Funded by Defra's Aggregates Levy Sustainability Fund, administered by English Nature.

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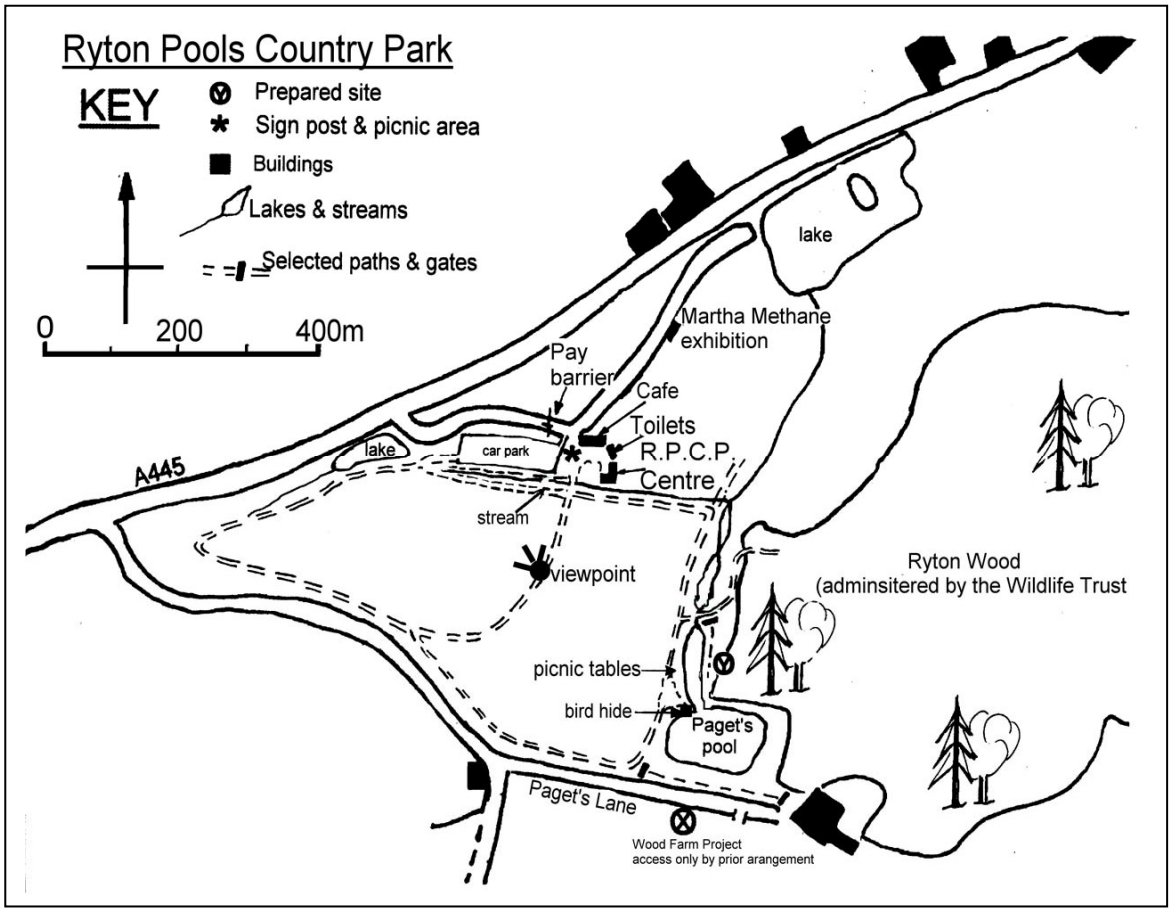
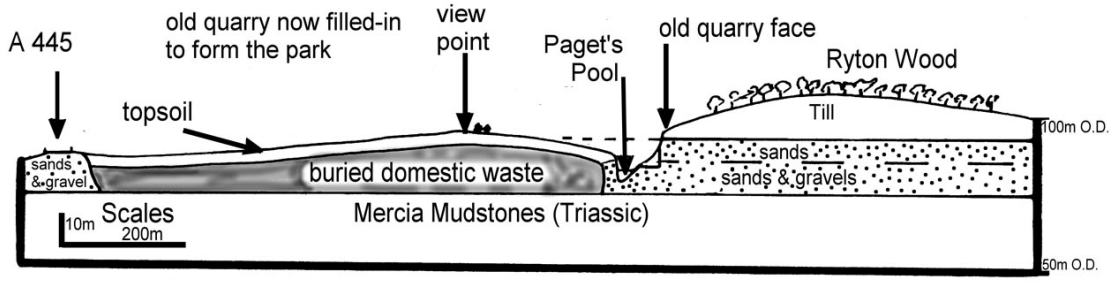
PUPIL ACTIVITY SHEET 1 Pupil Name.....

