

# KILLHOPE

## INFORMATION FOR TEACHERS AND OTHER EDUCATORS.

How a visit to Killhope can inspire and support learning across the curriculum



# KILLHOPE

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# KILLHOPE

## WELCOME TO KILLHOPE

**Come and visit our award winning open-air museum  
and experience the North Pennines in all its glory!  
There's so much to see and so much to do at Killhope –  
A visit can support learning in all its forms!**

### **Killhope: An Introduction**

Killhope, the North of England Lead Mining Museum, is a fully restored nineteenth century lead mine, where visitors can experience the life and work of the Pennine lead miners. Visitors can see where the miners worked, in the mine and on the Washing Floor where the lead was dressed, and where they lodged.

As well as its historical interest, Killhope is located in a European / Global Geopark, an area recognised for its world class geological features. The site contains a mineralogical display, and samples that can be handled.

Killhope is located in the North Pennines, an Area of Outstanding Natural Beauty, and the woodland around the site contains plentiful wildlife, including our famous red squirrels, and the reservoirs are excellent examples of pond ecology.

### **Why Visit?**

A visit to Killhope can support learning at any level, and in many areas. Although the guided tours focus mainly on the social history of the area, the site is so diverse that it can cater to most primary subjects.

Visits can be focussed or cross-curricular, and can tie in with one or several QCA schemes, all of which are detailed in this pack.

**But why Killhope? What makes a visit here worthwhile?**



## **Hands on**

By its very nature, Killhope encourages students to learn by getting their hands on the objects and experiencing the sorts of jobs and conditions that nineteenth century Weardale lead miners would have known. A visit to Killhope brings to life what is learnt in the classroom – students can apply what they learn to real life contexts. By getting out of the classroom, all your class will benefit from the different learning styles and opportunities our site has to offer.

## **Our staff**

Our staff are given training in National Curriculum awareness and how to work with children. Some of our staff are ex-teachers and classroom assistants, some are history and science graduates – they're all local and have lots to talk to your class about.

## **Your visit**

Our staff are very flexible and can tailor a visit to **your** needs – they can focus on one or several national curriculum subjects as requested. Staff at the museum lead most group visits and encourage a “hands-on” approach, which is very well received by visiting schools. Pupils are given the opportunity to work as “washerboys” on the Washing Floor, try on replica clothing and engage in role-play in the mine shop.

## **Features**

The main features of the museum include: tours of the mine, restored working water wheels, reconstructed miners' living accommodation, blacksmith's shop, Washing Floor, jigger house, mineral and spar box displays, and of course shop, cafe and toilet facilities. Although the museum does have more traditional exhibitions, most of the site is interactive, and students can learn by experiencing things as they were then. There are also the woodland trails and our famous Red Squirrels (they've been on the BBC!).

## **Loan Service**

For work in the classroom, Killhope offers Resource Boxes, aimed mostly at Primary schools. More information is provided in this pack: please ask for more details.

# KILLHOPE

## ABOUT US

**Preliminary visits for teachers are free.** Please inform reception on arrival.

### Hazard Identification Sheets

Use our Hazard Identification Sheets (page 9) to help you complete your Risk Assessment.

### Contact us

Killhope, The North of England Lead Mining Museum,  
Cowshill, Weardale, County Durham, DL13 1AR

Tel: 01388 537505

Email: [killhope@durham.gov.uk](mailto:killhope@durham.gov.uk)

Website: [www.durham.gov.uk/killhope](http://www.durham.gov.uk/killhope)

### Opening Hours

10.30 am – 5.00 pm, earlier starts by prior arrangement. Last admission 4.30 pm.

### Access

If your class has any specific access requirements please contact us to discuss them. As far as possible, these will be catered for, although it may not be possible to visit all areas of the site.

### Prices (from 1<sup>st</sup> April 2004)

2 hours + mine trip - £3.00. 3 hours + mine trip - £4.00.

1 free adult per 14 students, additional accompanying adults £3.00

Pre-booking is essential: please give as much notice as possible.

Parking is free, and there is a car / coach park on site.

### Awards

- Winner of The Guardian Family Friendly Museum Awards 2004
- UFA member
- English Tourism Council Quality Assured Visitor Attraction – 3 years running
- Pride of Northumbria 2000 – Special Award for An Outstanding Learning Experience
- Investors In People



# KILLHOPE

## FEATURES OF KILLHOPE

### What to expect to discover...

A typical school tour at Killhope will focus primarily on social history, although there will also be discussions about how the lead was mined, prepared and used, and about the other minerals found in the area.

The following is a list of the areas that a tour can cover, and the topics the information assistant may discuss with the students. Other subjects can be added if requested.

