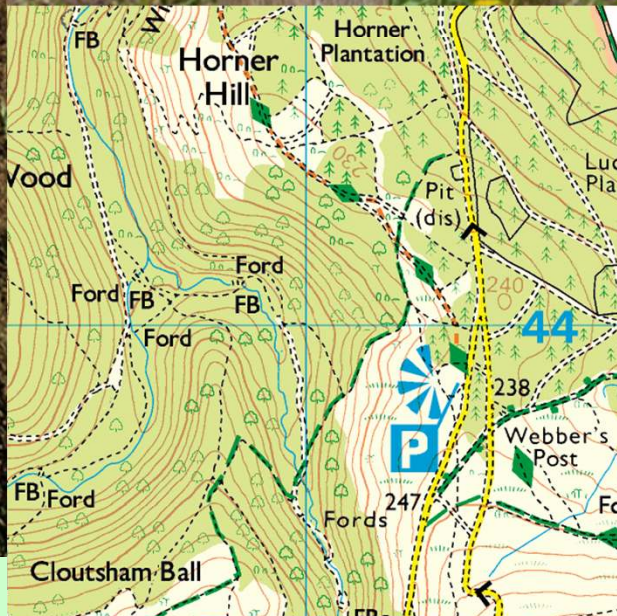


# Map reading & Navigation



# Maps and equipment



- ‘Standard’ walker’s map is **OS Explorer** (1:25,000)
- OS maps are large and cumbersome in the field – copy/print on A4 or fold the map to show the relevant section
- **Croydecycle** maps (1:12,500) – more detail, smaller, water-resistant – cover the coast plus parts of Exmoor and Dartmoor
- **Yellow Maps** – enlarged OS maps, smaller area, laminated
- Electronic packages – for computer (plot route and print out) and phone (linked to GPS) – e.g. OS, MemoryMap, Outdooractive & UK Map use 1:25,000 OS maps (purchase/subscription) – download, don’t rely on 4G signal
- Compass – make sure you know which end points north (it can become remagnetised)
- Map case/plastic sleeve, pencil
- Binoculars can be useful

<https://shop.ordnancesurvey.co.uk/map-selector/#os-map>

<https://www.croydecycle.co.uk/>



# OS Explorer maps

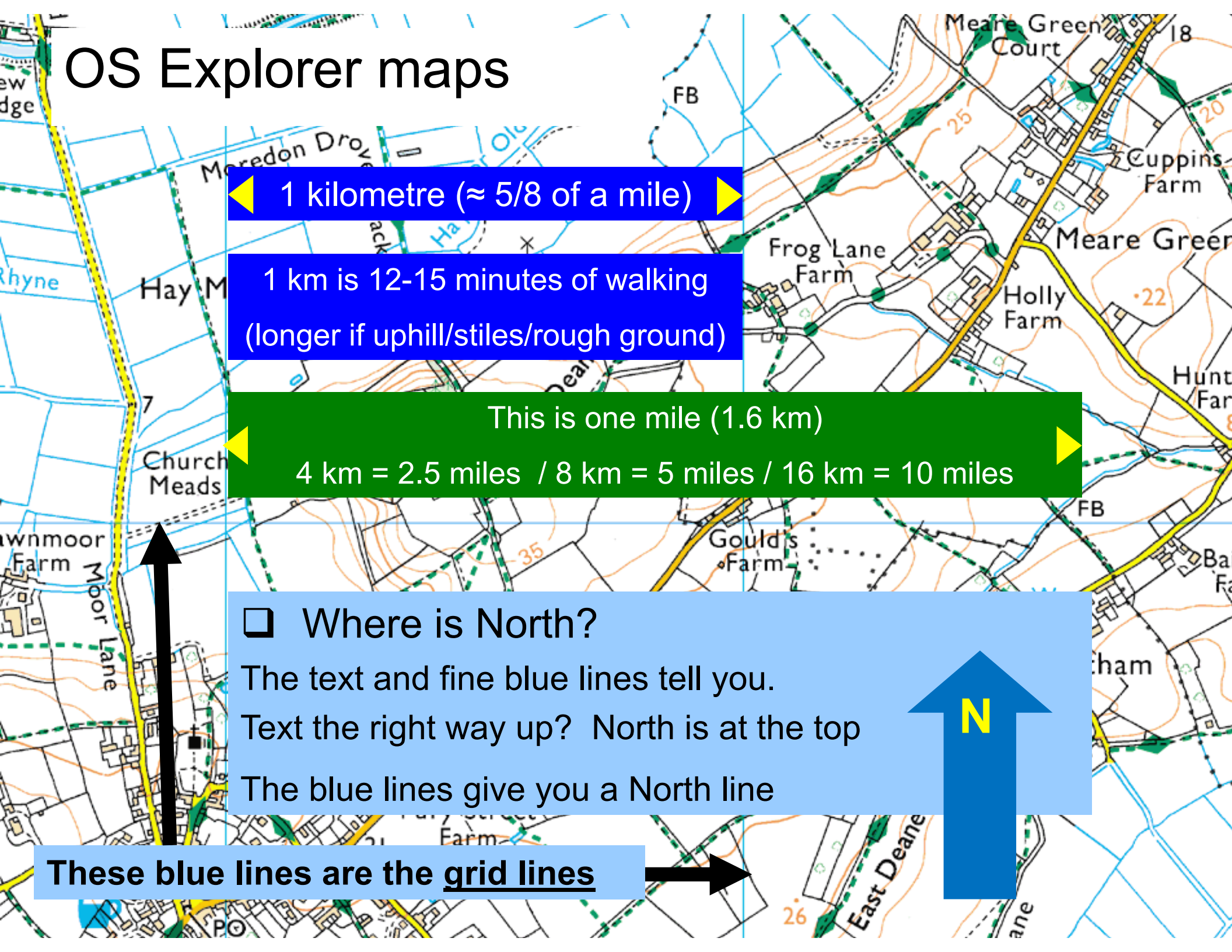
◀ 1 kilometre ( $\approx 5/8$  of a mile) ▶

1 km is 12-15 minutes of walking  
(longer if uphill/stiles/rough ground)

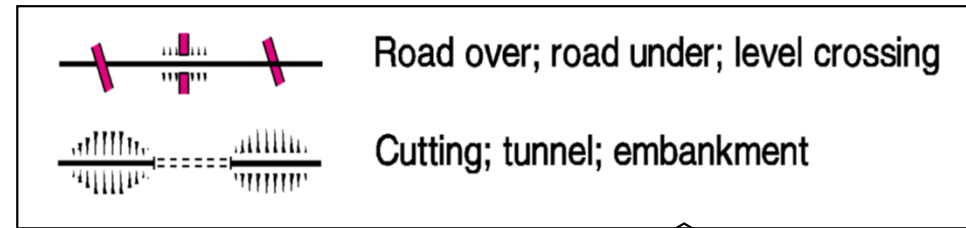
◀ This is one mile (1.6 km) ▶  
4 km = 2.5 miles / 8 km = 5 miles / 16 km = 10 miles