Your Map Of Ryton Pools Country Park.
Mark the direction north on the compass cross on the map.
Use the map to follow your way through the park.



Below is a cut-through section across the park.



PUPIL ACTIVITY SHEET 2 Pupil Name .....

Site 1: The "Mystery" Stream

Most people have seen streams and paddled in them.
This one is a bit unusual. Let's see how unusual!

Do you think our "Mystery Stream" makes a nice feature in the Park?

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Questions	**Answers**
Describe the shape and size of rocks on the stream bed.	
Is there any mud or sand or small round pebbles?	
From your knowledge of rocks, describe and identify the rock type.	
These rocks are exactly the same as those found in a quarry in Leicestershire! How do you think they got here?	
Check the bed of the stream. Is the water cutting down and wearing away the bed?	
Look at the water. It is steep and flowing quite fast. Is it moving anything?	
Where does the water come from? Where does it go to?	
What do we call this process of using things again?	

PUPIL ACTIVITY SHEET 3 Pupil Name .....

Site 2: "Ryton Pools in the Stone Age"
The display board explains what life was like here 500,000 years ago.
The clues to the story are found in the sands, gravels and clays seen across the pool.

What name has been given to the river which flowed here 500,000 years ago?	
What materials was it carrying?	
What large animals lived and died in the area, leaving their bones to be buried in the gravel?	
500,000 years ago was the climate hotter, or colder or about the same as now?	
What is the evidence that early humans lived here?	
What did the early humans eat?	
Why did the animals and early humans move away, to the south?	

PUPIL ACTIVITY SHEET 4 Pupil Name .....

Site 2: The View From Paget's Pool

Look across the narrow end of Paget's Pool. Match what you see with the photo below.

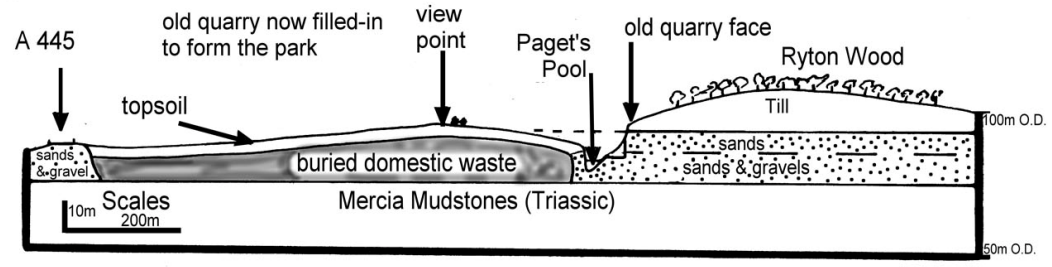
Write these points against the correct arrow on the photo from Site 2.

- Ryton Wood, with large trees growing on hilltop.
- Sand & gravel showing in the side of the hill.
- Sand & gravel slipping down slope into the pool.
- Bank of soil and planted trees.

Now look at the slope across the pool in front of you.

Questions	Answers
How can you tell that this was once the edge of a quarry?	
What has happened to the face in the 20 years since quarrying stopped?	
What is happening over the ground's surface?	

On the correct ends of the section below, write in EAST and WEST.



Questions	Answers
What do you think the sand and gravel have been used for?	
Why doesn't Paget's Pool completely soak away into the ground?	
Describe the materials used to make the paths in the Country Park.	
What happens to the edges of the paths in wet weather?	

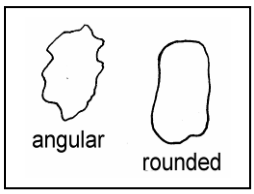
PUPIL ACTIVITY SHEET 5 Pupil Name .....

