THE PRIORY, RIVER WHARFE AND HARTINGTON TRAIL HANDBOOK.

BOLTON ABBEY ESTATE

The Bolton Abbey Estate is centred on the village and ruins of the Priory or Abbey. It extends for about 30,000 acres (12,140 ha.) into the surrounding Dales countryside. On the Estate there is farming, forestry, fishing, heather moorlands, many historic buildings, miles of footpaths open to the public, plus cafés, restaurants and hotels. Practically all the Estate comes within the Yorkshire Dales National Park and has been granted Heritage Status because of its historic buildings and fine landscape.

The Hartington Trail

This trail commences in the coach and car park at Bolton Abbey, passes through the Hole in the Wall to the ruins of Bolton Priory before crossing the river Wharfe at the footbridge. A study of the river is followed by an ascent along the footpath into the woodlands leading towards the Cavendish Pavilion where drinks, ice cream and food can be bought. The return walk follows Sand Holme Brow to the Cavendish Memorial, then the footpath which crosses in front of the Church before crossing the field back to the Hole in the Wall. The walk with study time is likely to be about 3 hours but, with a break for food at the Pavilion and recreational time on Sand Holme by the river, it can easily be extended into a full day.

The trail is designed for pupils in the age group 8 - 13 years to cover aspects of Key Stages 2 and 3. It is thus suitable for older Primary School pupils or the lower years of Secondary Schools. Questions are deliberately varied to cover aspects of geography, history, science, conservation, woodlands and the environment. It recognises varied ability, so some questions are easy, others require thought and reasoning.

Staff should be prepared to assist and direct their pupils according to ability and age. Suggested answers are available but these are not exhaustive and alternatives can be substituted.

The Estate hopes you find the Trail helpful to pupils, stimulating, thought provoking and a suitable addition.

ARRIVAL

Coaches and mini-buses should follow the A59 to Bolton Bridge, turning at the roundabout on to the B6160 (see the enclosed location map). Coaches following the B6160 from the north (Grassington area) have to pass through an archway which is 10'9" high and 9'5" wide. All coaches, minibuses and cars should enter the village car park from the B6160. Staff should report to the Estate Office Visitors' Centre just beyond the shop on their arrival. Schools should leave the car park by the shop and walk the 150 metres to the Hole in the Wall. GREAT CARE SHOULD BE TAKEN WHEN CROSSING THE B6160 ROAD.

TOILETS

Toilets are available on the car park and at the Cavendish Pavilion but there are no facilities between these two areas.

CLOTHING

Old clothes are most suitable. Long trousers for both boys and girls are advisable and strong shoes should be worn. An anorak or waterproof coat is also advisable as the weather can rapidly change and the pupils are out in the open for long periods.

LITTER

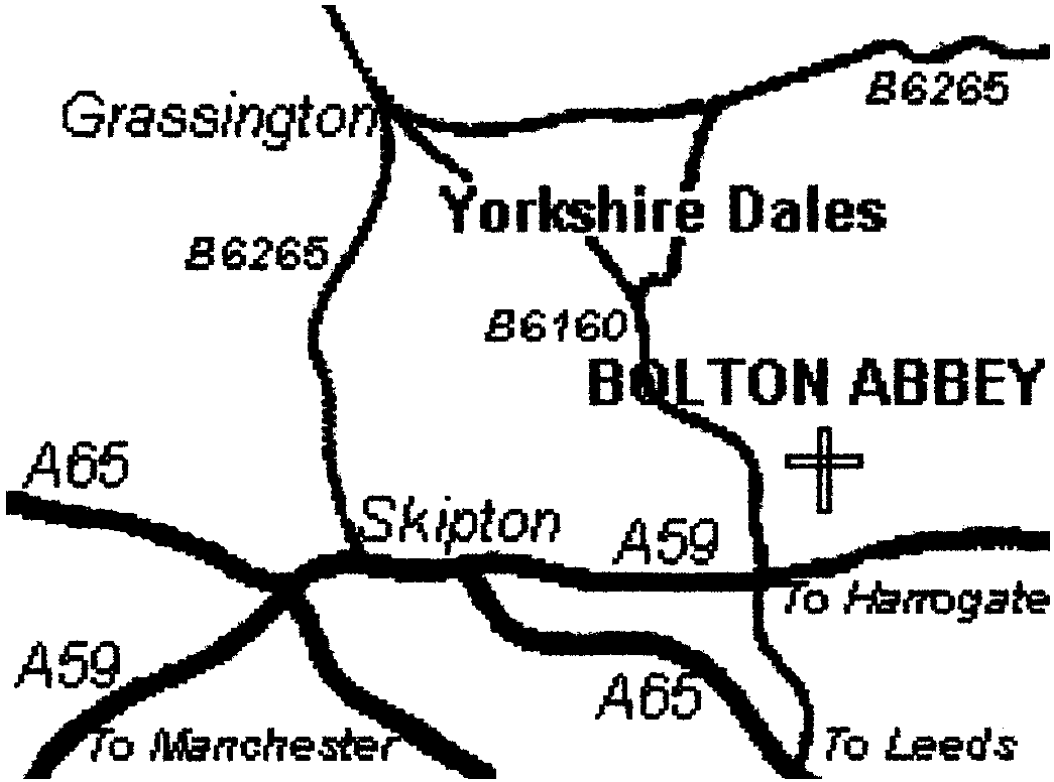
Please keep the trail free from litter. Litter bins are available on the car park and at the Cavendish Pavilion. Remember the wildlife and environment are at risk.