❑ Where is North?  
The text and fine blue lines tell you.  
Text the right way up? North is at the top  
The blue lines give you a North line

These blue lines are the grid lines →

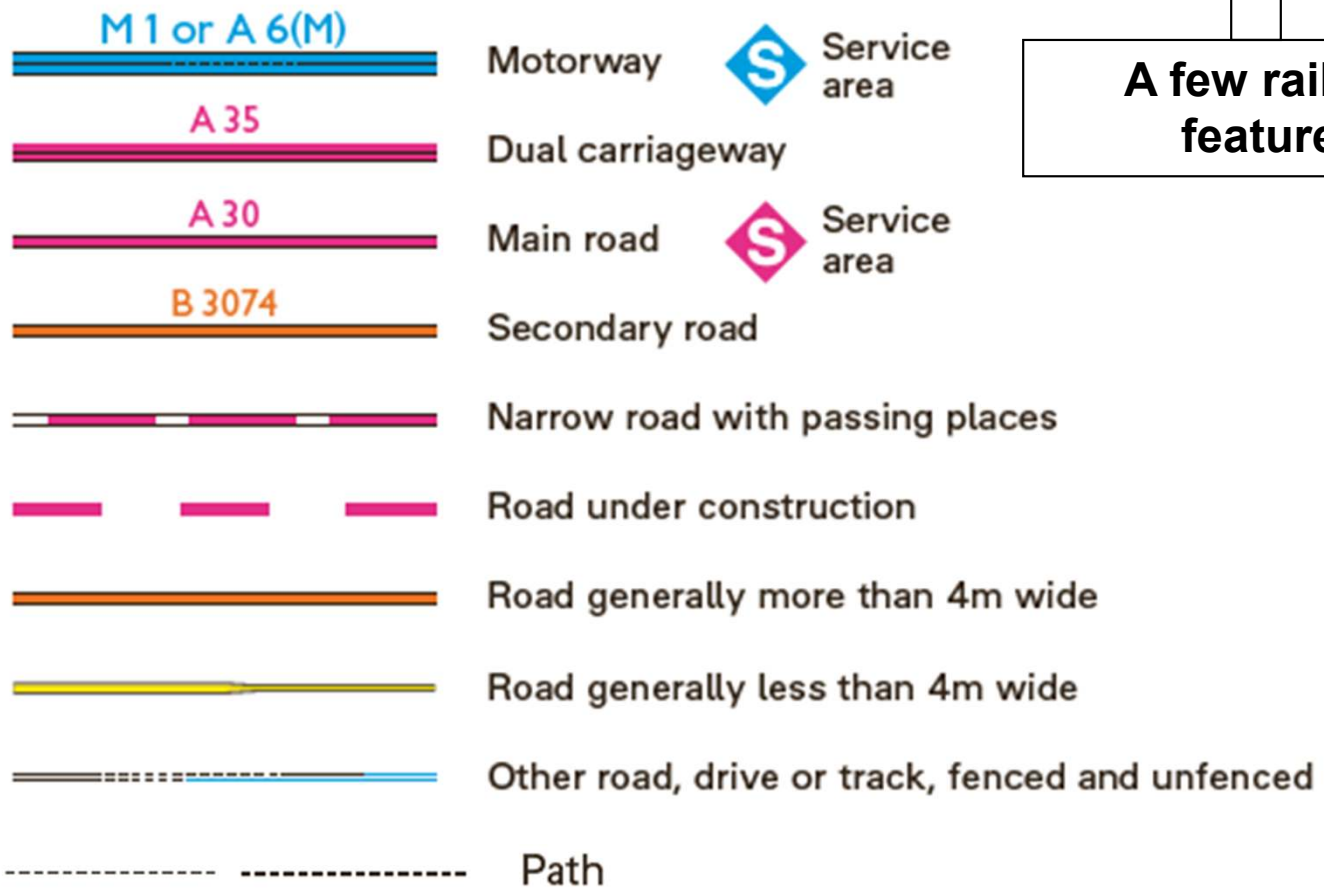


# Roads and tracks



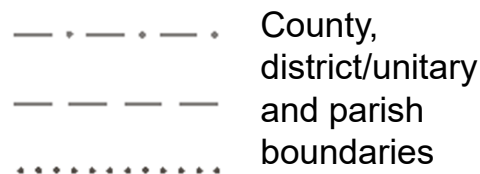
A few railway features

Coloured roads are normally rights of way, as are most white roads in built-up areas.



May not be a right of way.

