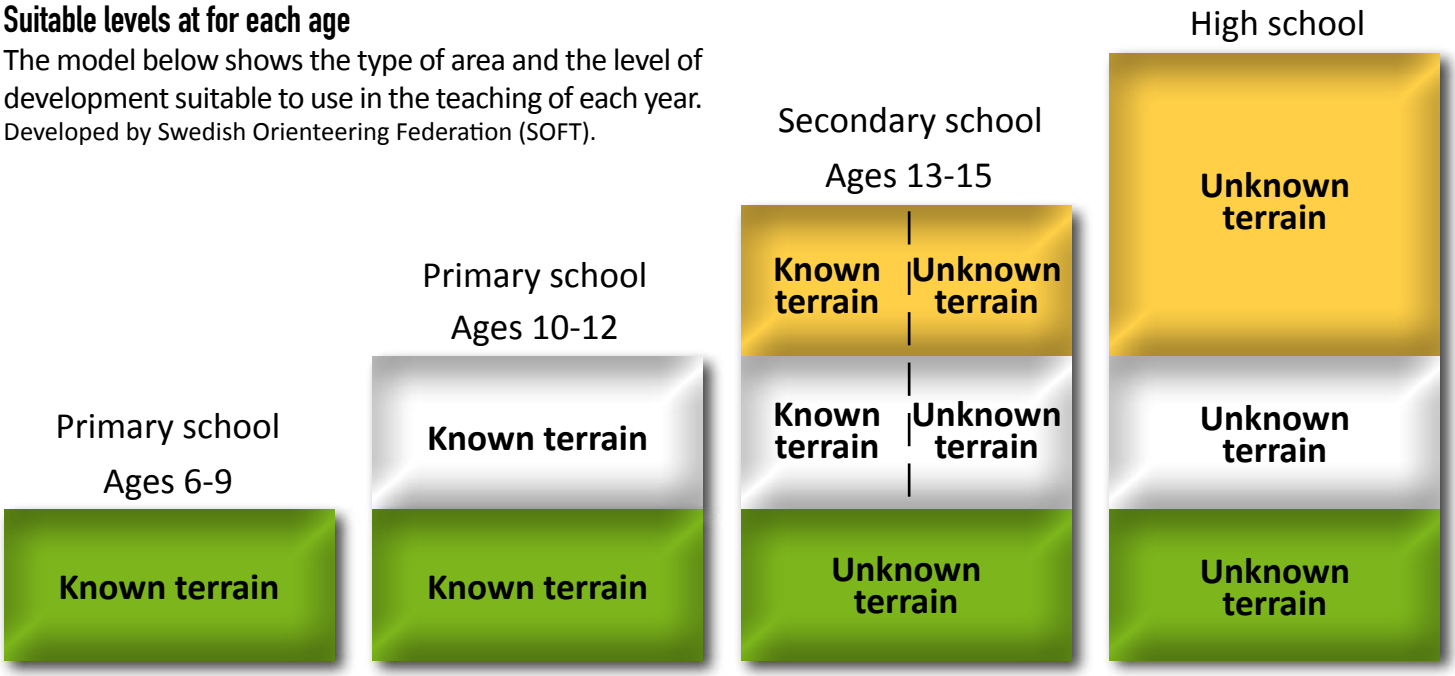
Developed by Swedish Orienteering Federation (SOFT).




## Suitable levels at for each age

The model below shows the type of area and the level of development suitable to use in the teaching of each year.

Developed by Swedish Orienteering Federation (SOFT).




**Known terrain:** means the school yard and areas just outside the school.

**Unknown terrain:** means a nearby outdoor forested area close to the school.

## GLOSSARY

**Map understanding:** Knowing that the map is a reduced small scale and a simplified version of reality.

**Handrail:** Distinct terrain objects that are easy to follow, for example, roads, paths, fences or large buil dings. Less distinct handrails can be small paths, hedges, ditches and, vegetation boundaries.

**Orientate the map:** The map is a simplified picture of reality. The map should fit to reality. The map's north should fit to the real north. "Red to Red".

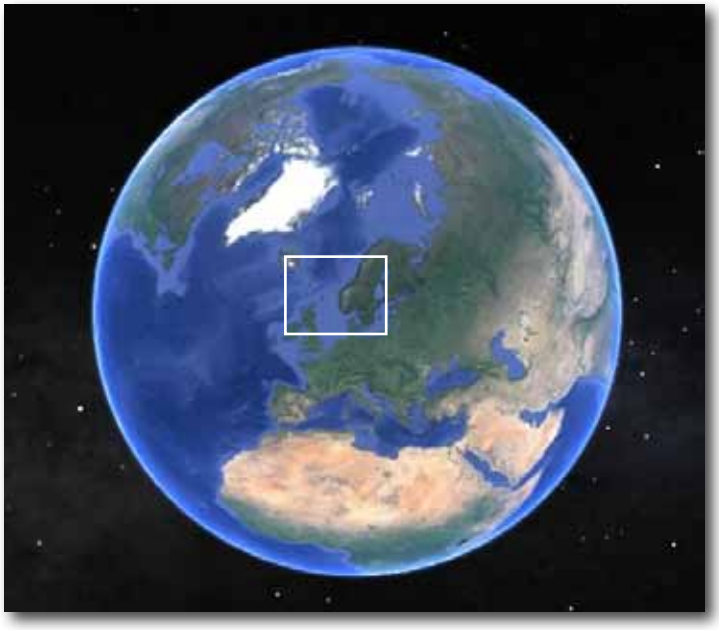
**Thumb your map:** You place your thumb on the map where you currently are in the terrain. While you move forward, you move your thumb on the map.

# WHAT IS A MAP?

Google Earth has opened up a whole new world of how the Earth's different parts look like. The aim of Google Earth is to view the Earth from above. They use aerial photographs and satellite images of Earth. These images have been put together in the form of a puzzle, a globe

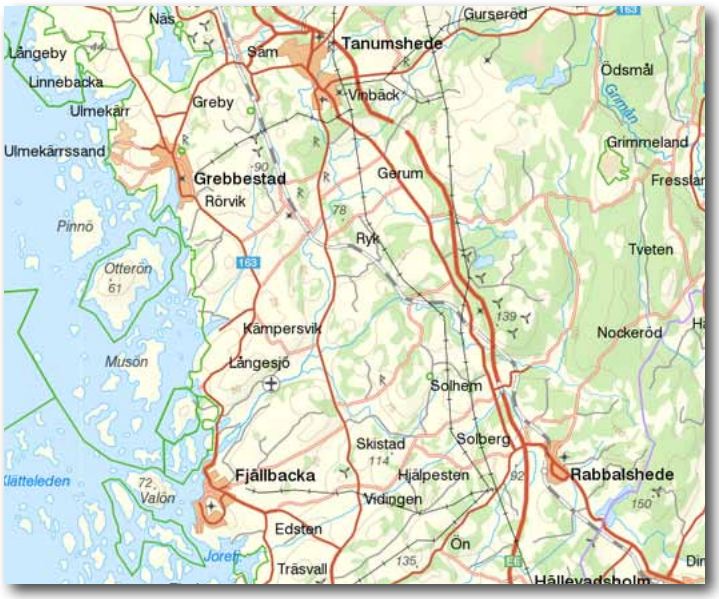
In it you can enter a location, zoom in down to city and street level. Everywhere on Earth you can discover lakes, cities and rivers, and in the big cities, you can see major traffic routes, parks, squares etc.

In the areas where the pictures are clearer you will discover buildings, streets, bridges and cars. In some cases you can even see people.



Thanks to this programme, you can in a very simple way understand how a map is created. Each map is unique. Tourist maps, road maps, city maps are some maps that we all face at some point in life. All these maps are a simplified picture of reality. In the wider area, such as parts of the Nordic region (picture to left), there are less details on the map. This map is very simplified compared to the map below.

The communities Tanumshede, Grebbestad and Fjällbacka are not on the Nordic map. On the map below they are marked. Roads (orange), forests (green colour), lakes (blue) as well as fields and meadows (white) can be seen very clearly. This map is suitable for use when you are biking or driving a car.

# THE MAP'S COLOURS

### The language of the map

The map's language is international. In the global orienteering of the world, it is important to understand how a map is drawn. International Orienteering Federation (IOF) has developed an international standard for map drawing.

### The sprint norm

Urban maps and park maps are drawn based on this standard. It is generally called "the sprint norm". It is used for orienteering in sprints.

School maps are drawn in the sprint norm (ISSOM). Usually you draw sprint maps in the scale of 1: 4 000 or 1: 5 000. The school maps are drawn in the scale of 1: 1 000-1: 2 000. The advantage of this is that you can draw more details on a school map.

### Colours

An orienteering map in the forest is usually drawn in five or six colours. Sprint maps and school maps have a few more shades of the basic colours:

**White** - Forest with good run-ability

**Brown** - Hills, pits

**Black** - Rocks, cliffs, roads, fences, walls, bridges, pillars

**Yellow** - Open land as fields, meadows and lawns

**Green** - Dense vegetation. Used when the terrain is difficult to run through or to highlight hedges

**Grey** - Houses, buildings. Light grey highlights canopies

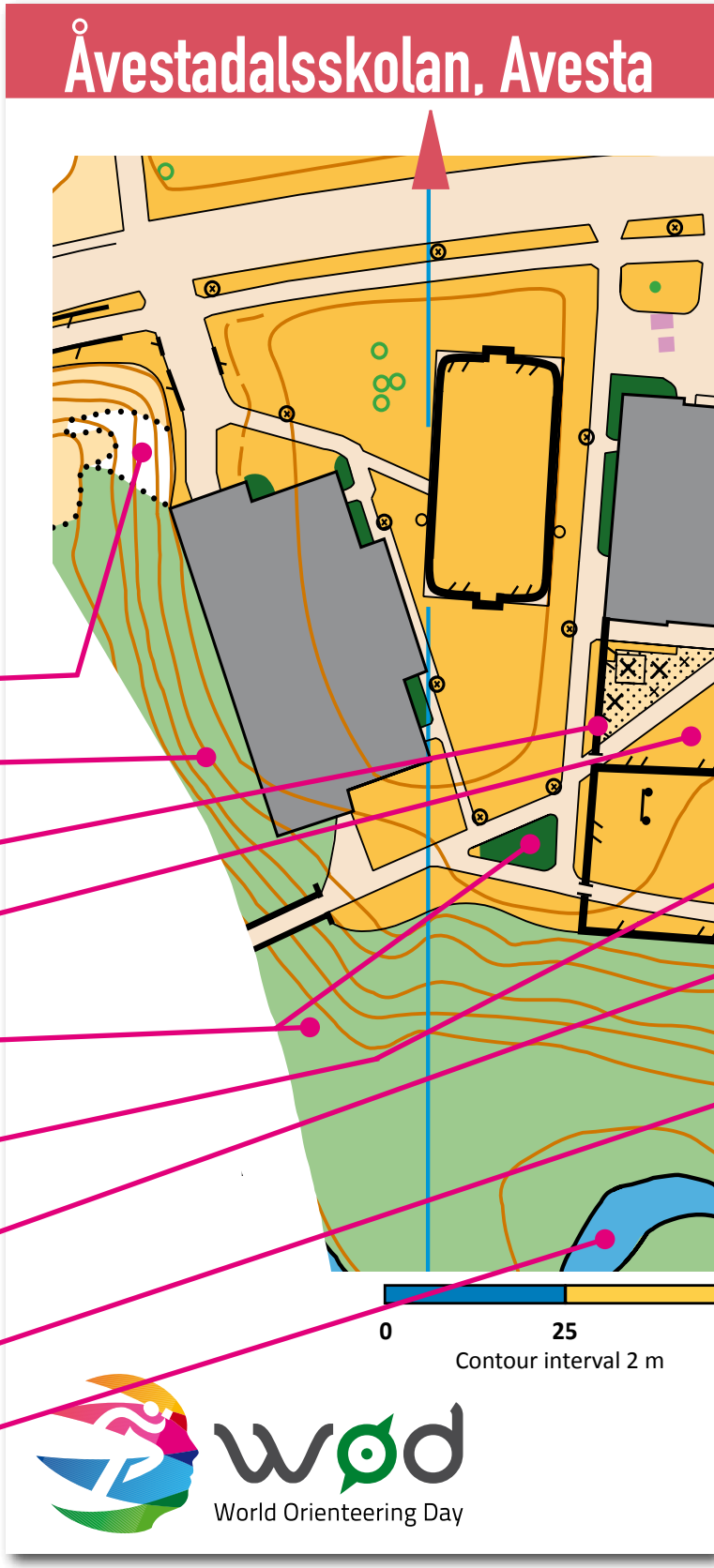
**Light brown** - Paved or hard gravel surfaces such as roads, car parks, school yards