FIRST AID

School parties should bring their own first aid. In emergencies, contact the Visitor Centre or the Cavendish Shop.

PLEASE NOTE THE BOLTON ABBEY ESTATE CANNOT TAKE RESPONSIBILITY FOR ANY INJURY OR DAMAGE WHICH MAY ARISE FROM YOUR ACTIVITIES ON ESTATE LAND. THE WELL-BEING AND SAFETY OF CHILDREN IN A GROUP REMAINS THE RESPONSIBILITY OF THE LEADER(S) THROUGHOUT THE VISIT. PLEASE ENSURE YOUR LOCAL EDUCATION AUTHORITY INSURANCE IS IN PLACE AT THE TIME OF YOUR VISIT.

Location Map A



Distance from:

HARROGATE – 20 MILES

LEEDS – 23 Miles

MANCHESTER – 51 Miles

YORK – 37 Miles

NB: On the B6160 just north of Bolton Abbey village green there is an archway across the road, which measures 10’9” high x 9’5” wide.

This archway can be negotiated by most touring coaches, but please make your Coach Operator aware if they are approaching Bolton Abbey from the Barden region to the north. Coaches approaching from the A59 to the south do **NOT** have to pass through the arch.

Location 1 **Hole in the Wall**
(15 minutes)

This is the main entrance to the Priory grounds after crossing the road from Bolton Abbey car park. To the left of the flight of steps is a large area of sloping ground and also a flat track from where the Priory grounds can be viewed and the following questions answered.

Overleaf map D is a simple plan of how Bolton Priory may have looked about 1500 to 1530 (early sixteenth century). Your position is shown on the plan. There is also a picture by the Hole in the Wall entrance, which can help you to understand the questions.

At the foot of the steps in front of you is a large hollow (shaped like a sausage). This was the fishpond and so you can see or imagine where the other buildings may have been. The stream shown on the plan is still there. See if you can see the small valley it follows just beyond the large hollow.

(1) What reason was there for a fishpond at the Priory? *It provided some of the food for the monks and visitors.*

(2) What kind of fish would have lived in this deep and rather muddy pool? (Some of you may have a garden pool at home which could help you.) *A type of carp (goldfish/koi family) which can live in stagnant water*

(3) How was the fishpond filled with water? Think about what happens on a canal lock. *A sluice gate from the nearby stream could be lifted to allow water into the fishpond.*

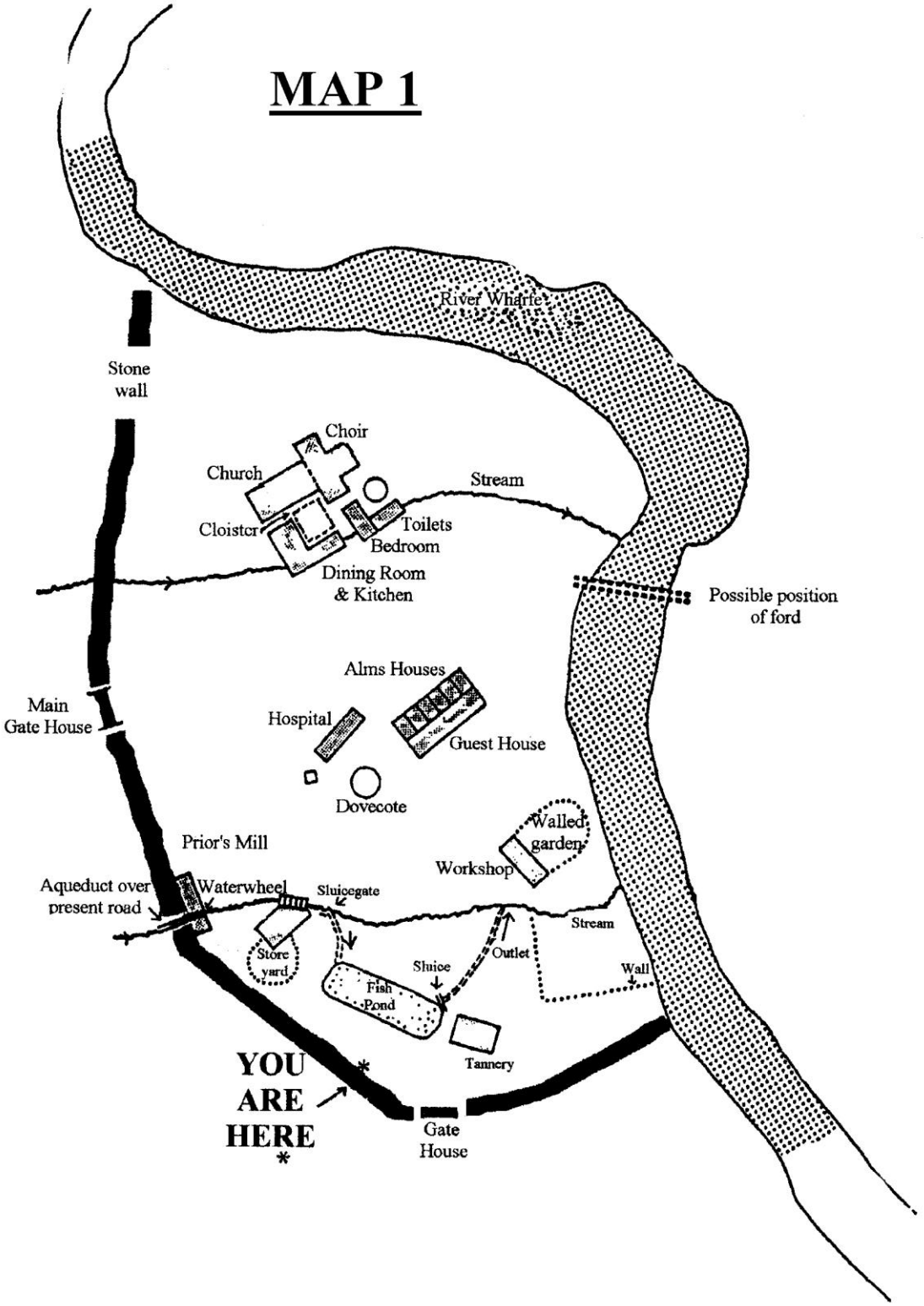
(4) If the monks wished to catch the fish, suggest one method they might have used. Remember sluice gates can be lifted and lowered to allow water through or stop the flow completely. *The water level could be lowered in the pond by opening the sluice at the south eastern end and closing the sluice gate - then the fish could be netted.*

