

WHERE ARE WE?

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WHERE ARE WE?

INTRODUCTION

Getting started with map reading

Holt Island is a great place to encourage children to be outdoors, and it offers teachers the opportunity to introduce the concept of location, maps and map reading. This first section looks at the use of maps and grid references and involves going to Holt Island to identify features and carefully plotting them on the map outlines.

To start with, gather together lots of maps of the area (World, Europe, England, East Anglia, Cambridgeshire, Huntingdonshire, St Ives) in different styles and scales.

Ask the children some questions about maps

- What can a map be used for? Good answers would be giving directions, showing country boundaries (political), or showing physical features.
- What type of maps have you seen or used? Globe, historical maps, pictorial maps, large scale, small scale, Ordnance Survey.

See if the children can find Holt Island and their school on any of the maps. They can then work out the route they will be travelling to get to the Island. Can they work out the distance on each map? How far is it?

On the opposite page we have presented a selection of symbols to be found on Ordnance Survey maps. These are deliberately shown without labels so they can be used as a refresher or a learning tool enabling the children to become familiar with them during their map work. These symbols have also been provided for your use at a larger size on the CD-ROM. Rather than just walking in a crocodile to Holt Island, it might be fun to print out some map symbols and during the walk photograph the children holding the correct symbol in front of the feature. Depending on your route and the features you pass, you may need to add some more in advance. You can obtain these from www.ordnancesurvey.co.uk/oswebsite/education-and-research/teaching-resources/map-symbols.html

You will also find on the CD-ROM a black-and-white outline map of the Island, plus another one in colour, which the children might find helpful for the MAP THE ISLAND projects.

RESOURCES

There are some alternative map and mapping resources and activities on the following websites:

www.ordnancesurvey.co.uk/mapzone Fantastic free resources, activities and online games

www.geography.pppst.com/mapskills Based on the Americas but still has some useful Powerpoint presentations

www.centremaps.co.uk/page/free_maps Free down-loadable information sheets

www.teachnet-uk.org.uk/2006%20Projects/P_Geog-mapping_Skills_Y6/Lesson1 has a Powerpoint presentation to discuss maps of different scales.

Teacher's
Page

ORDNANCE SURVEY MAP SYMBOLS



1 _____



2 _____



3 _____



4 _____



5 _____



6 _____



7 _____



8 _____



9 _____



10 _____



11 _____



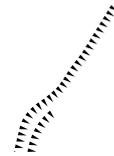
12 _____



13 _____



14 _____



15 _____

MP

16 _____

MS

17 _____

TH

18 _____

FB

19 _____

PH

20 _____

PO

21 _____

Sch

22 _____



23 _____



24 _____



25 _____

WHAT ARE GRID REFERENCES?

Many maps have a grid over them with numbers running along the bottom and up the left-hand edge. Each square on the grid has a four-figure grid reference that refers to that square alone. This helps people pinpoint a particular location on the map accurately.

The reference is actually made up of two numbers, so 0613 is 06 and 13. Notice that these numbers label the lines rather than the square itself! More complicated grid references are given as six figures giving the exact location within the individual square.

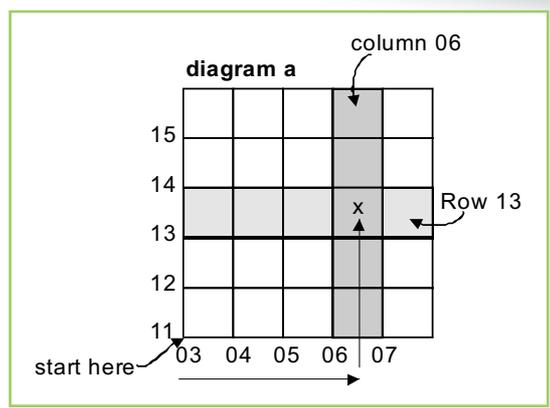
Columns and rows

Here's what to do to find the location grid reference 0613 on the map. Break it down into the two numbers 06 and 13. Always start from the bottom left-hand corner of the grid. Run your finger along the bottom until you find the number you want - in this case 06. Note the column to the right of the number. Then, starting from the bottom left-hand corner of the grid again, look up the left-hand edge until you find your second number - in this case 13. The row you want is the one above this line.

