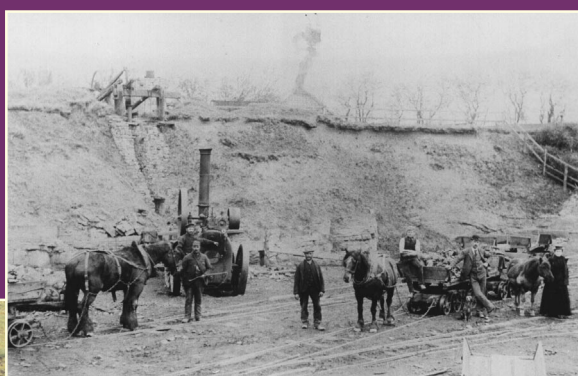




Northumberland
NATIONAL PARK

WALLTOWN

EDUCATION PACK



science • humanities
literacy, numeracy and I.C.T.

Inside: School Based Activities
On Route Activities
On Site Activities

Archive Photographs & Press Cuttings

Website: www.nnpa.org.uk/edwtown.html

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Introduction to Walltown Education Pack

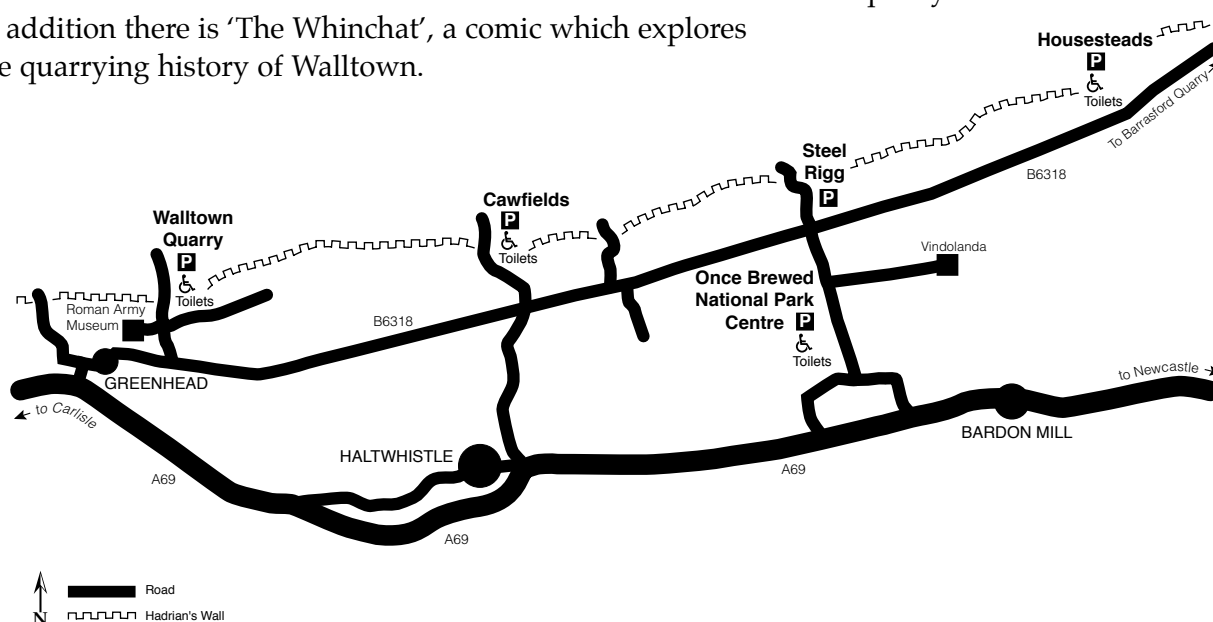
What is Walltown?

Walltown lies on the line of Hadrian's Wall in Northumberland National Park. It once was a quarry where the whinstone (that forms the immense crag along which Hadrian's Wall runs) was blasted to provide road surfaces and kerb stones for the expanding and improving road network of the early 20th Century.

The Quarry was owned by Northumberland Whinstone Company (now Tarmac Quarry Products Ltd.). It closed in 1976 and was sold to Northumberland County Council who then reclaimed it. They used the earth from the cutting of the A69 Greenhead bypass (a few miles away) to fill the 30m hole left by the quarry. The land was then shaped and planted with trees and flowers, and the ponds began to fill with wildlife. In 1995 Walltown was opened to the public as a place where people could walk, picnic, play, study and enjoy the wildlife and landscape of Hadrian's Wall World Heritage Site.

Northumberland National Park has cared for Walltown ever since. To help people enjoy their visit, the National Park has created a place where there are varied wildlife habitats, art work and a range of walks. The Pennine Way and Hadrian's Wall National Trail run through Walltown, but there are also the Clue Trail and Hard Rock Trail around the former quarry.

In addition there is 'The Whinchat', a comic which explores the quarrying history of Walltown.



Why should we come to Walltown?

A visit to Walltown can form an important part of any school's visit to Hadrian's Wall. This accompanying Education Pack allows an understanding of the landscape and wildlife of the area and will help to stimulate students' interest in the natural environment within which Hadrian's Wall was built.

Walltown can stand alone as a beautiful location for KS2 and KS3 studies of 'Life Processes and Living Things', 'Materials and their Properties' and 'Environmental Change/Issues'. Its position on Hadrian's Wall, close to several accommodation centres, allows you to expand the curriculum coverage of a visit which mainly focuses on the Romans. Furthermore it will give your pupils the chance to experience the Northumberland landscape at first hand, and to imagine what life could be like for the Picts and Roman soldiers living along the Wall.

How the Walltown Education Pack fits the National Curriculum

The Walltown Education Pack is mainly designed for middle schools visiting Walltown. Consequently aspects of the National Curriculum are covered for Key Stages 2 and 3. There is also ample scope for first, high, junior and senior schools to use the Pack.

The activities in this pack are divided into three sections:

- Science
- Humanities
- Literacy, Numeracy and I.C.T.

Within these divisions are activities to do at school, on site and even on your journey to Walltown.

All the activities are National Curriculum linked, as shown in the following pages. Aspects covered include parts of the National Curriculum for Science, Geography, History, Mathematics, Literacy, I.C.T. and Physical Education.

The Activity Sheets are designed for use by staff both in class and at Walltown. They contain enough information and instruction for each activity to be a success. There are suggested questions to ask pupils; these are preceded by a circular bullet point ●.

Student Work Sheets and a Planning Grid are also provided to help your visit run smoothly.

Additional Possibilities

For many decades Walltown provided the livelihoods for families in the neighbouring village of Greenhead and local town of Haltwhistle. These settlements could be studied under KS2 Geography Section 4: Contrasting Localities.

If you would like to make a comparison between Walltown and a working whinstone quarry, Tarmac Quarry Products Ltd. welcome school visits to the nearby Barrasford Quarry. Contact details are included in the *Useful Addresses* section of this Pack.



Information for Teachers

What is whinstone?

The ridge along which Hadrian's Wall runs is known as the Great Whin Sill. It was formed about 300 million years ago by molten rock from the Earth's core forcing its way between a layer of limestone and a layer of sandstone. This molten rock cooled and formed quartz dolerite, locally known as whinstone.

'Whin' means hard; whinstone is a very hard, durable rock. Millions of years after it had formed, glaciers covered the region, scouring the ground. The igneous Whin Sill stands proud in the landscape because the surrounding sedimentary rocks (limestone and sandstone, etc.) were more easily eroded by the glaciers. The ridge was then used by the Romans to make Hadrian's Wall into an even more formidable barrier, although because it was so hard the Romans did not quarry the whinstone for the Wall itself. This hardness and durability was the reason the rock was not quarried until modern times since it was so difficult to extract.

Why was whinstone needed?

In the second half of the 19th Century the industrial revolution increased production of goods. Their distribution was made easier by the invention of motorised vehicles. These demanded better road surfaces and in 1876 a series of quarries was opened along the Whin Sill to provide stone for road building. Walltown was one of these quarries. In the 20th Century the stone was still in demand to build runways for airports, particularly during the War years, and to build the new Motorway network which revolutionised communications within Britain. Stone from Walltown was used to build the M6 around Penrith.

What was it like to work in the quarry?

The hardness of the rock meant it was difficult to quarry. The rock was blasted apart and then cut to shape before being transported from the site. The larger lumps of whinstone were carved by hand into kerbstones and setts (rectangular cobbles). The smaller pieces were 'knocked up' then crushed by machine and used to harden road surfaces or made into paving slabs. The surfaced paths you will follow around Walltown are made from whinstone chips.

The quarryman would climb to the top of the crag and drill a line of holes 3cm wide and 2 metres deep through the whinstone. He would fill these with explosive and light the fuse. One blast would provide him with enough stone to work for 6 months. The rock was 'knocked up' to a rough of the required shape with a 13kg 'mell' hammer.

The work was very hard and extremely dangerous, but it was highly paid when compared to other local employment such as agriculture or forestry. The average daily output for each man was 20 tons. They were paid £14 for 100 tons in 1958, with the added bonus that workers did not have to buy their own explosives and tools. 'The Whinchat' comic enclosed with this pack is intended to give young people a clearer idea of the human story behind quarrying.

Information for Teachers

Wildlife habitats

The soil that was used to fill the 30m deep hole left behind by the quarry is 'boulder clay' taken from the A69 Greenhead bypass cutting. This soil is a dense clay with boulders of many different varieties collected by a glacier on its journey across the land. The boulder clay has almost no nutrients in it because it had been left behind when the glaciers melted 10,000 years ago, and had been buried ever since. This lack of nutrients has made it difficult for any plants to grow in the newly reclaimed Walltown quarry.

Clover, trefoil and alder are some of the species planted at Walltown. They make their own nutrients from nitrogen in the air and so can grow very well here. When they die back in the autumn their leaves decay into the soil, and so the nutrients are recycled for other plants to use.

By the time the site opened to the public in 1995, several fledgling habitats were beginning to establish - two ponds, a marsh, woodlands and grasslands. The ground conditions at Walltown are generally wet, which has allowed certain species to thrive there. The subsequent management by Northumberland National Park Rangers has improved the suitability and diversity of species, and it is interesting to contrast these with those found in the more established habitats on the edges of the quarry. In years to come Walltown's habitats will mature and evolve into those best adapted to the area's harsh conditions.

WALLTOWN - YOUR QUESTIONS ANSWERED

What facilities are at Walltown?

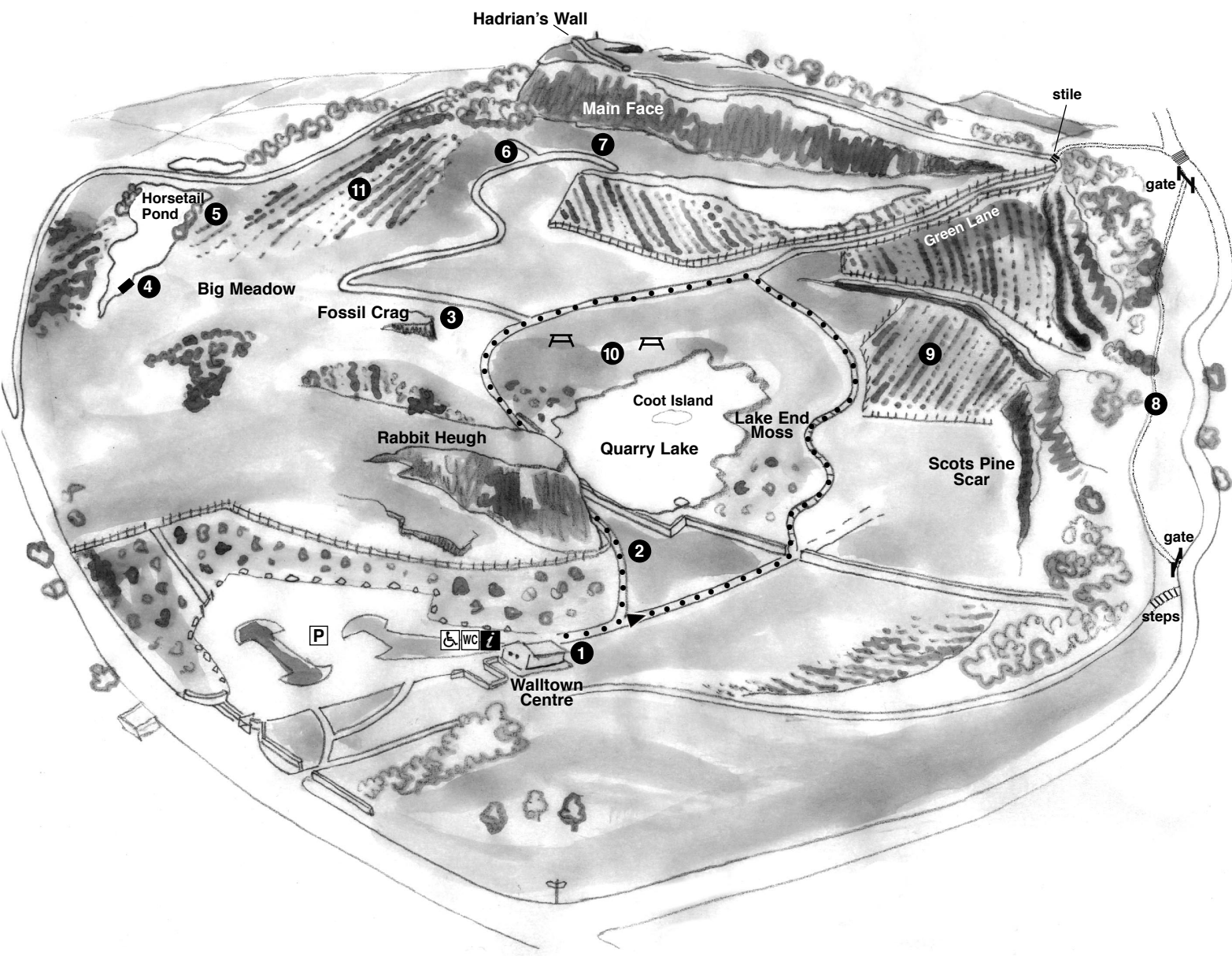
At Walltown Centre there is a sheltered picnic area, toilets and a small information point. Around the site there are surfaced paths which are suitable for assisted wheelchairs, with a maximum slope of 10% over 100m. Certain areas, such as the Horsetail Pond (*see map*), are only accessible via mown grass paths across damp meadows.