### Mineral Room

- Types of minerals and rocks.
- Uses of lead
- Modern uses
- Density/ weight of lead
- Map of lead mining areas in Northern Britain

### Hushes and replica old mine workings

- Follow the woodland trails to see how galena used to be mined before Park Level Mine was started in 1853

### Mineshop (miners' accommodation)

- General living conditions
- Education
- Clothing, clogs and 'hard hats' – costumes are available for dressing up
- Food and how / where it would be cooked and stored
- Health and remedies
- Time off
- Pastimes
- Graham Letters – letters from a family who had emigrated to America



## Mine Office

- Differences between conditions in the Mineshop and the Managers Office
- Examples of newspapers, money, writing implements.
- List of prices of food and equipment
- Manager's and his wife's clothes to dress up in

## Park Level Mine

- Discover how galena was mined in the nineteenth century
- Experience going underground in similar conditions to the miners!
- You will be provided with hard hats, battery lamps and wellington boots if you need them
- See the underground water wheel which pumped water out of the mine
- Experience total darkness as the miners would have done

## Water Wheel

- Find out how the water wheel is powered
- What machinery is powered by it
- Find out about different types of water wheel – overshot and undershot

## Washing Floor (where the lead ore was washed)

- Types of jobs children would have carried out
- Working conditions
- Implements used
- Your class get the opportunity to do some of the jobs

**Two girls on a school visit discover how 'washerboys' sorted minerals using water on the Washing Floor.**



## Brunton Buddles (original repaired water sorting machinery)

- See how the water wheels power the machinery to sort fine particles of minerals
- What effect would this have had on the workers?

### **Jigger House** (the most complicated machinery used on site)

- See how the power from the wheel is converted into power for the machinery to sort the minerals further
- Listen to the sounds of the machinery, the water and the minerals...

### **Spar Box Exhibition & Pennine Jewels**

- An exhibition of the minerals found in the North Pennines and what they are used for
- An exhibition of Spar Boxes – find out what the miners did with the ‘Bonny Bits’ they found.

### **Reservoirs**

- See the complex system of streams which collect the water into reservoirs that power our wheel
- The reservoirs provide a home for wildlife. We can provide opportunities to investigate pond ecology



**A school discovering  
our reservoirs.**

### **Woodland**

- Have a walk along our woodland trails and see how our woodland habitat is managed
- What wildlife can you spot?

### **Squirrels**

- Go quietly to the squirrel hide and see our colony of rare red squirrels

### **Temporary exhibitions**

- See our website or brochure for details of forthcoming temporary exhibitions.

# KILLHOPE

## HAZARD IDENTIFICATION SHEET

Teachers who wish to come on site and do their own assessment, have a chat to guides and the Visitor Services Officer are more than welcome to do so free of charge. The following notes will help teachers conduct their own risk assessments.

Please note: This is NOT a Risk Assessment. Teachers should follow DfES guidelines and write their own.

Hazard Identified	Risk and to whom	Existing Control Measures
Cars/ buses in the car parks	Could be bumped or knocked over. All visitors and staff	Children should be supervised by school staff.
Uneven paths around the site	Slip, fall, injury. All visitors and staff	Site staff give general verbal warning.
Some objects in handling collection may be heavy and occasionally some have sharp edges.	Trap fingers, drop onto feet, cuts, rips to clothing. All visitors and staff	Site staff give verbal warning about nature of handling collection. Its condition is monitored closely by site staff.
Mine tour - low roof in one area, dark, uneven floors, running water on ground in some areas.	Bumping head, tripping and falling. All visitors and staff	All visitors on the mine tour are given hard hats, lamps, and Wellingtons if they don't already have them. Site staff give verbal warnings about the potential hazards on the mine tour.
Lit candles are placed in various locations around the site. (Most are out of reach of the public.) Coal fires in mine shop and managers office - both behind fire guards.	Could burn self or clothing if stood too near. All visitors and staff	Site staff position themselves nearest the candle if it is not out of reach. They also give out verbal warnings about candles and the fires.



<b>Hazard Identified</b>	<b>Risk and to whom</b>	<b>Existing Control Measures</b>
Many sets of steps are outdoors and so may be slippery in wet weather or may have leaves on them.	Slip and fall, injury. All visitors and staff	Most stairs have handrails. Verbal warnings are given by site staff.
Woodland Area: reservoir ponds.	Slipping into water. All visitors and staff	Life belts around pond edges. Site staff give verbal warnings about hazards in woodland area, and emphasise that school groups should always keep to the marked paths, and not go off ahead or alone.
Working / moving machinery at the Water Wheel, in the Jigger House and various other locations.	Trapping / knocking injuries. All visitors and staff	Machinery kept behind barriers and guards. Warning signs. Site staff give verbal warnings about safety near machinery.
Various pieces of old machinery and equipment are placed around the site.	Tripping and falling, bumping into, injuries. All visitors and staff	Site staff give verbal warnings about objects.
Streams and watercourses running through site.	Slipping at edge and falling, injuries. All visitors and staff	Site staff give verbal warnings about how to behave near the running water.