5) The stream crosses the Priory land - what other use was made of the water **apart** from the **fishpond?**

(a) *Water was used in the tannery - tanning leather.*

(b) Why was this use so important in 1500? *Leather was vital for footwear and clothing, so tanning cow hide was very important before the idea of plastics, rubber etc.*

MAP 1


River Wharfe
Stone wall
Choir
Church
Stream
Cloister
Toilets
Bedroom
Dining Room & Kitchen
Possible position of ford
Alms Houses
Main Gate House
Hospital
Guest House
Dovecote
Walled garden
Prior's Mill
Workshop
Aqueduct over present road
Waterwheel
Sluicegate
Stream
Store yard
Outlet
Sluice
Wall
Fish Pond
Tannery
YOU ARE HERE
Gate House

(6) A bark mill and a tannery were built close together.

(a) What type of tree bark from the surrounding forests would have been crushed in the mill?

……*Oak*……..

(b) What material would have been produced from the crushed wood?

……*Tannin*……

(c) What materials does a tannery produce?

……*Finished leather*……

(d) Why was it built close to the bark mill?

……*Because the bark was crushed for the tannin necessary in the production of the leather - so no transport costs were involved.*

(7) Where would the waste (effluent) from the tannery be put? Look at the map to help you decide.

……*Into the stream and back into the river. No one was concerned about the environment in those days*

(8) Would you be allowed to throw the waste away today? Yes/No. *NO*

Perhaps you could think of a reason for your answer.

……*The effluent would certainly affect the fish etc in the River Wharf*

(9) Why did many Abbeys and Priories own a dovecote - a rounded tower specially built with nesting areas inside for maybe 150 or more doves? ... *The doves produced eggs - (eaten) and also surplus birds each year could be caught and eaten for their meat* ……..

(10) Bolton Abbey had a walled garden - often walls were 3 metres or more high. Why did they build high walls around the garden?

……*Protection against wind and frost. Any south or west facing walls had fruit trees (apples, plums, cherries etc.) grown against them as walls retain daytime heat and release it overnight, keeping the fruit warm. (Acts against frost too)*

(11) Look carefully at the Priory buildings. A small stream passes beneath the old dining room, which would have required a kitchen alongside it. Why were these buildings built over a fresh water stream in the years about 1500?

……*The kitchen took fresh water from the inlet for cooking and washing pots etc. but waste materials and soil etc washed from vegetables could be put into the stream (other side of kitchen) and washed away into the River Wharfe. So, the equivalent of having a tap and waste disposal unit.*

(12) Remember that the Priory was built over 400 years ago. So why were the toilets also built on the same stream which continued onwards from the kitchen - but nearer to the river than the dining room and kitchens?

……*The waste from the toilets could also be flushed away by the stream down into the River Wharfe along a channel.*

(13) What were the cloisters and how did the monks use them?

…… *These were quiet, secluded walks, undercover yet open where monks could walk, think, contemplate in peace, exercise etc.*

(14) Look at the map of the Priory. Can you see a good reason for building it at this point? Remember that only a few **bridges** had been built when the Priory was started about 1154 AD.