**Pink** - Temporary buildings, outdoor café, containers

**Blue** - Water: lakes, rivers, streams, ditches, marshes

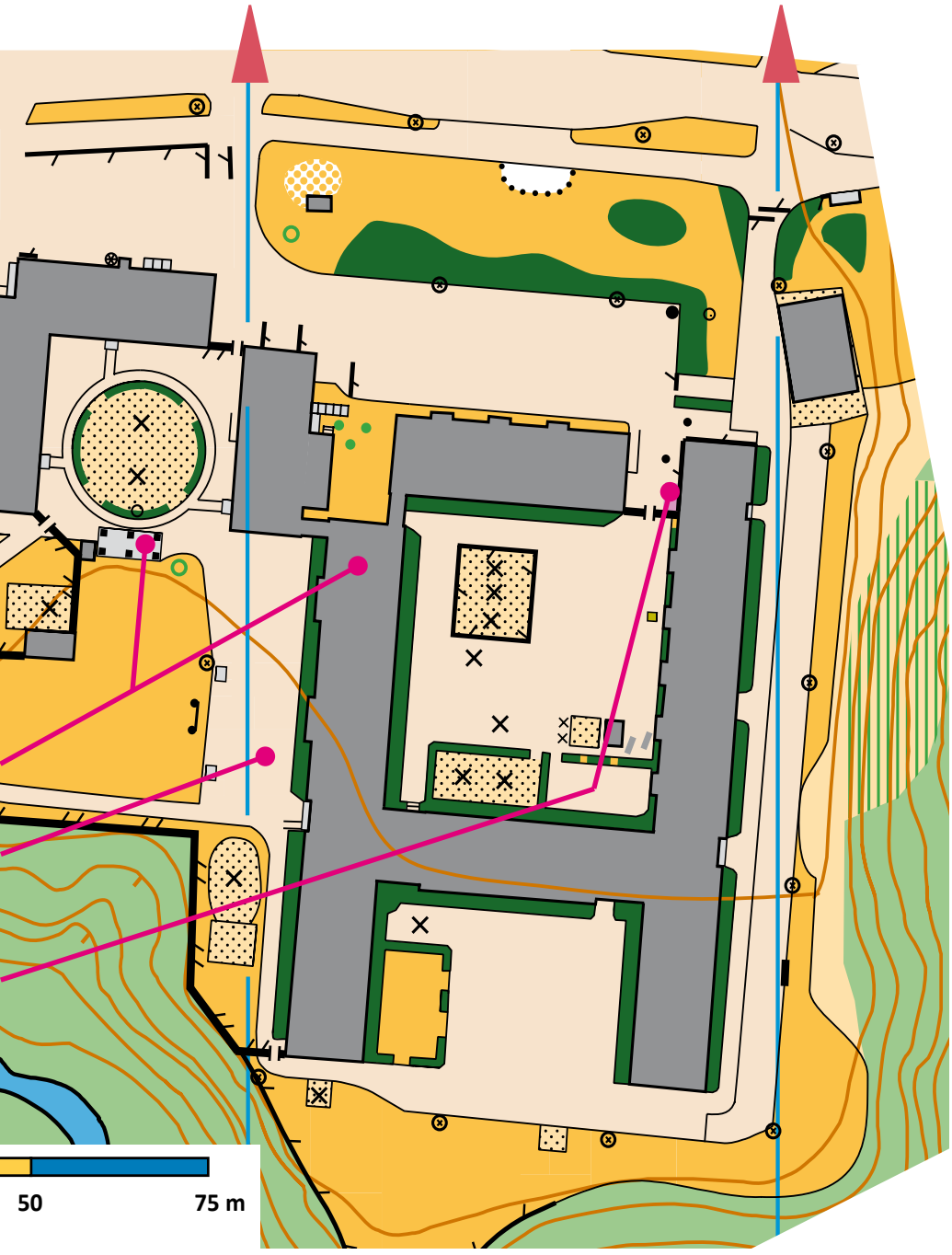
### Explanation ISOM and ISSOM

**ISOM:**
International Specification for Orienteering Maps
**ISSOM:**
International Specification for Sprint Orienteering Maps



# THE MAP'S SYMBOLS

The map symbols are the same throughout the world. A boulder is marked as a black dot on the map. The same sign if you are in Sweden, Australia, China or Brazil. The legend to the right of the map shows most maps characters. However, there are more characters to use to make the map more detailed. Some maps characters are highlighted with a pink background. This is important information for both the teacher who prepares the courses and the students who participate in the activity. No running here!




SKOL SPRINTEN

## Legend

- Forest
- Building
- Canopy
- Open land
- Undergrowth
- Open land scattered trees
- Open sandy ground
- Rough open land
- Paved area
- Dense vegetation
- Private area, flower bed
- Road, paved footpath
- Big and small footpath
- Impassable fence
- Passable fence
- Impassable wall
- Passable wall
- Impassable vegetation
- Vegetation boundary
- Minor watercourse
- Impassable cliff
- Football goal
- Big and small tree
- Prominent veg features
- Stair
- Big post/Lamppost
- Flagpole, small post
- Shower/Boulder
- Well/Man-made object
- Hill/Depression
- Knoll/Pit

**NB!** Forbidden to cross!

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SILVA emit WOC Sweden 2016

# FACING MAPS EVERYWHERE

## Navigation is a valuable skill

Today we are facing maps in different ways. It is an important skill to understand what information a map is giving. It doesn't matter if it's a paper map or if you look at the map via the Internet. It is important to find the correct path, to navigate by yourself to the desired goal in a smart way.

## Stockholm Metro

Sweden's most studied map is the subway map of Stockholm. The map to the right is a very simplified map of the reality. The map shows the locations of the metro stations located relative to each other. This map is "adapted to reality."

## Shopping navigation

You find shopping malls everywhere. They are also one of the most visited places. We constantly shop, roam and drink coffee. Shopping Malls have become a meeting point for the whole family as well.

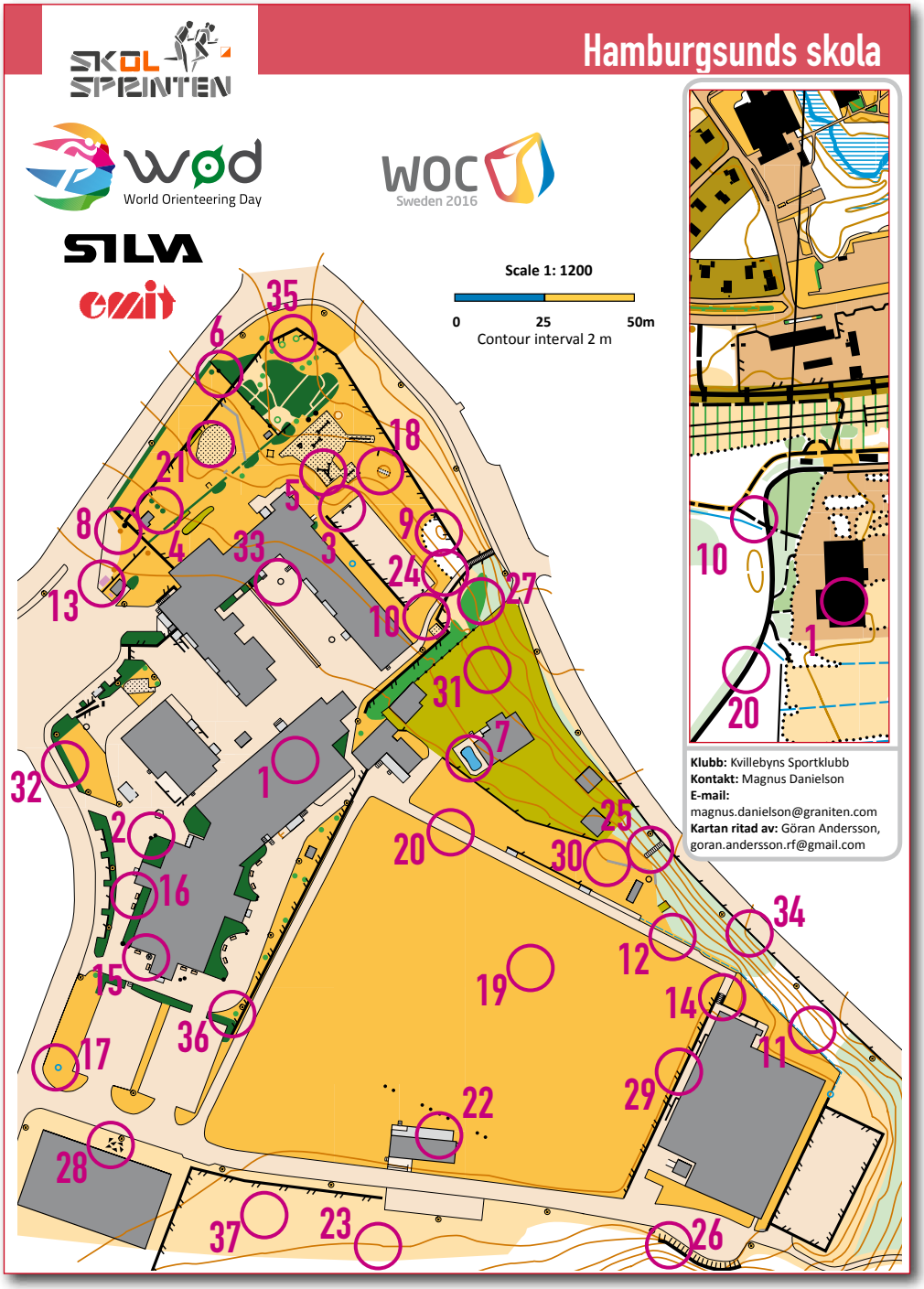
All shopping malls have maps to help customers finding the right department. The map to the right shows the largest sport's store in Scandinavia, "Sportshopen". It is located a few kilometres south of Grebbestad.


# THE MAP´S SYMBOLS

## Exercise

### Test yourself!

The map is drawn according to ISSOM. It differs in some details from the forest map (inset). Complete in the boxes with numbers you believe match the controls (correct answers on page 12):



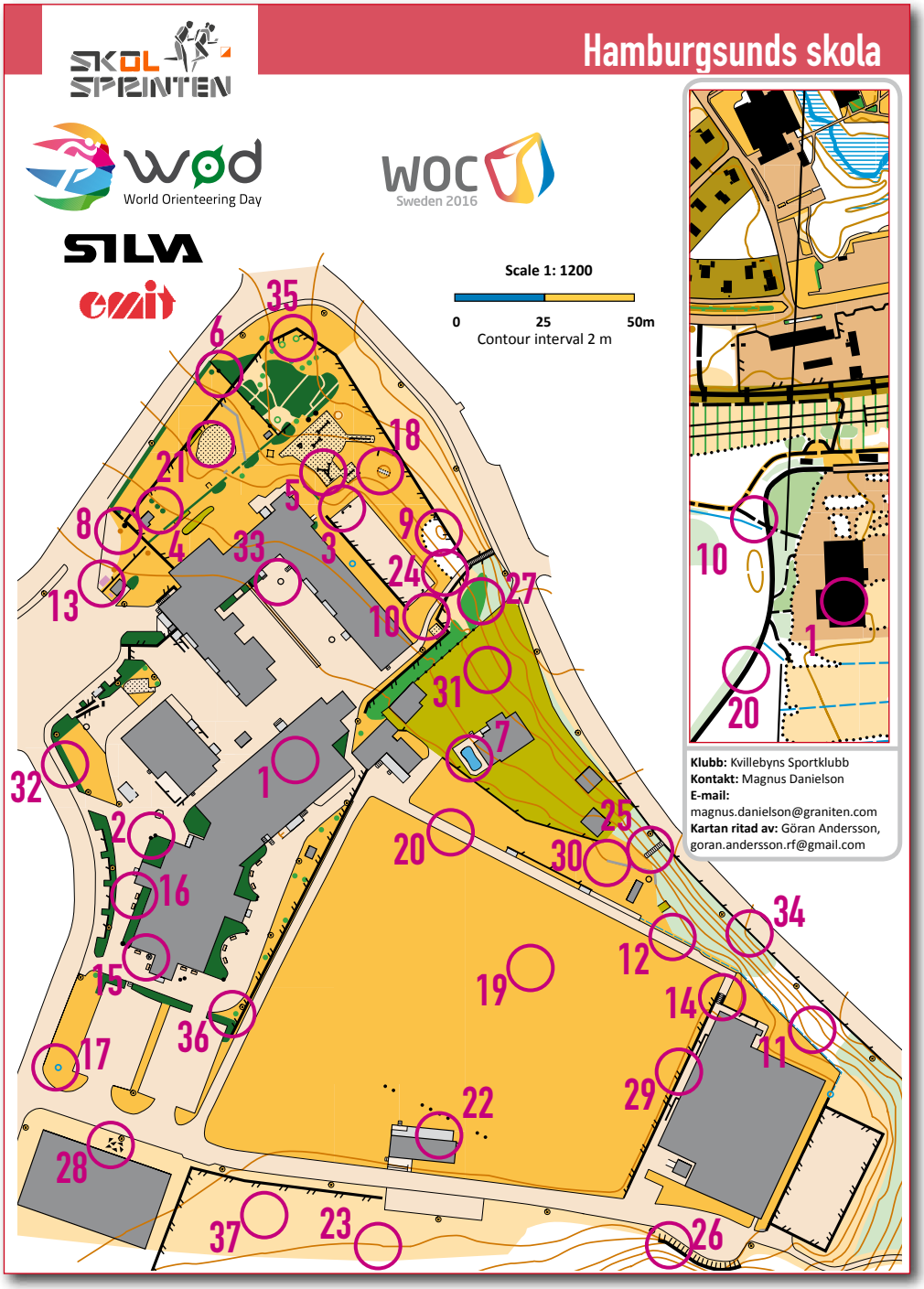

- ☐ House, building
- ☐ Forest
- ☐ Canopy
- ☐ Lawn, open land
- ☐ Sandy ground
- ☐ Boulder
- ☐ Road, park road
- ☐ Big path
- ☐ Hill, contour line
- ☐ Stone wall
- ☐ Big tree
- ☐ Small tree
- ☐ Tunnel
- ☐ Stair
- ☐ Hill
- ☐ Knoll
- ☐ Vegetation boundary
- ☐ Impassable cliff
- ☐ Bush
- ☐ Football goal
- ☐ Minor watercourse
- ☐ Flag pole, small post
- ☐ Private area, flower bed
- ☐ Well
- ☐ Play equipment
- ☐ Dense vegetation
- ☐ Open field in forest
- ☐ Passable fence
- ☐ Impassable fence
- ☐ Impassable wall
- ☐ Passable wall
- ☐ Impassable vegetation, hedge
- ☐ Boulder field
- ☐ Table
- ☐ Spiral stair
- ☐ Water, pool
- ☐ Temporary building

# THE MAP´S SYMBOLS

## Correct answers

### Test yourself!

The map over the school of Hamburgersund is drawn according to ISSOM. It differs in some details from the forest map (inset). Correct answers as follow:




- 1 House, building
- 11 Forest
- 22 Canopy
- 19 Lawn, open land
- 21 Sandy ground
- 2 Boulder
- 20 Road, park road
- 10 Big path
- 23 Hill, contour line
- 6 Stone wall
- 35 Big tree
- 36 Small tree
- 18 Tunnel
- 25 Stair
- 9 Hill
- 8 Knoll
- 24 Vegetation boundary
- 26 Impassable cliff
- 4 Bush
- 3 Football goal
- 12 Minor watercourse
- 33 Flag pole, small post
- 31 Private area, flower bed
- 17 Well
- 5 Play equipment
- 27 Dense vegetation
- 37 Open field in forest
- 34 Passable fence
- 29 Impassable fence
- 14 Impassable wall
- 30 Passable wall
- 32 Impassable vegetation, hedge
- 28 Boulder field
- 16 Table
- 15 Spiral stair
- 7 Water, pool
- 13 Temporary building

# RED TO RED!

## Orientate the map

"Red to Red", "Orientate the map", "Thumb your map" are some terms that occur repeatedly. Both for beginners and elite orienteers. Applying these principles is vital for interpreting the map.