# KILLHOPE

## TOP TEN TIPS FOR GETTING THE MOST OUT OF YOUR VISIT

1. **Come on a preliminary visit.** Admission is free for teachers on preliminary planning visits. Come and see what we have to offer. Ensure our facilities are suitable for your group – we can tailor visits to your needs.
2. Use our **Hazard Identification Sheet** to help you write your Risk Assessment. It has lots of general points about the site and is included in this pack.
3. **Facilities:**

**Toilets:** are situated on the outside of the Visitor Centre. There is an accessible toilet also.

Lunch arrangements: There are several **picnic areas** around the site, and we have a specially built class sized round picnic table so everyone can sit together! Please encourage your group to clean up after themselves. In wet or very cold weather we do have space available indoors.

**Café:** Please ensure that children are accompanied in small groups should they need to use the café. (Open April – October)
4. **Shop:** Our shop has a range of pocket money items as well as sweets and various gifts. We recommend that only small accompanied groups of children visit the shop, as there may be other visitors in there as well. If you do not wish your group to visit the shop but would like to buy souvenirs, we can arrange for goody bags worth a specified amount (usually £2) to be made up in advance. Please inform us well in advance of your visit should you wish to take advantage of this service.
5. **Group size and number of adult helpers:** For our Health and Safety requirements in the mine we ask that students be in groups of 14 with a minimum of one adult helper per group. Groups staying on the surface may be in larger groups. Obviously if your group needs a higher ratio of adults please bring them. For guided visits a member of Killhope staff will be with your group for the whole visit.
6. **Discipline:** You and your adult helpers are responsible for your group's behaviour at all times on the site. Whilst our Information Assistants lead the visit, they are not responsible for disciplining the group. They are entitled to insist on appropriate behaviour and will cut



short a tour if a group continues to behave poorly or is acting in a dangerous manner. This is particularly important in the mine. (Thankfully, everyone enjoys themselves so much this is very rare!)

7. **Length of visit:** We recommend you allow a good three and a half hours for your guided visit (this includes a half hour lunch break). We welcome you to stay longer if you wish to explore the woodland, reservoirs and squirrel hide.
8. **Suitable clothing:** Killhope is an open air site 1500 feet (450m) above sea level, and the weather can be bleak at any time of the year. Please ensure your group has suitable clothing – and waterproof coats if possible as you will be outside whatever the weather. As there are many uneven surfaces on site, your group will need suitable footwear. We can supply wellington boots for those visitors without their own.
9. We encourage a **hands-on experience:** Killhope is a worksheet free zone! Use our Resource Boxes to support your class – more information is included in this pack.
10. **HAVE FUN!!**



# KILLHOPE

## KILLHOPE RESOURCE BOXES

**Our interesting and unique variety of documents, costumes and objects can inspire learning across the curriculum.**

Resource boxes are an excellent way to support learning in the classroom. We provide objects and documents for the children to work with, and our accompanying Resources Pack for Teachers suggests some activities for you to try. The hands-on experience that Killhope is famous for can be brought into the classroom with our boxes. The boxes are designed to support Primary History, particularly QCA Units 11, 12 and 18, but can be used to support a variety of other subjects too – be inspired!

Our resource boxes are available for free, although teachers must collect and return the boxes themselves. Our standard loan is for two weeks, although it is possible to borrow them for longer if required. If you are planning a visit to Killhope and also wish to borrow a resource box, we would suggest that you may like to collect the box on your preliminary visit and return it when you bring your class.



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## List of contents:

### Artefacts:

**Most of the artefacts are replicas, made especially for this handling collection.**

Wooden clogs

Peppermint essence – miners used this to relieve indigestion.

Galena (lead ore)

Mat frame – with pegs and wool strips ('clippings')

A bucket

Small tin of Oatmeal

Tallow candles – tallow is an animal fat – some children may wish not to handle it

Clay Pipe

Peat

Bible – King James version. Boys were expected to be able to read from the Bible before they could be employed.

Knitting (wool and four needles)

Girl's clothes (skirt, pinafore, bonnet)

Bag of games (draughts, pop gun, cup and ball, slate and slate pencil)

Boy's clothes in a 'wallet' (hand made shirt, trousers & braces, waistcoat, cap)



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## Documents:

'Making the Most of the Killhope Loans Boxes: A Resource Pack for Teachers'

Census returns for Killhope

An example of one of the Graham letters

Copies of various site and OS maps

1:25,000 OS Explorer Map

How to make a mat - leaflet

Copies of the Teesdale Mercury

Leaflet Pack including 'Secret World of Spar Boxes'

## A selection of books:

'Our Native England' (reproduction 19<sup>th</sup> century book)

'Plain Cookery for the Working Classes'(reproduction 19<sup>th</sup> century book)

"Whar a candel will not burn...The story of Park Level Mine" - by Durham County Council.

"Lead and Life at Killhope" – by Ian Forbes

A selection of traditional Wesleyan Methodist Hymns, on cd, recorded at High House Chapel, Ireshopeburn

Set of three images of Spar Boxes.