……*It was an important FORD across the river - where the river was often shallow.*

(15) Can you think why the Priory was not built closer to the river Wharfe on the very flat land?

……*Flooding! Also the flow of the stream through the kitchens here would be fast and suitable - on the flat land there would be little flow.*

(16) Although not shown on your map, many Abbeys had an apiary with one monk working as an apiarist. What is an apiary? …*Beehive*

What is an apiarist? …*Bee keeper*

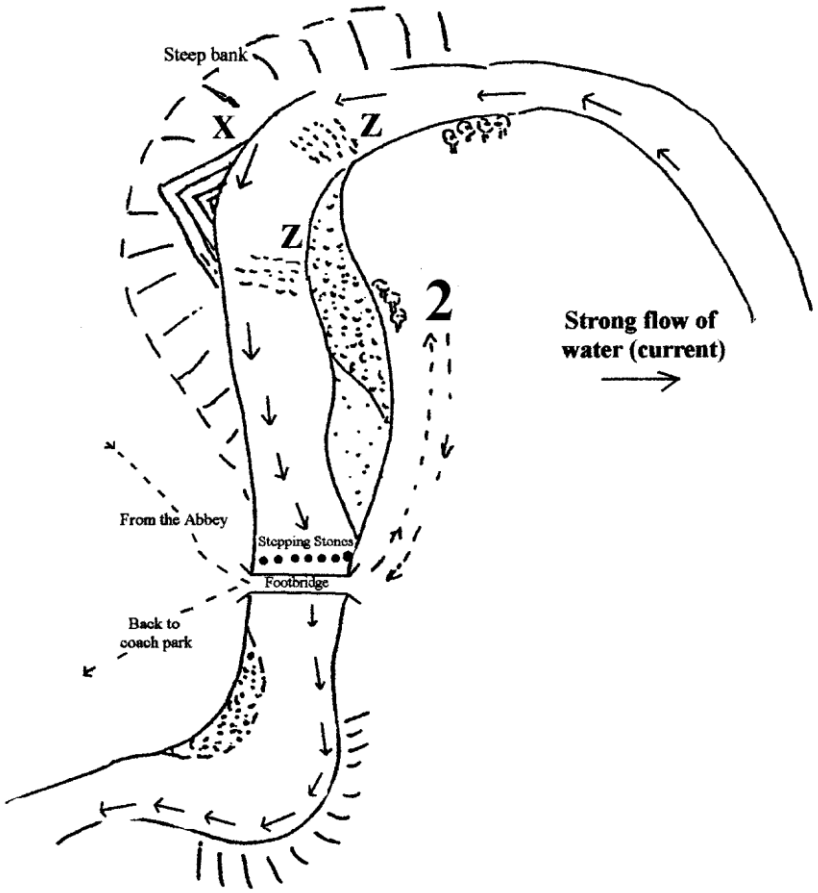
(17) Can you think of a good reason for having an apiary over 500 years ago before there was a way of making sugar? This may give you a good clue to question 16.
……*It was the only way of sweetening food - no sugar existed.*

(18) The Abbey had a farm, dovecote, fishpond, gardens, a tannery, and workshops. Thus it could produce all the monks required for their simple life.

This is what we call being S*elf……Sufficient*
Having food, clothing, housing, to live a simple life not relying on outside help.

Location 2 The River Wharfe.
(15 minutes)

Walk down to the footbridge, cross the river and walk along the edge of the sand and shingle beds until you arrive by the three small hawthorn trees (see map below).



(1) Look across the river, the bank is very steep, similar to the bank near the footbridge. This steep bank is called a *river. . . cliff . .*

If it was on the sea coast, we would call it a sea *cliff. .* in the same way.

(2) On the map, the strong current in the river is shown. Why do you think the river banks are so steep at point X and Y?

……The current wears (erodes) away the side of the valley, undercutting the base, the valley wall collapses making it steep

(3) Between where you are sitting and the far bank of the river, the water may appear to be 'white'. This is because the river here is *shallow* the *rocks* are close to the surface of the water and this causes the water to bubble and foam. These areas labelled Z on your map are called r*apids*. Complete the missing words from the list given - waterfalls, rocks, gorge, deep, rapids, shallow, white.

(4) In front of you there is a large area of pebbles. Examine them and tick the correct boxes.

The pebbles are:

very sharp with many corners	◯	rounded and smooth	◯
all one size	◯	*many different sizes*	◯
many colours	◯	only one colour	◯

(5) If there are many colours, try to put a colour against the type of rocks found in this area

Colour	**Rock**
orange/brown towards black	Grit stone (made of large pieces of **sand** and grit)
grey to white	Limestone (made from **whitish** shells, white coral, etc.)
usually very dark/black	Shale (made from mud which has become hard and become **darker** in colour)

(6) Which type of rock is there most of? ……This is likely to be the main rock found in the local area.