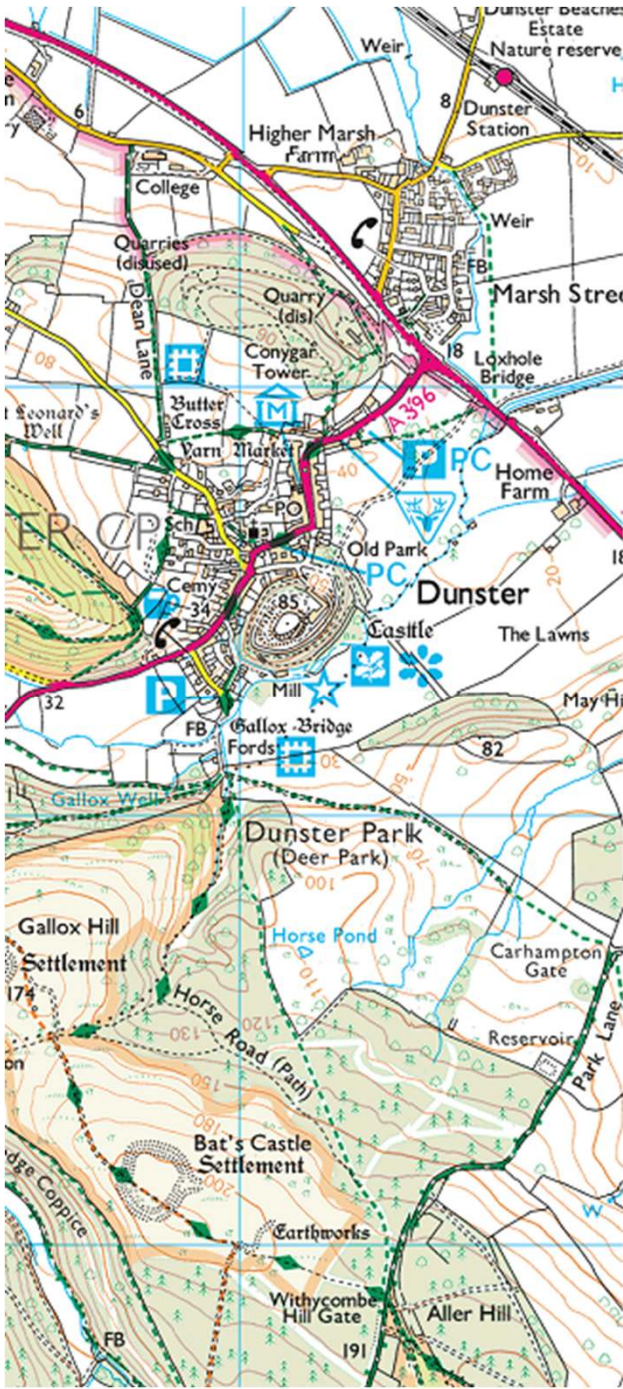
Beware! →



Does the path go under the motorway, or just stop? **Unclear on Explorer maps.**



# Rights of way



Footpath  
 Bridleway  
 Byway open to all traffic  
 Restricted byway  
 (not for use by mechanically propelled vehicles)



*Not always 'paths' – may just cross a field – and occasionally paths are not as shown on map*



Recreational Route



Other routes with public access (not normally shown in urban areas)

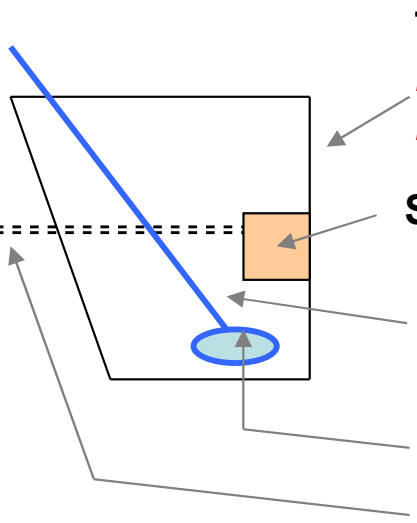


Permissive footpath



Permissive bridleway

*Not always shown, and the landowner can withdraw permission*



Thin black lines – hedges, walls and fences.  
*Not on the ground? They do get removed (and new ones added).*

Shaded brown rectangle - Building

Blue lines – Stream or Rhyne  
*Do not confuse with grid lines*

Shaded blue area – an area of water e.g. pool

Parallel dashed line – un-fenced track or lane

# Way-marking

Status of Path:	Public Footpath	Public Bridleway	Restricted Byway
Who can use them:	<ul style="list-style-type: none"> <li>Walkers only</li> </ul>	<ul style="list-style-type: none"> <li>Walkers</li> <li>Horse riders</li> <li>Cyclists</li> </ul>	<ul style="list-style-type: none"> <li>Walkers</li> <li>Horse riders</li> <li>Cyclists</li> <li>Carriage Drivers</li> </ul>
Waymark colour:	Yellow	Blue	Purple
	 	 	 

Access land



Named trail



Permissive route – varies!

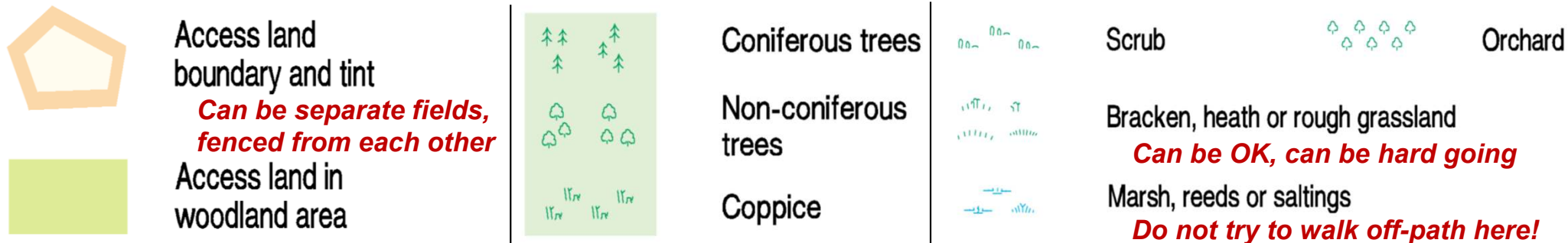
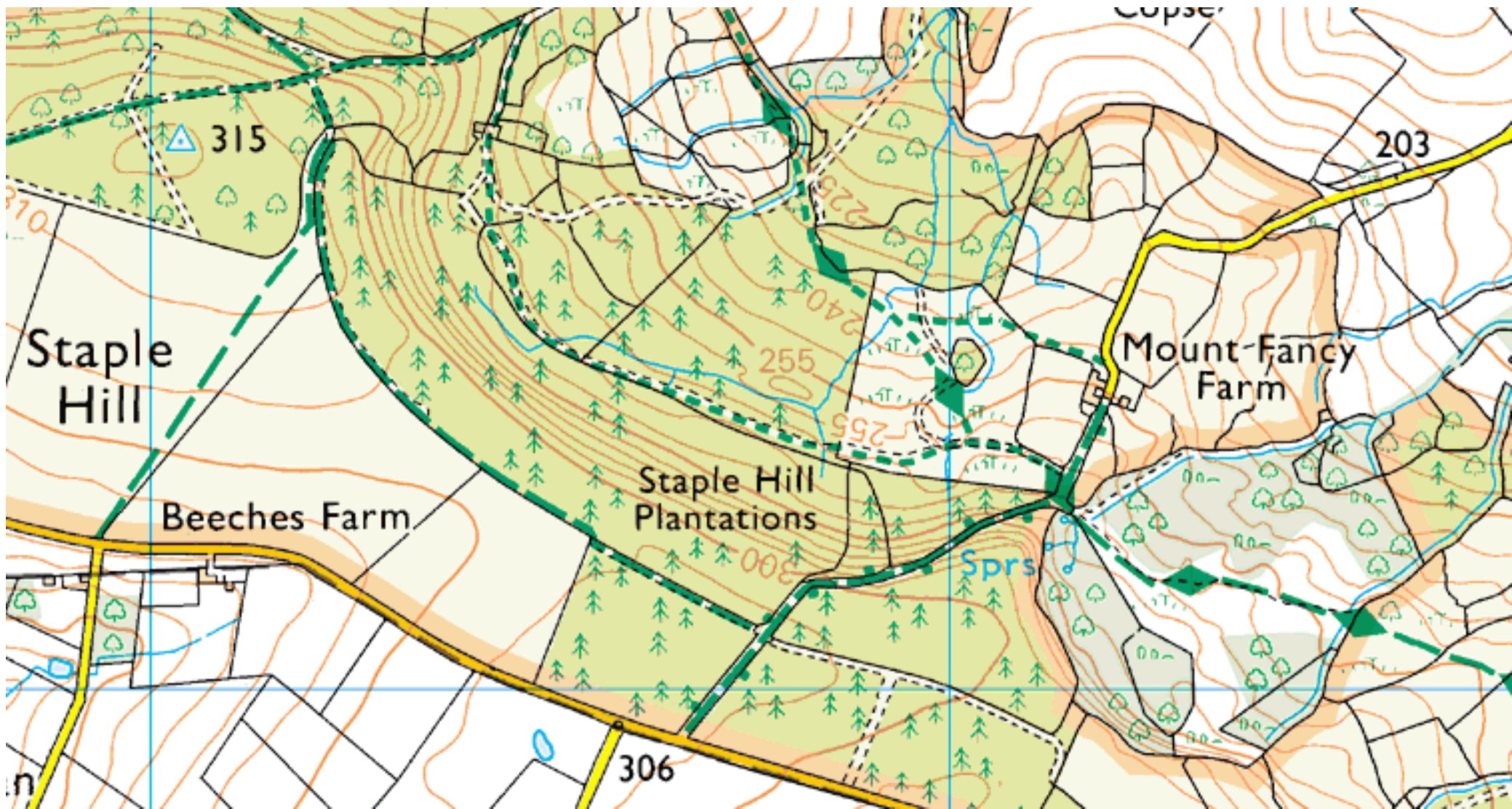