Run one finger up the column you identified first and one finger along the row until they meet: this is the square you want (indicated by x) - see the grid **diagram a** opposite.

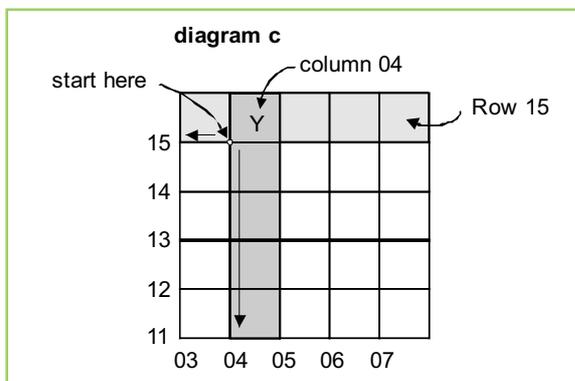
The **first** number always indicates how far **along** the bottom you go and the **second** number indicates how far **up** the side you go. An easy way to remember this is that you must go **IN** to the house before you can go **UP** the stairs.

"in the house then up the stairs"



Working out a grid reference from the map

If you want to tell someone the location of a place or something on the map, you need to tell them the grid reference, sometimes called the coordinates. Say your place is Y in the grid **diagram c** below. Start in the bottom left-hand corner of the square in which Y is situated. Follow this line down to a number on the bottom edge and note this down - in this case 04. Go back to your square and, again from the top left-hand corner, follow the line to the left and make a note of the number on this edge - in this case 15. So, Y is located at grid reference 0415 and these are Y's coordinates.



ANIMAL GRID

Now it's time to have a go for yourself. Use this grid with animals in various squares to practice finding and creating four-figure grid references. This will also test your animal identification skills!

1. Which squares are these animals hiding in?

deer

bumble bee

duckling

duck

weasel

centipede

barn owl

frog

22										
21										
20										
19										
18										
17										
16										
15										
14										
13										
	45	46	47	48	49	50	51	52	53	54

2. Which animals are hiding in these squares?

4814

4521

4918

5116

4718

4820

5220

3. Which is the odd animal out?

4. Why?

GRID REFERENCES ON THE ISLAND

Use the **Grid Reference Map** to answer all three parts of this challenge.

Part 1

Below you will see a list of six key locations on the Island. Walk round until you find one of them. Now, by looking around at your surroundings, work out exactly where you are on the map and then work out the grid reference for your position. See the page **WHAT ARE GRID REFERENCES?** if you have forgotten how to do this. Write down the grid reference. Now walk a bit more until you find another key location and repeat the exercise. Continue until you have found all the locations and worked out their grid references.

1. Rangers' shed
Grid reference
2. Bench for Sid and Doris Mann
Grid reference
3. Willow dome
Grid reference
4. Bench for the Friends of Holt Island
Grid reference
5. Information board about the reed and osier beds
Grid reference
6. Information board about the meadow
Grid reference



Part 3

Find another feature on the island (another bench or picnic table, or a sign, or maybe the pond, for example) and work out the grid reference for it. Walk away from it and find a friend. Give your friend this grid reference and see if they end up at the same point. If they end up in a different place, ask somebody else to check who is correct! **Grid reference**

Part 2

Here are the grid references for five squares on the map. First, locate the square on the map. Now, find your way to each square in turn. When you get there write down three things you can see at each location (try to find different things each time).

Grid reference 2610 **What I saw there:**
.....
.....
.....