The map is a simplified picture of reality (see page 7). They should fit into each other. If the map is orientated in the wrong direction it doesn't match the reality of the map. It's always the map which has to be adapted to the reality. Or as we say: "orientate the map".

You can fit the map e.g. to houses or to roads. You can also use the "Red to Red" with the help of a compass. SILVA's "Begin" compass is perfect for small hands.


**1 Fold the map**

Fold the map to a proper size.

**2 Thump your map**

Place your thumb where you are right now.


**3 Red to Red**

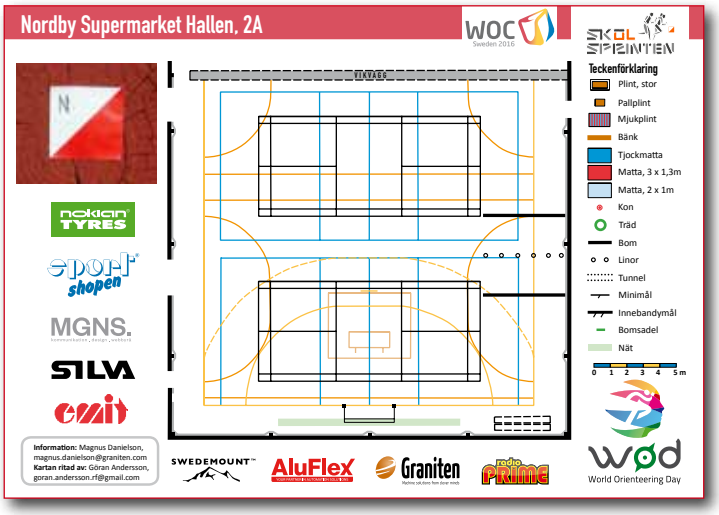
Rotate the map until the red edge of the map and compass' red north arrow form a "T", i.e. north arrow is pointing toward the edge of the map. You are now orientated to the reality or to the terrain.

## Orientate the map in the multi-gym

The student gets a map of the multi-gym and a pen. The teacher divides the class into four groups. All students receive a colour. There are four colours on the floor showing lines for different sports. Handball (yellow), mini-handball (orange), badminton (black) and volleyball (blue). The student begins in one of the corners. As soon as the student crosses a new colour line it will change the student to the new colour line.

**TIP to the teacher:**

Place 22 controls on the lines (see photo on map). The letters can create three words that students should put together. The words can be: **COOL, AWESOME** and **EDUCATIONAL**



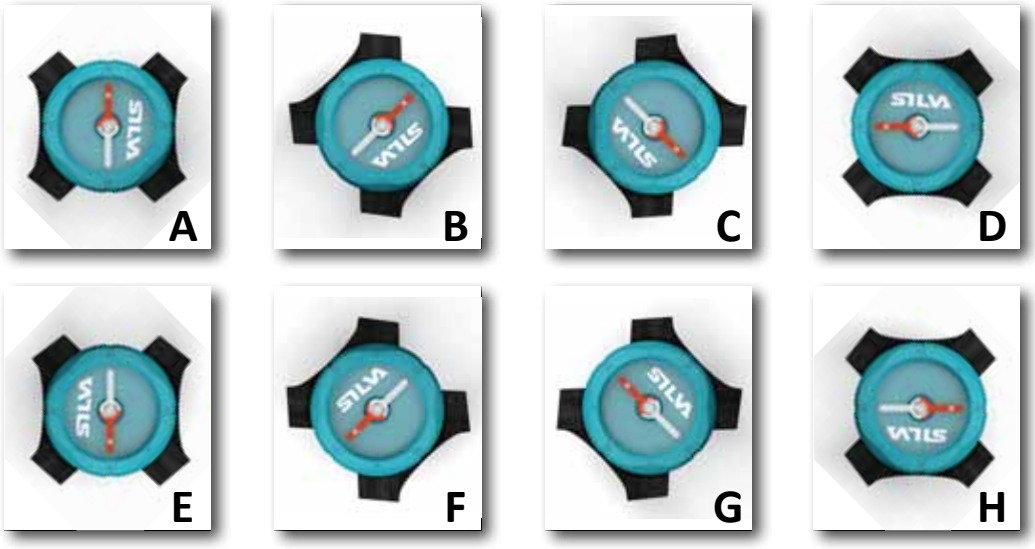

Cut the tape into squares. Write a letter on each control marker. Place them on the floor (on the lines). The tape can be purchased at Bauhaus.

# RED TO RED, exercise

## Orientate correct map to correct compass


Draw a line between the **number** and the **letter** that you think is correct ”Red to Red”:

| | |
|---|---|
| **1** | **A** |
| **2** | **B** |
| **3** | **C** |
| **4** | **D** |
| **5** | **E** |
| **6** | **F** |
| **7** | **G** |
| **8** | **H** |




Correct answers on page 16.

# LINE ORIENTEERING

## In a known area (school yard)

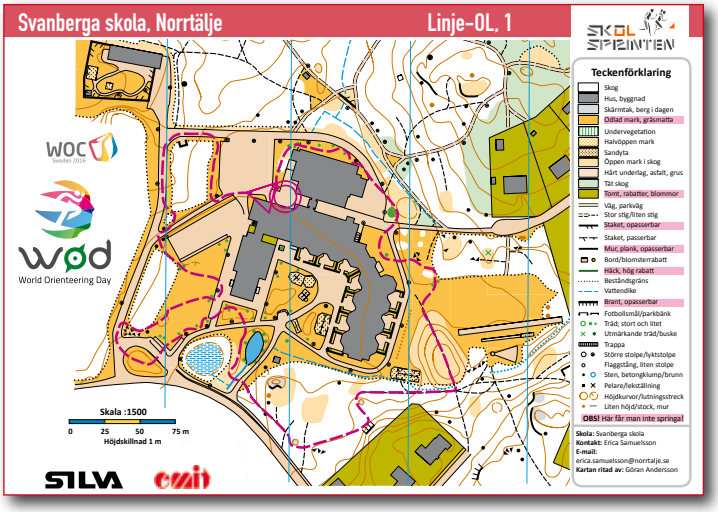
**Line-O, 1:** The teacher follows the dotted line and makes a stop at distinct objects/places. Students have a blank map and follow the teacher. The teacher reminds the students to ”Thumb your map” and especially ”Red-to-Red”. The teacher asks the students ”Where are we?”, ”Where is for example the boulder on the map?”, ”In which direction do I point now.”

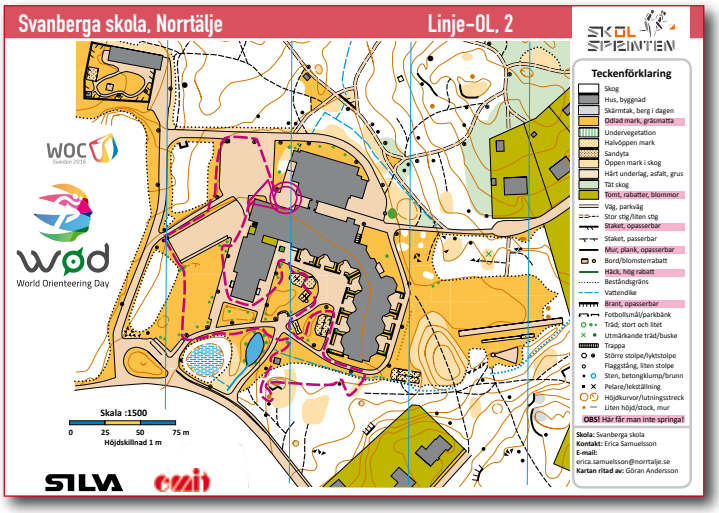
**Line-O, 2 and 3:** The students will be divided into three groups and should follow the dotted lines. There are control markers placed at different distinct points along each dotted line. The task is to highlight where these are situated. The teacher reminds students to focus on the ”Red-to-Red”.

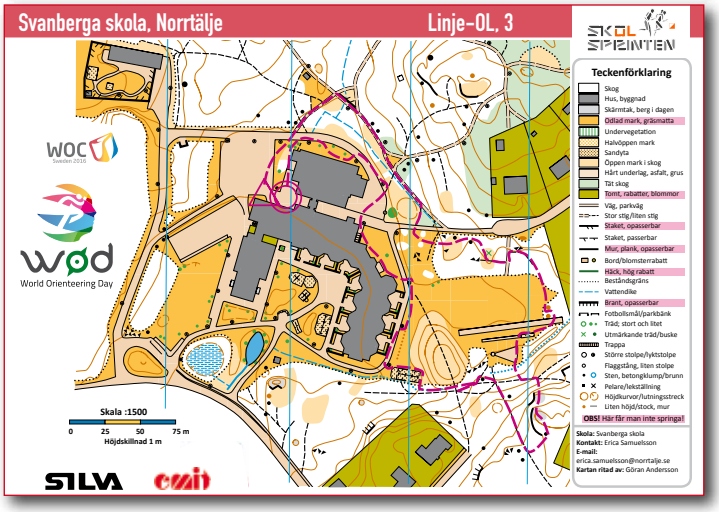
## In an unknown area (e.g. forest close to school)

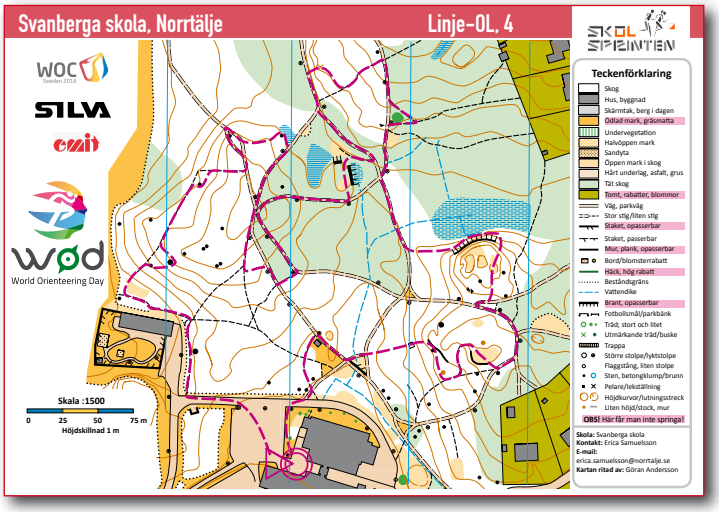
**Line-O, 4:** This exercise is carried out in a more unknown area. The forest outside the school is a good area. The dotted line shows the student to follow handrails (paths, roads, cliffs and hills). On a number of occasions, the line changes direction. This happens close to a clear object. It is important to fit the map to reality. This method is called ”Red-to-Red”!

*Students work together in pairs and show and answer to the teacher’s questions by pointing on the map.*



# STAR-O, 1 CONTROL

## Orientate the map (Star-O part A, control 1-12)

This is a perfect exercise for developing the technique to orientate the map. The exercise is carried out as an interval training. Only one control on each map. Students can work together in pairs. They can also help to put out the control markers.

