



Natural Numeracy

A Key Stage 2 Field Studies Pack



Purpose

This Field Studies Pack has been designed to help a class of Key Stage 2 pupils use and enhance numeracy skills whilst learning more about the habitats and the locality of Ashdown Forest. Following the Broadstone Amble, a way marked route from the Ashdown Forest Centre Car Park, children can use the equipment included in the 'Natural Numeracy' box (available from the Ashdown Forest Centre), to complete simple activities and discover more about the unique local landscape. For more information about the route you'll be following please see the Broadstone Amble walk leaflet.

Pack Contents

There are 6 main activities to complete, based at each of the Broadstone Amble way markers. The route is approximately 3km long. The equipment for all activities (enough for approximately 30 pupils) is in separate, labelled, packs within the main 'Natural Numeracy' box. Maps, additional activities for time filling and various information leaflets are also included for your interest.

Curriculum Links

The activities in this Field Studies Pack cover various parts of the current National Curriculum Programme of Study (see overleaf) - but these links are not exhaustive. The activities have also been designed to embrace the Every Child Matters agenda and Key Aspects of Learning. Further support in learning about the local environment is available from the High Weald AONB Unit. See: www.highweald.org for more details.

Please ensure you have read the site risk assessment - available on www.ashdownforest.org



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Curriculum Links – continued

Activity	Curriculum Links	
Marvellous Minibeasts (Broadstone Amble – 1)	Numeracy: Ma3 1g, Ma4 1befh, 2c Literacy: En1 3abc, 10a	Geography: 1b, 2b, 3ag, 6a, 7ac PE: 11abc Science: Sc1 2ehij, Sc2 1c, 4ab, 5abc
Tree Hugging (Broadstone Amble – 2)	Numeracy: Ma 2 1k, Ma3 1c, Ma4 1bch	Geography: 1c, 3ag, 6a, 7ac PE: 11abc Science: Sc1 2abj, Sc2 1c, 5b
Natural Mapping (Broadstone Amble – 3)	Numeracy: Ma 3 1cg, 2d, 3a, Ma4 1bcf Literacy: En1 3abc, 10a	Geography: 1abcde, 3acg, 6a, 7ac PE: 11abc Science: Sc1 2bc
Sly Sheep (Broadstone Amble – 4)	Numeracy: Ma 2 1bdhk, Ma3 1cg, Ma4 1bcefh, 2a Literacy: En1 3abc, 10a	Geography: 2g, 6a, 7ac PE: 11abc Science: Sc1 2b
Compass Fun (Broadstone Amble – 5)	Numeracy: Ma 3 1cg, Ma3 3a, 4b, Ma4 1bc Literacy: En1 3abc, 10a	Geography: 1ab, 2b, 3a, 6a, 7ac PE: 11abc Science: Sc1 2befg
Scavenger Hunt (Broadstone Amble – 6)	Numeracy: Ma 2 1acd, 2i, Ma3 1abcdgh, 2ac, 4abe, Ma4 1ce	Geography: 2d, 6a, 7 PE: 11abc Science: Sc1 2befg

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The Weald Forest Ridge Landscape Partnership Scheme is involving people with the unique heritage in one of England's Finest Landscapes. www.highweald.org