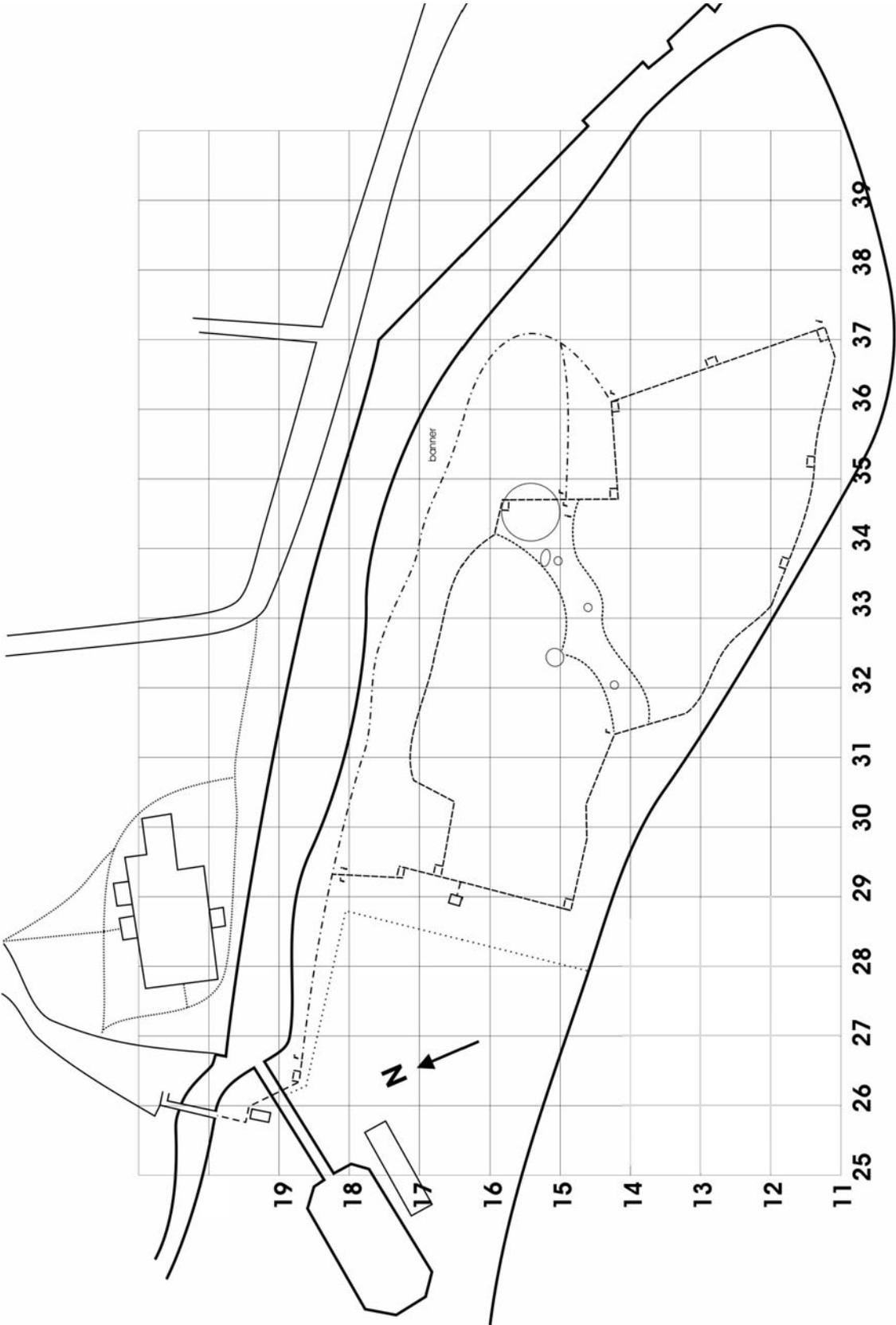
Grid reference 3711 **What I saw there:**
.....
.....
.....

Grid reference 2816 **What I saw there:**
.....
.....
.....