# KILLHOPE

## SECONDARY HISTORY AT KILLHOPE

### How a visit to Killhope can inspire learning in History

Killhope can be used to support learning in secondary history either generally, as the site contains a restored Victorian lead mine, or more specifically, to support the following QCA units:

- Unit 11: Industrial changes action and reaction? (*Suitable for Year 8*)

Killhope is particularly useful for studying history, as it contains the most complete original lead mining facilities in Great Britain. The site contains a mine which students can go down, the miners accommodation, the office, and the Washing Floor where the ore was treated, allowing for studies of British social history, lead-mining, or industrial change. Students can experience the conditions the miners worked in, study the changes that took place, and carry out some of the jobs that the miners would have done. Through the Information Assistants that accompany schools round the site, students are encouraged to develop historical reasoning using primary and secondary sources, and to ask questions to expand their knowledge. It is this hands-on approach that has made Killhope so successful.



It is recommended that most school-groups who come to study history do so for most of the day in order to maximise use of the site. An Information Assistant should accompany you around the site, explaining the various features, and encouraging students to actively take part. No prior knowledge is necessary before a visit: Information Assistants are trained to quickly establish the level of knowledge the students possess and tailor the day around it. If there are any particular topics you would like the Information Assistant to cover on your visit, please mention this at the time of booking.

We can supply pictures and maps of the site dating to the nineteenth century although these should be requested at the time of booking.

## UNIT 11: INDUSTRIAL CHANGES ACTION AND REACTION

**Using Killhope:** Killhope provides support for this unit by providing a real-life context for the industrial changes that will be studied. Our site provides an excellent venue for conducting studies as our Information Assistants can provide large amounts of information when questioned, and by independently studying our authentic site students can draw their own conclusions. A trip down the mine will help students to understand what working conditions were like, and it provides an excellent contrast to the other industries that developed in the area.

LEARNING OBJECTIVES	POSSIBLE ACTIVITIES	LEARNING OUTCOMES
<b>What industrial changes happened in the locality?</b>		
<ul style="list-style-type: none"> <li>To use local maps to identify changes in industrial growth and development.</li> <li>To extract information from local maps.</li> <li>To identify the main features of local industrial changes.</li> </ul>	<ul style="list-style-type: none"> <li>Use the nineteenth century map of Killhope and the surrounding area to discuss what has changed and what has stayed the same. Focus on transport and industrial changes.</li> <li>Compare this to more modern maps.</li> </ul>	<ul style="list-style-type: none"> <li>Use maps to identify differences and similarities over time in the local area.</li> <li>Use a sequence of maps to demonstrate change over time.</li> <li>Extrapolate information from maps.</li> </ul>
<b>Local industry: what happened?</b>		
<ul style="list-style-type: none"> <li>About the development and significance of a local industry.</li> <li>To interrogate local source material in order to answer a specific question.</li> <li>To make comparisons between local industry and the national context.</li> </ul>	<ul style="list-style-type: none"> <li>Use lead mining at Killhope as the local history in which the class are to focus.</li> <li>Undertake an investigation to answer questions about Killhope, such as <i>What was it like to work in the lead mine?</i> Talk to our information assistants and go down our mine to find out the answers.</li> <li>Put the study in a national context, and discuss the similarities / differences.</li> </ul>	<ul style="list-style-type: none"> <li>Identify, evaluate and use sources of information to reach a supported conclusion.</li> <li>Show some independence in following lines of investigation, asking questions and using source material to provide some answers.</li> </ul>
<b>How industrialised was Britain by 1850?</b>		
<ul style="list-style-type: none"> <li>That by 1850 some areas of the country were heavily industrialised and others were not.</li> <li>That the rate and nature of change in the three industries of transport, agriculture and production differed.</li> <li>To carry out investigations based on a range of sources.</li> </ul>	<ul style="list-style-type: none"> <li>Look at Killhope and examine the situation, highlighting changes. The miners at Killhope were employed to work building enclosures when the price of lead was low - look at the effect this had on the area, as well as the changes in lead mining. Look at the how the road system used to transport the lead changed.</li> <li>Compare this to national changes and draw conclusions.</li> </ul>	<ul style="list-style-type: none"> <li>Make links between outline and detailed factual knowledge.</li> <li>Begin to analyse relationships between features of a particular period.</li> <li>Draw conclusions and / or create hypotheses from selected course material.</li> <li>Begin to understand that conclusions are tentative.</li> </ul>

# KILLHOPE

## SECONDARY SCIENCE AT KILLHOPE

### How a visit to Killhope can inspire learning in science

Killhope can be used to support learning in secondary science in many ways, as the site contains a mineral collection, woodland, streams, a river and a reservoir, or more specifically to support the following QCA units:

- Unit 7C: Environment and feeding relationships (*Suitable for Year 7*)
- Unit 8D: Ecological relationships (*Suitable for Year 8*)
- Unit 8H: The rock cycle (*Suitable for Year 8*)
- Unit 9M: Investigating scientific questions (*Suitable for Year 9*)

Killhope is particularly useful for studying science at all ages, as it contains an excellent collection of minerals both for study and handling. It has a woodland with safe walks which can be used to study wildlife, such as our famous red squirrels and birds, and the minibeasts which lurk there. We have a large number of streams, and the river Killhope Burn runs through the bottom of the valley on site. Our reservoirs can be used to study pond ecology in safety: a specially designed viewing platform has been constructed by the lakeside. Killhope's status as a European / Global Geopark, and an Area of Outstanding Natural Beauty make this a superb place for pupils to get involved in all sorts of hands on activities. Killhope can also provide the facilities necessary for an outdoor study, such as toilets, and a picnic area.