In addition to this Education Pack there are a number of other publications about Walltown: a Welcome to Walltown leaflet, a Clue Trail, a Hard Rock Trail, 'The Whinchat' comic and an Orienteering Trail. Copies of all these are provided in the Education Pack, except for the Orienteering Trail which may be obtained from the Northumberland National Park Education Officer at Hexham or the Once Brewed National Park Centre.

Is it safe?

Northumberland National Park's first priority is to make sure that Walltown is safe for visitors. The crag faces are dangerous and are therefore fenced off. Each winter the crags are subject to freeze-thaw erosion and every year experts assess the quarry and any dangerous rocks are removed. There are safety code notices displayed around Walltown. As long as this code is followed Walltown is as safe as any other similar site. You will find a copy of the safety code printed on the folder of this pack.

Walltown Site Map and Route of the Blindfold Walk



- 1 2 11** Activity Locations
 Route of the Blindfold Walk
 (see p.35)



Visit Guidance for Staff and Pupils

Below are a few guidelines to help ensure that both staff and pupils come properly prepared for a trip to the National Park. They will help you get the most out of your visit.

TEACHER'S CHECK LIST:

- Please bring the Walltown Safety Code to the attention of your pupils. A copy of the Code is printed on the folder.
- In addition to the special equipment required for each activity, pupils will need clipboards, pencils, blank paper and copies of the worksheets.
- Consider the staff/student ratio out in the field. For older students 1:10 is acceptable but with younger children or those involved in the Pond Dip a smaller ratio of students to staff is more advisable. Ensure there is both a male and a female member of staff with a mixed group of pupils.
- Ensure you have First Aiders amongst the staff.
Take at least one First Aid Kit, preferably more in case the group splits.
- As you are working near water remind pupils to bring spare clothing and as staff you may want to put in extra socks, etc. Remind pupils to wash hands as soon as possible after working with water and especially before eating.
- Refer to your LEA handbook on taking children out of school.
- Familiarise yourself with the Walltown Education Pack Activities.
- Phone the National Park to discuss your visit with the Education Officer, and
 - Discuss any queries you have about your visit;
 - Please inform us of any special medical conditions if necessary;
 - Check opening times of toilets, car park and Once Brewed National Park Centre;
 - Enquire about National Park publications for sale or loan.
- If possible make a personal advance site visit so that you know what to expect.
- There is a small teaching room available at Once Brewed Centre, 6 miles east of Walltown, which also has toilets and coach/ car parking facilities. The room must be booked in advance with the Centre staff, Tel 01434 344396. There are no indoor teaching facilities available at Walltown.
- Most pathways at Walltown are accessible by wheelchair users. Some paths are flat, others have a maximum 10% slope over 100m. Some areas are only accessible by mown grass paths over damp meadows.
- Make a photocopy of the Site Map and your Planning Grid (p.60) for every group.
- Copy the Pupils' Check List (or compile your own) and distribute a few days before the visit.



And please, after your visit...

- Complete and return our Evaluation Form (p.63). Thank you.

Pupils' Checklist

If a child's main memory of their visit to Northumberland National Park is that they get cold, hungry or wet they are less likely to be positive about the countryside in future. Please help us to enthuse children with the importance and delights of nature by following the guidelines below.

All children taking part in an educational visit to Northumberland National Park:

- will need a hearty breakfast on the morning of the visit.
- will need a packed lunch, spare food and a drink (hot in winter if possible).
- will need suitable footwear. This may be wellies, walking boots, trainers or stout shoes. Make sure the footwear has a good sole and gives you support around the ankle. Parts of Walltown can be very wet, so fashion shoes with smooth soles and without support or protection from wet conditions are not suitable!
- will need warm clothing that they can easily move in. In winter ensure children put on several layers as it may be very cold. If they have thermals ask them to wear them. Make sure they have at least a warm woollen jumper, hat, gloves, scarf and a windproof jacket. Jeans are cold and uncomfortable when wet.
- will be more comfortable in a waterproof jacket and trousers.
- will need a bag to carry a packed lunch, spare clothing, pencils, clipboard and paper; a rucksack able to be carried across both shoulders would be best.
- should bring sun-block, a hat and clothing to cover arms, legs and the back of the neck in hot spells. Walltown is exposed to all weathers.
- should be aware of the Walltown Safety Code.

The children will be working in environments which demand appropriate and careful behaviour from the group. We hope group members will avoid damaging the ecosystem they are trying to study, by not causing unnecessary disturbance to the wildlife. Please remember, we will have to mend anything you damage.

Please help us to look after the countryside. Thank you.



Science Curriculum Links

School Based Activities

Habitat Sampling	KS2 KS3	science 5a science-Experimental.. 1, 2, 3 science-Life.. 4, 5a
The Properties of Stone	KS2	science-Materials.. 1a,1d
Pack Your Bags	KS2	science 5a, 5b
Crystal Creation	KS3	science-Materials.. 2g, h
Whether Weathered?	KS3	science-Materials.. 2f

On Route Activities

I-Spy Stones	KS2	science-Materials.. 1a
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On Site Activities

What Habitats Are Here?	KS2 20 mins	science-Life.. 4a, 5a
Pond Dipping	KS2 45 mins	science 5a, 5b science-Life.. 4a, 5a, 5b
Habitat Survey	KS2 45 mins	science-Life.. 4a, 5a, 5b, 5e
Hard As Rock	KS2 45 mins	science-Materials.. 1d
Crystal Craggs	KS3 20 mins	science-Materials.. 2e, g, h
Woodland Wise	KS3 45 mins	science-Life.. 3d, 4a, b, c, 5a
Feeding Frenzies	KS3 30 mins	science-Life.. 5c,d

Science: School Based Activities

HABITAT SAMPLING

Special equipment: a safe grassland habitat close to school, quadrats, basic identification sheets tailored to your habitat or a simple book, clipboards, pencils and paper.

The first step in conservation is finding out what you have that needs conserving. Sampling is the most important way of finding this out, as it would be inefficient to survey every square centimetre of an area. One method of doing this is RANDOM SAMPLING.

First find your survey site. A playing field may not prove to be very rich in species, but this may be a benefit, as there's less for you to identify. Get the children to work out the approximate area of your habitat, and then work out the area of your quadrat.

- How many quadrats would it take to fill your area?
- How many quadrats would you need to sample 10% of the whole area? Decide what is a feasible number of quadrats to take in your time scale.

Random sampling is an easy technique, but should first be demonstrated to pupils. First check there is no-one standing behind you, then drop your quadrat over your shoulder. Record the plants inside the fallen square, in a method suitable to the pupils' ability, e.g. % cover of each species. After demonstrating, split the class into as many groups as there are quadrats and spread them randomly over your area. Make sure they take turns with the quadrats. Emphasise safety.

THE PROPERTIES OF STONE

Special equipment: teacher provides examples of (preferably locally mined) stones, e.g. coal, igneous and sedimentary rocks. Each pupil is asked to bring an interesting (non precious) stone into school. All stones should then be tested and compared. It may be helpful to create a table for your pupils to fill in as they make their observations.

- Can you make a mark on it? With your fingernail, a plastic pen top, another stone, an iron nail?
- Which was the hardest to scratch? Put the stones into order of hardness.
- Can you make a mark with the stone? On another stone, on paper?
- What happens when it gets wet? Can you make a mark on it or with it now?
- Is it all the same colour, or made up of different coloured parts?
- Is it shiny or dull? Does it have crystals with flat shiny faces?
- Can you think of uses these stones are particularly suited to?

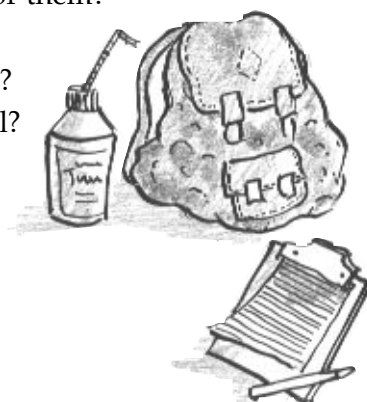
PACK YOUR BAGS

Special equipment: rucksack and items as listed by pupils (within reason).

A real life planning activity which may make the day of the visit go more smoothly.

Two days before the visit, ask the children what they think the teacher will need to take. Write the list up, highlighting which ones they will also need. Get them to copy their list and take it home along with a copy of the Pupils' Checklist. The day before the visit bring in the equipment listed by the children, including any surplus or unnecessary items they may have listed. Let them take turns in packing the rucksack and carrying it.

- Can they fit everything in? What would they leave behind if they had to?
- Is it too heavy? Too lumpy? Are the straps set in the right place for them?
- It's started raining! Are their waterproofs easy to get to?
- Will their yoghurt/juice leak? Did they remember a spoon/straw?
- Can they easily stow away and retrieve their clipboard and pencil?



CRYSTAL CREATION

Special equipment: copper (II) sulphate or Salol (phenyl salicylate/phenyl-2-hydroxybenzoate), hand lenses (or microscopes). Note: Check COSHH for safety information.

Either:

Make a saturated solution of copper (II) sulphate. Allow half to cool slowly and the remainder to cool quickly. Observe the difference in size of the crystals formed. Fast cooling gives small crystals, slow cooling gives large crystals.

- Why? Think about particles in liquids and solids.
- How will the rate of cooling affect the size of the crystals?

Or:

Gently melt some Salol in a water bath. Place one drop onto a chilled microscope slide and another onto a warm slide. Observe the formation of the crystals using a hand lens or microscope.

- Does the temperature of the slide have an effect on crystal size?
- How does the rate of cooling affect the size of the crystals?

WHETHER WEATHERED?

Special equipment: Bunsen burners, tongs, samples of sandstone/limestone (sedimentary rock), dolerite (whinstone)/basalt/granite (igneous), marble (metamorphic), sticks of chalk, hairdryer, hand lenses, plastic screw top bottles, balance, iron nails, safety glasses.

1. Wearing safety glasses:

- Heat samples of rock. Drop hot rock into cold water.
- Does the rock crumble?
- Repeated heating and cooling causes rock to expand and contract, making it crack.

2. Soak a stick of chalk in water, then freeze it over night. Thaw out with a hairdryer.

Compare with a dry stick of chalk and compare the two sticks with a hand lens:

- Can you see cracks/holes in the chalk?
- Are the holes bigger or smaller in the chalk that was soaked and frozen? (should be bigger)
- What happened to the water when it froze? (expanded)
- How did this affect the cracks in the chalk?
- What happens when water gets into the cracks in a rock and freezes?

For reinforcement: completely fill a screw top glass bottle, e.g. a medicine bottle, with water and replace the top. Place inside a sealed plastic bag, and put in the freezer. The bottle should crack, showing that the water expanded when it froze.

3. Find the mass of a piece of chalk:

Place inside a plastic, screw top bottle with some sharp stones, shake the bottle for one minute. Find the new mass of the chalk.

- What has happened to the chalk? (ground down/worn smooth/eroded)
- Calculate the percentage change in the mass.

Repeat the test with a piece of marble:

- Was there a difference between the percentage change for chalk and that for marble?
- Explain in terms of the hardness of these rocks.
- Are there any examples of this form of erosion in nature? (glaciation, in streams, sand)
- What type of rocks will be eroded most?

Science: On Route Activities

I-SPY STONES

In pairs or small groups play I-Spy.

You're restricted only to things that people have made out of stone. The children should get more inventive as the journey progresses; from walls and kerbstones to lintels and pathways.

- Who can be the first to see Hadrian's Wall?
- If you are coming along the A69 from Newcastle upon Tyne, or the A1, look out for sections along the road near the A1/A69 roundabout.

Science: On Site Activities

N.B. Refer to Site Map on p.7 for details of locations.

WHAT HABITATS ARE HERE?