Grid reference 3214 **What I saw there:**
.....
.....
.....

Grid reference 3415 **What I saw there:**
.....
.....
.....

GRID REFERENCE MAP



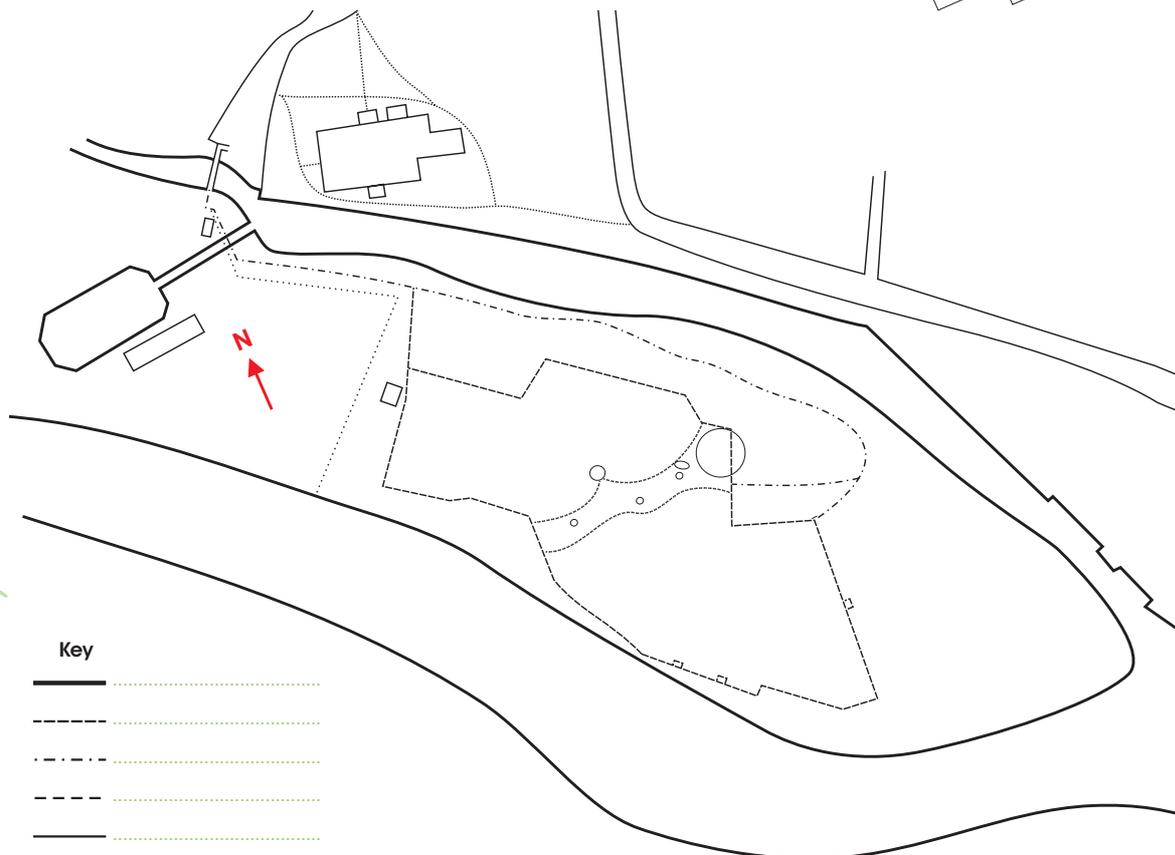
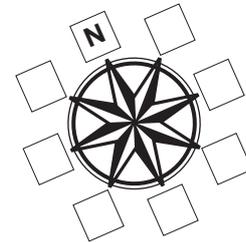
WHERE ARE WE?

MAP THE ISLAND

Now it's time to complete your own map of the Island. Here are the stages:

1. Colour in the map - use **green** for the island and **blue** for the river.
2. Now fill in the blank squares on the compass rose.
3. Next, complete the key.
4. Finally, work out where the objects listed below are located, and draw them onto the map as accurately positioned as possible.