Finger posts

Should point the way!



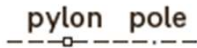




# Other useful symbols



**Quarry or pit**



**Power line**



**Solar farm**



**Slope or cliff**



**Earthworks**



**Viewpoint**



**Parking, toilets**



**Camping and  
caravan sites**



**Nature reserve**



**Golf course**



**Church**

**with tower  
with spire**



**Trig point**



**Radio etc. mast**



**Windmill**



**Water pump**



**Wind generator**



**Lighthouse**



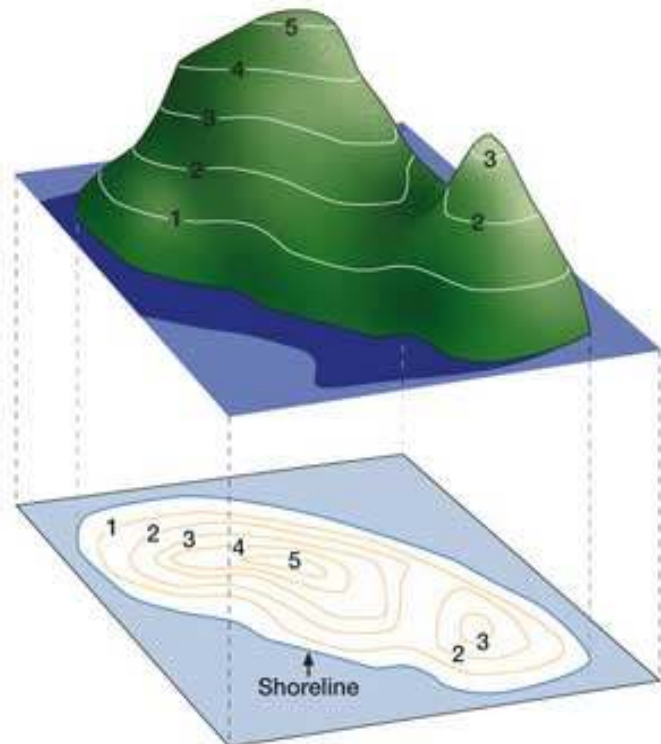
**Beacon**



**Firing and test ranges  
in the area. Danger!  
Observe warning notices**



# Contour lines



Light brown lines – 5 metre intervals

Heavier lines – every 25 metres

Closer together = steeper terrain

Black number = spot height

Work out which way is uphill – figures or other map features

Illustration: Tom Hill Walking © MLTDU, W/2003

## Gradients

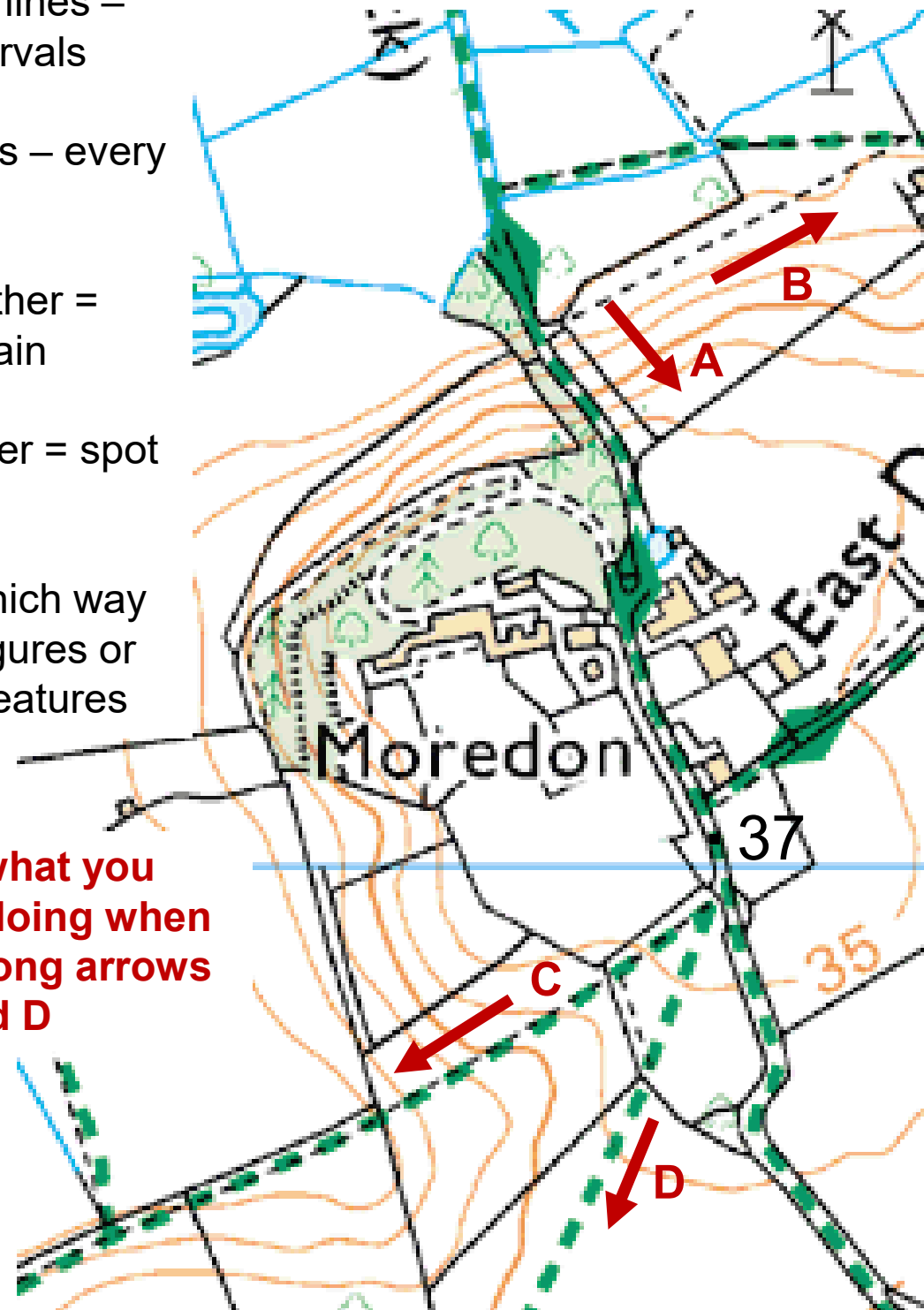