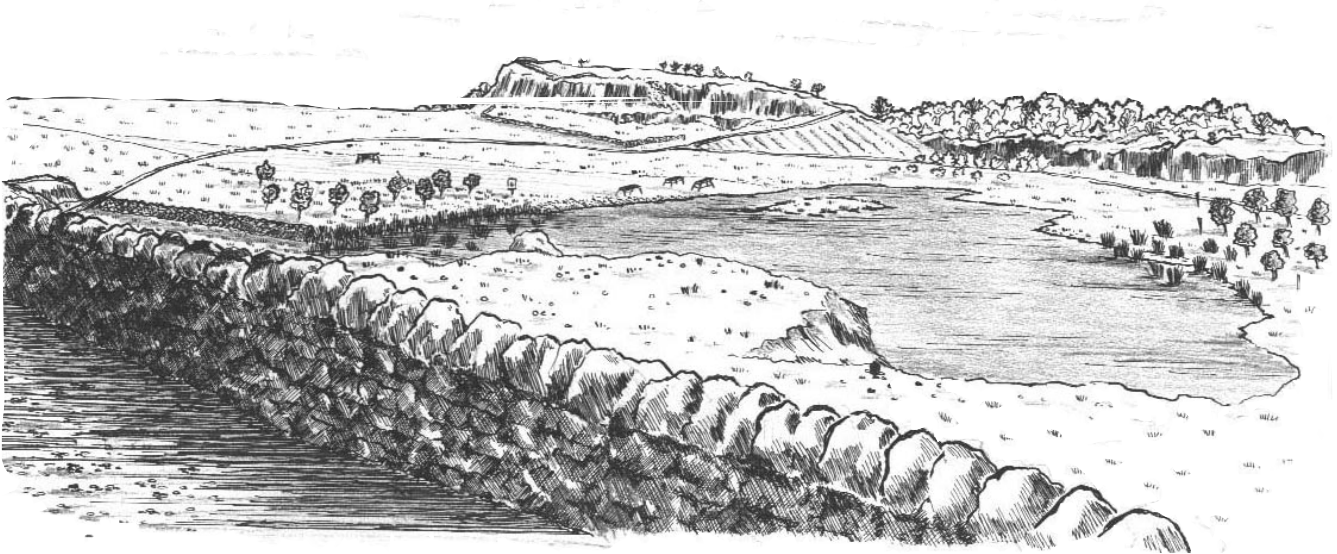
LOCATION 2

Time: 20 minutes

*Also suitable for
Humanities Studies*

Special equipment: worksheet (p.25)

The children will be aware that Walltown is a reclaimed former quarry. There are a mixture of natural and man-made features here. This worksheet activity will help them recognise these differences in the landscape. They can then translate their observations to a sketch of the view, and finally onto a map of the site. They should mark their own position on the map, putting themselves into the landscape.



science

on site activities

POND DIPPING

LOCATION 4

Time: 45 minutes

Special equipment: one tray, net and identification sheet (p.23) for every 4-5 children.



The edge of Horsetail Pond is slippery. The water and mud are more than a welly boot deep. Please do all dipping from the platform. Put 3cm of pond water in the bottom of each tray. Place the tray on a flat piece of ground where everyone can get round it. Take it in turns to dip the net in the pond. Take care not to knock anyone with the net handles. Turn the full net inside out over the tray and gently wash off the catch in the tray. Leave the water to settle and use the sheet to identify the animals you see. After 2 or 3 dips the tray may be too full of vegetation. Carefully empty it back into the pond and replace the 3cm of water before continuing.



- Is there a difference between the catch from a dip in the open water and that from a dip amongst the vegetation? If so, can you think why the animals prefer one place to the other?

Before moving on, empty your trays gently back into the pond and make sure there are no animals stuck to the plastic.



HABITAT SURVEY

LOCATION 5

Time: 45 minutes



Special equipment: worksheet (p.26), identification sheet (p.24).

The National Park Rangers are working to create and maintain certain habitats within Walltown. Habitats in the surrounding countryside have developed over the ten thousand years since the last ice age, but at Walltown the habitats have only been developing since the 1980s as the reclamation programme progressed. Consequently there is not a vast distinction between the different areas... yet! However the Rangers are managing the site to improve the diversity. The object of the Habitat Survey is to find the differences that they have made. Increasing the diversity of habitats increases the number of species of plants and animals that can live there. The soil here is very poor in nutrients. Plants that have done well, such as clover, trefoil and alder, have created their own by making nitrates out of atmospheric nitrogen. Other plants will catch up when there are more nutrients in the soil. In the area near the picnic tables there are four habitats developing:

Habitat Dominant Plants

at the water's edge:

willow trees, coltsfoot and horsetails

in the rough grassland:

broad bladed grass, narrow bladed grass, trefoil, clover

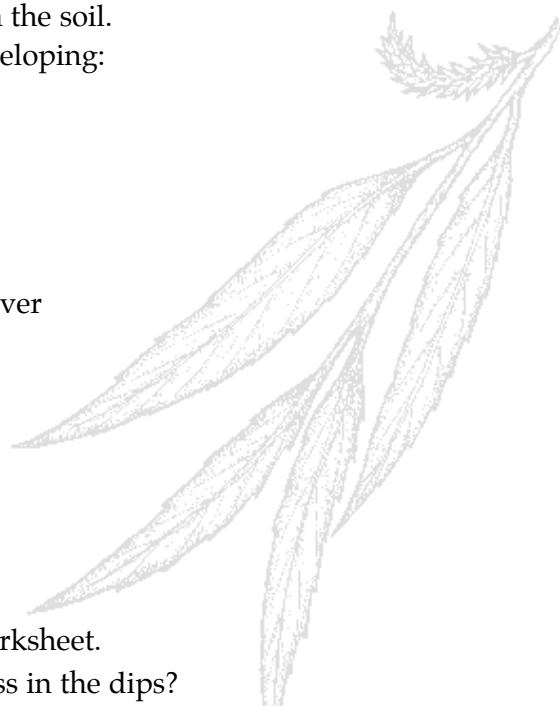
in the planted woodland:

alder trees doing well, other trees not thriving

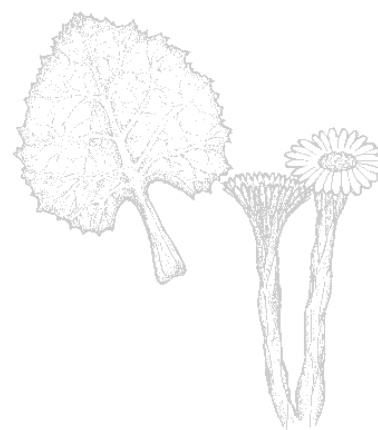
mosses in dips, grasses on rises

in the mown grass:

clover and broad bladed grass



- Can you identify the four areas?
- Using the identification sheet, fill in the boxes on the worksheet.
- Why are the willows doing well? Why is there more moss in the dips?
- Have you seen any animals living in these habitats? (mammals, birds or insects)
- Have you found any signs of animals living here? (rabbit or fox droppings, skeletons)
- Where will the soil nutrients come from in future? (decaying organic matter: leaves, droppings, carcasses, etc.)



HARD AS ROCK

LOCATION 3 then 11

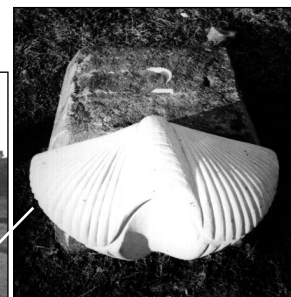
Time: 45 minutes

*Also suitable for
Humanities Studies*

Special equipment: pieces of rock, as described below, worksheet (p.27) and hand lenses.

Walk around Fossil Crag and study the stone carving. Do not climb on the crag as it may be slippery and have loose stones. The rusty brown stone is whinstone. The grey rocks sloping away from you on either side of the outcrop are a different type of stone: a mudstone.

The whinstone lies on top of this grey layer which contains fossils 1-2 cm across which are the same shape as the rock carving. These were shellfish which died in a shallow tropical sea 310 million years ago.



- Can you find the 2 different layers of rocks?
- Can you find any fossils in face of the grey mudstone?
- How did the fossils become trapped there? (They were buried in the mud when they died and became fossilised as the mud turned to stone).

Using a hand lens look closely at the surface of the rusty brown whinstone.

Compare it with the surface of the grey mudstone or of the carving (this is sandstone).

- Are there any similarities between the sandstone, mudstone and whinstone? Are there any differences?
- Can you find any fossils in the carving (use a hand lens)?
- Can you think of any uses these stones would be particularly suited for? (whinstone = road building, sandstone = carving, building, mudstone = useful for its minerals)
- Which would be the easiest to quarry?
- Fill in the worksheet for whinstone, the mudstone and the sandstone carving.

Please do not scratch the carving nor the fossils in the mudstone.

Follow the path going up the ridge towards the main crag, and drop down the far side into the trees towards Location 11. This soil underneath the trees is BOULDER CLAY brought in during the reclamation, it was left behind in the Tyne Valley when the glaciers melted. It contains stones from the Lake District and other areas. In the tree planting area, find two stones which appear different to the mudstone, sandstone and whinstone you have already investigated.

- Use the hand lens to explore these stones, compare them with the whinstone and sandstone.
- Are these stones made up of different coloured pieces?
- Are the particles the same shape as each other? Are they the same shape as in other stones?
- Fill in the work sheet for your two stones.

CRYSTAL CRAGS

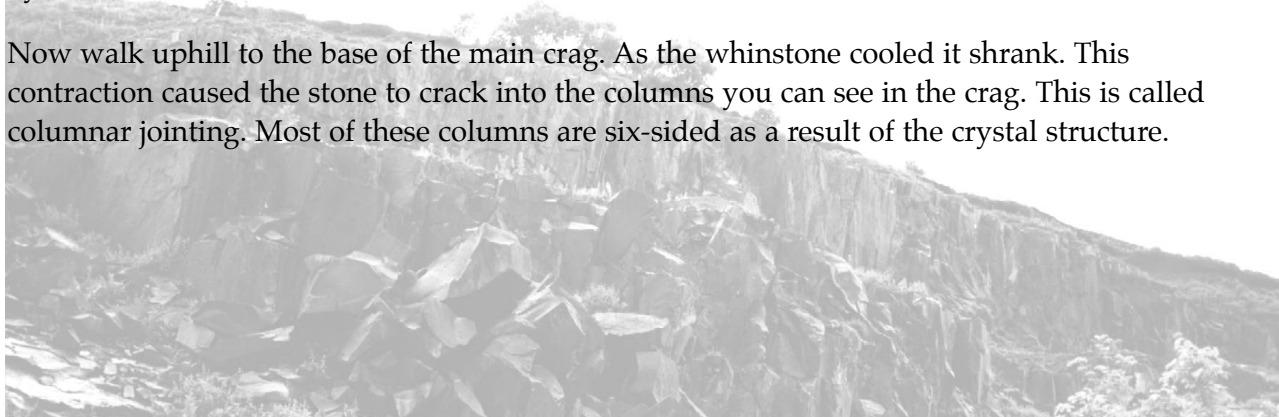
LOCATION 3 then 7

Time: 20 minutes

Special equipment: hand lenses

Use hand lenses to look at the dolerite (whinstone) of Fossil Crag. It was injected as molten rock along a crack between sedimentary layers of mudstone (sandstone) and limestone. Fossil Crag shows the bottom of the whinstone intrusion, lying on top of the mudstone. The join between the two rocks is at the base of Fossil Crag. Close to this join the molten whinstone cooled quickly, the crystals are microscopic. A few centimetres above this, and the crystals become visible to the naked eye. Here the rock cooled more slowly. The sandstone has been altered (metamorphosed) by the intense heat of the molten whinstone.

Now walk uphill to the base of the main crag. As the whinstone cooled it shrank. This contraction caused the stone to crack into the columns you can see in the crag. This is called columnar jointing. Most of these columns are six-sided as a result of the crystal structure.



WOODLAND WISE

LOCATION 8 then 9

Time: 45 minutes

Special equipment: quadrats (one per pair or small group), school's own plant ID books.

Random sampling is an easy technique, but should first be demonstrated to pupils. First check there is no-one standing behind you, then drop your quadrat over your shoulder. Record the plants inside the fallen square, in a method suitable to the pupils' ability, e.g. % coverage. After demonstrating split the class into as many groups as there are quadrats and spread them randomly over your chosen area. Make sure they take turns with the quadrats. Emphasise safety.

Follow the path round the back of the Centre to Location 8 in the established woodland. After the steps, spread the groups out along the footpath. Carry out random sampling of the ground flora beneath the established trees.

Follow the path through the gate in the fence, turn left over the cattle grid and then left again, along the wall. Climb over the stile back into the quarry.

Note the change from established habitats to the fledgling habitats of the reclaimed quarry.

Follow the path round to Location 9. Sample the tree planting area and compare your results with those of the established woodland.

- Are there any differences between: the number of species; the type of species and the percentage cover of each species growing in the two areas?
- What explanations can you give for any differences that you notice? (Nutrients in the soil: the soil in the quarry was sterile when imported, leguminous plants - trefoil, clover, alder).