It depends on the site chosen - generally very large gritstones (very local) or limestone (brought down the river from the area above Barden Bridge, much smaller in size) but there may be more limestone pebbles in number.

7) Which rock forms the largest pebbles? *Gritstone* Can you think of why this may be? *Because it is harder and more resistant*

(8) Look at the map which shows where the strong current flows. Fast moving water can carry pebbles and sand along with it. In slow moving water, the pebbles and sand drop to the riverbed (called depositing). What has caused the sand and pebbles to be deposited on your side of the river?

The current is very slow here

(9) The area of sand and pebbles on the inside of a large bend is called

Slip off slope, point bar.

10) When a river makes a number of wide bends, the river is said to be

Meandering

11) The area of land behind you (away from the Priory) is

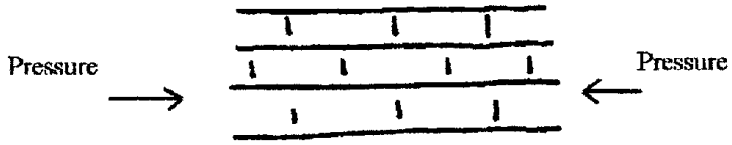
☐ steep ☐ *flat* ☐ undulating (up and down)

(12) Such an area is likely to *flood* when the river level rises after very heavy rain or thunderstorms or when snow melts in the winter.

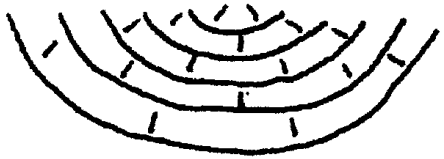
So the area labelled A may be called a *Flood plain*

(13) Looking in front of you (towards the Priory), there is a rock 'formation' on the far bank, which looks like this:-

These rocks have been produced by great pressure such as an earthquake. They can fold upwards or downwards.



If upwards like the area you can see, the formation is called an.....but if downwards, then it is called a .....



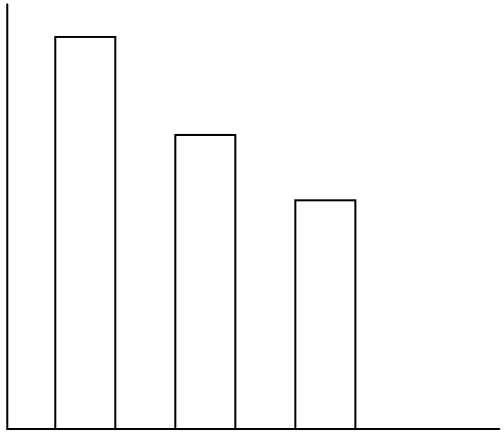
Upwards - anticline Downwards - syncline

(14) If you have time at the river, you might like to do a simple survey of the pebbles on the beach. Mark out an area by covering it with a page of your book. This can be done at random by allowing one sheet to float down onto the ground.

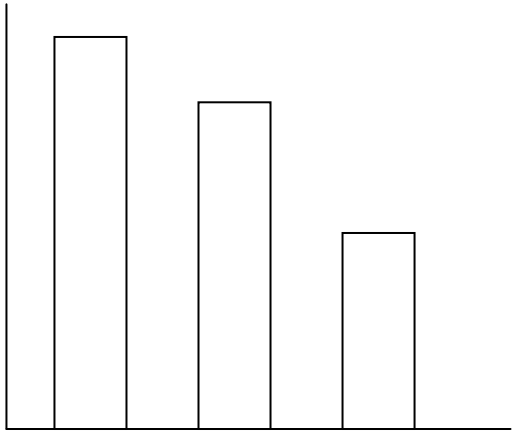
(i)	Then count the number of pebbles which are	white	……
(ii)	" "	sandy colour	……
(iii)	" "	black	……
(iv)	" "	very smooth	……
(v)	" "	smooth but also sharp	……
(vi)	" "	sharp all way round	……
(vii)	" "	smaller than fingernail	……
(viii)	" "	fingernail to little finger length	……
(ix)	" "	bigger than finger length	……

When you return to school, you may be able to work out some percentages and use them to draw graphs some bar graphs. (It may help you understand the work of a river.)

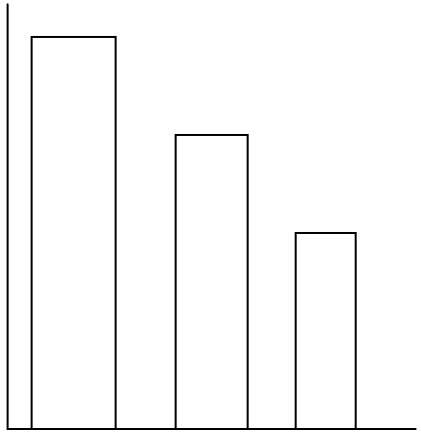
These are some examples which may be helpful.



Colours



Shapes



Smooth or sharp

Location 3 The Junction of Footpaths.
(10 minutes)

Walk uphill along the footpath to the junction with the footpath to Storiths. Look to the north-west over the field towards the open moorland in the distance.