It is recommended that most school-groups who come to study science do so for most of the day in order to maximise use of the site. If required, an information Assistant can accompany you around the site, explaining the various features, and encouraging pupils to actively carry out experiments. If there are any particular topics you would like the Information Assistant to cover on your visit, please mention this at the time of booking.

Not all the activities listed should be carried out at Killhope: some are more suited to follow-up work in the classroom after a visit.



## UNIT 7C: ENVIRONMENT AND FEEDING RELATIONSHIPS

**Using Killhope:** Killhope provides an outstanding location to study this unit. We have a variety of habitats, including woodland, reservoirs, the Washing Floor, Killhope Burn, and all the facilities necessary for a detailed habitat study, such as picnic area and toilets. Killhope is also involved in conservation projects to protect the black grouse and red squirrels, providing an excellent case study in criteria for suitable habitats.

LEARNING OBJECTIVES	POSSIBLE ACTIVITIES	LEARNING OUTCOMES
<b>How does the environment influence the animals and plants living in a habitat?</b>		
<ul style="list-style-type: none"> <li>• That different habitats have different features.</li> <li>• That different habitats support different organisms.</li> <li>• That the distribution of organisms in different habitats is affected by environmental factors.</li> </ul>	<ul style="list-style-type: none"> <li>• Visit Killhope's river, woodland and reservoir to provide stimulus material. Ask the pupils to describe the physical features of each habitat and identify major environmental factors. For example, the woodland is a managed environment for red squirrels and black grouse. Why are they a suitable environment?</li> <li>• With pupils decide on a limited list of animal and plant species for each habitat.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify features which are different in different habitats.</li> <li>• Describe adaptations to life in a variety of habitats such as water and woodland.</li> <li>• Pick out appropriate adaptations and explain their significance.</li> </ul>
<b>A: How do environments vary?</b>		
<ul style="list-style-type: none"> <li>• That some animals are adapted to daily changes in their habitat.</li> <li>• How to measure and record changes in environmental factors.</li> <li>• How to interpret patterns in data.</li> </ul>	<ul style="list-style-type: none"> <li>• Ask pupils to predict how physical environmental factors at Killhope, such as <i>light intensity, temperature</i>, would change over a 24-hour period. Monitor the changes. Try and identify links between the different changes.</li> <li>• Ask pupils to suggest how the population of plants and animals in any one habitat at Killhope would change over that time. Help pupils to develop a list of diurnal, nocturnal, dawn and dusk animals.</li> </ul>	<ul style="list-style-type: none"> <li>• Describe changes in physical environmental factors.</li> <li>• Interpret data about daily changes and explain in simple terms.</li> <li>• Relate changes in variables to each other.</li> <li>• Relate plant and animal activity to environmental changes.</li> </ul>
<b>B: How do environments vary?</b>		
<ul style="list-style-type: none"> <li>• How to frame a question to be investigated.</li> <li>• How to decide which factors are relevant to a question.</li> <li>• About the importance of sample size.</li> <li>• To consider results in relation to the sample used.</li> </ul>	<ul style="list-style-type: none"> <li>• Using observations of small invertebrates, ask the children to generate a suitable question about how the activity of an invertebrate varies with environmental changes, and to plan and carry out an investigation. For example, daphnia,</li> </ul>	<ul style="list-style-type: none"> <li>• Identify a suitable question for investigation.</li> <li>• Identify and control relevant variables.</li> <li>• Choose an appropriate way of obtaining an adequate sample.</li> </ul>

	woodlice and snails are all residents in Killhope's river, reservoirs and woodland.	
<b>C: How do environments vary?</b>		
<ul style="list-style-type: none"> <li>• How some animals are adapted to seasonal changes in their habitats.</li> <li>• That adaptations may be to avoid climatic stress.</li> </ul>	<ul style="list-style-type: none"> <li>• Take pupils to Killhope at different times of the year, and ask pupils to describe differences and describe the consequences of these for the organisms in the habitat. Ask them to predict changes to a local habitat and the effect on the plants and animals over the year.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify ways in which habitats vary through the year.</li> <li>• Describe some strategies which plants and animals adopt to avoid climatic stress.</li> </ul>
<b>What do food webs tell us?</b>		
<ul style="list-style-type: none"> <li>• To make careful observations of plants and animals and sources of evidence about animal's food.</li> <li>• That some plants have adaptations to deter animals from feeding on them.</li> <li>• To interpret evidence about food sources and draw conclusions from it.</li> </ul>	<ul style="list-style-type: none"> <li>• Ask the pupils to suggest likely places to find plants and animals, and say what species they think they will find there, and how they may be linked into food webs. Encourage children to think about what evidence we use to find out what animals eat. How many of these can you find at Killhope, eg <i>teeth marks, remains near nests, droppings showing berries, plant protectors in certain areas!</i></li> <li>• Ask the children to identify and record as many species of plants and animals as possible, and to record any observations which help to identify a food source, and to note features which may deter animals from feeding.</li> </ul>	<ul style="list-style-type: none"> <li>• Identify plants and animals.</li> <li>• State that a wide variety of organisms can be found in quite small habitats.</li> <li>• Describe and explain what might provide evidence about animals' food.</li> <li>• Identify features of plants which might deter animals from feeding.</li> <li>• Interpret evidence about food sources.</li> </ul>