The teacher starts the students from the start/finish sign. ”Thumb your map” and ”Red to Red” have to be highlighted. When the students have got the map orientated, the task is: ***The students navigate to the control, punch and run back to finish at high speed.***

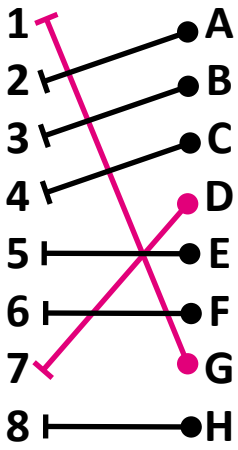
## Star-O has many advantages

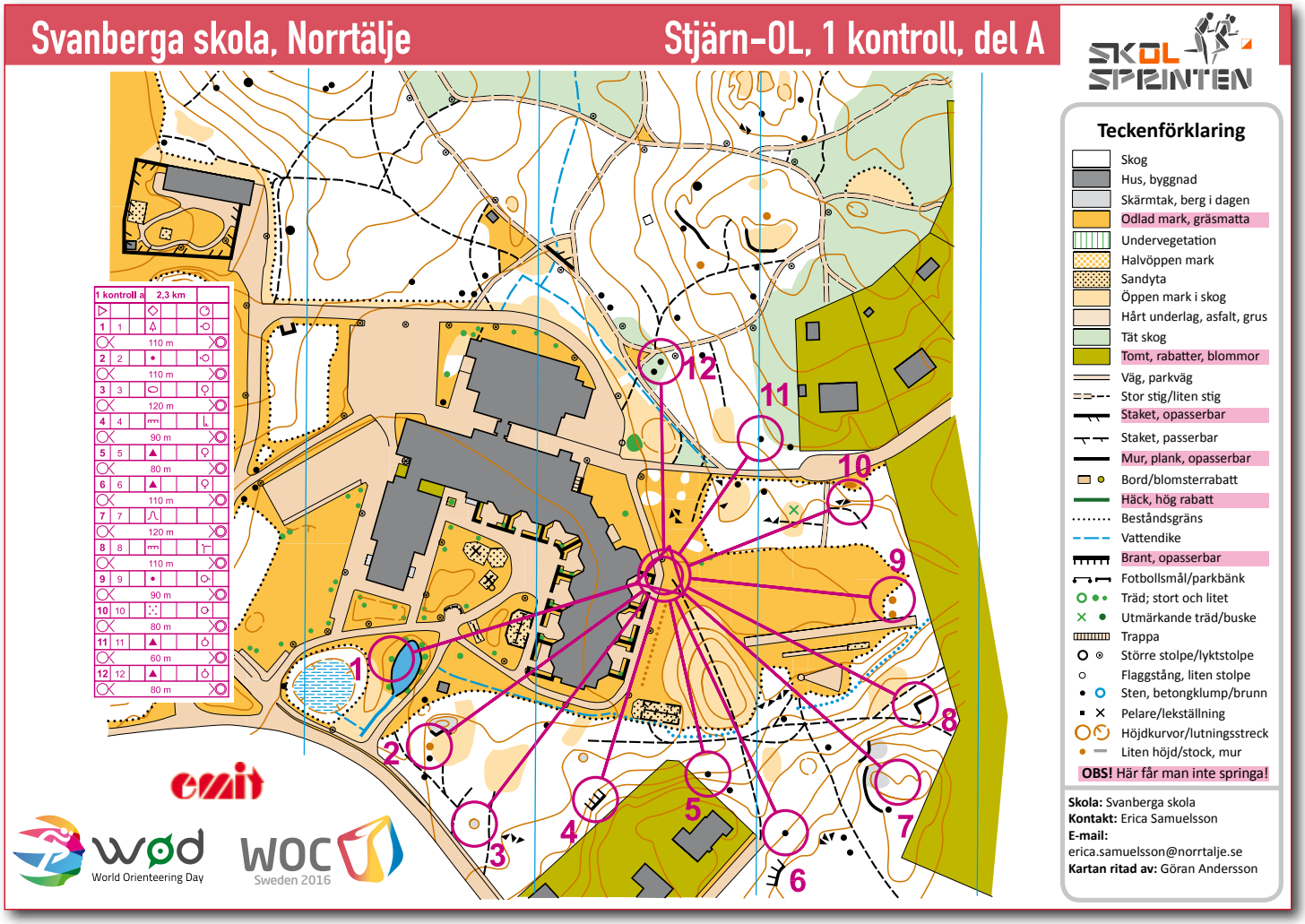
The advantages of ”Star-O” is that the teacher very often can give instructions and feedback to the students. This is normally very difficult when you teach orienteering.

Students can work one by one during these exercises. If some students want to run together it is of course absolutely fine.

# RED TO RED! correct answers

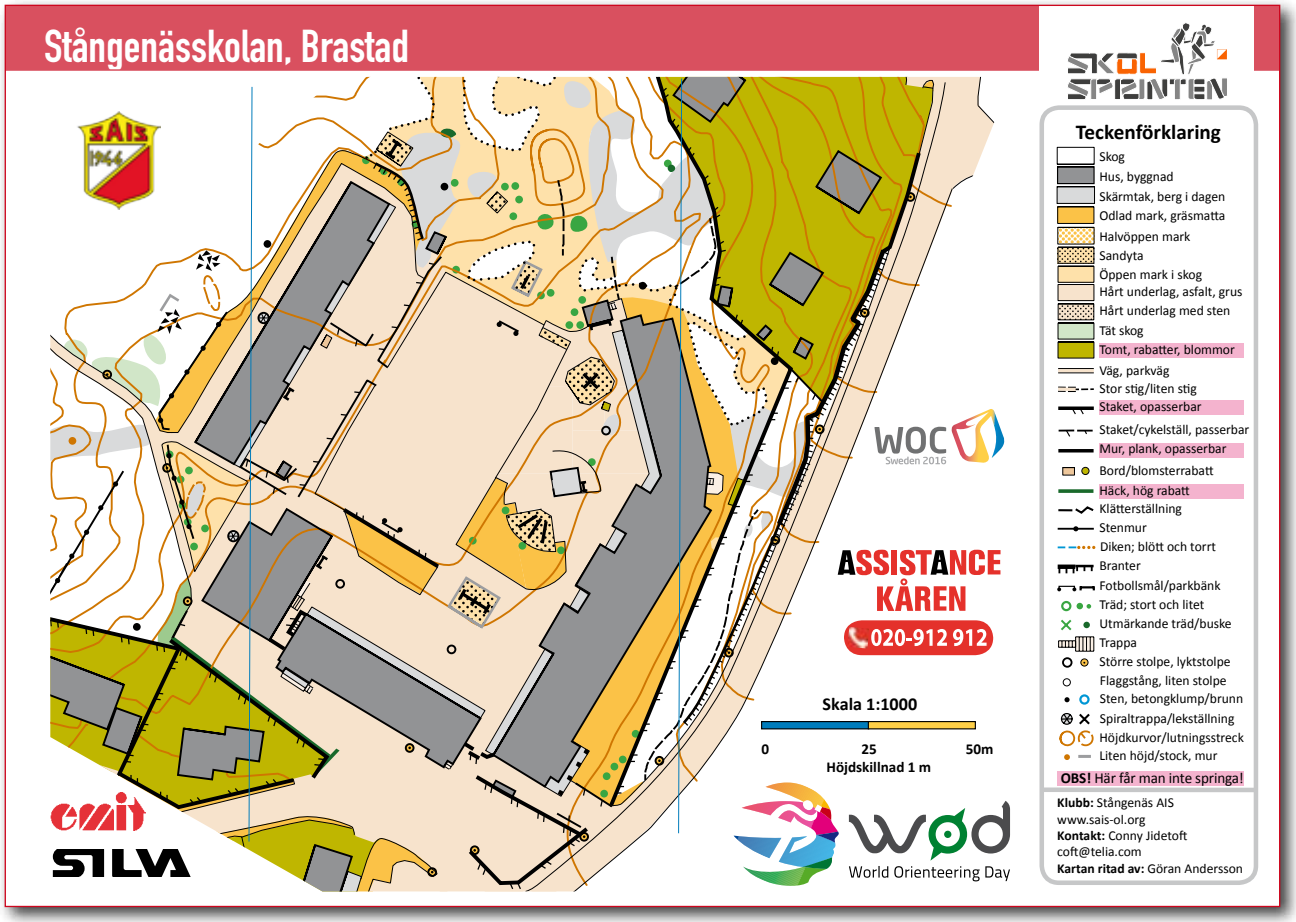
The task was to orientate the correct map to the correct compass. You should have drawn a line between the **number** and the **letter** that you think is correct ”red to red”:

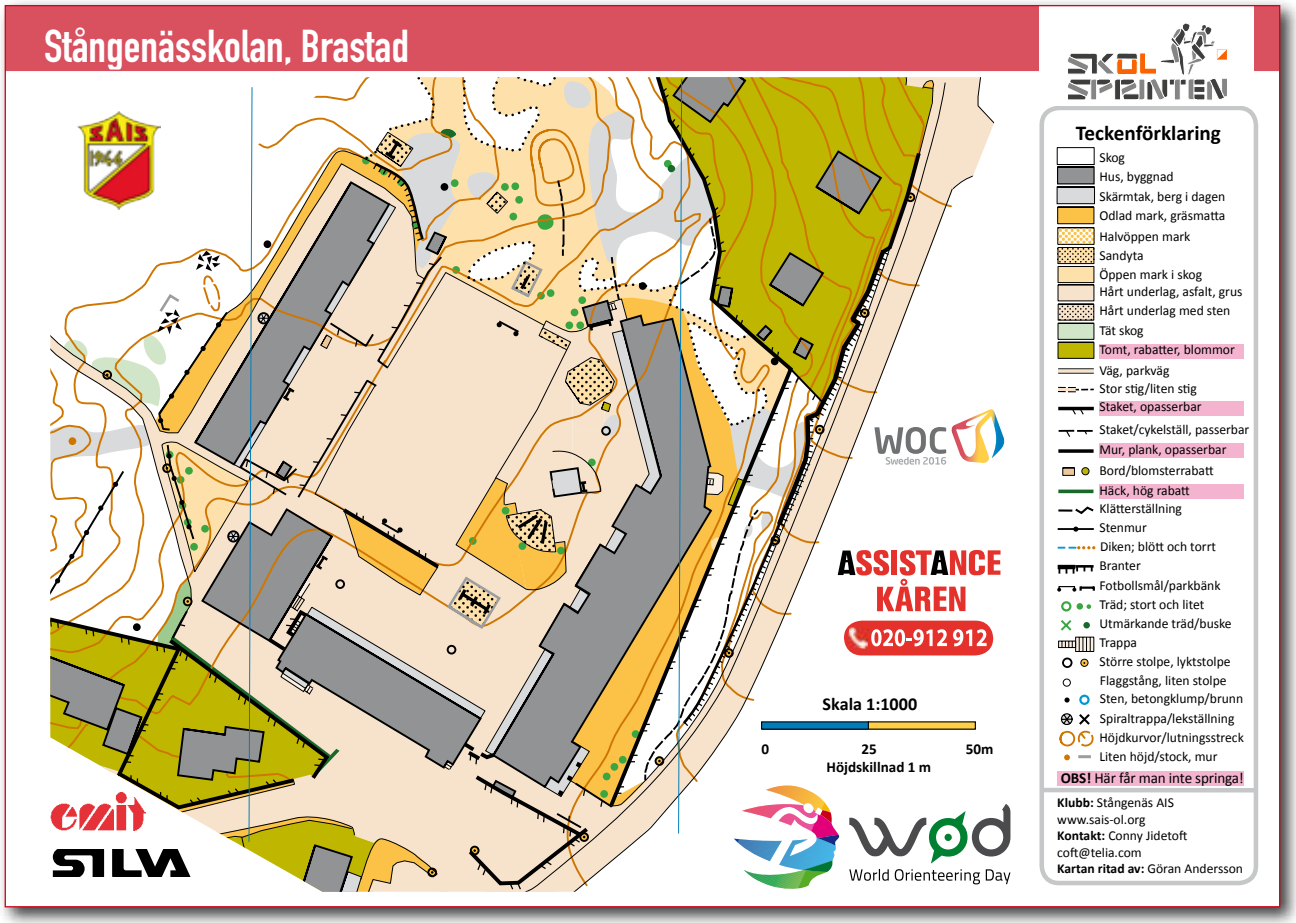


# FIVE MAP SYMBOLS HAVE DISAPPEARED, exercise

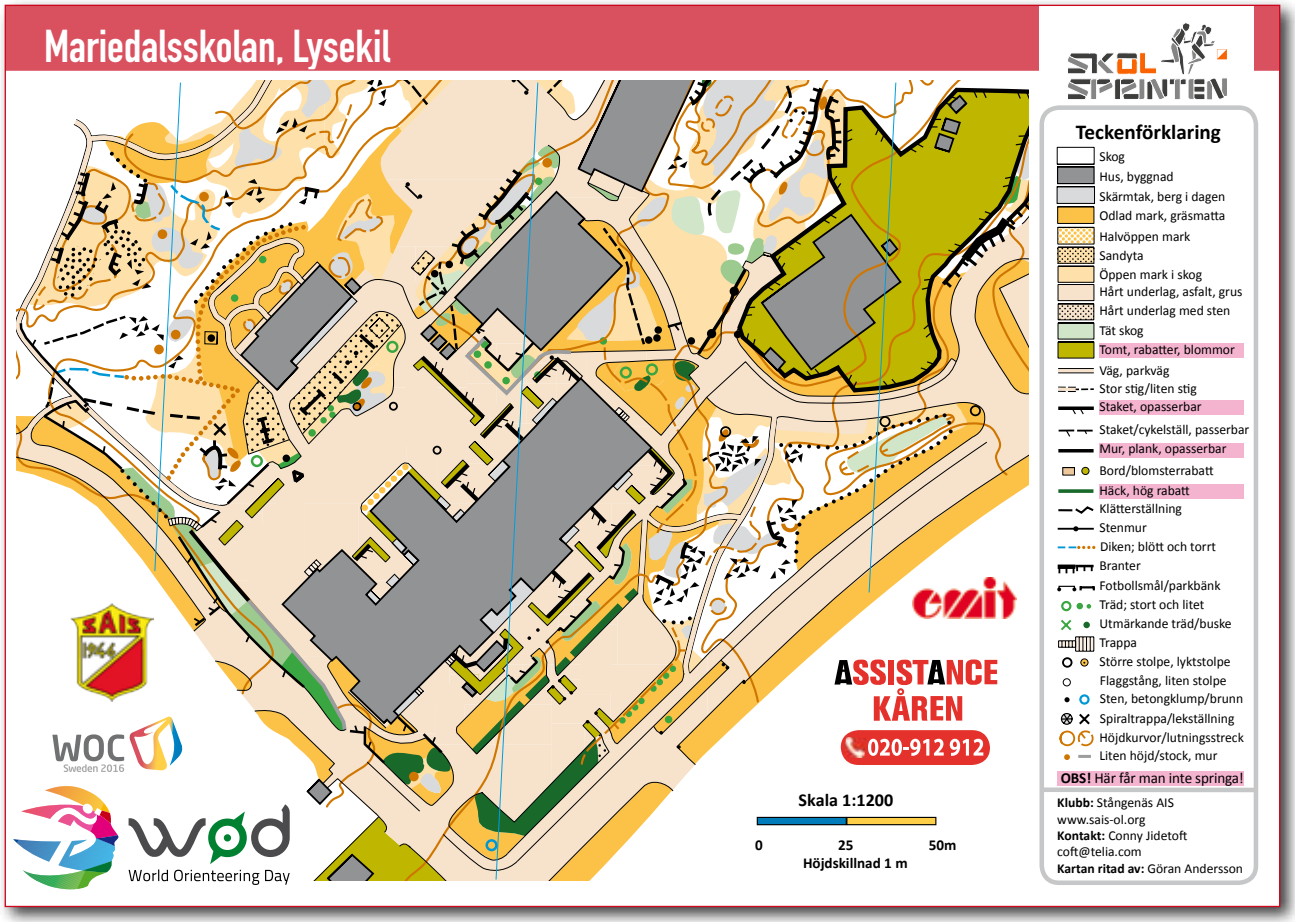
Compare these maps with each other. On the map at the bottom five symbols have disappeared. Which?