FEEDING FRENZIES

LOCATION 10

Time: 30 minutes

Special equipment: name badges/stickers, string, scissors

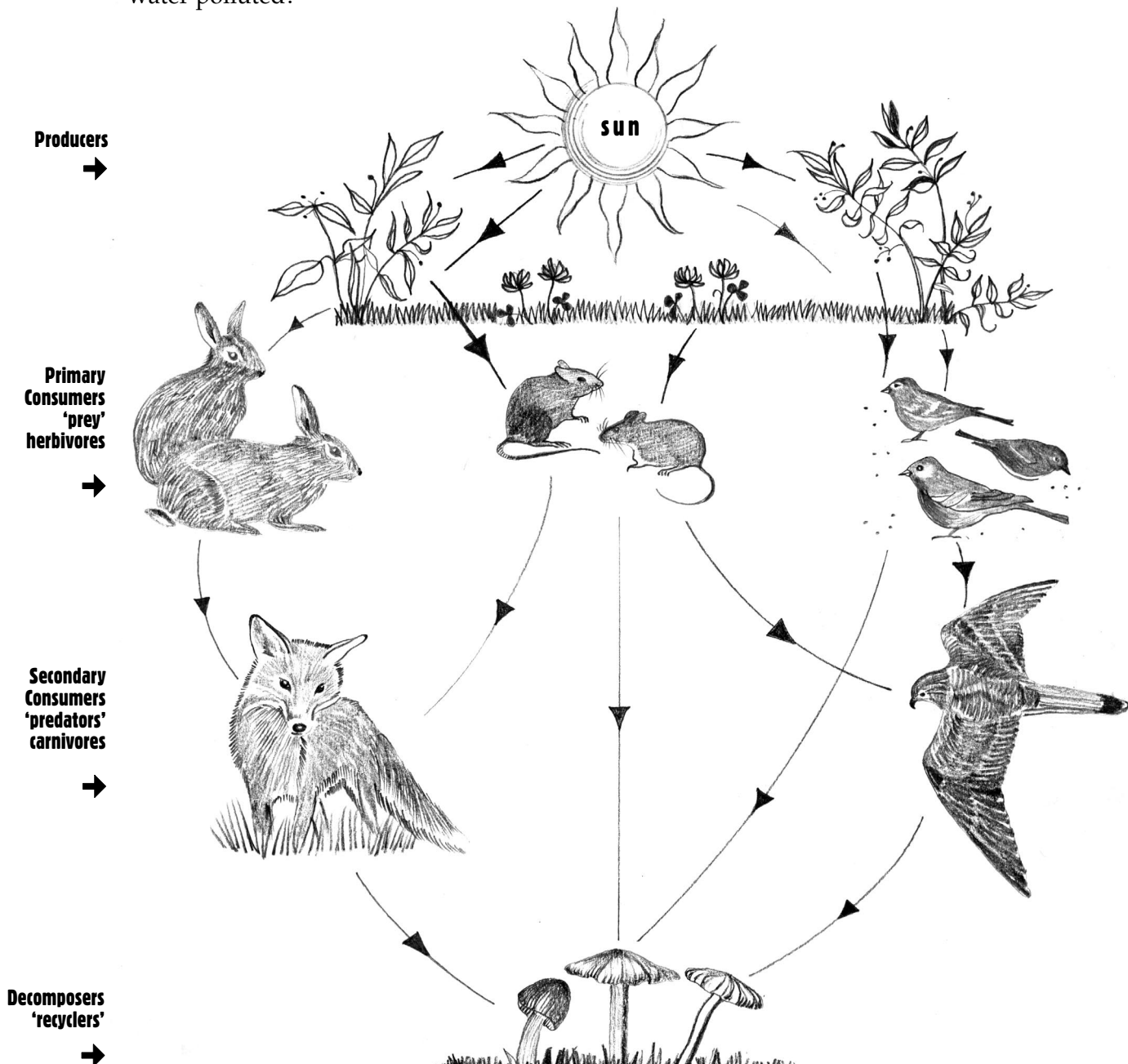
Think about the feeding relationships in the pond and the grassland, what eats what? Make up a food chain for the grassland, remembering to put in the sun, a producer, consumers and a decomposer. Write each element in your food chain on one sticker and stick it on to one person, i.e. one person is the sun, another is grass, etc. In your food chain identify the predators, prey, herbivores and carnivores. Link the food chain with a flow of energy between the elements (use string to symbolise the transfer of energy).

Use your food chain to create a pyramid of numbers, by increasing the number of producers.

Give each new producer a name sticker and link them into the chain with string.

Make up more food chains for both the pond and grassland areas. You will need only one sun.

- Can you link your food chains together to make a food web?
- What happens if the sun is taken out of the food chain, the grass is poisoned or the water polluted?



Science Identification Sheet

POND DIPPING



Ramshorn Snail



Water Beetle



Water Boatman



Leeches



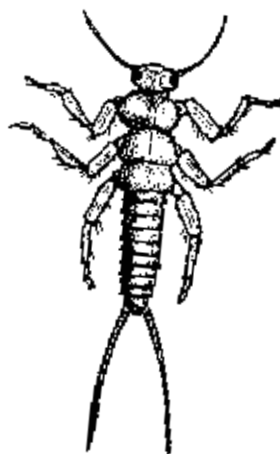
Swimming Nymph



Damselfly Nymph



Water Flea



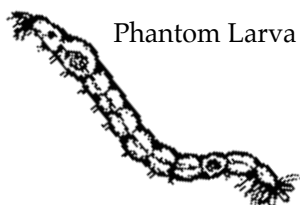
Stonefly Nymph



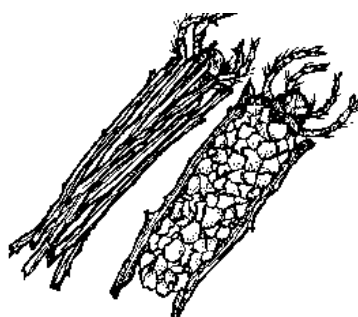
Midge Pupa



Midge Larva



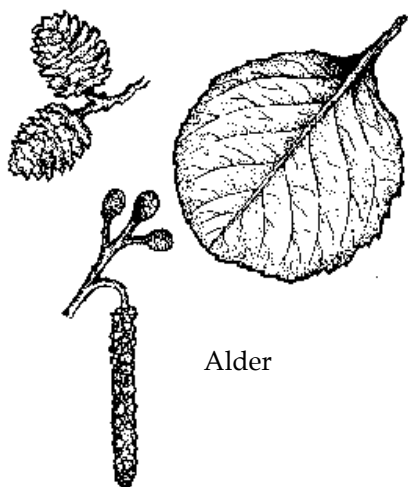
Phantom Larva



Cased Caddis

Science Identification Sheet

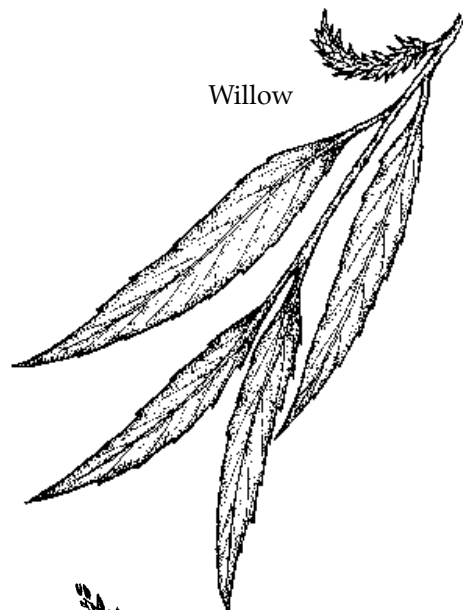
H A B I T A T S U R V E Y



Alder



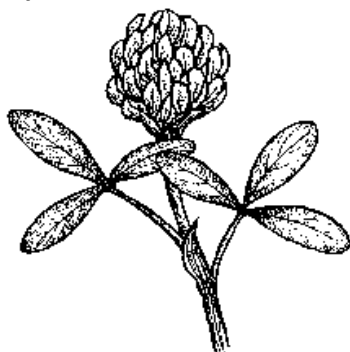
Trefoil



Willow



Red Clover



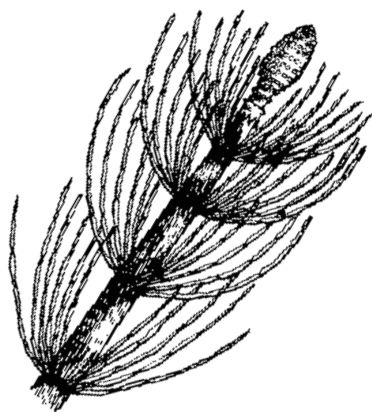
Mosses



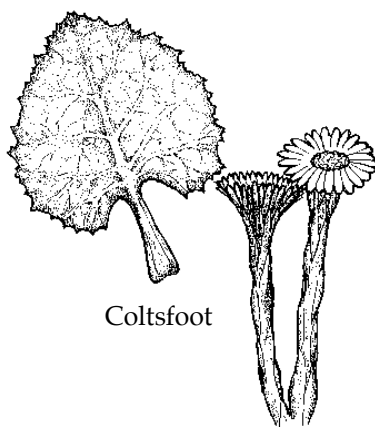
narrow bladed grass



broad bladed grass



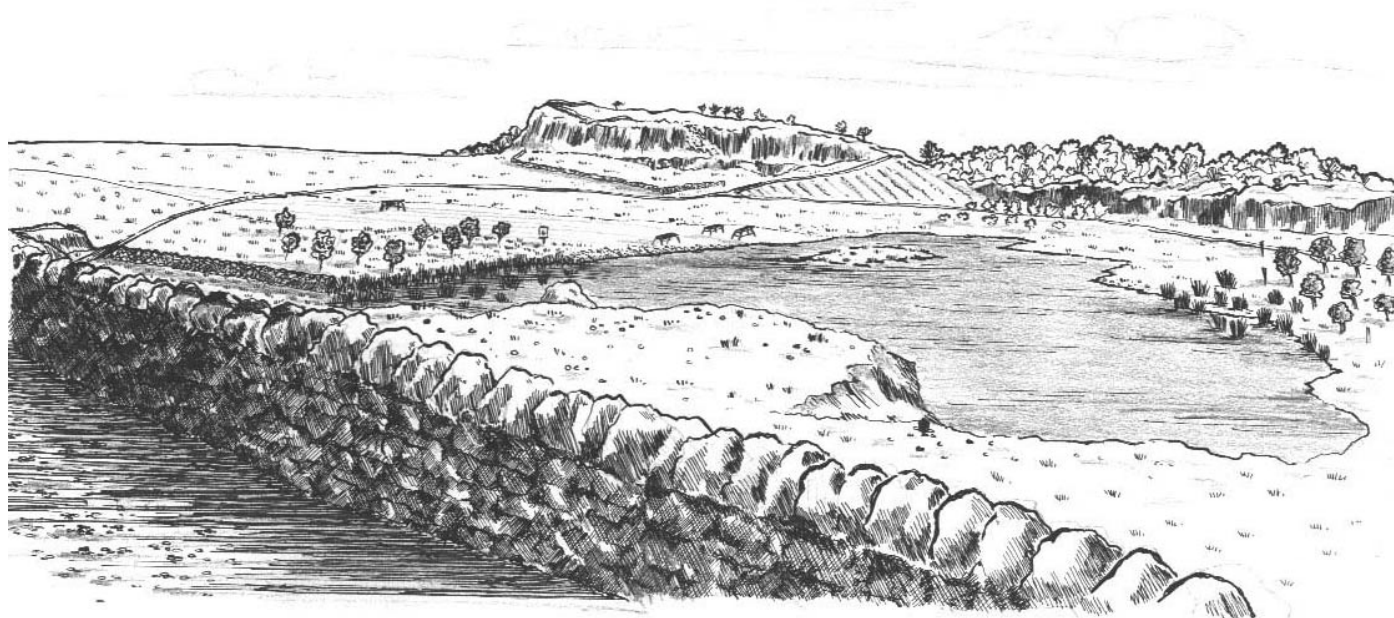
Horsetail



Coltsfoot

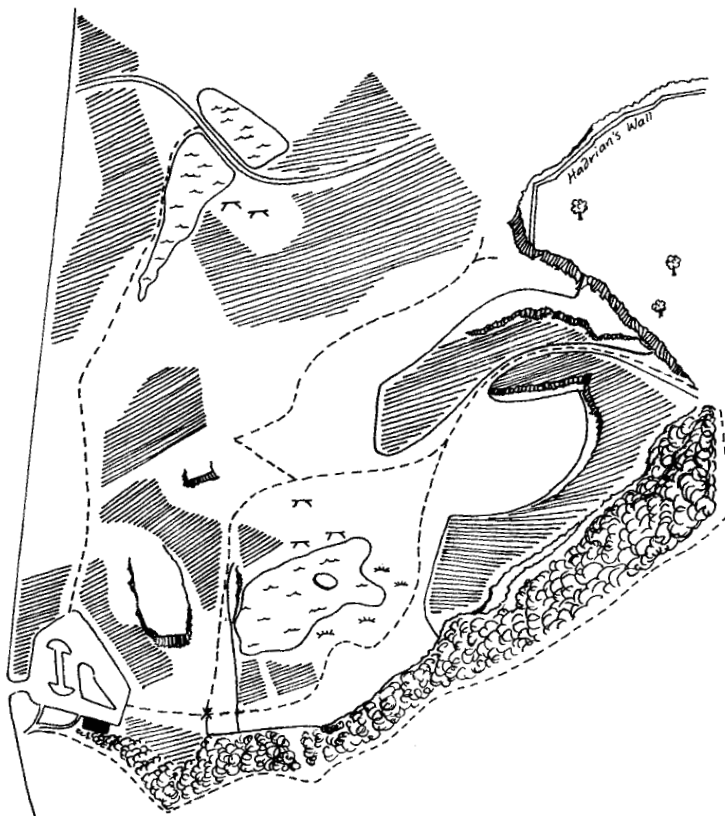
Science Work Sheet: What Habitats Are Here?