## UNIT 8D: ECOLOGICAL RELATIONSHIPS

**Using Killhope:** Killhope is a perfect location to compare and contrast different habitats because we have so many, all within a twenty minute walk of each other. The river, Killhope Burn, flows through the bottom of the valley, we have woodland which is part of a protection programme for red squirrels and black grouse, and we also have reservoirs which are fed by a stream system. The Washing Floor, where the lead was cleaned and dressed, now contains a variety of small but hardy plant life, and invertebrates and minibeasts can be found throughout the site. Killhope also provides all the facilities to make a field visit more comfortable, such as toilets and picnic facilities.

LEARNING OBJECTIVES	POSSIBLE ACTIVITIES	LEARNING OUTCOMES
<b>How can green plants be classified?</b>		
<ul style="list-style-type: none"> <li>That green plants can be subdivided into those with vascular tissues and complex leaves with a waterproof cuticle, and those without.</li> </ul>	<ul style="list-style-type: none"> <li>Find a selection of plants in Killhope's woodland and around the reservoir, and ask the children to list the differences in the conditions in the two environments. Show how plants are subdivided into two groups: plants without waterproofing layers, eg moss, and plants with waterproofing layers, which inhabit a wider range of habitats.</li> <li>Ask the pupils about other features of the plants, and use this as the basis for classification.</li> </ul>	<ul style="list-style-type: none"> <li>Recognise that plants are subdivided into groups based on different characteristics.</li> <li>Explain why mosses are found in places which are damp.</li> </ul>
<b>How do plants, animals and environmental conditions interact in a habitat? How can we collect data to answer questions about a habitat (1)?</b>		
<ul style="list-style-type: none"> <li>How to frame questions that can be investigated.</li> <li>To use scientific knowledge and understanding to raise questions about habitats.</li> <li>To decide what data might be collected and how to present data.</li> </ul>	<ul style="list-style-type: none"> <li>Organise fieldwork – take a trip to Killhope, focussing either on the reservoir, Killhope Burn, or the woodland, and ask pupils to consider <i>What lives there? Why do communities differ in habitat sizes?</i></li> <li>Plan and carry out fieldwork to determine the answers.</li> </ul>	<ul style="list-style-type: none"> <li>Decide on questions to be investigated.</li> <li>Suggest data to be collected.</li> </ul>
<b>How do plants, animals and environmental conditions interact in a habitat? How can we collect data to answer questions about a habitat (2)?</b>		
<ul style="list-style-type: none"> <li>To sample using quadrats.</li> </ul>	<ul style="list-style-type: none"> <li>Organise fieldwork – take a trip to Killhope, focussing either on the reservoir, Killhope Burn, or the woodland, and carry out population sampling using quadrats</li> </ul>	<ul style="list-style-type: none"> <li>Use data from quadrat sampling to give information about population size.</li> </ul>
<b>How do plants, animals and environmental conditions interact in a habitat? What lives there (1)?</b>		
<ul style="list-style-type: none"> <li>To observe and record the organisms which comprise the living community in a habitat.</li> <li>To work safely with living things.</li> </ul>	<ul style="list-style-type: none"> <li>Choose a habitat at Killhope, and ask the pupils to find, collect and identify typical plants and animals that they may come across. Perhaps you could sit in our red squirrel hide and observe the</li> </ul>	<ul style="list-style-type: none"> <li>Observe and record the organisms which comprise the community in a habitat.</li> <li>Work safely with living things and show sensitivity to them.</li> </ul>