1. Why have new trees been planted in the area immediately in front of you?

   ……*Replace dead or dying trees, conserve landscape and environment*

2. Why have the trees been surrounded by high rectangular fences?

   ……*Prevent attack by rabbits, sheep, deer etc*……..

3. In the foreground a dead tree has been apparently abandoned.

   a) Look around to find where it has been cut down - look for the old stump.

      ……*Stump by path* ……..

   b) Can you think of two reasons why this tree may have been felled?

      i) …*Tree possibly dead or dying*

      ii)…*Danger also to the public* ……

   c) The tree has been left on the slope. How may it help both the area around it and possibly the local environment?

      i) …*Humus as it rots*……..

      ii) …*Home for insects, beetles spiders and small animals*

      iii) …*Basic food chain*……

4. From where you are standing, you should be able to see a large, tall tree about 40 metres away that has many bare branches and very few leaves compared to other similar trees.

i) What is happening to this tree? …*It is slowly dying*……

ii) Why is it happening? ……*Possibly old age*……

iii) What will eventually happen to this tree? …*Fall over in high winds as it rots inside the trunk. Maybe cut down to avoid danger*

iv) To preserve the landscape, what will eventually be necessary where this tall tree presently stands?

Replant with young tree ……

Now look back to question 1 at Location 3 and see if your answers are connected.

5. i) About 10 metres along the track, examine the tree to the left of the path. What type of trees is this?

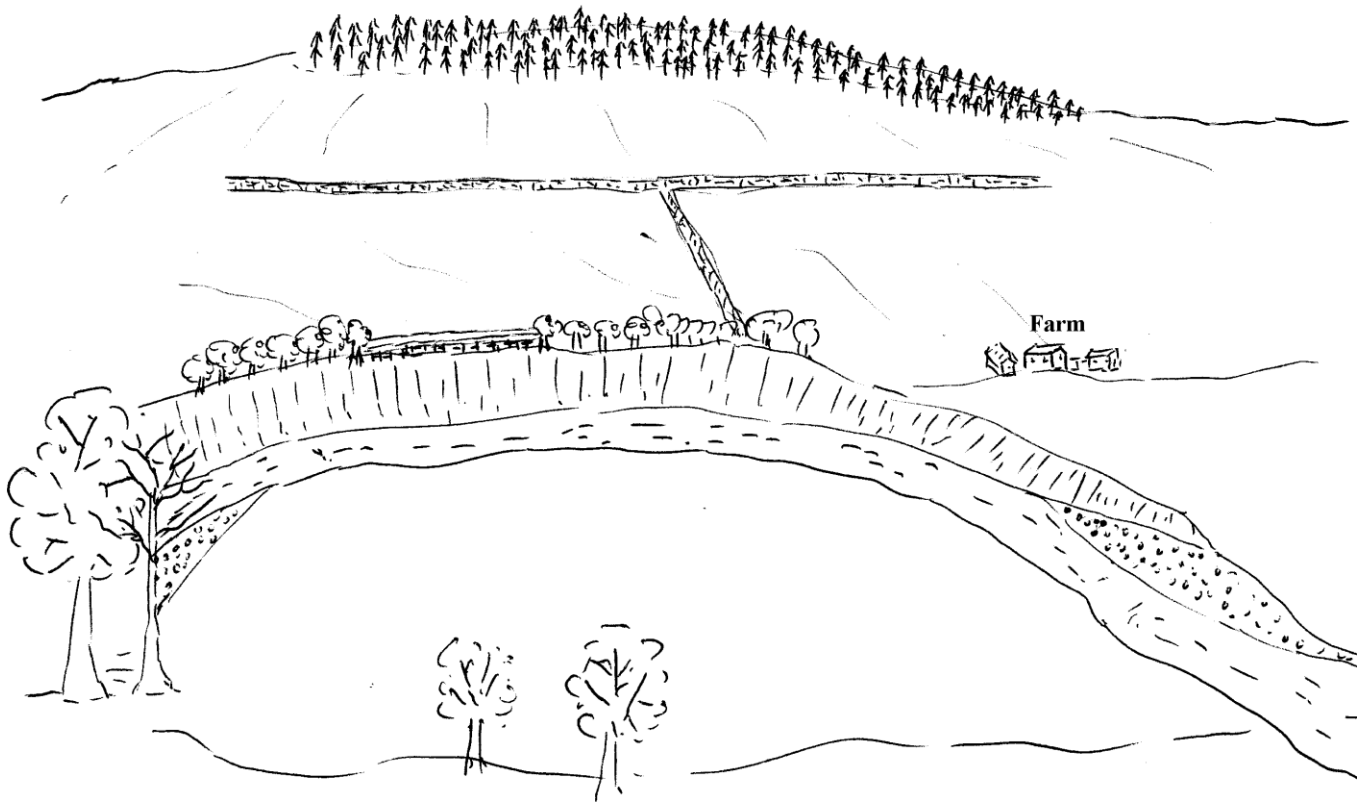
…*Holly*……

ii) How does it differ from the small tree branches we often use to decorate the house at Christmas? …….