Natural Numeracy

Background Information for Teachers



Ashdown Forest: Key facts

- In Norman times, Ashdown was established as a deer hunting forest.
- Ashdown has always been common land, allowing commoners the right to graze animals on the land.
- The word “forest” is derived from the Latin “foris”, meaning “outside” and in medieval England came to mean land outside common law and belonging to the Crown.
- Ashdown Forest looks different to its immediate surroundings because of its distinctive land-use over the last nine centuries. The Forest hasn’t been farmed but has been heavily exploited for grazing, military training, deer hunting and for its extensive wood, bracken, stone and iron resources.
- Ashdown Forest has national and international importance as it a SSSI (Site of Special Scientific Interest), an SPA (Special Protection Area) and is part of the European Natura 2000 Network as it hosts some of Europe’s most threatened species and habitats.
- The two main ecological habitats that make up Ashdown Forest are heathland and woodland, each of which provides a very different environment for animals to live in.
- Ashdown Forest is the largest area of lowland heath in the South-East, covering approximately 2,396 hectares (10 square miles).
- Ashdown Forest is at the heart of the High Weald Area of Outstanding Natural Beauty (AONB) – one of the England’s 60 Finest Landscapes.
- Nearly two thirds of its 6,500 acres (2,500 hectares) are heathland, amounting to 2.5% of the UK’s extent of this rare habitat.
- Despite its name, woodland makes up less than 40% of the total area of Ashdown Forest.





Natural Numeracy Field Studies Pack

Marvellous Minibeasts

Broadstone Amble - 1



Head out of the Education Barn towards the Ashdown Forest Centre Car Park. Go through the wooden gate from the Forest Centre site and turn left at the first way marker. Move a safe distance away from the car park, further down the woodland path, to complete this activity.



1

Equipment: Magnifying pots, plastic cutlery, minibeast identification guide, blank Venn diagrams.
Location: Broadstone Amble - first way marker
Time: 30 minutes

An activity that encourages minibeast identification and classification

Activity Description: Allow children to have a good rummage around the woodland floor - for example under leaves, logs, stones and inside bark crevices on trees - to see what minibeasts can be found. Use plastic cutlery to collect the creatures and the magnifying pots to examine them closely. Allow lots of time for finding and examining them. Help the children to use a simple minibeast identification guide to determine the names of the minibeasts found. They will need to look closely at its legs, wings and body. Can they think about how the minibeast is adapted to living in this habitat? In smaller groups, ask children to use the Venn diagrams provided to sort the minibeasts e.g. Has wings, Has 6 legs, Has wings and 6 legs. How else can the children classify their creatures? Can you get everyone's minibeast on the same Venn diagram? Can all parts of the Venn diagram be used? Ensure that minibeasts are safely released at the end of this activity.

High Weald Teaching Point: As you look for things in the woods, consider that almost a third of the High Weald is woodland and over 70% of this is classed as 'ancient' - having existed continuously since 1600AD. (Nationally, only about 19% of woodland is ancient). Ancient woods are important habitats for certain woodland plants that can only colonise very slowly. They also contain many archaeological features - for example the remains of iron workings. This is one of the characteristics that makes the High Weald a unique landscape.



Check out the Learning Zone at www.highweald.org



Natural Numeracy Field Studies Pack

Tree Hugging

Broadstone Amble - 2



From the first way marker continue downhill along the wooded path. After approximately 150m you will find the second way marker.



2

Equipment: Blindfolds

Location: Broadstone Amble - second way marker

Time: 30 minutes

An activity that uses senses and promotes trust between children!

Activity Description: Children are put into pairs. One child is blindfolded and the other child leads them to a nearby tree. To minimise trips, accidents etc, blindfolded children will need to take extra care when moving around the woodland and their partner must give clear instructions, hold their arm etc. Once they reach the chosen tree, the blindfolded child must feel it to gauge texture, patterns, and approximate size. They could also stretch up to see if they can reach any branches and finally hug the trunk to approximate its girth (circumference). Is it possible to work out what type of tree it is?

Once the child thinks they know their tree they are led back to the starting point via a different route, so they cannot memorise their way. The blindfold is then removed and the child attempts to find their tree. Discuss what makes them so sure? What clues are they using? Do they have logical reasoning? The child's partner can then reveal if they are correct. Swap roles and repeat.

Before you move on from point 2 you may wish to start collecting some natural materials e.g. twigs, leaves etc, that will help you complete activity 3.

High Weald Teaching Point: Medieval farmers brought their herds of pigs onto the High Weald to fatten them up for winter. The pigs would feast on acorns. Discuss where acorns come from and see if there are any oak trees in the woodland you are in.