> 1 in 5

1 in 7 to 1 in 5

Normally only shown on coloured roads

- Describe what you would be doing when walking along arrows A, B, C and D



# Grid references



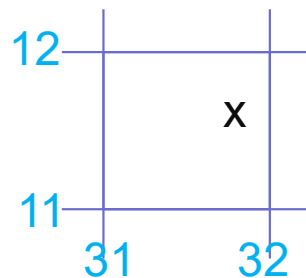
- Any location in the UK has a National Grid reference, e.g. **ST 222 321** (Fyne Court)

- 'ST' is the 100km grid square – this is shown in the key panel on the OS map



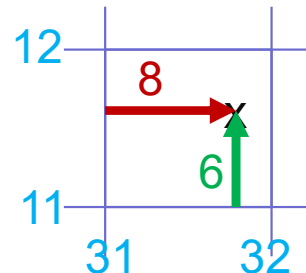
x = Ashclyst Forest

- To plot a grid reference, first read off the numbers of the grid lines to the **left** and **below** the point you want the reference for:



**ST 31 11**

- This gives you the position to within 1km. To be more accurate, measure or estimate the number of tenths to the **right** and **above** the grid lines:



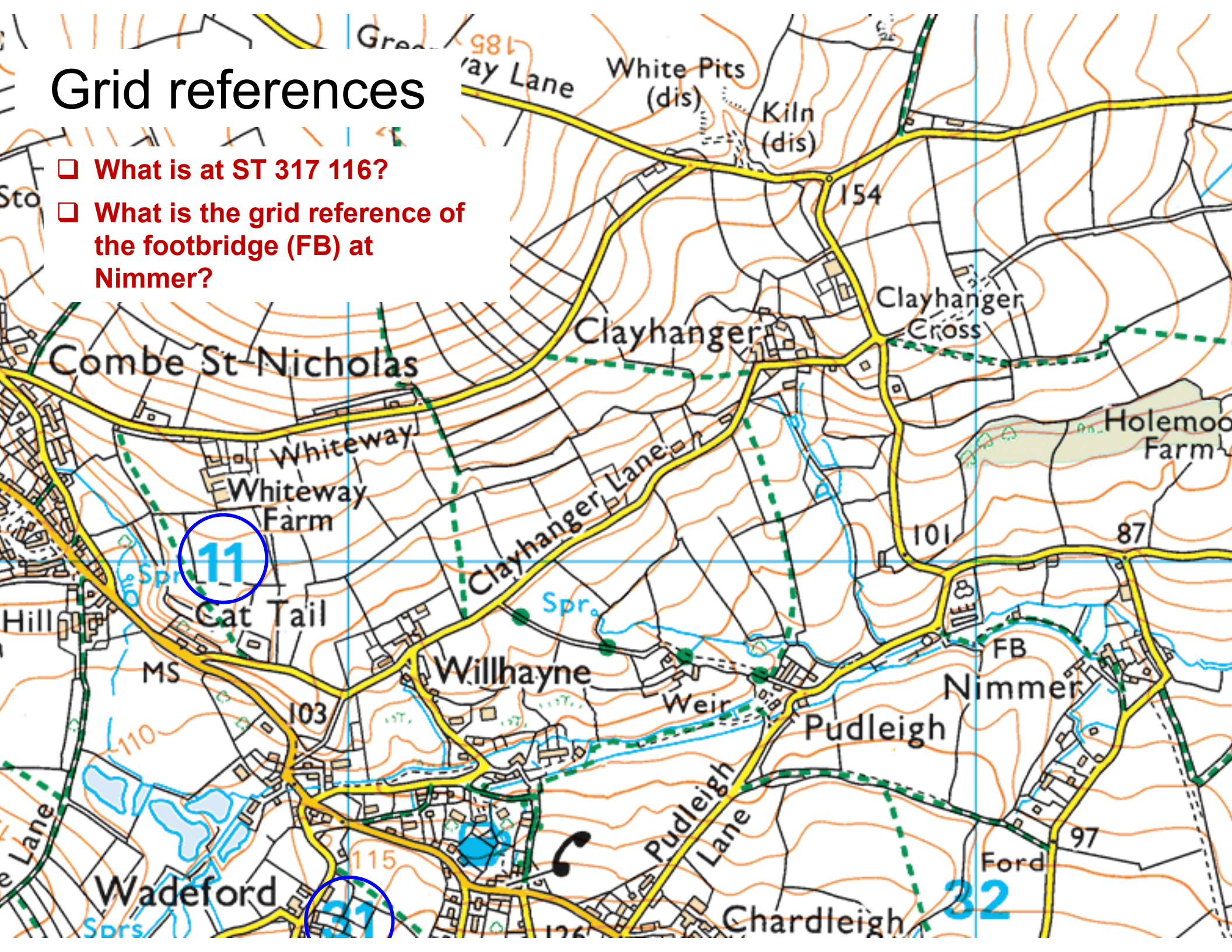
**ST 318 116**

For greater accuracy, estimate 100ths and use an 8-figure reference.