- Wide passing places
- Ramps
- Ranger's shed
- Benches
- Willow dome
- Information boards
- Circular picnic benches
- Banner



Key

—————
-----
- - - - -
—————
.....
.....

MATHS WALK

The boardwalk is the most important feature on the Island. It enables visitors to walk easily around the reserve and to keep their feet dry when the ground is muddy. Sometimes the Island becomes flooded and so then the boardwalk becomes even more important because without it the Island would have to close. You can walk on the grass path and the Meadow but at all other times it is best to stay on the boardwalk for your own safety. Here are some calculations for you to try as you walk round.

1. You will notice several useful features provided for use by the visitors. How many can you count? What is the total cost to provide all the features?

	How many?	Cost per item	How much for all of them?
Benches		£350	
Round picnic tables		£435	
Litter bins		£200	
Interpretation boards		£1,200	

2. Why do you think we do not provide certain items?

.....

3. What other facilities would you like see on Holt Island?

.....

Constructing the boardwalk

Over the winter of 2009-2010 Rangers and volunteers started to replace the whole of the boardwalk. To do this we had to buy materials and so on the next page we have given you some real figures to use in the next calculation.



MATHS WALK continued

4. Imagine you are the Ranger in charge of this essential project. Can you complete the costing table below? You may use a calculator - after all, the Ranger did!

- Sometimes you will need to count how many items there are and then from the total cost you can find out the cost of each item.
- Sometimes the cost per item is given and so once you know how many items there are you can find out the total cost.
- Sometimes the number of items is given and the cost per item so you can work out the total cost.

	Tally	Cost per item	Total Cost?
Metal 'H' frames that go into the ground (approximately 2 frames every 5 m)			£9,038
Wooden beams that support the planks (5 m length)		£18.65	
Wooden planks that you walk on (approximately 1.4 m)	2,625	£2.60	
Concrete (per bag)	444	£3.60	
Nails (per 25 kg tub)	4 tubs	£51.50	

For the next questions you will need to go to Holt Island to measure the length of the boardwalk and count some of the features.

- The length of the board walk is metres
- How long is each load-bearing beam?
.....
- In general, looking at the normal width of the boardwalk, how long is each wooden plank?
.....
- Each nail weighs 10g. How many are there in each tub?.....
- If each wooden plank has 4 nails to attach it to the beam, how many planks can we fix with each tub?
.....
- It costs £2,000 to add the non-slip surface to 500 m of board walk. How much does it cost per m?
.....
- Why do you think it is necessary to have a board walk?
.....
.....
.....
- As you walk along, what evidence can you see that animals have used the boardwalk too?
.....
.....

VISITOR BRAINTEASERS

Now test your brain power on these questions that relate to visitor numbers on Holt Island.

1. A class of 28 children were asked to put their hands up if they had visited the Island. Fourteen hands went up. What fraction of a pie chart would this cover?

- a) One half
- b) One quarter
- c) One third

2. Seven children had visited the Island within the last month. What is that number expressed as a decimal proportion of the class?

- a) 0.25
- b) 0.5
- c) 0.75

3. Which graph would be the best way to show how many children had visited over the summer months?

- a) Line graph
- b) Pie chart
- c) Bar graph

4. Douglas had visited the Island more than most children. Each time he was there, he kept a record of how many hours he stayed and he drew a bar graph to show his friends. How could we see how long he stayed each day?

- a) Looking at the height of the bars
- b) Adding together the total number of bars
- c) Neither of the above

5. Roy drew a bar graph to show how many of each bird he saw on the Island. There was no bar above the label 'Goldeneye'. What can this tell us?