Name






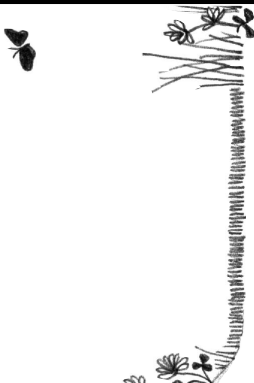
Mark the different habitats on the sketch above, and then onto the map below.
Finally, put **your** location on the map.

- | | |
|------------------------|------------------------|
| A Pond | F Tree Planting Areas |
| B Cut Grassland | G Established Woodland |
| C Wildflower Grassland | H Drystone Wall |
| D Marsh | I Grazing Land |
| E Main Whinstone Crag | |



Science Work Sheet: Habitat Survey

Name

	 WATER'S EDGE	 ROUGH GRASSLAND	 PLANTED WOODLAND	 MOWN GRASS
Most common and characteristic plants	<i>Most natural</i> ↑ ↑ ↑ ↑ ↑	<i>Least natural</i> ↑	<i>Most managed</i> ↑	
	<i>Least natural</i> ↑	<i>Most managed</i> ↑		
Description of ground				

Science Work Sheet: Hard As Rock

Name

	WHINSTONE	SANDSTONE	MUDSTONE	STONE 1	STONE 2
Colour (s)					
Texture (circle 1-5)	fine grain → large grain 1 2 3 4 5	fine grain → large grain 1 2 3 4 5	fine grain → large grain 1 2 3 4 5	fine grain → large grain 1 2 3 4 5	fine grain → large grain 1 2 3 4 5
Shiny or Dull? (circle 1-5)	shiny → dull 1 2 3 4 5	shiny → dull 1 2 3 4 5	shiny → dull 1 2 3 4 5	shiny → dull 1 2 3 4 5	shiny → dull 1 2 3 4 5
Hard or Soft? How easy to mark? (circle 1-5) Please don't scratch the carving. Please don't scratch the fossils.	hard → soft 1 2 3 4 5	hard → soft 1 2 3 4 5	hard → soft 1 2 3 4 5	hard → soft 1 2 3 4 5	hard → soft 1 2 3 4 5
Other observations					
Type of Stone	whinstone	sandstone (carving)	mudstone		

Humanities Curriculum Links

School Based Activities

The Three R's Part 1 KS2 History SU1 Part 2aiii, SU 3b parts a, b, d

*See Literacy, Numeracy
and I.C.T. Section
(p.55)*

On Route Activities

Sense of Place KS2 History SU1 part 2aiii, biii, ciii

On Site Activities

Hard As Rock KS2
45 mins Geography 10a

*See Science Section
(p.19)*

What Habitats Are Here? KS2
20 mins Geography 3c, 3d

*See Science Section
(p.17)*

Time Line KS2
20 mins Geography 10a, 10b

Wider Than Walltown KS2
45 mins Geography 1a-d, 3a, 3e, 9a, 10a, 10b

What Can We Do? KS2
45 mins Physical Education 5b
Geography 10b

Where Was The Rock? KS2
10 mins Geography 10a

Hard Rock-Hard Work-
Hard Life KS2
10 mins History SU3b, part d

Role Play KS2
45 mins Geography 1b, 1d, 9c, 10a, 10b
History SU1, part 2 aiii
Physical Education 5

Humanities: School Based Activities

THE THREE R's (PART 1)
*See Literacy, Numeracy
and I.C.T. Section
(p.55)*

Humanities: On Route Activities

SENSE OF PLACE

In different areas of the UK certain place names are common, often because of the landscape type or the language of the area's earlier settlers.

- As you travel in Northumberland can you see these names? Do the places fit their meanings?
- Can you think of meanings for other place names you see?

Shiel(d)s = summer huts

Byre = cow shed

Law = hill

Heugh = riverside, low-lying land

Rigg = plough lines

Head = top end of a valley

Moss = marshy land

Burn = stream

More examples from around the country can be found in the Oxford Dictionary of Place Names.

Humanities: On Site Activities

N.B. Refer to Site Map on p.7 for details of locations.

WHAT HABITATS ARE HERE?
See Science Section p.17

HARD AS ROCK
See Science Section p.19

TIME LINE

LOCATION 6

Time: 20 minutes

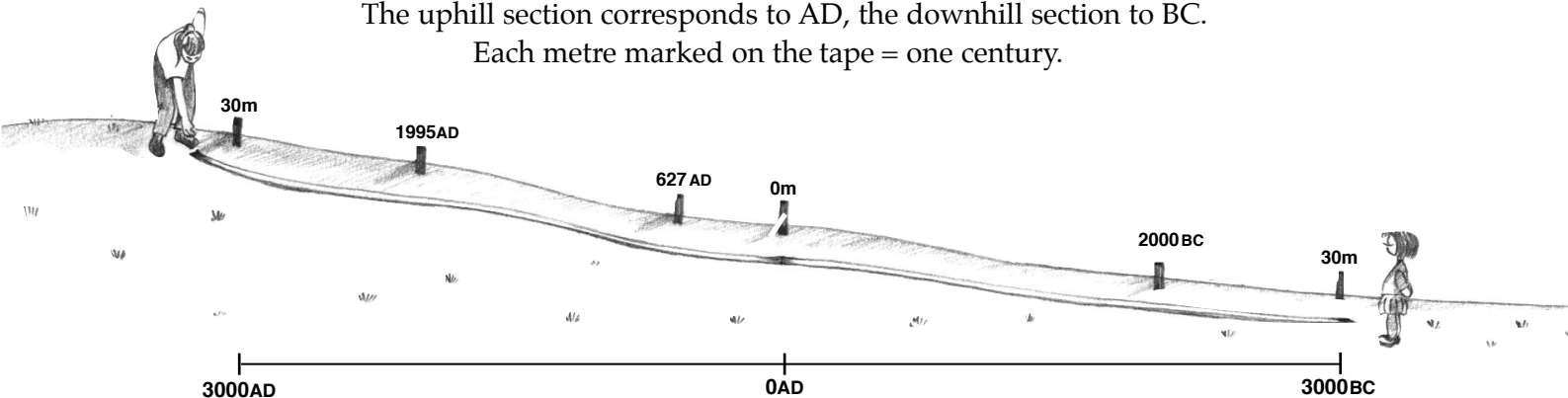
TIME LINE
Also suitable as a
Numeracy Activity

Special equipment: two 30m tapes

Along the path lay out the two tape measures in one line with their zero ends next to each other. You should have a progression from 30m to 0m, then back to 30m as you move downhill.

The uphill section corresponds to AD, the downhill section to BC.

Each metre marked on the tape = one century.



Get one pupil to stand at 'this year' on the AD tape and then progress downhill, backwards in time. Other pupils can mark the following dates listed below:

Walltown open to public.....	1995	Stone robbed from Hadrian's Wall to build Thirlwall Castle....	about 1306
Reclamation started.....	1981	Monks carrying St Cuthbert's body reputedly stayed in nearby cave.....	about 800 AD
Roman Army Museum (at Carvoran) opened.....	1981	Paulinus reputedly baptised King Egbert at King Arthur's Well at Walltown.....	627 AD
A69 Greenhead bypass built...	1981	Hadrian's Wall abandoned by Romans.....	about 400 AD
Quarry closed.....	1976	Hadrian's Wall completed.....	130AD
Northumberland National Park designated.....	1956	Romans first came to Britain...	55BC
Commercial forestry blocks planted.....	1960s	Native woodlands mostly cut down, cultivation beginning....	2000 BC
World War II ended.....	1945	Whin sill exposed when surrounding rock eroded by glaciations.....	8000 BC
Quarry opened.....	1876	Whinstone forms	295 million BC
Newcastle to Carlisle railway opened.....	1839		
Military road built.....	1751		
Border Reivers.....	about 1500		

The last two markers ought to be busy running into the far distance! On this scale the last ice age occurred 800 metres away (that's on the crest of the hill on the other side of the road) and the Whin Sill was formed 295,000 kilometres away (that's nearly 7½ times around the world).

- Discuss how these events are related to this landscape: its remoteness, the Tyne Gap, and the area's strategic advantages.
- Are any of these events linked, e.g. the boulder clay dug out for the Greenhead bypass and used in the reclamation of Walltown Quarry?

WIDER THAN WALLTOWN

LOCATION 6

Time: 45 minutes

Special equipment: plain paper, pencil and clipboard, reclamation photographs (pp.41, 43 & 45)
From this vantage point look out over the surrounding countryside to the north
(Hadrian's Wall on your right).

- Can you find the following land uses:
Isolated Farmsteads - Farm buildings surrounded only by fields.
Outbye - brown, purple or green. Heather and bracken, rough hill grazing.
Inbye - green grass. Fertilised fields used for good grazing close to the farms.
Forestry - dark green. Mainly the same species, planted in blocks as a crop.
Marsh - yellow or brown. Low-lying land, too wet to keep many animals on.
- Estimate (%) or fractions) how much of the landscape is used in each way.
- Sketch the view in front of you using shading and labels to explain your diagram.



Share copies of the reclamation photographs between the group.
Turn to face the car park and compare the scene in front of you with the photographs.
Swap the photographs amongst the group so that everybody sees them all.

Constant features: skyline, military road, tree in field straight ahead,
3 trees in line along drive to Roman Army Museum

Changing features: Rabbit Heugh, Fossil Crag, land shape within the quarry

The Vallum of Hadrian's Wall extends as a ditch, over the hill in the fields across the road, to the right of Rabbit Heugh. This gives a clue to the original extent of the whinstone crag before quarrying began.

- What features have remained the same?
- What features have changed?
- Can you put the reclamation photographs (pp.41, 43 & 45) in order from the oldest to the most recent?
(ANSWER: D, F, A, C, B, E)
- What shape do you think the land was before the quarry was dug?

WHAT CAN WE DO?

LOCATION 1

Time: 45 minutes

Special equipment: Blindfolds

Go to the covered area near the toilets and look at the map on the wall and at the leaflet display. Please do not take all our leaflets, copies of them were supplied with the Education Pack.

You may photocopy them for Educational use.

Find out what visitors to Walltown can do.

- Do you already do any of these near your home?
- Which of these would you enjoy?
- Which wouldn't you enjoy?
- What else would you like to be able to do here?
- What features do you think would help visitors enjoy the site?
- Which would make it harder for them?
- Imagine you have a disability, this does not necessarily mean you are in a wheelchair. Would this disability change your answers to the earlier questions?

Group the children into twos and give each pair a blindfold.

They are going to experience Walltown as a blind person.

One child will be blindfolded and the other will be their guide.

After the activity has been completed once, the children will swap roles. If a child is frightened by putting on the blindfold, do not force them, they will gain an insight from being the guide.

The route the guide will lead the 'blind' partner along is shown on the Site Map (p.7). It follows the path through the five bar gate, along the paving slabs over the marsh, around the pond on the surfaced paths, up the slope to Fossil Crag, then back to the car park between the two drystone walls. If time is short you may want the partners to swap roles half way round. Safety must be emphasised to the guiding partner. At no point should they let go of the 'blind' person. Get the children to talk about their impressions and anything they found more noticeable because of the blindfold.



WHERE WAS THE ROCK?

LOCATION 2

Time: 10 minutes

Special equipment: none

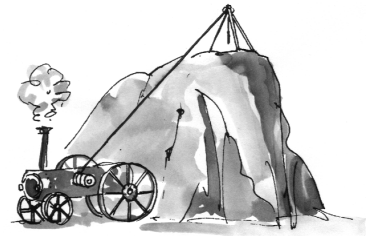
Look towards the large crag with Hadrian's Wall running along it. The crag is WHINSTONE. The top surface of the whinstone once met with the top surface of Rabbit Heugh, the crag behind you. The entire area which is now covered by the pond and the planted trees in front of you was a continuation of that whinstone crag. Where the pond is now, the quarry eventually reached a depth approximately 30m below the present ground level. This immense volume of rock was removed by men and women (who drove the vehicles) from the local villages, Greenhead and Haltwhistle. It took them over 100 years.

- Whinstone is similar to solidified lava. How do you think it got here?
- Do you think it is younger or older than the rocks which form the rest of this landscape?

HARD ROCK-HARD WORK-HARD LIFE?