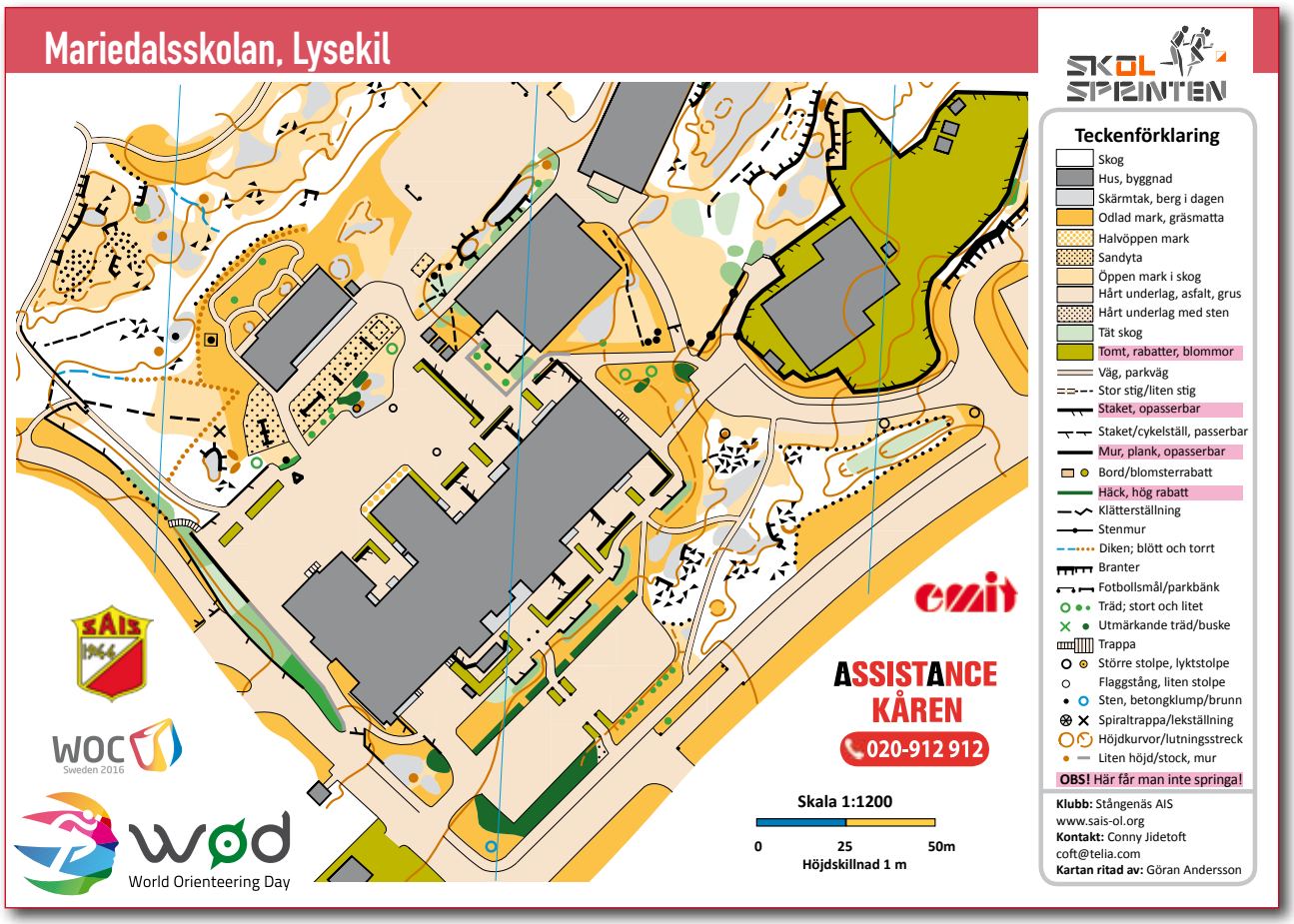


# FIVE MAP SYMBOLS HAVE CHANGED, exercise

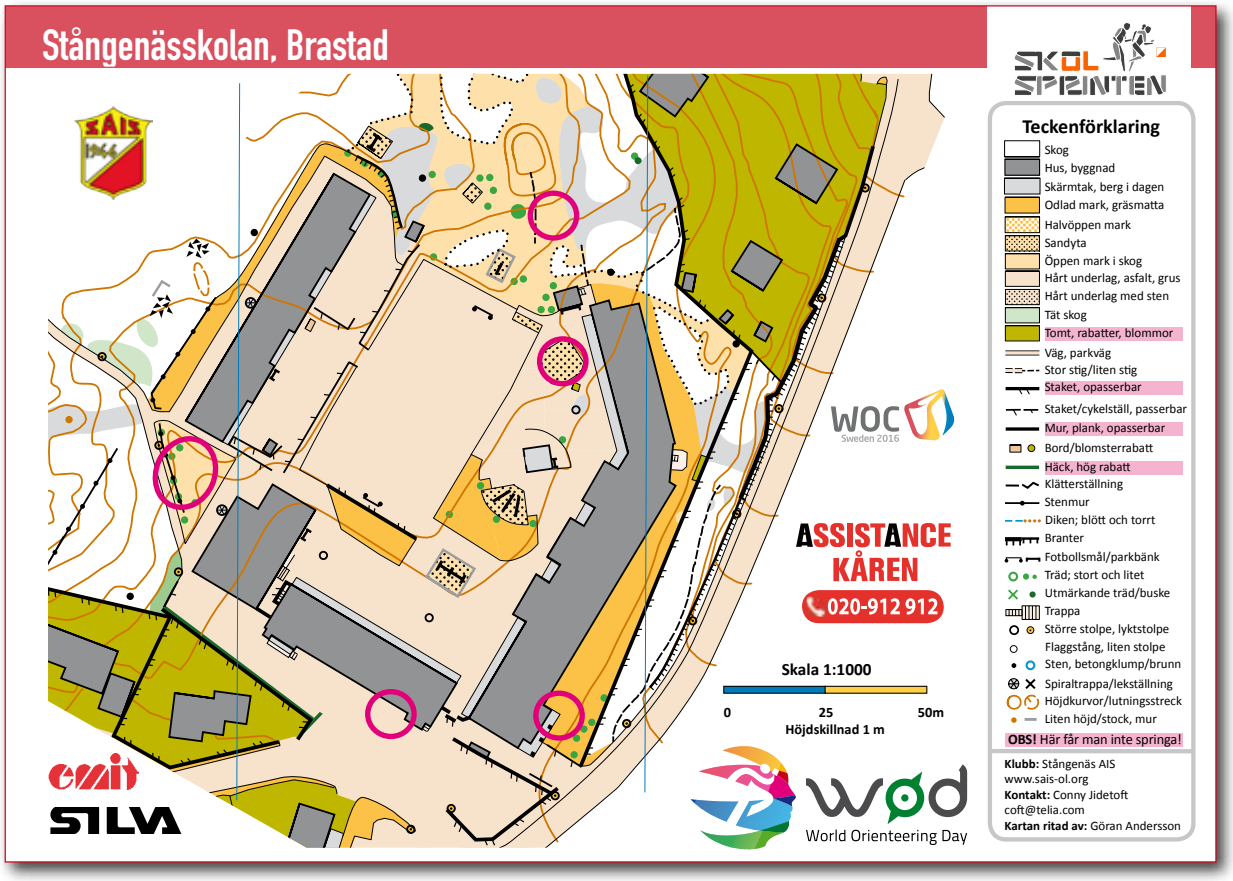
Compare these maps with each other. On the map at the bottom five symbols have changed. Which?



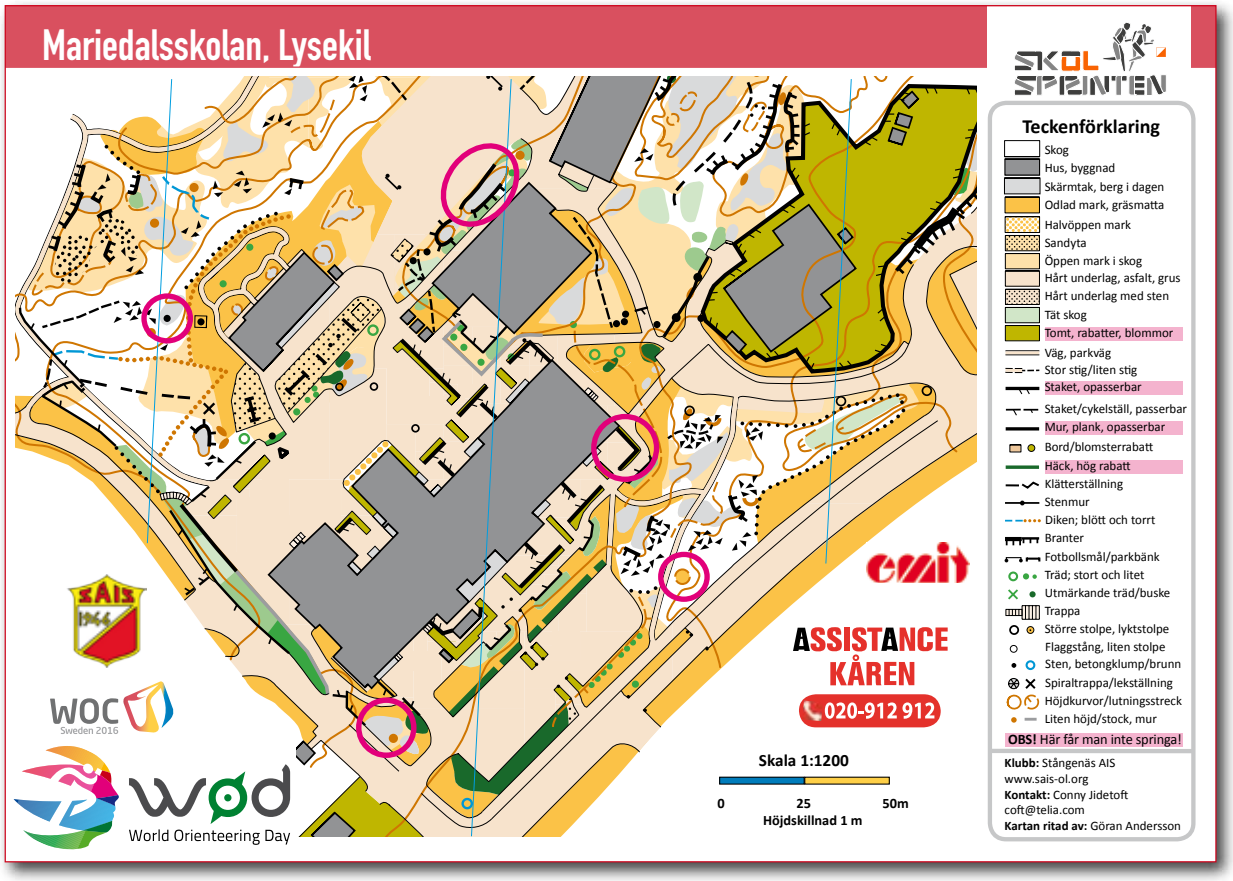



# FIVE MAP SYMBOLS, correct answers

## Five map symbols have disappeared




## Five map symbols have changed



# TO UNDERSTAND HILLS AND VALLEYS

## From 3D to 2D

On the following pages we focus on mountains and valleys, ridges and depressions, hills and pits. The three dimensional hill we will try to transform into a ”flat hill”. It should be drawn with help of contour lines.