…*Very few thorns or berries May be the result of crossing with a non-thorn cultivated variety*……

Location 4 Walk about 30 metres to the seat with a view westwards.
(5 minutes)

Below is a field sketch taken from the seat. Not all the trees and vegetation are included. This allows you to see the main features of the landscape. A number of words are listed for you. Use these to label the features on the field sketch with a short arrow. One feature, the farm, is done for you.



Label

1. Farm – see across
2. Flood plain
3. Dry stone wall
4. Shingle bank
5. River cliff
6. River Wharfe
7. Coniferous plantation
8. Fencing
9. Road
10. Rapids
11. Deciduous trees

Location 5. Follow the footpath until you see the stile. Stop about 20 metres before the stile and look back at the view towards the south-west. (20 minutes including time for sketch, otherwise 10 minutes.)

1. On the blank side of your paper, draw a field sketch towards Bolton Priory. Label the field sketch with arrows/words as at Location 4. Remember to miss out much of the vegetation and concentrate on the highlights. A list of words follows - these may be helpful.

2. Look at the following words. Underline the words you feel might be used to describe the landscape or parts of the landscape.
Rocky, rough, rolling, undulating, flat, steep, wooded, plantations, evergreen trees, deciduous trees, meanders, cliffs, farms, grassland, meadows, arable land, quarry, tracks, road, farms, Priory, church, houses, stone walls.

3. This general area has been granted heritage status because of its old buildings and general landscape.
i) In two sentences describe the scene or scenery in front of you

. ……*Description should include the Priory, Church etc*……

ii) Do you find this area attractive? *Yes*/No. *Hopefully*
iii) Give a reason for your answer to 3.ii) *Depends*……

……

iv) How might the landscape you see be improved further? …*Could be interesting dependant on where the pupil comes from*

Location 6. Some 50 metres beyond the stile.

On the right hand side of the path are 4 plastic tubes containing young trees.

1. How old do you think these trees are?

   a) *less than 5 years.*
   b) 10 years.
   c) 15 years
   Underline or circle one age.

2. Why have these young trees been planted in tubes?

   a) ……*Rabbits would eat the bark & kill the trees*

   b) ……*Helps the trees grow straight and have few lower branches. Produces a better tree on occasions*

3. There are many large trees to the left of the path, so why was it thought necessary to plant these extra trees?

   …*Eventually the large trees will die - these will help replace them in many years time. Protection from N & NE winds*

4. Can you recognise the trees around you from the distinctive leaf shape? …*Oak*……

5. What type of seed/nut does the tree produce in order to regenerate (produce more identical trees)?

   ……*Acorn*……

6. Around the young trees are areas of brambles, blackberries, docks, etc. looking quite untidy. Why are such areas deliberately left and not cut down? Think of two good reasons.

   a) ……*Food for birds and animals*……

   b) ……*Protection and shelter - nests etc*……..

Location 7. Walk on a further 70 metres to a bench overlooking a slope.

1. On the slope is a prominent tree which has no leaves on its crown. This tree is known as a 'Stag's Head' tree. Why is it so called?
   ……*Looks like a set of antlers from a stag*……..

2. What is happening to this tree? ……*Slowly dying in it's crown*……..

3. Eventually what will the foresters (people who maintain woodland) have to do to this tree?
   a) ……*Cut out diseased wood* …….. b) …*Fell the tree and then replace it*

Location 8. Walk on a further 90 metres to a plantation of trees between the path and the dry stone wall (to the right).

1. These trees have plastic wrapped around their lower trunks. Why was the plastic placed there originally?
   ……*Protection against rabbits gnawing the bark.*

2. How is this plastic wrapping better than the tubes seen earlier? i) *It will expand*
   ii) ……*Will eventually pull away or disintegrate*……

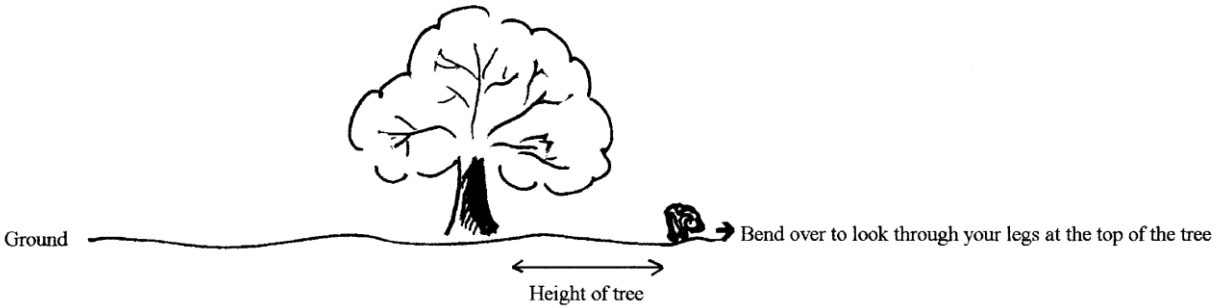
3. How old do you think these trees are? Circle one age. i) 5 - 10 years. ii) *15 - 20 years*. iii) 30 - 50 years.