LOCATION 6

Time: 10 minutes



Special equipment: photographs of workers (*pp.47,49 & 51*)

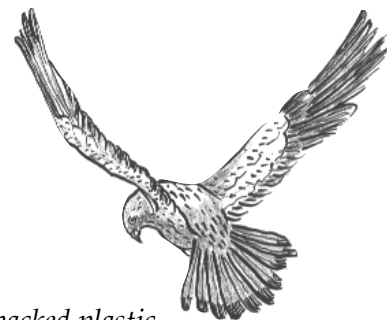
From the tree planting area, walk up the hill to Location 6. Up above you the crag face is covered with loose angular pieces of whinstone. This is where a quarryman has left the rock from a blast. In 1944 the expansion of the quarry along the Whin Sill was halted to protect the remainder of Hadrian's Wall.

At this time the majority of the work was done by hand. To loosen the stone, the quarryman would have stood at the top of the crag and drilled a series of holes, 2m deep along the edge of the face. The holes would have been filled with explosive powder and primed with a fuse. Before the fuse was lit, the quarry manager would have blown a long note on the horn.

The stone that was blown away from the crag is called a shake. After the explosions the quarryman would select the larger stones to make into setts (or road cobbles) and then break up the remaining stone into smaller pieces. He would do this by smashing the rock with a hammer. The handle of the hammer was 1m long and the hammer head was the size of a house brick. You would have to be strong to lift it, and stronger still to swing it for 8½ hours each day. The small pieces of stone would then be crushed and turned into slabs which were also used for road building. Look at the photos which show what working in the quarry was like in the 1940s.

- Can you imagine your parents and grandparents working in a quarry like this?
- In 1899 boys began working here at the age of 12. Would you enjoy working in a quarry?
- Do you think quarrying today has changed from the photos?
- Do you think a quarry would employ as many people today?





Special equipment: character cards (pp.38 & 39)

Photocopy the character cards (see overleaf) onto card, cut out and cover with sticky-backed plastic. The cards can then be used either in class or at Walltown.

Imagine that Walltown Quarry has just shut down and is up for sale. A leisure development company wants to buy it and turn it into a dry ski complex with a cafe and bar. They will only buy it if they can get planning permission from the local planning authority, in this case Northumberland National Park. The matter is so controversial that the Secretary of State for the Environment has to make the decision. To help find out everyone's views a public inquiry is being held. You are all attending.

Split up into 10 groups. Each group takes a character card (*see overleaf*).

Use the information on the card and your own knowledge to argue your case.

Elect one person to be the advisor to the Secretary of State. They will chair the meeting.

This role could be taken by your teacher. Let us know your decision. Good luck!

This activity can be used as the inspiration for a wide range of Literacy work.



Photocopy these character cards onto card, cut out and cover with sticky-backed plastic. The cards can then be used either in class or at Walltown.

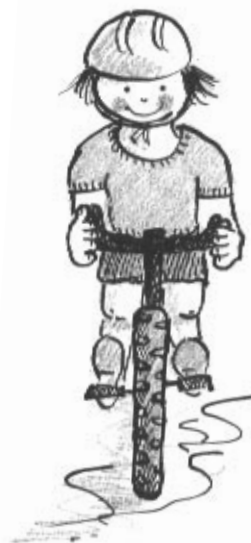
WALKER

The site lies on the Pennine Way and the new Hadrian's Wall National Trail. You walk these paths to enjoy the tranquillity and glorious landscapes. This would be intruded upon if you had to walk along the edge of a noisy, inappropriate ski slope.



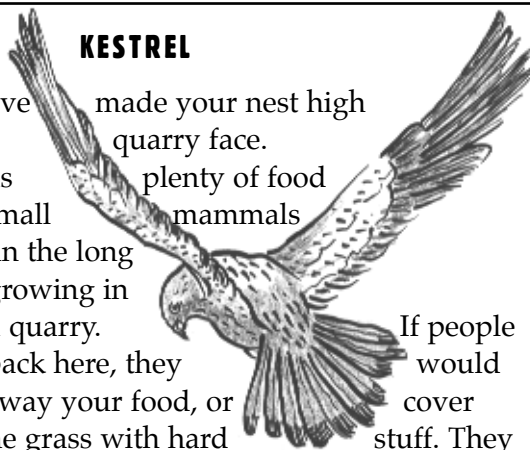
CYCLIST

You were hoping that the old quarry was going to be developed into a mountain bike circuit. All those rocky outcrops! You're not welcomed in many places, because of your speed and the erosion you cause. This place would be ideal.



KESTREL

You have made your nest high on the quarry face. There is plenty of food here, small mammals living in the long grass growing in the old quarry. If people came back here, they would scare away your food, or cover over the grass with hard stuff. They may climb to your nest and steal your eggs. You wouldn't want to live there anymore.



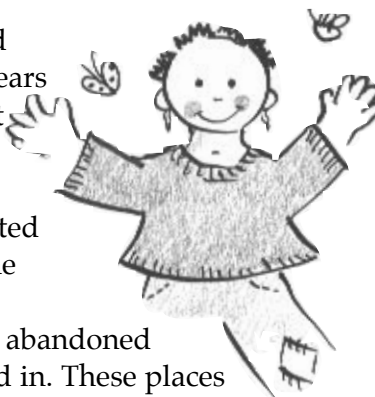
FARMER

The Wall area's busy enough with tourists and school parties, already. The traffic's terrible and the language you sometimes get if cars get stuck behind your tractor is atrocious. This ski resort would cause more people to come here, disturbing your livestock. The night time floodlights would shine on your farm, ruining your sleep. You have to be up early.



CONSERVATIONIST

It has been proved over millions of years that Nature is best at reclamation. In other areas, before people started tampering with the scheme of things, quarries were just abandoned and Nature moved in. These places aren't safe for people, but if they were, would they be as safe for Nature?



PARENT

You're here on holiday. You want a safe place for you and your children to enjoy the countryside and to walk your dog where there's no sheep. The paths must be easy because of the pram, and your toddler doesn't walk too quickly so the route has to be fairly short. You want a varied and interesting walk; a break from Romans which your 10 year old is learning about at school.



HISTORIAN

It's a tragedy that this World Heritage Site is so defaced. A huge section of Hadrian's Wall has disappeared, its stones used to build local houses. Even the very bedrock has been quarried away. People have little respect for time. Look how the tourists have eroded the site, and now they're encouraging more. Hadrian's Wall has been here nearly 2000 years, will it last 2000 more?



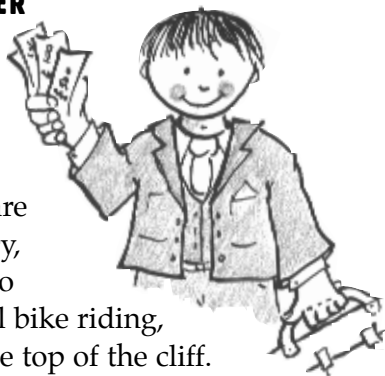
NATIONAL PARK RANGER

You have to balance the views of everyone, and do the best you can for the National Park. This place is unique and beautiful: people want to visit. People also live here, some need jobs, some live off the land. You also have to consider the needs of wildlife, and the landscape. The National Park deserves protection, and you have to look after it.



LEISURE DEVELOPER

This place is ideal! The slopes won't stick out over the horizon, yet. The outdoor pursuits are a booming industry, we can expand into rock climbing, trail bike riding, even gliding off the top of the cliff. We'll create jobs, some for locals, and the more tourists we attract the more money they'll spend at the other local attractions.



EX-QUARRYMAN

You used to work the stone crushers in the quarry. Your father, brothers and sons worked there too. You need a job, but there's not much on offer away from the towns. Your whole family has lived here for generations. You like the idea of this ski slope. Sounds like there'll be lots of work there. They could do with an experienced worker like you.





Reclamation Photograph A
Reproduced by kind permission © Mr. S. White.



Reclamation Photograph B
Reproduced by kind permission © Mr. S. White.



Reclamation Photograph C
Reproduced by kind permission © Mr. S. White.



Reclamation Photograph D
Reproduced by kind permission © W.E. Lattimer.



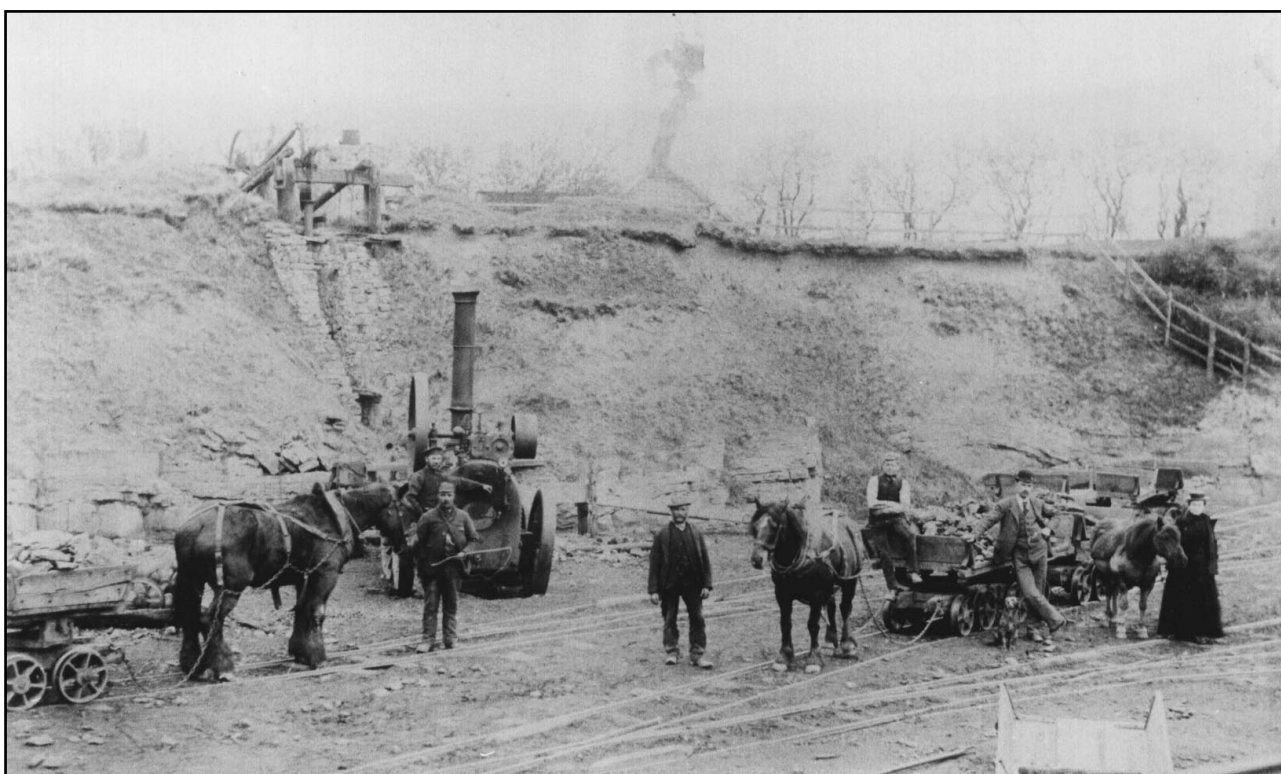
Reclamation Photograph E
Reproduced by kind permission © Mr. S. White.



Reclamation Photograph F
Reproduced by kind permission © Mr. S. White.



Quarry workers with tub, sets, kerb stones and whin chips.
© Northumberland Record Office. Copyright reserved.



Moving the tubs of whin chips through the quarry.
© Northumberland Record Office. Copyright reserved.



The towering quarry face.
Reproduced by kind permission © Mrs. S. Watson.



'Resting', knocking up and drilling.
Reproduced by kind permission © Mrs. S. Watson.



Men and machine.
Reproduced by kind permission © Mrs. S. Watson.

Literacy, Numeracy and I.C.T. Curriculum Links

School Based Activities

The Three R's (Part 1)	KS2	Lit Y3 Term 3: T12, T16, T20, T21, T23 Lit Y4 Term 3: T16, T17, T18, T21, T23, T24
The Three R's (Part 2)	KS2	Lit Y3 Term 2: T17 Lit Y3 Term 3: T12, T21 Lit Y4 Term 1: T11, T12, T19, T20, T21, T24, T27
The Three R's (Part 3)	KS2	Mathematics-Number 3a, 4a
What Do We Do?	KS2	Mathematics-Handling data 2b, 2c Lit Y3 Term 1: T22
Walltown Website		www.nnpa.org.uk/edwtown.html

On Route Activities

Sense of Place	KS2	English-Speaking 3a, 3b
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*See Humanities
Section p.31*

On Site Activities

Time Line	KS2 20 mins	Mathematics-Using 1c Mathematics-Number 2b
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*See Humanities
Section p.33*

Role Play	KS2 45 mins	Lit Y3 Term 2: T8 Lit Y3 Term 3: T1, T5, T20 Lit Y4 Term 1: T1, T2, T11 Lit Y4 Term 2: T2, T4 Lit Y4 Term 3: T1, T8, T11, T16, T17, T18
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*See Humanities
Section p.37*

Literacy, Numeracy and I.C.T: School-Based Activities

THE THREE R'S

*Part 1 is also suitable
as an Humanities
activity*

1. Read the letters (p.57-58) to the newspapers from the 1940s.

Hold a class discussion on whether Walltown Quarry should continue to operate or be closed. Compare the styles of writing in the national and local papers. Ask the children to write a newspaper article in the style of a local or national paper containing arguments for and against quarry closure. Other children could write mock letters to The Times, in character as an archaeologist or professor, arguing about national heritage and the war effort. Others could write in character as a quarryman to the Haltwhistle Gazette, mentioning jobs and avoidance of conscription as the main concerns of most local people.