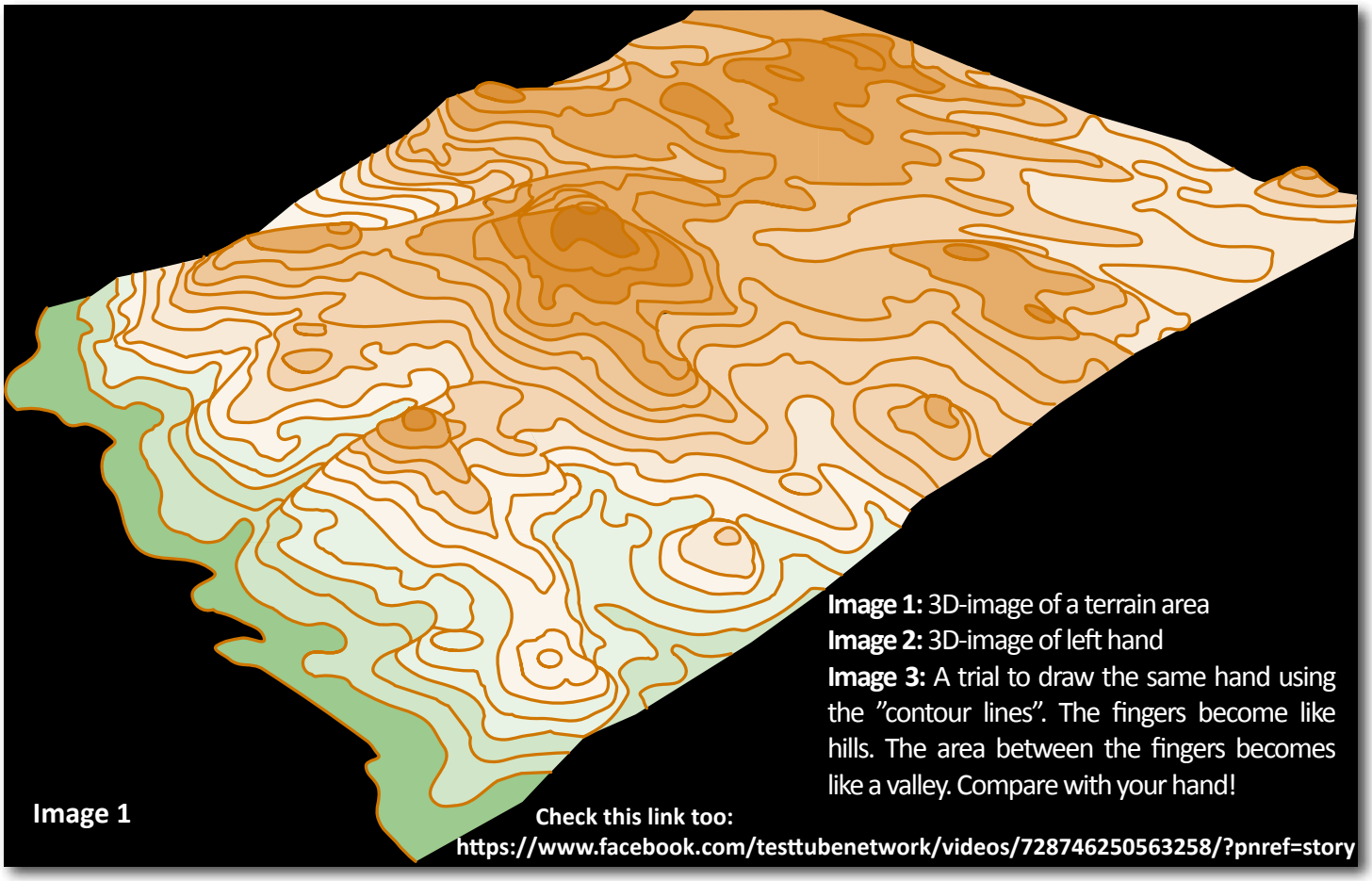


Image 1

**Image 1:** 3D-image of a terrain area
**Image 2:** 3D-image of left hand
**Image 3:** A trial to draw the same hand using the ”contour lines”. The fingers become like hills. The area between the fingers becomes like a valley. Compare with your hand!

**Check this link too:**
**https://www.facebook.com/testtubenetwork/videos/728746250563258/?pnref=story**

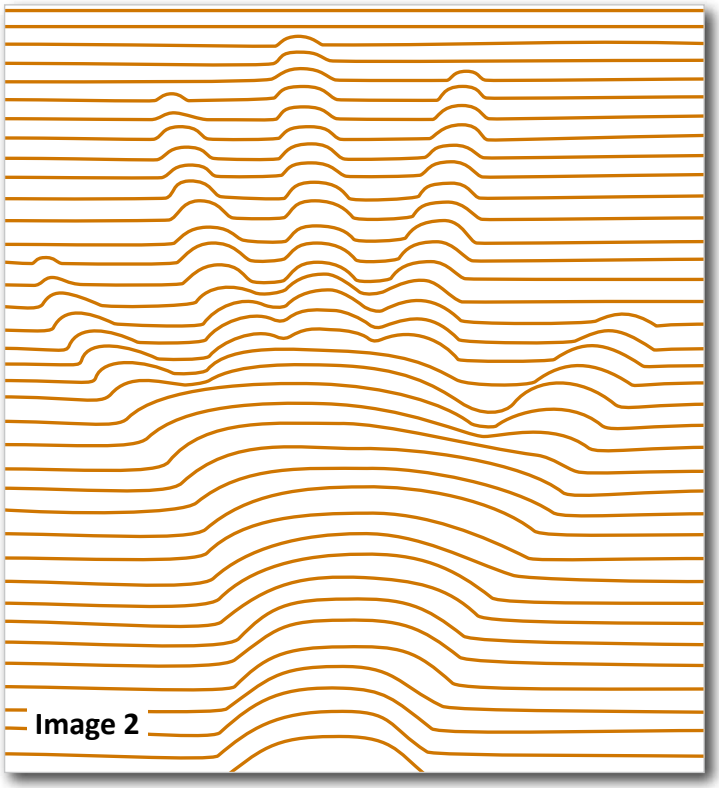


Image 2

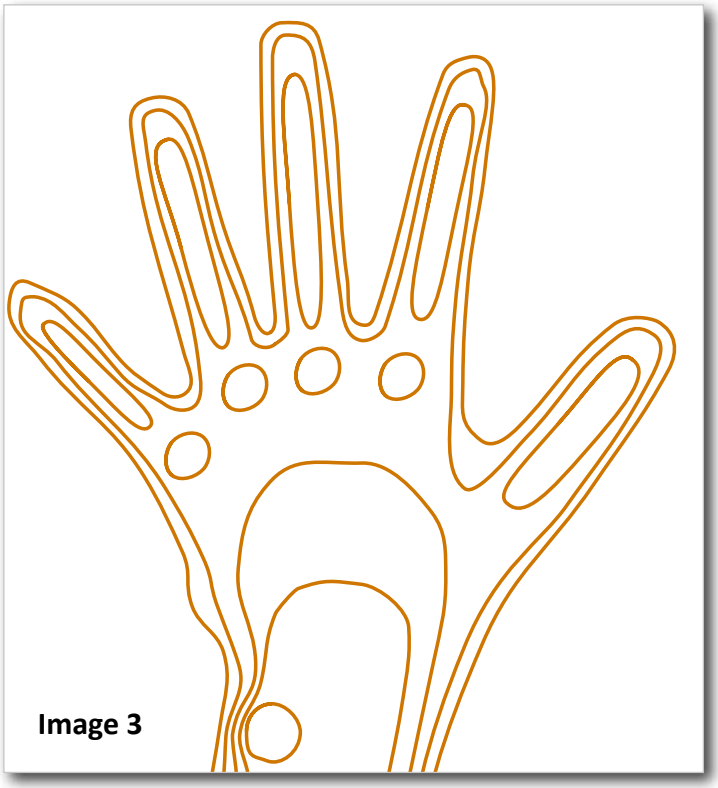


Image 3

# TO UNDERSTAND HILLS AND VALLEYS

### The peak from different directions

The ”Globe Arena ’in Stockholm and other round buildings have regular shape. They look the same no matter where you stand and look at them. Peaks or hills are very different. Hills and valleys are irregular.

### The peak of Idre Fjäll; Städjan

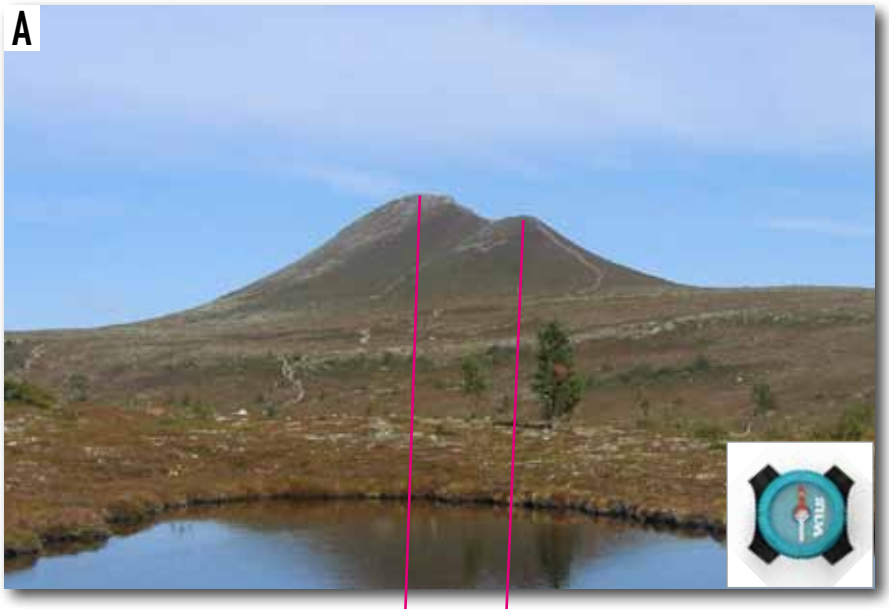
Städjan is Sweden’s southernmost mountain top. The mountain is very steep. It is visible from all directions. The top of the hill extends in a north-south direction. Städjan has a higher peak in the north and lower in the south. The highest peak is 1131 metres above sea level.

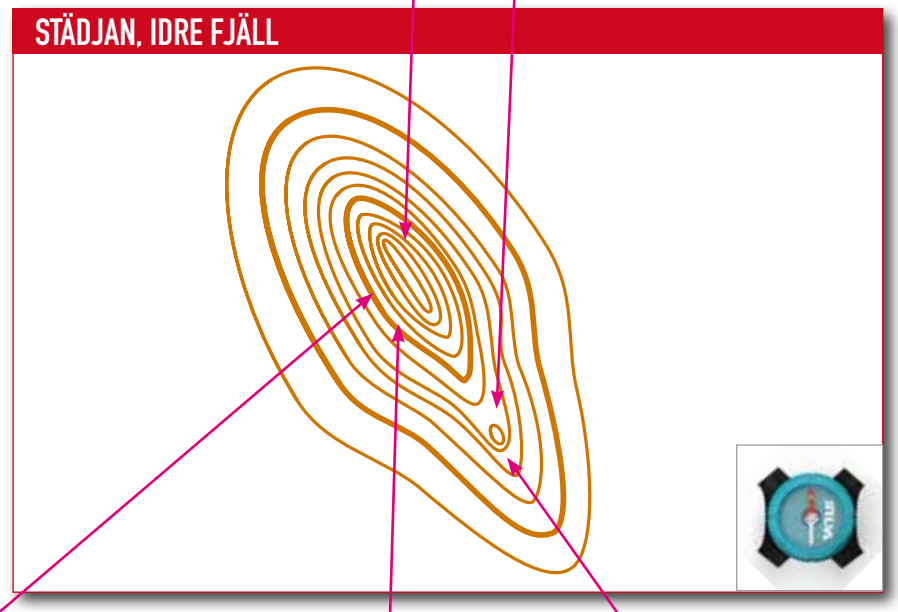
### Different directions

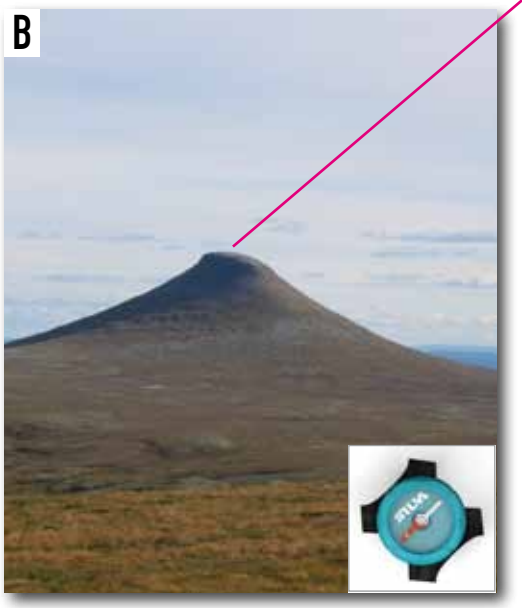
The photos A-C show Städjan from different directions. You see the mountain in three different directions. It’s hard to know it is the same mountain from the photos. However, on the map the mountain is the same no matter where you are.