- a) He forgot to draw it
- b) He saw no Goldeneyes that day
- c) Goldeneyes do not live in this country

Holt Island opens at weekends for six months each year. For three years Steve has counted the number of people who visit the Island, on the last Sunday of each month.

	year 1	year 2	year 3
Apr	132	71	82
May	82	11	95
Jun	151	99	106
Jul	158	34	103
Aug	159	248	264
Sep	139	202	153
Total	821	665	803

6. Which month is constantly busiest?

Can you think why this particular Sunday is always busiest?

.....

7. Can you think of a reason why May in year 2 might have been so quiet?

8. What is the average number of visitors on the last Sunday in June over the three years?.....

9. Which two months had the same number of visitors?

.....

Now use the figures for year 3 and assume each month has 4 Sundays.

10. What was the approximate number of visitors on Sundays in year 3?

11. What was the average number of visitors per month?

.....

12. What was the average per Sunday?

.....

13. Why are these figures only a guide line?

.....

.....

14. Draw a bar graph to show how the numbers varied. Remember to add your labels. (Use another sheet of paper.)

WHERE ARE WE?

ANSWERS

OS MAP SYMBOLS

- Golf course
- Campsite/caravan site
- Information centre
- Picnic site
- Recreation/leisure/sports centre
- Nature reserve
- Parking
- Public phone
- Building of historic interest
- Museum
- Footpath
- Trunk or main road
- Quarry
- Non-coniferous trees
- Slopes
- Milepost
- Milestone
- Town Hall
- Footbridge
- Public house
- Post office
- School
- Bus or coach station
- Place of worship with spire, minaret or dome
- Place of worship with tower

ANIMAL GRID

- | | |
|------------|------|
| 1. deer | 4720 |
| bumble bee | 5120 |
| duckling | 5414 |
| duck | 4715 |
| weasel | 4613 |
| centipede | 4616 |
| barn owl | 5218 |
| frog | 5316 |

- 4814 rabbit
4521 ladybird
4918 fox
5116 goose
4718 squirrel
4820 butterfly
5220 spider

3. and 4. kangaroo is the odd one out because it is not likely to be found on the island!

GRID REFERENCES ON THE ISLAND

Part 1.

- 2916
- 3311
- 3215
- 3711
- 3711
- 3414

Part 2.

These five squares have a variety of things that can be seen, including the following:

2610 Main bridge onto the island

3711 The 'Friends' bench, the main St Ives town bridge and the Dolphin Hotel

2816 Rangers shed and surrounding area. The church is sometimes visible.

3214 Picnic bench

3415 A big ash tree

MAP THE ISLAND

See the CD-ROM for reference maps.



VISITOR BRAINTEASERS

- a) One half
- a 0.25
- c) bar graph
- a) Looking at the height of the bars
- b) He saw no Goldeneyes that day
- Bank holiday weekend or nice weather
- Weather
- 119
- May in year 1 and April in year 3
- 3,212
- 535
- 134

- Weather or special events on the Island could increase number.

14.



MATHS WALK

1.	Total	Cost per item	How much for all of them?
Benches	2	£350	£700
Round picnic tables	2	£435	£870
Litter bins	0	£200	£0
Interpretation boards	2	£1,200	£2,400

- We do not supply litter bins because rubbish blows out of them and is also pulled out by birds. Instead we ask you to take your rubbish home.
- Toilets? (Too expensive) Ice cream shop? (not suitable) Sun loungers? (Not suitable) Pond dipping (We hope to provide this soon)

4.	Tally	Cost per item	Total Cost?
Metal 'H' frames	221	£40.90	£9,038
Wooden beams (5 m)	232	£18.65	£4,326
Wooden planks (1.4 m)	2,626	£2.60	£8,480
Concrete (per bag)	444	£3.60	£1,598
Nails (per 25 kg tub)	4 tubs	£51.50	£206

- 500 m
- 5 m
- 1.4 m long
- 2,500
- 625
- £4 per m
- Safe access for all when ground is wet, muddy or flooded. Wheelchairs can be pushed round and baby buggies too.
- Deer droppings; fox droppings; bird droppings