2. Ask each child to write a report on the role play activity (see p.37) they took part in at Walltown.

They are to assume the role of the advisor to the Secretary of State, presiding over the inquiry and should conclude their report with their own reasoned decision on the fate of the former quarry and their recommendations to the minister.

3. Explain that in 1971 British currency changed from £.s.d. (pounds, shillings and pence) to pounds and new pence and that this is the money we all use today. The quarrymen of 1943 would have used £.s.d.

Draw up a list of the current prices of food the children might have in their lunch box. Get them to work out how much their lunch cost. Convert this to old money using the table below:

	New Money		Old Money
£	£1	=	£1
	£1	=	20s
	10p	=	2s
	5p	=	1s
	5p	=	12d
	1p	=	2.4d
			£

- If the quarrymen were paid 1s 4d for every ton of rock they quarried and 'knocked up', how many tons would they have needed to quarry to pay for your lunch?
- If it took the quarrymen $\frac{1}{2}$ hour to quarry and 'knock up' a ton of stone, how long would it have taken them to pay for your lunch?
- Is your lunch worth all that hard work? Would you enjoy your lunch more if you had worked to pay for it?



WHAT DO WE DO?

Ask the children to write a list of all the things they do in their spare time, after school and at the weekends, and how long they spend each day/week/month doing it.

Collate them into a table, individually or as a class, with columns for indoor, outdoor, active and relaxing activities. Tick the columns as appropriate for each activity.

Use this information to make a chart, or series of charts, showing the proportions of indoor/outdoor, active/relaxing, activities and of the amount of time spent doing them.

Get the children to find out about local outdoor pursuits and countryside recreation activities, what there is to do and where to do them. This can be done either by writing to their local Tourist Information Centre or the local Council's countryside department, or by a visit to your local public library.

WALLTOWN WEBSITE

On your Internet connection go to:

www.nnpa.org.uk/edwtown.html

Follow the instructions there to download additional copies of:

- reclamation photographs (*pp.41,43 & 45*)
- photographs of the workers (*pp.47,49 & 51*)
- newspaper cuttings (*pp.57 & 58*)

There may be different photographs and other resources there too.

Literacy, Numeracy and I.C.T: On Route Activities

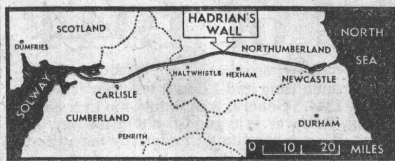
SENSE OF PLACE
See Humanities Section p.31

Literacy, Numeracy and I.C.T: On Site Activities

TIME LINE
See Humanities Section p.33

ROLE PLAY
See Humanities Section p.37

Antiquaries Fear for Hadrian's Wall



AS QUARRIES DIG WAR STONE

By Daily Mail Reporter

HADRIAN'S WALL, 73-miles-long "Magnet Line of the North," built by the Ancient Romans across the Border country, is being reviewed by Government planners to see what sections of the remains are worth saving as a national monument.

Out of the hard whinstone ridge on which a section of the great rampart is perched—north of Haltwhistle, Northumberland—stone vital to the war effort is being quarried.

The quarry owners themselves, anxious to avoid any disturbance to the main wall, are carving out the whinstone with care.

Antiquaries believe, however, that eventually the whole of these historic remains should be "mused" under the powers of Mr. Morrison's new Ministry of Town and Country Planning, which has already begun its survey of Britain.

They point out that only the Government has the power and the money to save the wall, which was flung across the country from the Tyne to the Solway Firth at the orders of the Emperor Hadrian in the second century to stop the ravages of the Picts and Scots.

Parts of the wall are now national property, but treasures of antiquity, dug from time to time from the ridge on which it stands, are constant reminders of its value.

Treated Fairly

Colonel G. R. B. Spain, of Newcastle-on-Tyne Society of Antiquaries, told me last night: "It seems inevitable that this section of the wall must be damaged."

"But the quarry owners have treated us very fairly. Whenever they find an inscribed stone from the wall they let us examine it on the spot and then present it to the society."

"Many of these stones would not have been discovered but for the quarrying."

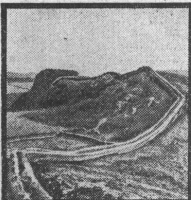
Suggestions that stone from the wall itself is used for road-making are described by antiquaries as absurd. Hadrian built his wall of sandstone, which is too soft for roads.

Mr. E. Marshall, managing director of the company quarrying near the section north of Haltwhistle, told me:

"In 1938 we made an agreement with the Government to preserve a 300 yards length of the wall. This is now a park."

"In return the Government gave their unreserved approval to the full development of the rest of the quarry. The section is in such a poor state of preservation that only an expert could define it."

"There are still a good 30 miles of Hadrian's Wall left, so I do not think anyone need get worried about it."



The Wall at Cuddy's Crag.

Hadrian's Wall : The Finest Showplace in Britain

At the end of the war a great deal of temporary employment will have to be created until business gets properly going again. The restoration of the Roman Wall in providing such employment for practically unskilled labour would certainly be a national investment, by making Hadrian's Wall the finest showplace in Britain, bringing prosperity to many towns and villages along its 70-odd-mile line through the Border country.

NOV. 20TH '43

PICTURE POST

Town's need of Wall Quarries

SIR.—The letter signed by the Chairman of the Northumberland County Council and the Bridges and Roads Committee regarding the Wall Quarry gives a very inconsiderate point of view. Are these gentlemen aware that, for eight years, these quarries and a small factory in its early stages of development provided almost the sum total of employment for the manhood of Haltwhistle and district?

True, they did not absorb a great percentage of the available labour, but they did prevent the unemployed man-power figures from rising from 60 per cent. to possibly 90 per cent. If depression returns to this district and the fade-out of the quarries takes place, as the letter foreshadows, the only fully employed people will be the cashiers at the Employment Exchange.

I am fully in agreement with your correspondent, Mr. Robinson, who says there is 100 years' work in one of the quarries without doing more than negligible damage to any important part of the Wall.

I cannot agree with Lord Ridley's assumption that the community at large, or the general body of ratepayers, would endorse the policy of closing down an essential industry and means of livelihood for some hundreds of men and their families, for the sake of preserving an unimportant part of the Wall, which, even now, is extinct for many miles.

NORTH MAIL
24th Nov. 1943

HAULIERS' PROTEST

SIR.—Will you allow us to protest most strongly against the suggested closure of the quarries in the Haltwhistle district. Such an act would eventually affect all branches of the community.

We feel that it ought to be made plain to the public that the quarries are not destroying any valuable ancient monument and, begging Professor Joad's pardon, do not interfere with the pleasure of tourists, nor interrupt the tinkling of the "mythical sheep bells."

Instead, the quarries have been given to produce in record time the essential road material for the building of several R.A.F. stations, and to that end the hauliers, working under many crippling restrictions, have strained every nerve to keep their vehicles in a fit condition to cope with work of such national importance.

Surely the efforts of all concerned deserve a little better thanks than to find themselves deprived of their means of livelihood, and the country deprived of the help it needs because of a supposed injury to a largely non-existent ancient monument.

Incidentally, there are boys in the Forces who look to the quarries and the hauliers for the means of sustenance when they return to civil life. These, above all, need our thought and care for their future.

NEWCASTLE JOURNAL
JANUARY 3RD 1944

North Mail 9th Dec 1943

THE ROMAN WALL

Sir,—I have read with interest the letters from your correspondents, C. E. Carss and J. L. Cox, concerning the rebuilding of the Roman Wall, and would like to say that in my opinion the suggestions made are simply fatuous. The rebuilt Wall would certainly not be Roman, nor an ancient monument, nor even a reconstruction on the original site.

If whinstone is of such rarity and value that this particular outcrop of it must be quarried, then surely it is better to shed our few silent tears over the spoliation of what is both a glorious bit of England and a relic of the Roman occupation, and leave it at that.

But let us make very sure that this sort of thing is not repeated. The whole of the remainder of the Wall, and particularly that part of it between the necks of Thirlwell and the North Tyne, should henceforth be preserved inviolate as an ancient monument. Why not place it in the hands of the National Trust? Let a fund be raised for the purpose, to which I would willingly subscribe.

SIR.—The pother over the alleged damage to the Roman Wall, known as Hadrian's, gives an indication of the attitude of mind of many of our people. They revel in the past instead of concentrating on the future.

I venture to say that these old relics are of little, if any, value. Like many other things of ancient times they should be scrapped, and if they were nothing but good would accrue.

A. J.

Sir,—In view of the great shortage of building material for houses for the living, may I suggest the whole of the ancient tyrants' wall be used for this purpose?

Our forebears had the sense to do this, as can be seen in the farmhouses and other buildings in the neighbourhood of the Wall.

M. B.

Sir,—I have been amused at some of the letters appearing in your journal, especially that from Mr. J. M. Carr. I defy Mr. Carr to locate Hadrian's Wall at Greenhead unless it is pointed out to him.

A large number of persons find employment at these quarries and have done so for the last 60 odd years. May I refresh Mr. Carr's memory by reminding him that in 1938 Haltwhistle was a distressed area and efforts were then made by local people to develop the quarries?

RAMBLER

Newcastle Journal & North Mail
Sept 7th 1943.

LONDON LETTER

London Monday Night.

HADRIAN'S WALL—or at least the most picturesque part of it—may become a National Park after the war.

This, I learn to-night, is proposed by the Ministry of Town and Country Planning. A report on prospective national parks has been prepared and submitted to the Minister (Mr. W. S. Morrison), and is now being considered by other Ministries which have an interest in the area concerned.

To attract tourists

Certain parts of the Lake District are likely to be included in this scheme, which embraces the whole of Britain.

Scheduling of Hadrian's Wall area as a National Park opens up the prospect of a new "light" industry—tourist traffic. I understand that if the national parks scheme is put into operation the Government intend to see that every facility and encouragement are given to attract sightseers.

North Mail 11th Jan 1944

Messing

ROMEIKE & CURTICE LTD.

Colley House, New Street Square, Fetter Lane, E.C.4

THE PRESS CLIPPING BUREAU

EXTRACT FROM 24.8.43

THE TIMES

1785

HADRIAN'S WALL

TO THE EDITOR OF THE TIMES

Sir,—Why should we weep for Rome when the most splendid Roman monument in this country, Hadrian's Wall, is daily quarried for road metal?

Yours faithfully,
G. O. HOSKINS.

1945

Wall damage "nonsense"?

Letters to the Editor

SIR,—In view of complaints about the quarrying away of Hadrian's Wall, I paid a visit to the site and have to say that where there is no Wall, it does not appear long ago. As an ordinary layman, I consider that a great deal of nonsense is being written about ancient monuments when neither Hitler nor Mussolini considers sacred monuments in this country. I discovered that the material quarried (not from the Wall) is being supplied to various Ministries for war purposes, and it tries for war purposes, and it would be interesting to know what some of the fighting men who are prisoners of war in Italy think about this controversy.

ENGINEER.
Newcastle.

Newcastle Journal & North Mail Sept 6th 1943

ROMAN WALL PROTEST MAY CLOSE QUARRIES

Haltwhistle people are concerned at the possibility of Greenhead and Cawfields quarries being closed to preserve the Roman Wall in that area. When Haltwhistle was classified as a distressed area, the quarries were one of the few bright spots.

Mr. A. Corbett, manager of the Cawfield Quarry, told a "Newcastle Journal" representative that because of a request by antiquaries, that a portion of the quarry be reserved, the quarry had practically been brought to a standstill. No stones from the Wall were being taken and the whinstone beneath the Wall was used in aerodrome construction. The quarry was started 50 years ago, he added, and had extended 200 yards in that time. Anti-quaries had seen that there had been no turrets or mile castles interfered with. The next rock scheduled for quarrying was some distance away and where there was definitely no wall.

WAR MATERIAL

Mr. C. E. Carse, manager of the Greenhead Quarry, said the quarries, now highly mechanised, found employment for many workers.

Had this activity and all it involved to be discarded because of those interested in the Roman Wall?

Quarrymen had an important war job to do even if it meant destroying part of the Wall.

Millions of people in this country had never seen the Wall and never would, and they would not have much interest in it, but they were all interested in finishing the war.

Divided views on value of relic

SIR.—It is evidently not realised by some of your correspondents who condone the destruction of the Roman Wall on grounds of utility and disdain for the past that not only is a very picturesque site threatened, but our debt to the authors of the Wall, Ancient Rome, is enormous.

Britain and France may well be proud of the evidence of Roman occupation, as it is that civilising influence that has enabled us to be so far ahead of Germany in our institutions to-day. Whatever the Ancient Britons may have thought of their Roman conquerors we, the descendants of both, may well be proud of our ancient inheritance and refuse to allow its evidence to be destroyed.

Who is it who is so unwise as to speak of Ancient Roman as if she were a gangsterish Germany wherein her day she served Europe as well as we hope to do in very different times, circumstances and with different aims?

DORIS SWAN.