<ul style="list-style-type: none"> <li>To show sensitivity to living things in their environment.</li> </ul>	<p>feeding ground – it's not only red squirrels that you can see!</p>	<ul style="list-style-type: none"> <li>Make records in an appropriate way.</li> </ul>
<b>How do plants, animals and environmental conditions interact in a habitat? What lives there (2)?</b>		
<ul style="list-style-type: none"> <li>That different habitats support different living things.</li> </ul>	<ul style="list-style-type: none"> <li>Ask different groups of pupils to collect data about two different habitats, perhaps comparing the woodland to Killhope Burn, and then report their findings.</li> </ul>	<ul style="list-style-type: none"> <li>Describe how the communities in two habitats differ.</li> </ul>
<b>How do plants, animals and environmental conditions interact in a habitat? Why do the communities differ in different habitats (1)?</b>		
<ul style="list-style-type: none"> <li>To measure, record and describe environmental factors.</li> <li>That different habitats have different environmental features.</li> </ul>	<ul style="list-style-type: none"> <li>Ask pupils to collect data about the environmental factors of the habitat they are studying.</li> </ul>	<ul style="list-style-type: none"> <li>Collect environmental data using ICT.</li> <li>Use the data collected to compare different habitats.</li> </ul>
<b>How do plants, animals and environmental conditions interact in a habitat? How big are the populations in the habitat (1)?</b>		
<ul style="list-style-type: none"> <li>How to use quadrat sampling techniques to collect information about populations of organisms.</li> <li>How to record data in appropriate ways.</li> </ul>	<ul style="list-style-type: none"> <li>Arrange for pupils to collect quantitative data about the number and distribution of organisms in two different habitats where environmental data has already been collected.</li> </ul>	<ul style="list-style-type: none"> <li>Collect information about the number and distribution of organisms in a quadrat sample.</li> <li>Use sample data to estimate a population.</li> <li>Record data in appropriate ways.</li> </ul>
<b>Reviewing work</b>		
<ul style="list-style-type: none"> <li>To apply their knowledge of populations within a habitat to an environmental issue including protection of living things.</li> </ul>	<ul style="list-style-type: none"> <li>Present the pupils with a case study, such as the conservation of the red squirrels or the black grouse at Killhope, ask the children to report on how a change to their environment, such as the planting of different types of trees, might affect the living things in the environment, and how to protect it.</li> </ul>	<ul style="list-style-type: none"> <li>Produce a report in which consequences of the change are related to specific organisms within a particular habitat and how they might be protected.</li> </ul>

## UNIT 8H: THE ROCK CYCLE

**Using Killhope:** The QCA schemes recommend using a collection of rocks to teach this unit. As a European / Global Geopark, Killhope has an excellent mineral collection, both on display in the Pennine Jewels exhibition, and available for students to handle and observe the different characteristics in our Mineral Room. The guidelines also recommend visiting museums to see how rocks are used – at Killhope they are an integral part of the site, and also taking a trip to observe rock formations. At Killhope it is possible to see the erosion of rocks on our Washing Floor, where rock is sorted into smaller and smaller particles and finally into silt, and it can be seen in action in the streams in our woodland, and at Killhope Burn, the river flowing through the site. In our mine pupils can observe rock formation underground and veins of minerals running through the earth.

## UNIT 9M: INVESTIGATING SCIENTIFIC QUESTIONS

**Using Killhope:** Killhope is an excellent location for carrying out scientific studies, and there are many ways this unit could be adapted. We have reservoirs and water wheels which can be used to investigate water power, mass of water necessary to power the wheel, and other similar questions. We have a wide variety of habitats, such as streams, a river, woodland and reservoirs with a wide variety of flora and fauna, and we are involved in several conservation projects within our woodland. The machinery on site is used to sort and sieve minerals, and we have an excellent collection on display which could provide further information. We also provide facilities necessary to support a detailed scientific study, such as toilets and picnic tables.

LEARNING OBJECTIVES	POSSIBLE ACTIVITIES	LEARNING OUTCOMES
<b>What sort of questions can be investigated scientifically?</b>		
<ul style="list-style-type: none"><li>Identify questions which can be answered scientifically, design a suitable strategy, and carry out the investigation.</li></ul>	<ul style="list-style-type: none"><li>Adapt this unit to Killhope as suggested above.</li></ul>	<ul style="list-style-type: none"><li>Identify questions which can be answered scientifically, design a suitable strategy, and carry out the investigation.</li></ul>

# KILLHOPE

## LEISURE AND TOURISM

### How a visit to Killhope can inspire learning in Leisure and Tourism

Killhope is a lead mining museum in the North Pennines, run by Durham County Council. The site focuses around the reconstructed remains of a nineteenth century lead mine, the most complete in England, with a mine that visitors can go down, a Washing Floor where visitors can try some of the jobs of the lead miners, and the miners' accommodation. The site continually tries to expand: there are exhibitions of minerals, events held throughout the year, and now woodlands and reservoirs where conservation programmes for black grouse and red squirrels are being carried out. The museum has won several awards, including the Guardian Family Friendly Museum Awards 2004 and the Pride of Northumbria 2000 Special Award for Outstanding Learning Experience, and is an English Tourism Quality Assured Visitor Attraction for the third year running.

Killhope is known for the quality of its customer service, recognised through these awards, but the nature of the site has raised issues that students of leisure and tourism will find particularly relevant. Due to its isolated location in Weardale, Killhope employs a Commercial Services Officer to handle their complex marketing, which is targeted to attract visitors of different ages as well as school groups. Every year Killhope carries out on-site market research, ensuring that their marketing is as up-to-date as possible.