4. There are three main types of tree. Can you name them from their leaf shape or type of fruit/nut?
   i)…*Oak*…… ii) …*Rowan*…….. iii) …*Native Cherry*…….

5. Suggest how these types of trees may naturally regenerate (produce new trees of the same type in the local are or perhaps further away)?
   i) …*Squirrels bury acorns then forget them*…(ii) *Birds eat the rowanberries & cherries. Seeds/stones eventually excreted elsewhere to germinate*

Location 9. Leaving the plantation you will see some very tall trees in front of you about 70 metres away. Eventually the path passes immediately alongside them but, as you approach, try to estimate their height.

1. The height may be roughly calculated by turning your back on the tree and looking at the tree through your legs. When you are close enough to the tree, you can just see the top of the tree (see below). The distance to the base of the tree is approximately the height of the tree. Using this approximate method, calculate the height of these high (tall) trees. *About 30 metres*



2. When you have measured the height in large strides (metres) to the base of the tree, try to decide what type of tees they are *Beech*

3. Look carefully at the lower branches coming from the trunk. They grow out either horizontal (level) or droop downwards towards the ground so that some leaves are almost at floor level. This type of tree is often planted as seedlings very close together in along straight line to produce an almost impenetrable …*Beech hedge*

4. These trees are large. Calculate their diameter at ground level *Over 2 metres* and at about 2 metres high *about 1 - 1.5 metres*

5. How old are these trees? Circle one number. a) 10 - 30 years. b) 30 - 50 years. c) 50 - 100 years. d) 100 - 150 years. e) *Over 150 years.*

Location 10. Pass through the gateway in the stone wall and walk on some 50 metres to two large trees on the right.

1. The first tree is oak, the second tree is birch. They have very different patterns and structures to their bark (the outer layer of a tree). Trees can be identified by their bark so try to describe each tree. Below is a list of words you may use but think of your own as well.

   Smooth, coarse, very coarse, thick, thin or thinner, shallow cracks, deep cracks, ripples, brick like shapes, prominent, vertical lines, twisting lines, colours.
   Oak - course, brick like thick, prominent vertical lines
   Beech - smooth, thinner, ripples, shallow cracks etc.
2. As you walk a little further along, here is a Yew tree (Taxus) on the right. This is a coniferous tree and is evergreen with needle like leaves. Look at its bark and describe it also - including the colours.
   Much smoother, often flaky, may be brownish/reddish in colour

Location 11. Continue along the path until you reach the bench with a view across the river towards Sandholme and the car-parking region. This area of Sandholme along the river Wharfe is visited by many thousands of tourists each year.

1. Think of at least three but possibly many more reasons why it is so popular

   a) *Nice flat area to sit & play on (recreational)*

   b) *Benches provided*

   c) *Pavilion nearby for food/toilets*

   d) *Access to shop for souvenirs etc*

   e) *River to play in - keep cool on hot summer days*

2. The river is a very popular feature. Think of three ways in which children and adults may use it.

   a) *Fishing - fly*

   b) *Toddlers with nets inspecting under stones & in rock pools*

   c) *Paddling, swimming?*

3. Visitors arrive in cars. How has the Estate tried to help people use the area sensibly but keeping the area looking attractive and scenic? Again, try to think of a number or reasons.

a) *Used old natural looking trees to mark out areas*

b) *No fences so area fits in with landscape*

c) *No overnight parking, no tents caravans*

d) *All litter collected daily & area renewed each day.*

Location 12 .

As you walk along from the bench, note how the Estate has improved the area to make it possible for walkers and also wheel chairs (disabled people) to use all or part of these woods. There are gravelled paths, new steps, the use of wooden boards and wooden pegs to edge the pathways, new drains under the path for small streams, new stone walls and bridges. All these features require very regular maintenance - usually in the winter months when there are fewer visitors.

1. Where do you think the money is obtained to pay for these improvements and the labour?

   ...*Money comes from car parking & sale of goods in shops*

2. Do you feel it is sensible to pay a small charge so that you can use paths and woodlands like these on the Estate? *Yes*/No. Cross out one.

3. Give a reason for your answer to question 2

   ...*Hopefully yes if we are to continue to have access to such areas in the future. A no answer needs a very good justification.*

Location 13.

Walk on through the glade of saplings and trees down towards the road. This area has dappled sunlight, allows a variety of flora such as bluebells and wild garlic to grow beneath it and creates a different habitat for the fauna. Remember that fauna requires differing conditions of light, shade, rainfall, types of soil, vegetation, etc. so it is essential to have all types on the Estate to encourage the maximum variety of animals and birds.

On reaching the road, follow the footpath to the footbridge, cross Pickles Beck and then following the footpath across the field by the River Wharfe to the Wooden Bridge. Cross the bridge to the Cavendish Pavilion. Return to the Coach passing the Cavendish Memorial and church back to the Hole in the Wall.