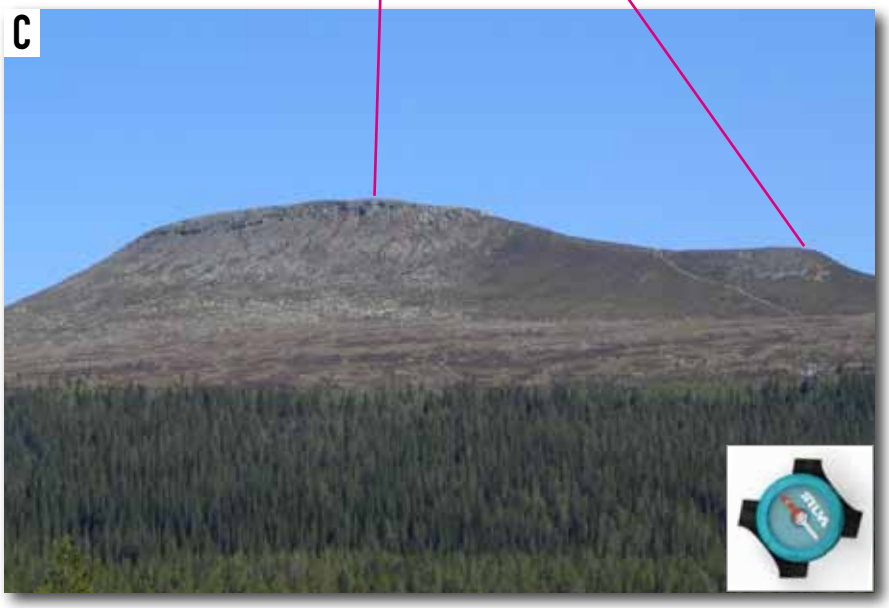
### 10 or 2 metres contour interval

The height between each contour line at a mountain map is 10 metres. Similar distance at a school map is 1 or 2 metres.



# TO UNDERSTAND HILLS AND VALLEYS

### Draw a map of a hill

In Hansbyn outside Dala-Husby in Sweden, where I live, there are a lot of boulders. I can choose which boulder I want. The boulder, photo on the right, I have chosen to draw a map of contour lines.

### The boulder's different shapes

The map of the boulder is a simplified picture of reality. The purpose of the map is to show different shapes of the boulder. The steep sides. The highest points. The deep notches. These are the key elements to draw first. Then I draw the smaller details, such as a small groove or protruding parts.

### The contour lines

It is the same distance between the contour lines. It is steep where the contour lines are very close together. Longer distance between the contour lines shows that there is a flatter area.

On most maps the fifth contour line is drawn with thicker line. Thanks to the thick contour lines you get a much better idea what the hills and valleys look like.

The boulder from above

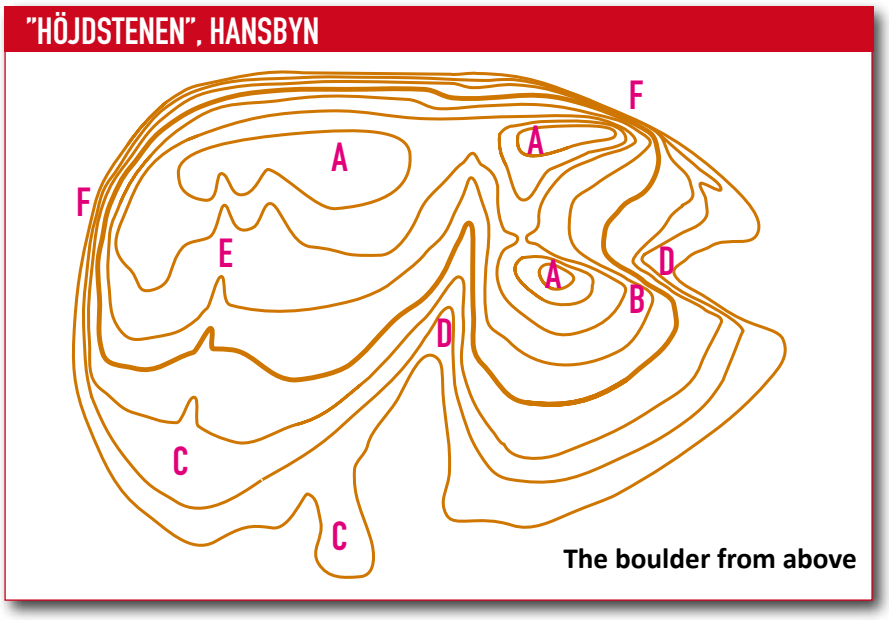
### Test yourself!

On the following pages you will find some "Test yourself exercises." You will understand better how the hills and valleys are drawn on a map.

### Explanations of the map's contour lines

**A** Hill, highest point
**B** Ridge or spur
**C** Terrace or plateau
**D** Re-entrant or valley, large
**E** Re-entrant or valley, small
**F** Steepest part of the hill

**"HÖJDSTENEN", HANSBYN**




The boulder from above

# TO UNDERSTAND HILLS AND VALLEYS, exercise

**Test yourself!**

In the photos A-F a small control marker is placed in different locations. Put the correct letter together with the correct number on the map ”Höjdstenen”:

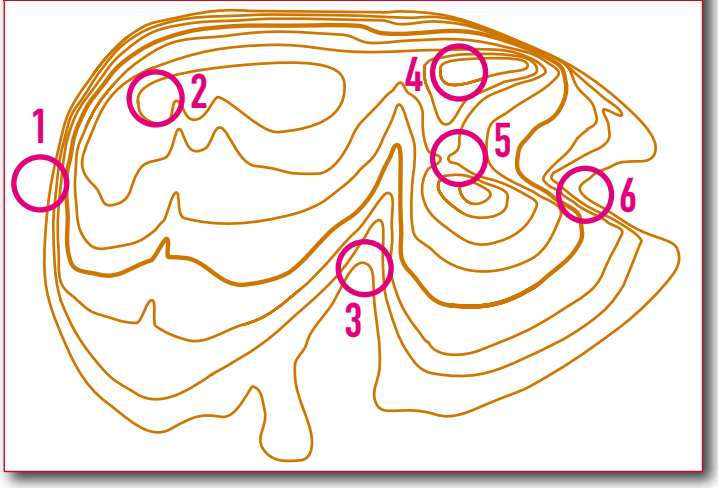
**A** _____ **D** _____

**B** _____ **E** _____

**C** _____ **F** _____

You will find the correct answers on page 26.

**”HÖJDSTENEN”, HANSBYN**




**C**

**D**

**A**

**E**

**B**

**F**

# TO UNDERSTAND HILLS AND VALLEYS, exercise

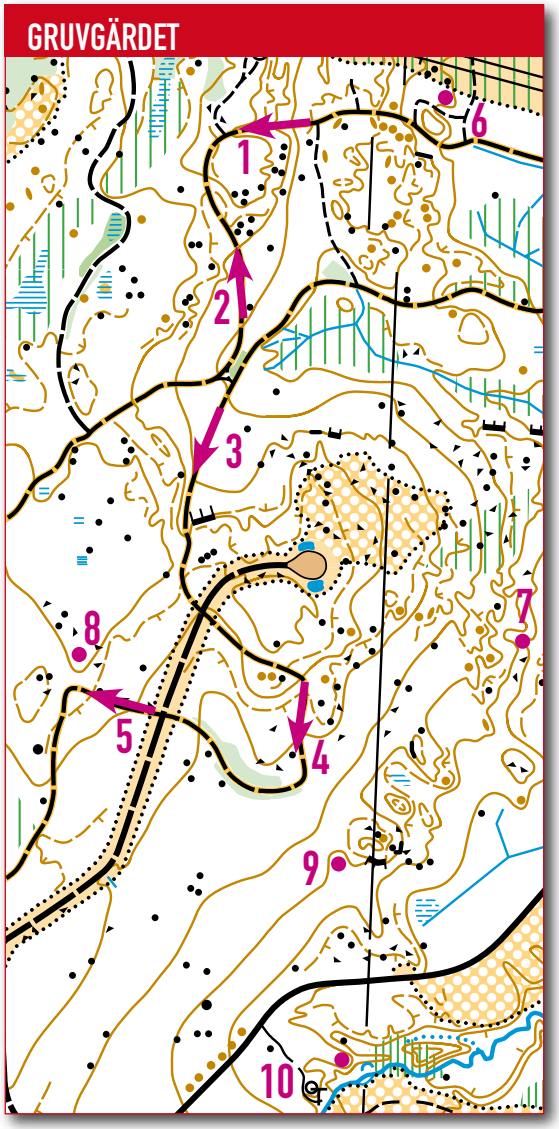
**Test yourself!**

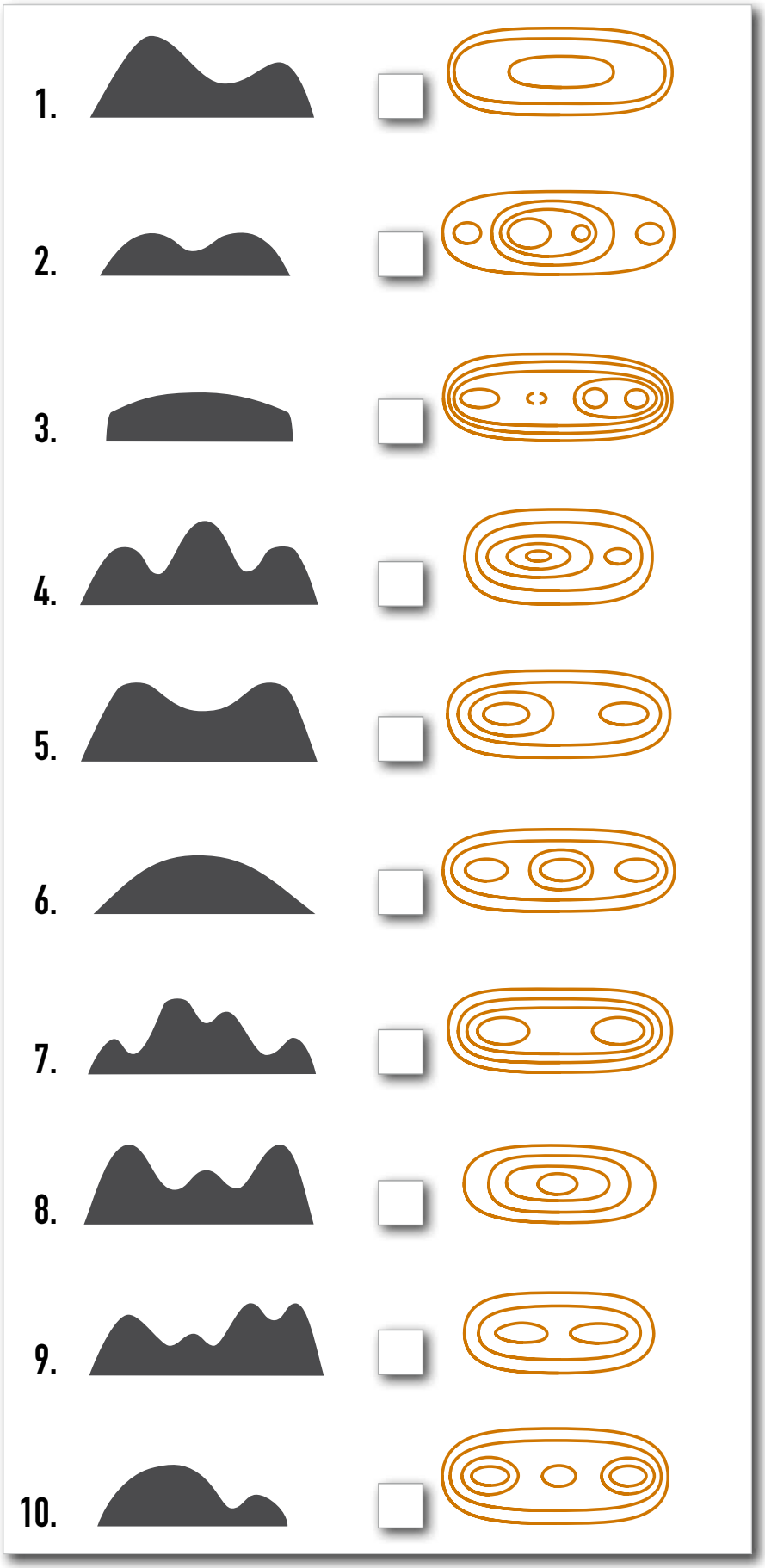
To the right you will find profiles of 10 different hills. Beside you will find the map of the hills. These are drawn from the top. Put the correct profile together with the correct map. In the box, please write the number that you think fit with the profile.

Below you will find a map with 5 → and 5 ● . Which of the arrows are showing uphill and which are showing downhill? Which ● are showing re-entrants or spurs?

| | |
|---|---|
| 1 | 6 |
| 2 | 7 |
| 3 | 8 |
| 4 | 9 |
| 5 | 10 |

You will find the correct answers on page 26.



# SIX PEAKS



### Up on the top and look around!

It takes a while to learn how hills, pits, ridges and re-entrants are drawn on a map. Out in the terrain you can more easily compare the map with reality.