Killhope deals with the impact of tourism daily: it has had important economic, cultural and environmental effects on the area. The museum is a major local employer, with thirty-five full time, part time and casual staff, and also operates a café franchise. It continues the traditions of the north-east miners, and some visitors come to the site from old mining families who emigrated, trying to trace their family history.

Killhope also has complex environmental issues to deal with. The site is located in an Area of Outstanding Natural Beauty, and was recently awarded the status of European / Global Geopark, causing changes in several policies. Staff are aware of the need to ensure high numbers of tourists will not have an adverse affect on the area.



Killhope also faces issues of sustainable tourism, as visitors are primarily day-trippers and local schools. Like many other rural tourist locations, Killhope was forced to close during the foot and mouth, although the following summer was one of our best seasons! Killhope also monitors why it appeals to visitors, promoting popular aspects, and improving / developing others as required.

### **WHAT CAN WE OFFER...**

Killhope can be used to support learning in Leisure and Tourism at any level. Our staff are flexible, and will deliver programmes tailored to the ability of your group.

### **GUEST LECTURES:**

In order to support learning in the classroom, the Commercial Services Officer can come and speak to your class on a number of issues:

- **Marketing at Killhope** – planning and implementing a successful marketing policy for a rural organisation
- **Customer Service at Killhope** – creating an award-winning customer friendly team
- **The Impact of Tourism on Killhope and the Local Area** – dealing with issues such as employment, sustainable tourism, working in an Area of Outstanding Natural Beauty and a European / Global Geopark, and Killhope's relations with local residents.
- **Killhope as a Tourist Organisation** – a more general lecture on the organisation of Killhope as a County Council museum, the effect this has had on its policies, the activities it runs, its facilities and the decisions the organisation has taken regarding where to focus its resources.

A lecture will last for 1 – 2 hours, as requested, and will cost £50, plus expenses. Only one copy of material relevant to the lecture, such as marketing policies, will be supplied, and can be distributed if desired.

### **CASE STUDIES:**

Killhope can also provide a valuable case study for many of the modules:

- Investigating Leisure and Tourism
- Marketing in Leisure and Tourism
- Customer Service and Leisure and Tourism
- Impacts of Tourism
- UK Tourist Destinations

On a visit to Killhope, students will be given an introduction to the site, and a detailed breakdown of the relevant policies which they will evaluate. They will then be given some time to carry out independent study / group work of how these policies are implemented on site, whether they think the implementation is successful, and will then get together to discuss the work they have done throughout the day, and draw conclusions about Killhope as a working tourist organisation.

### **Investigating Leisure and Tourism:**

Students will be given:

- an introduction to the site, including a brief overview of its history and facilities
- a detailed breakdown of how Killhope operates as a public sector organisation
- information regarding the policies which affect its decisions, and where possible copies of those policies
- funding the museum, including details of grants, and income generation strategies
- Seasonal events and activities that Killhope runs, our expansion plans, and our educational programme.

### **Marketing in Leisure and Tourism:**

Students will be given:

- an introduction to the site, including a brief overview of its history and facilities
- a detailed breakdown of the different marketing policies, including:
  - Killhope's marketing strategy
  - market research
  - targeted marketing – reaching different audiences
  - Place and promotional decisions
  - Evaluating the success of these decisions
  - Implementing marketing strategies on site

### **Customer Service in Leisure and Tourism:**

Students will be given:

- an introduction to the site, including a brief overview of its history and facilities
- Customer Service Policy – including the complaints procedure and standards expected of staff
- working with external customers - visitors to the site
- working with external customers - external organisations
- working with internal customers
- customer records, and how this influences the Business Plan
- an opportunity to evaluate the implementation of the Customer Service Policy

### **Impacts of Tourism:**

Students will be given:

- an introduction to the site, including a brief overview of its history and facilities
- the economic effect of tourism on the site and on the area, including
  - Financial effects on Killhope and the area
  - Conditions of employment
  - Financing Killhope
  - Seasonalism
- the social and cultural effects of tourism on the site and area, including
  - revival and continuation of north east traditions and crafts
  - effect on the local area, such as overcrowding
  - increased revenue for local hotels / B&Bs
- The environmental effects of tourism on the site and area, including
  - The maintenance and cleaning of the streams on site
  - The conservation of Killhope as a heritage site, and its continued development within an environmentally sound context, including the constraints of being in an Area of Outstanding Natural Beauty
  - Killhope's environmental policies, including our conservation programme for red squirrels and black grouse, and out planting programmes
  - The potential problems of erosion cause by large numbers of visitors and the methods used to control the impact

### **UK Tourist Destinations:**

Students will be given:

- an introduction to the site, including a brief overview of its history and facilities
- a discussion of the reasons for Killhope's appeal to such a wide audience, and who that audience are
- details of competing attractions in the area, and strategies to minimise their effect
- accessibility of the site, including transport links
- impact on the local economy