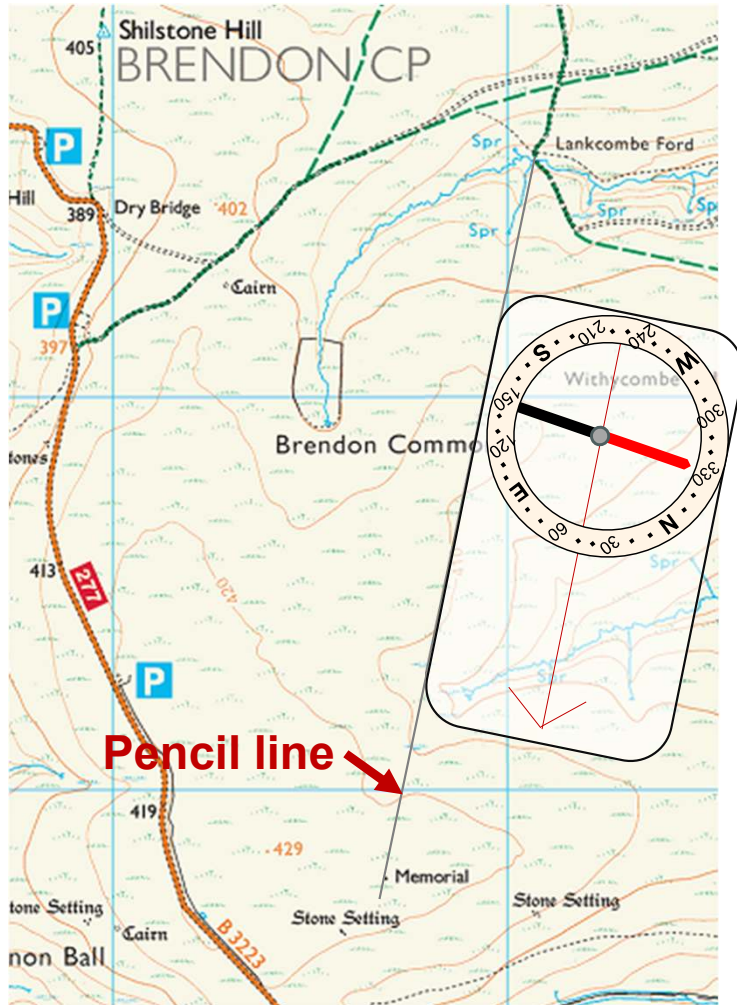
# Grid references

- ❑ What is at ST 317 116?
- ❑ What is the grid reference of the footbridge (FB) at Nimmer?





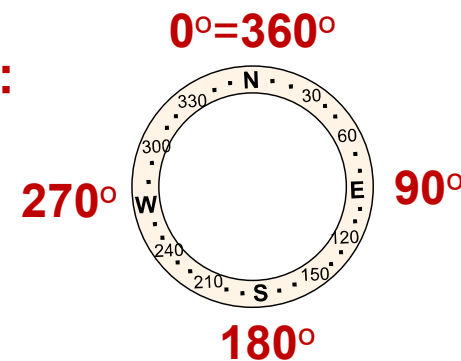
# Using a compass



## Setting a compass bearing

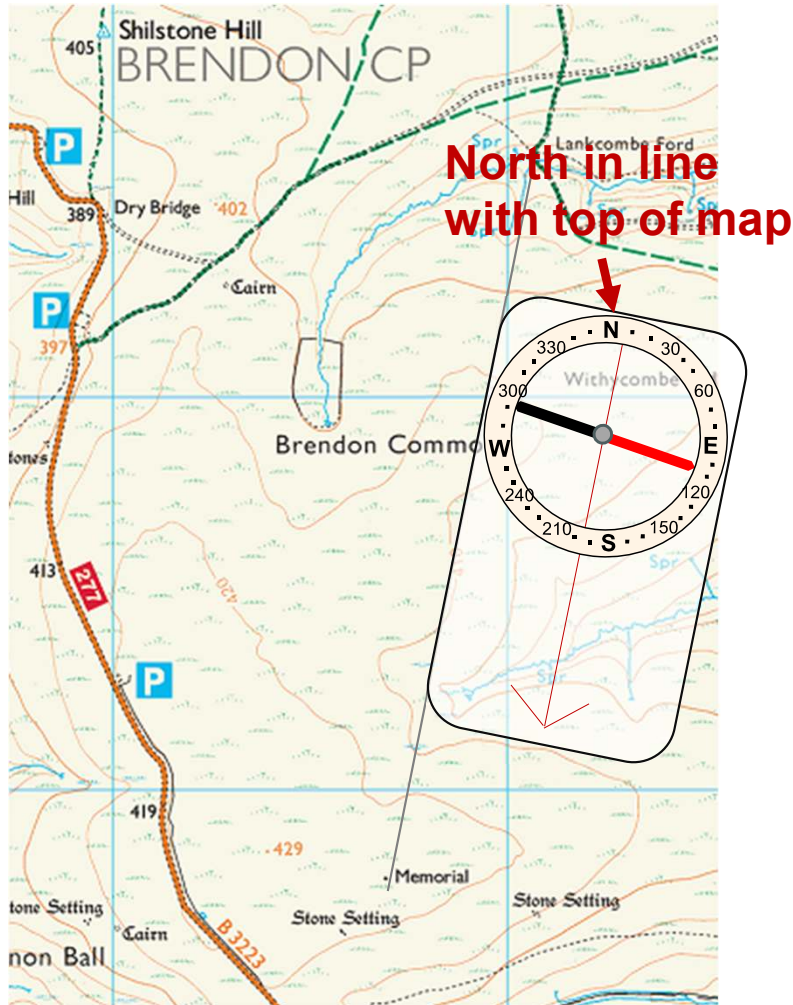
1. Draw a line from your starting-point to your destination (here Lankcombe Ford to the memorial)
2. Line up the edge of the compass with your line, so that the arrow on the compass base plate points in the direction of the destination. Ignore the compass needle.

**Note:**





# Using a compass



## Setting a compass bearing

3. Keeping the compass base plate in place, turn the ring so that north lines up with north on the map.
4. Read off the bearing on the ring that lines up with the arrow on the compass base plate. In the example it's  $195^{\circ}$  – halfway between the  $190^{\circ}$  and  $200^{\circ}$  marks.
5. Don't disturb the compass ring now that you have set it!

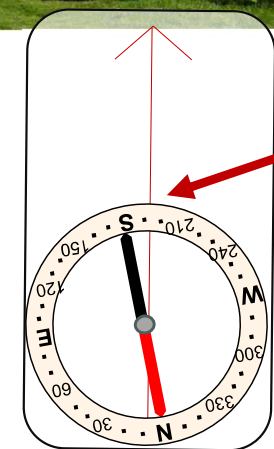
# Using a compass



## Following a compass bearing

1. If you haven't already set the compass up from the map, turn the ring so that the compass bearing you want lines up with the arrow on the base plate.
2. At your starting-point, turn the whole compass so that the needle (usually the red or pointed end, unless it has been remagnetised) lines up with north on the compass ring.
3. Keeping the needle lined up with north on the ring, walk in the direction of the arrow on the base plate. Rather than holding the compass out in front of you all the time, it is easier if you can identify an object in the distance to walk towards.