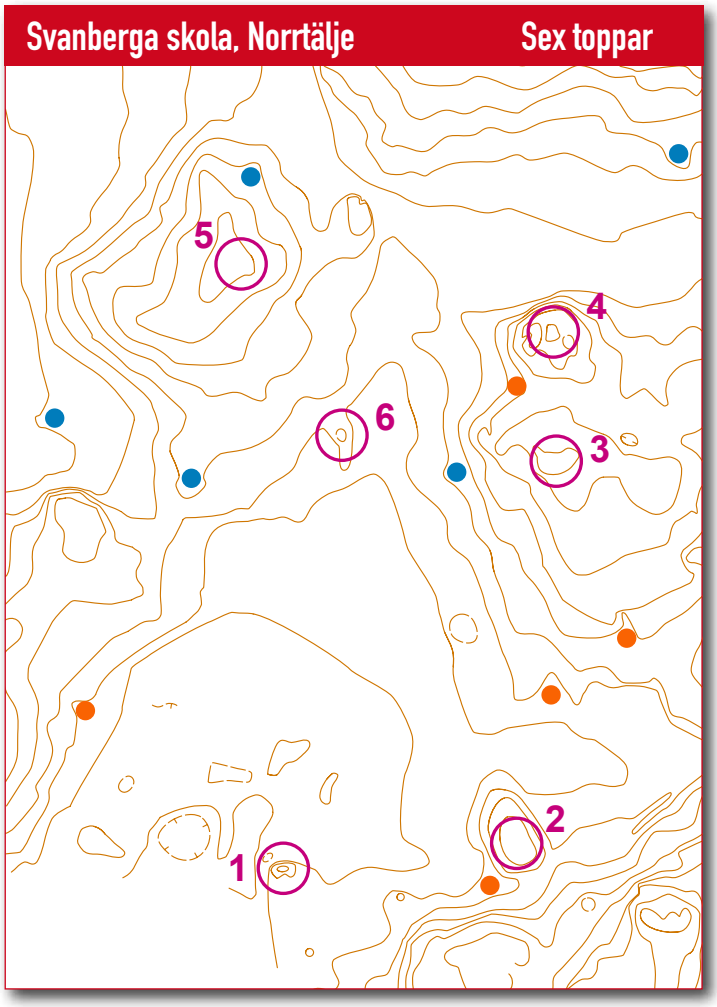
### 360 degrees

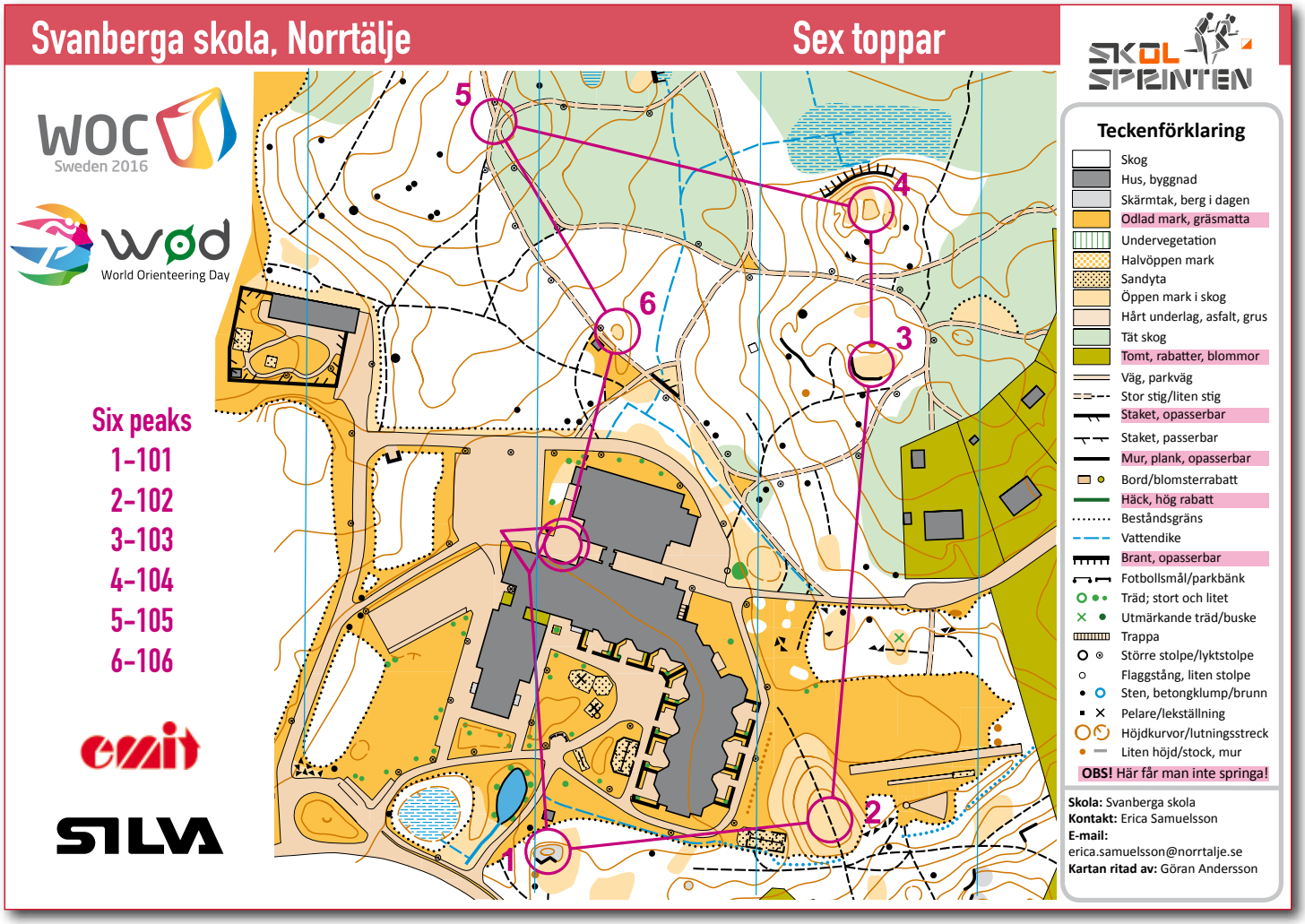
Find a number of peaks around the terrain. From the top of the hill scout 360 degrees around. You may see how the terrain ahead shapes itself as the fingers on your hand. Ridges ● rise up while re-entrants ● sink into the terrain.

### Three things to remember!

A good exercise is that the teacher will take the students to the different hills. The teacher can discuss following issue with the students:

- how to simplify
- how to keep the direction
- how to find a suitable attack point to find the controls safely



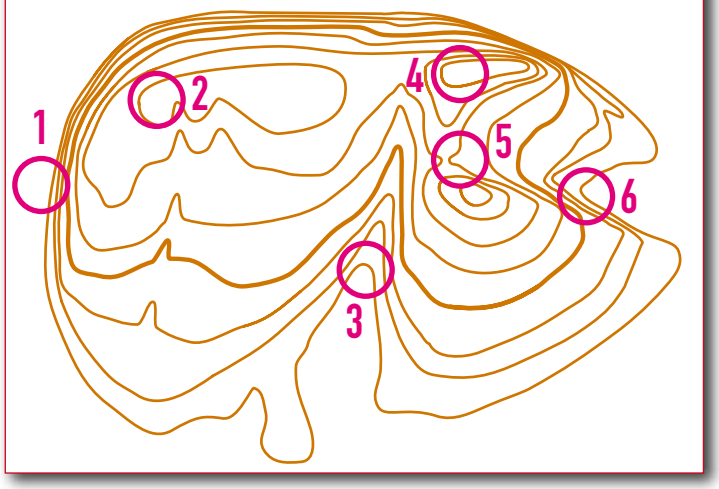



# TO UNDERSTAND HILLS AND VALLEYS, correct answers

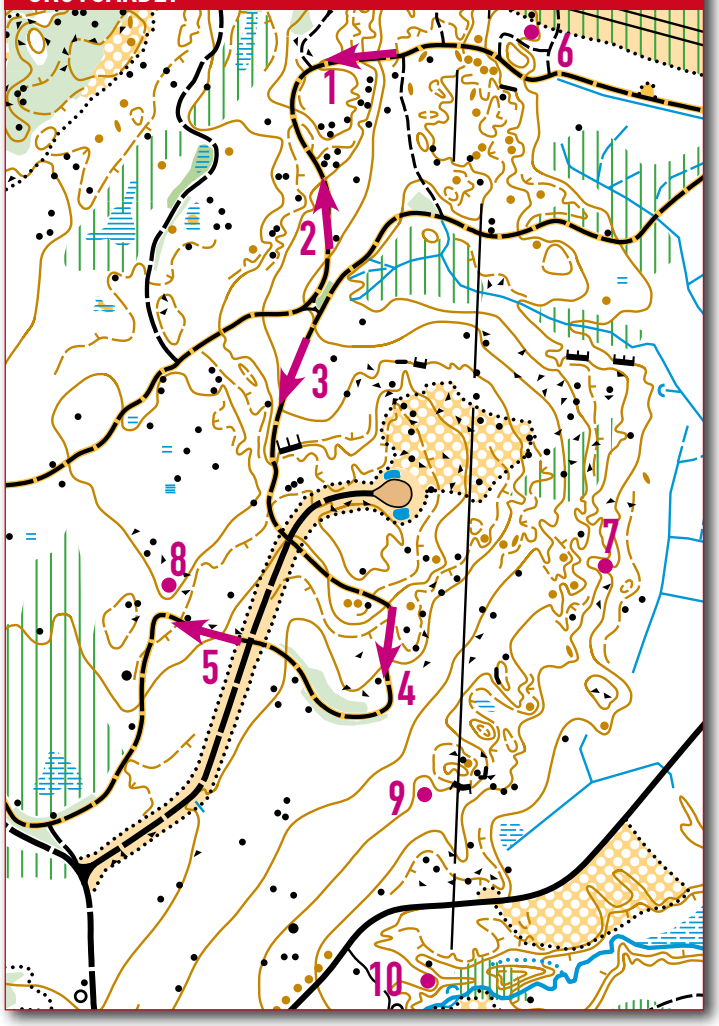
Correct answers "Test yourself", page 23:

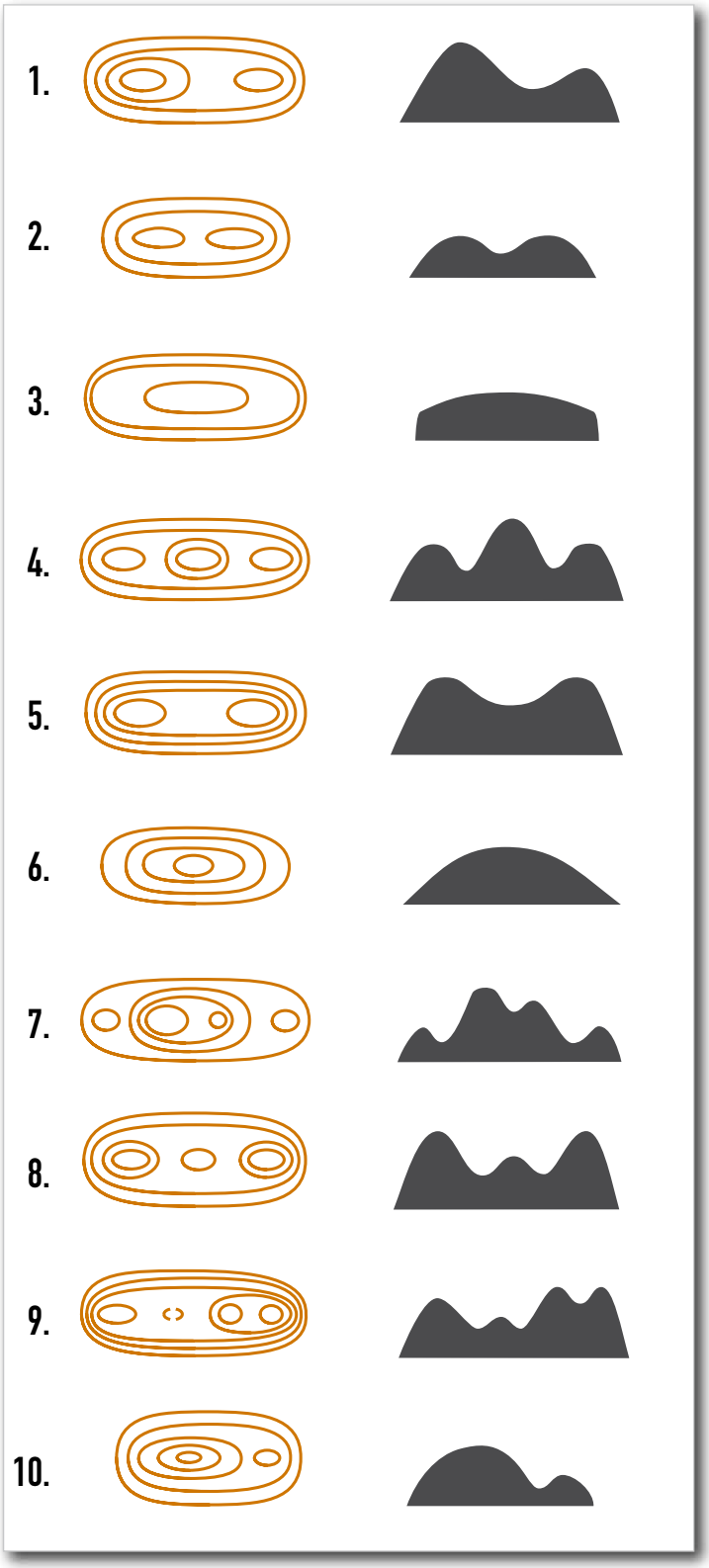
A 4
B 5
C 2
D 1
E 3
F 6

"HÖJDSTENEN", HANSBYN




GRUVGÄRDET




Correct answers "Test yourself", page 24, left and above:

1 Uphill
2 Uphill
3 Uphill
4 Downhill
5 Uphill
6 Ridge
7 Re-entrant
8 Ridge
9 Re-entrant
10 Ridge

# MOBO, MOBile Orienteering


## All in one!

MOBO (Mobile Orienteering) involves the use of a smartphone or a tablet instead of the traditional paper map. MOBO is available worldwide, but you find these maps in Estonia and Finland mostly. At a number of schools in Sweden, particularly in Avesta and Stockholm, you can use the app MOBO.

Map, compass and barcode scanner (for "punching") are available in the app. At the start you use your smartphone to scan the QR code. A beep indicates that your start punch is registered. At each check point you repeat the process. Press the app's camera symbol, scan the QR code and the check point is registered.

Using the zoom you can enlarge or reduce the map. The map is very clear and you can see all details very distinct.

More information about the MOBO can be found at: www.mobo.osport.ee.

The app is free of charge and is available for Android, Apple and Windows.

# NIGHT ORIENTEERING

your next
adventure!