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Natural Numeracy Field Studies Pack

Natural Mapping

Broadstone Amble - 3



From the second way marker turn right and follow the path as it emerges from the trees onto the open heath. Look for, and collect, natural materials e.g. leaves, twigs on the way to the third way marker.



3

Equipment: Natural materials, compasses

Location: Broadstone Amble - third way marker

Time: 30 minutes

An activity that uses natural materials to enhance map skills

Activity Description: Using natural materials collected from the surroundings, ask children to create a map, on the ground, of the route travelled so far. Working in small groups, encourage creativity as they create paths, buildings etc. The children should include as much detail as possible, which is a good way of seeing how observant the children have been on route! As they map their journey, ask the children to consider direction. Can they work out which way is North and create an arrow on their map to show this?

For extension work, children could be given copies of the Broadstone Amble map, so that they can see the rest of the route – can they translate this information into a pictorial map on the ground?

High Weald Teaching Point: This activity is taking place on heathland - the most characteristic habitat on the Forest. Nearly two thirds of its 6,500 acres (2,500 hectares) are heathland, amounting to 2.5% of the UK's extent of this rare habitat. On heathland you can find 5,000 types of invertebrate, 27 out of all 39 British dragonflies, more than 500 species of spider (all of which are carnivorous), all British amphibians and reptiles (including adders!) as well as endangered birds such as Nightjar, Woodlark and Dartford Warbler.



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Natural Numeracy Field Studies Pack

Sly Sheep

Broadstone Amble - 4



From the third way marker head all the way downhill . At the bottom, just before a stream, the path turns right at the fourth way marker.



4

Equipment: Plastic straws

Time: 30 minutes

Location: Broadstone Amble - fourth way marker. Take care, close to water's edge.

A problem solving activity

Activity Description: Put the children into small groups and explain the following: *The Ashdown Forest shepherd has four very sly sheep. He is keeping them in a row of four pens, before they are let out to graze on the Forest. The pens are made from 13 separate bars (see below). One night the sheep on one end of the row tried to escape and broke one of the bars. Thankfully the shepherd was watching and managed to capture the sheep before it escaped. Now the shepherd needs to pen his four sheep with only 12 bars. Can you help him? In their groups, and with only 12 straws, the children need to come up with a new arrangement. There must be 4 connected pens of the same size and all the straws must be used. As an extension, investigate the possibility of creating 4 pens with fewer straws.*

Original Formation



High Weald Teaching Point: Grazing livestock has been part of the Forest for hundreds of years. Sheep and cows play an important part in maintaining the heathland through controlling the growth of trees and bracken. If allowed to grow, the heathland would turn into woodland. Other plants, like Heath Spotted Orchids and Marsh Gentians also have a better chance of survival. In summer you may see tractors mowing large areas of bracken and, in winter, the cutting of small trees and scrub. This is all part of heathland management and restoration.



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Natural Numeracy Field Studies Pack

Compass Fun

Broadstone Amble - 5



From the fourth way marker continue along the woodland path across two streams. Follow the path as it climbs uphill through more heathland. Keep going until the path bears left to reach a bench and then bears right through the trees at way marker 5.



5

Equipment: Compasses (use from activity 3), digital cameras (optional)
Location: Broadstone Amble - fifth way marker.

Time: 30 minutes

An opportunity to practise compass use and observe the surrounding environment

Activity Description: Put the children into pairs and give each pair a compass. Ask them to find, and face, North. What can they see from here? Children could take photos, or simply discuss with each other what they can see. Once they have spent a few minutes facing North, they need to then work their way around the 8 points of the compass. As the children face a new direction see if they can tell each other what is different or the same as the previous direction faced. Discuss with the children what they would see during a different season, or what might be seen in 100 years? What about if this activity had been done 100 or 1,000 years ago? Make the point that a lot of the landscape would probably have been the same! The High Weald is essentially still a medieval landscape and much of it has remained unchanged for many years, something that makes this a very unique and special area.