**Points just to left of small cairn or hummock**



**195°**

**Needle points to N**



# Using a compass



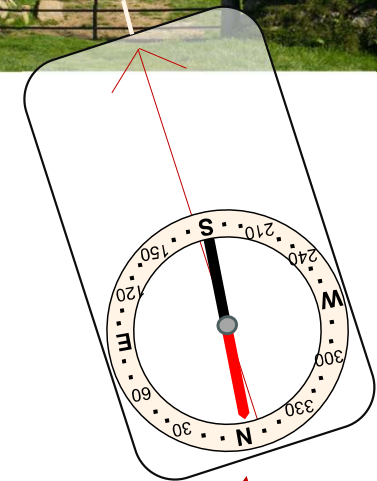
## Taking a compass bearing

1. Point the arrow on the base plate at the feature you want to take a bearing on.
2. Keeping the compass pointed at the feature (and flat), turn the ring so that north lines up with the needle. Let it settle.
3. Read the bearing – the figure on the ring that is in line with the arrow on the base plate.

**❑ What is the bearing to the top of the hill?**

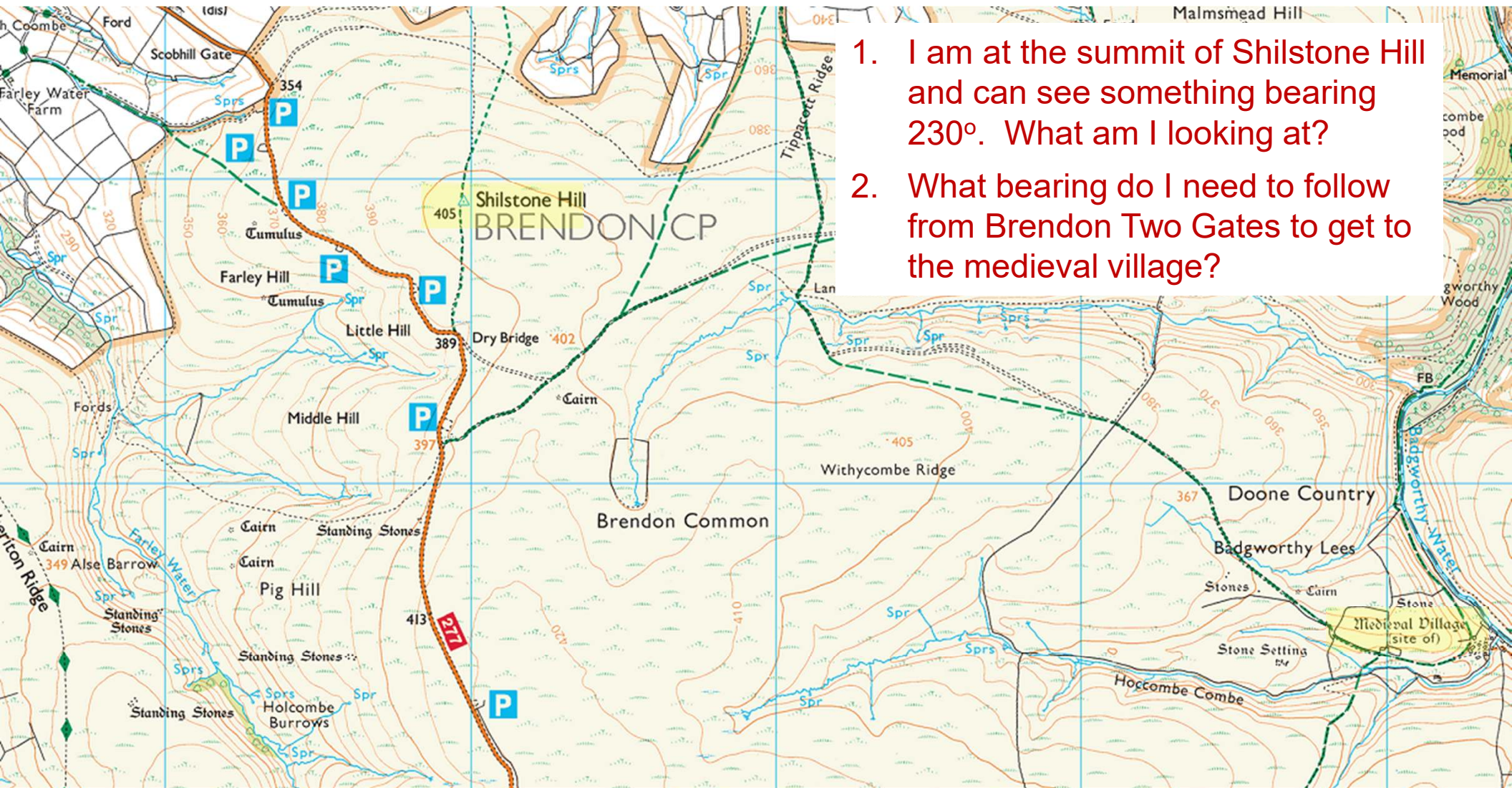
A simple bearing will allow you to orient the map.

On open moorland, try to find three different features (shown on the map) in different directions and take a bearing on each. Plot the lines on the map – where they meet is your position.



**Needle points to N**



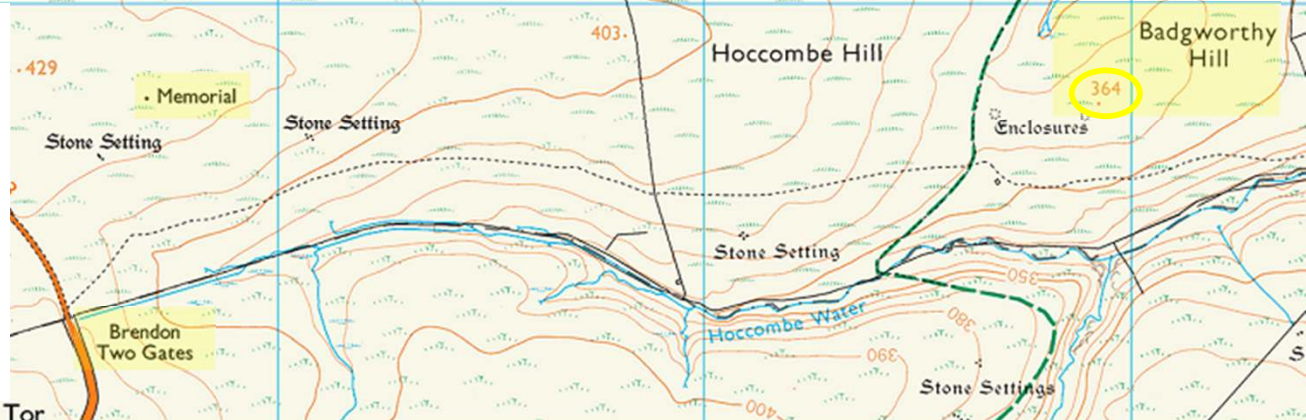


1. I am at the summit of Shilstone Hill and can see something bearing 230°. What am I looking at?
2. What bearing do I need to follow from Brendon Two Gates to get to the medieval village?