Sir,—Are not some of your correspondents looking at the question of the Roman Wall from far too low a standpoint? We cannot confine ourselves to the mere utility aspect. A nation with a history such as ours must have much sentiment in its make-up. Any old rag would not do for the Union Jack.

"Saxon and Norman and Dane are we," and our history goes back to the Romans and ancient Britons. We should cherish every link.

If utility is to be our only guide why should we not pave the foot-walks with our parents' grave-stones and grow turnips on their graves—both "war efforts"? Or turn the aisles of our churches into blacksmith's shops—another war effort—and shut down all music and arts?

All over the world there are people interested in our unique relics on the line of the Wall and to destroy what is left would turn us in their eyes into uncultured barbarians.

One correspondent advocates using the old stones to build houses. Speaking with full knowledge and experience, I may explain that even on the line of the Wall brick houses would be much cheaper, and the cost to-

LETTERS TO THE EDITOR

day of dressing and setting stone puts it out of the question. Even for its only sound purpose, not of bottoming roads, county and district road authorities are using whinstone to sustain the weight of modern traffic.

Lastly, the country round the line of the Wall is so majestic that our need should be great before we exploit it by turning it into a long-drawn-out quarry. It is one of the open spaces we may well retain.

G. REAVELL.

Sir,—If "Rambler" thinks that the Roman Wall is difficult to trace at Greenhead then he must be profoundly ignorant on the subject. Actually the Wall is quite easily located. Circumstances allowing, I would be pleased to act as his guide over any stretch of Wall from Newcastle to Carlisle.

To others who advocate vandalism I suggest that they arm themselves with a guide book and tour the whole length of the Wall and its fortifications. If their imagination remains unstirred by the grandest monu-

ment that exists in England to the might of our Roman colonisers, if they would still destroy this wonderful work that has withstood the ravages of time for some eighteen hundred years, then they are indeed to be pitied, for they know not the value of these things.

J. N. CARR.

Sir,—Having read with interest the correspondence concerning the Roman Wall, may I add my opinion and offer a challenge to public debate on the subject.

I regard the Roman Wall as a much over-rated antiquity, entirely out of historical focus. Antiquaries and historians have created a myth which constitutes an offence against British history. The glory of the Roman Wall is as false as Mussolini's Empire now in rags and tatters. I am prepared to substantiate my arguments with lantern slides and concrete facts.

Meanwhile, let them go on quarrying unless this farcical antiquity is of more importance than roads and R.A.F. flare-paths.

THE VAGABOND.

Newcastle Journal & North Mail
Sept. 13th 1943.

LETTERS TO THE EDITOR

Roman Wall "intolerance"

SIR,—Messrs. A. J. Readhead and "M.B." and some others take it upon themselves to suggest that such links with the past as the Roman Wall should be torn down, and justify their vandalism with their glib complacency by talk of building material shortages, and even more outrageously of the war effort.

Such narrow-minded intolerance is best left to the Nazis, who glory in the destruction of other countries' cultural monuments. Surely we have suffered enough such destructions at the hands of the Hun without having their work added to by our own people. It is significant that one of the first acts of the Germans in Poland and Russia was to destroy all ancient relics. They at least showed an appreciation of their moral value to the country that possessed them.

One cannot help feeling the similarity in thought between these demolitionists and the little man in the famous comedy "1066 and All That," who plaintively demands, "What's history ever done for me?"

BORCOVICUS.

Sir,—The argument on the subject of the Roman Wall contained in your correspondent's letter ("Journal," September 7) is briefly, that revelling in the past disqualifies for concentration on the future.

The Roman Wall is a memorial of the past and, though valueless,

it has nevertheless, on account of its antiquity, a pre-occupying and beguiling influence on the minds of many among us. It might have been added that relics of this kind have upon occasion evoked the writing of verse and even the expression of ideas prejudicial to the future, such as:

"Look on my works, ye Mighty, and despair!"
(Shelley: Ozymandias.)

For the foregoing reason the Roman Wall should be removed.

According to a famous dictum "History is bunk!" Your correspondent's criticism is that history

is not merely bunk but pernicious bunk.

But some may object that if history is bunk what about prophecy? Here, I feel, we are on thin ice. Further, if we are to be strictly practical, the question put by Artemus Ward (or some other philosopher) should be recalled: "What has Posterity ever done for us?" "To-day is ours"; to-day is charged with memories, hopes and fears. I fear, Sir, the last sentence is rather like poetry and hasten to subscribe myself

1066 AND ALL THAT.

Newcastle Journal & North Mail
September 9th 1943.

Suggested Programmes for Visits

Although the *Walltown Education Pack* is intended as a 'pick and mix' of activities, there are strong subject themes which can be focused upon. These centre around the science and humanities curricula. Suggested programmes for a science based visit and a humanities based visit are given below. These should not be considered as prescriptive, merely as a suggestion to aid your own visit planning.

The number of groups will depend upon the size of your party. We suggest approximately 10 students per group, each with a supervising adult. Each session lasts approximately 45 minutes, including the time taken to move between locations.

Half Day Science Visit			
science KS2	Hard As Rock <i>p.19</i>	Woodland Wise <i>p.20</i>	Feeding Frenzies <i>p.21</i> What Habitats Are Here ? <i>p.17</i>
Location	Locations 3 then 11	Locations 8 then 9	Locations 10 then 2
Special Equipment	Hard As Rock worksheet, hand lenses, iron nails, plastic pen tops	Plant ID books quadrats	What Habitats Are Here? worksheet, stickers, string, scissors
Session 1	group 1	group 2	group 3
Session 2	group 3	group 1	group 2
Session 3	group 2	group 3	group 1

This suggested programme will only take up half a day. Why not spend the remainder of your time visiting the working whinstone quarry at Barrasford? Further information can be obtained from Tarmac Quarry Products Ltd.'s address in the 'Useful Addresses' section of this Pack.

Full Day Humanities Visit				
humanities KS2	Wider Than Walltown <i>p.34</i>	What Can We Do? <i>p.35</i>	Where Was the Rock? <i>p.35</i> Hard Rock-Hard Work- Hard Life <i>p.36</i> Time Line <i>p.33</i>	Role Play <i>p.37</i>
Location	Location 6	Location 1	Location 2 and Location 6	Location 10
Equipment	Paper, pencil, clipboard and reclamation photographs	Blindfolds	Pieces of rock, two 30m tape measures	Character cards
Session 1	group 1	group 2	group 3	group 4
Session 2	group 4	group 1	group 2	group 2
L U N C H				
Session 3	group 3	group 4	group 1	group 2
Session 4	group 2	group 3	group 4	group 1

Your Day at Walltown

Please photocopy or adapt to plan your visit.

Activity				
Location(s)				
Equipment				
Session 1	group 1	group 2	group 3	group 4
Session 2	group 4	group 1	group 2	group 3
L U N C H				
Session 3	group 3	group 4	group 1	group 2
Session 4	group 2	group 3	group 4	group 1

Change over times:

Session 1 to Session 2 =

Session 2 to lunch =

Lunch to Session 3 =

Session 3 to Session 4 =

Session 4 - end =

Useful Addresses

Northumberland National Park Authority

Education Officer
Eastburn
South Park
Hexham
Northumberland
NE46 1BS
Tel: 01434 605555
Fax: 01434 600522
www.nnpa.org.uk



Once Brewed National Park Centre

Military Road
Bardon Mill
Hexham
NE47 7AN
Tel: 01434 344396
Fax: 01434 344022

Owns and manages Walltown and various car park and recreation sites in the National Park. Help and information for all schools visiting Northumberland National Park.

Barrasford Quarry

Tarmac Quarry Products Ltd
Barrasford
nr. Hexham
Northumberland
NE48 4AP
Tel: 01434 681443

Contact the Quarry Manager to arrange a visit to a working whinstone quarry close to Walltown.



British Aggregate Construction Materials Industries

156 Buckingham Palace Road
London
SW1W
Tel: 0171 730 8194

Produces information sheets called 'Why Quarry?'

Countryside Commission

Northern Regional Office
4th Floor
Warwick House
Grantham Road
Newcastle upon Tyne
NE2 1QF
Tel: 0191 232 8252
Fax: 0191 222 0185

Information on countryside issues and policy.



English Nature

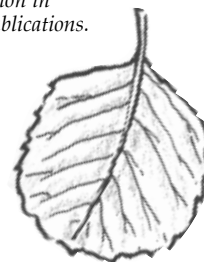
Telelink Ltd
PO Box 100
Fareham
Hampshire
PO14 2SX
Tel: 01329 668600
Fax: 01329 664725

Statutory body responsible for nature conservation in England. Free catalogue of English Nature's Publications.

National Stone Centre

Porter Lane
Middleton
Wirksworth
Derbyshire
DE4 4LS
Tel: 01629 824833

Hosts school visits in a former limestone quarry in the Peak National Park.



The Natural History Museum

Cromwell Road
London
SW7 5BD
Tel: 0171 938 9261
Fax: 0171 938 9189

Houses impressive displays on formation and use of rocks.

Northumberland County Council

Countryside Officer
Planning and Environment Department
Northumberland County Council
County Hall
Morpeth
NE61 2EF
Tel: 01670 533000
Fax: 01670 534069

Hosts school visits within Northumberland.



Northumberland Wildlife Trust

Education Officer
The Garden House
St Nicholas Park
Jubilee Road
Newcastle upon Tyne
NE3 3XT
Tel: 0191 284 6884
Fax: 0191 284 6794

Hosts school visits and produce resources.



Bibliography / Useful Resources

Northumberland National Park

Welcome to Walltown Leaflet

Walltown Family Orienteering Course

Walltown Clue Trail

Walltown The Hard Rock Trail (geology)

Walltown Whinchat Comic (quarrying)

Newberry, Elizabeth. 1996

Learning on Location.

Northumberland County Council, Advisory and Inspection Division 1997

Sustainability - Environmental Education Curriculum Guidelines - Ideas for Teachers.

Northumberland County Council, Advisory and Inspection Division, Education Department

Outdoor Education in the National Curriculum - Guidelines for putting policy into practice.

British Aggregate Construction Materials Industries (BACMI) 1995

Why Quarry? - Information sheets explaining the purpose of quarrying, the varied uses of aggregates and how the industry discharges its responsibility for extraction and aftercare of the land.

BACMI

Rocks Around You Primary Pack. A cross-curricular resource for Key Stage 2. Teachers' Notes.

HMSO Department for Education 1995

The National Curriculum.

Walltown Education Pack Evaluation Form

Northumberland National Park Education Service

Your name

School/Organisation

Address

..... Date of visit

- Did you have enough support from *Northumberland National Park Education Service* prior to the visit?

☐ Yes ☐ No Comments

.....

.....

- Did the Walltown Education Pack meet your needs regarding subject content?

☐ Yes ☐ No Comments

.....

.....

- Was there enough background information and planning help within the Pack?

☐ Yes ☐ No Comments

.....

.....

- Were the activity descriptions easy to understand and comprehensive?

☐ Yes ☐ No Comments

.....

.....

- Were the activities interesting and informative for your students?

☐ Yes ☐ No Comments

.....

.....

(continued overleaf)

- Did your pupils enjoy their visit?

☐ Yes ☐ No Comments

.....

.....

- How could we improve the Walltown Education Pack?

☐ Yes ☐ No Comments

.....

.....

- Will you be visiting Walltown and using the Education Pack again?

☐ Yes ☐ No Comments

.....

.....

- Would you recommend the Walltown Education Pack to colleagues?

☐ Yes ☐ No Comments

.....

.....

Please jot down any further comments you would like to make regarding your visit:

.....

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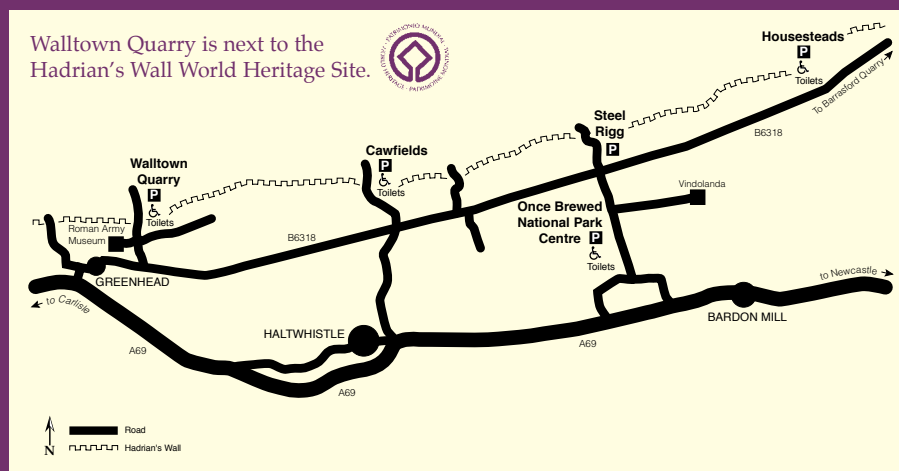
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Please return to: Education Service

Northumberland National Park Authority, Eastburn, South Park, Hexham,
Northumberland NE46 1BS Tel: 01434 609011 Fax: 01434 600522
e-mail: admin@nnpa.org.uk Website: www.nnpa.org.uk

Thank you



Acknowledgements



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