High Weald Teaching Point: The High Weald is an Area of Outstanding Natural Beauty (AONB). Discuss with the children what they think is beautiful. Look around where you are walking or sitting – can they understand why the High Weald has been given this special title?



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Natural Numeracy Field Studies Pack

Scavenger Hunt

Broadstone Amble - 6



From the fifth way marker bear right through the trees. Ahead of you is Townsend's car park and the main road. Bear right to find the sixth way marker.



6

Equipment: Measuring tapes, weighing scales

Time: 30 minutes

Location: Broadstone Amble - sixth way marker. The children will start their scavenger hunt here, but can continue finding things along the main path until back at the start of the route.

Practical shape, space and measure

Activity Description: Explain that there is one more challenge left - to be completed by the time the children get back to the Ashdown Forest Centre. Either individually or in pairs the children must find or observe the items from the list below. The items can be found in any order. At the end of the activity encourage children to share their findings and sightings with each other. Children who find all/most of the items correctly are the winners.

1. Find something that has parallel lines
2. Find something that is 4.5cms long
3. Find something that has a perimeter of 10cms
4. Find something that has 2 lines of symmetry
5. Find something that weighs 100g

High Weald Teaching Point: From as far back as the Neolithic period (c.4300 - 1400BC), farmers from the surrounding areas would drive their pigs into the High Weald woods each year to fatten them on acorns. Farmers returned, with their pigs, to the same woodland place year after year. These woodland pig pastures were called dens and the paths used to reach them called droves. Many of these droves can still be seen today in the pattern of lanes, bridledways and footpaths radiating away from the High Weald.





Natural Numeracy

True or False? Additional Activity



True or False?

Read the following statements to the children. Ask them to vote on whether they think it is 'true' or 'false'. Reveal the answers. Were they correct? What surprises them?

Statements for teacher to read:

- "Some forests have no trees."
TRUE - e.g. deer forests in Scotland; Ashdown Forest in the last century.
- "On heathland you can find 1,000 types of invertebrate."
FALSE - you can find 5,000!
- "Cutting a tree down can keep it alive for centuries."
TRUE e.g. the coppicing technique encourages re-growth.
- "Ashdown Forest is home to a carnivorous plant called the sundew."
TRUE - In folklore, the sundew had a reputation for preserving long life.
- "1 species of deer can be found on the Forest."
FALSE - 4 species. Roe, Muntjac, Fallow (most common) and Sika Deer all live on the Forest.
- "Forests were originally used for hunting."
TRUE - forests were deer hunting grounds often owned by nobility.
- "Ashdown Forest is home to Winnie-the-Pooh."
TRUE - many of the places mentioned in A.A. Milne's books are on the Forest - including the Enchanted Place, Kanga and Roo's Sandy Pit and Eeyore's Gloomy Place. A.A. Milne (the author) lived in Hartfield, a village close to the Forest.
- "Ashdown Forest was very important for the production of iron in Roman and Tudor times."
TRUE - in fact, iron ore was extracted from the Forest since before Roman times where it was processed in bloomeries. In 1496, Britain's second blast furnace was built at Newbridge (on the Forest) which was a huge technological advance and allowed even greater production of iron.
- "Parts of the Ashdown Forest are used for farming."
FALSE - The Forest hasn't been farmed but has been heavily exploited for grazing, military training and for its extensive wood, bracken, stone and iron resources.
- "Spiders cannot survive in heathland."
FALSE - Heathland is the best habitat for spiders; more than 500 species can be found among heath, all of which are carnivorous!

Natural Numeracy

Heathland Hunting - Additional Activity

Which of these can you see?

Once you've found these, how about finding something:

- Delicate
- Rough
- Old
- You've never seen before



Bell Heather



Ling



Yellow Gorse



Scots Pine



Bracken