3. I have taken the following bearings:

- Badgworthy Hill (top) 130°
- Shilstone Hill 300°
- Memorial 205°

Where am I?





# Getting prepared



- Work out your proposed route – paper map or computer package best
- Mark your route – pencil on map, photocopy/print and highlight, or highlight on computer and print (or transfer to phone)
- Ease of use in field – fold map to show the relevant part, make an A4 copy, or use a phone-based package (with paper back-up)
- Map case or plastic sleeve? Useful if it rains
- Break down into short legs
- Things to look for on each leg – e.g. farm, clump of trees, which side of field boundary, path crossing fence/hedge, streams, contours (up, down, level, at an angle?)
- Compass bearings if needed – open moorland, crossing large fields.

# Navigating the route



- Orient the map – use features on the ground or a compass
- Identify where you are – mark or put finger on map
- Walk short legs:
  - Pinpoint start and finish
  - Features to look for
  - Walk the section

## **Not sure which way?**

- Follow ‘handrail’ e.g. hedge line, stream
- Feature in distance: stile, farm, church, hilltop, etc
- Use the compass
- Do the contours help – should you be going uphill, downhill or level?



# A sixth sense?



## **Be observant and cultivate:**

- A sense of distance - 1km = 12-15 mins of level walking (1 mile = 20-25 mins). (Note the overall walking time for a route will be more, say 30-40 mins for a mile).
- A sense of direction – Sun and wind. Windswept trees, moss on the north side of the trunk. A hill in the distance, a church.
- Attention to features – e.g. which side of the hedge/stream is the path, what type of terrain?

## **Look around you and ahead:**

- Where others have walked (not animals!)
- The hump in the field where there was a hedge
- Contours: on the level, at an angle, straight up or down.

# Practice!



- Go out with someone else who wants to learn
- At first choose an area you know
- Mark the map (in pencil or make a copy)
- Take your time
- Divide your walk into legs
- Fall in love with maps, bring the landscape alive!

## **Technology is useful, but ...**

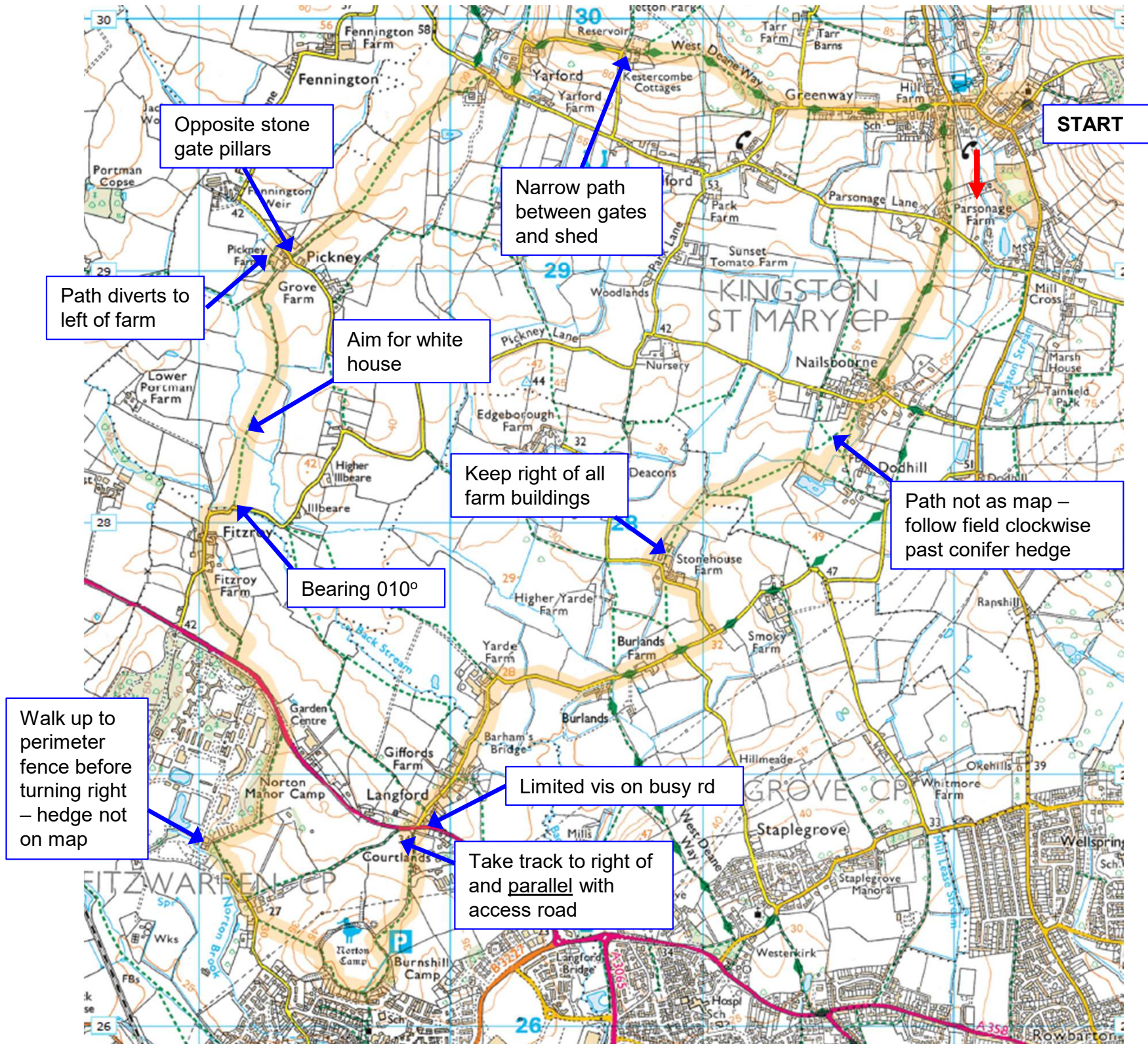
- Have a back-up – be able to use the physical map and a compass (loss of GPS signal, batteries run down, malfunction etc. – plus a paper map shows a larger area).



# Recording the route



- Make notes on the map of anything you think you won't remember, compass bearings, hazards etc.
- Will you remember a hard-to-spot turn or change of course when you are in the middle of a conversation?
- What will the route be like after heavy rain / if it's muddy or icy / when brambles and bracken have grown?
- Change the route if needed
- Voice recorder can be useful – but you will need time to play it back and make notes from it



START

Opposite stone gate pillars

Narrow path between gates and shed

Path diverts to left of farm

Aim for white house

Keep right of all farm buildings

Path not as map – follow field clockwise past conifer hedge

Bearing 010°

Walk up to perimeter fence before turning right – hedge not on map

Limited vis on busy rd

Take track to right of and parallel with access road