Site 3a: (or alternative) **The Rocks**

How would you describe these "rocks": Are they: Stuck together and hard or Soft and loose?	
Are they all jumbled up or are there signs of layering?	
Which is the oldest layer? [You may have done an experiment to demonstrate this].	
What is this layer made of? Measure the size of the grains – about 1mm, less than 1mm, more than 1mm	
Are the grains rounded, or angular, or mostly in between?	
What is the middle layer made of?	
What is special about the top layer? Your teacher may wish to collect a sample for later study.	
What is digging the holes in the sand?	

PUPIL ACTIVITY SHEET 6 Pupil Name .....

Site 3b: The Pebble Investigation
Look at the shape of the pebbles on the ground.
Use the picture at the side to help you



Look at the lower slopes:

What changes to the soil do you notice lower down the slope? Describe the shapes and sizes of the objects you can see.	
Suggest a reason why the soil here is so pebbly.	
What happened to the pebbles when this was a quarry?	
Describe the shape of most of the pebbles.	
What does the shape tell us about how the pebbles were transported to here? You may have done an experiment to show this.	
Most of the pebbles are made of very hard quartz and quartzite. Why does hardness improve a pebble's chances of survival?	
In which direction did the pebbles come from in order to be deposited here?	

In the space below draw one of the pebbles you have identified.
Show as much detail as you can. Label any features that you can see.
Give a 1 cm scale bar.

PUPIL ACTIVITY SHEET 7 Pupil Name .....

Site 3b: Counting The Pebbles

Collect the 25 pebbles nearest to your left foot. Use the identification sheets to name them. Record them in the table. Put the pebbles back when you have finished.

	Look out for:	**Tick here for each one found**	**Totals**
MINERAL	**White, very hard.** [Vein quartz]		
SEDIMENTARY	**Brownish colour & layered, quartz grains, quartz cement.** Quartzite a very hard sandstone		
	Made of sand sized grains. Other sandstones		
	Made of grit sized grains. Gritstone		
	Made of rounded pebbles. (more than 5mm.) Conglomerate		
	Made of angular pebbles. (more than 5mm.) Breccia		
	Reacts with acid, may include shells. Limestone		
	Is very hard and glassy. Flint		
	Has grains cemented together. Other sedimentary rock		
IGNEOUS	**Has large crystals of pale colour.** Granite		
	Has small/medium crystals, mostly black. Basalt/dolerite		
	Has interlocking crystals. Other igneous rock		
METAMORPHIC	**Is hard, banded, flat pieces.** Slate		
ANY OTHERS (Unidentified)	Record here any you can't identify.		

PUPIL ACTIVITY SHEET 8 Pupil Name .....

Site 3c: (or alternative) **Investigating Soil.**
Look at the top of the face.

Observations/Questions/Teaching points	**Answers/Interpretation/Comments**
Watch whilst your teacher pours some water gently onto the soil surface. Is it permeable (it lets water through) or not?	
What is the soil made from?	
How do you think soil is formed?	
Describe where the roots are growing.	
Try to identify some plants growing in the new soil on the scree slopes.	
Try to explain why the trees in Ryton Wood at the top are larger than those on this slope.	
What clues have you found to show that animals live in the soil in this area?	

PUPIL ACTIVITY SHEET 9 Pupil Name .....

Ryton Pools Summary pupil worksheet (i)
On our visit to Ryton Pools Country Park we have found out a lot about the rocks beneath our feet.

At the Mystery Stream 1. Describe the size and shape of the most common rock here.	
2. You should find that the rocks are made of crystals, describe what they look like.	
3. What rock is it?	
4. How did these rocks get here?	
5. Is this a natural stream or Man-made?	
View from Paget's Pool 1. What has happened to the old quarry face in front of you?	
2. What is it turning into?	
3. Name two plants you can see growing in it.	
4. Why doesn't the water in Paget's Pool completely soak away into the ground?	
The Display board: Ryton Pools in the Stone Age 1. What was the river which flowed here 500,000 years ago?	
2. What animals lived in the area at that time?	
3. How do we know that early Man lived here?	

PUPIL ACTIVITY SHEET 10 Pupil Name .....

Ryton Pools Summary pupil worksheet (ii)

The Faces and Pebbles 1. How would you describe these "rocks"/ Are they: Stuck together and hard or: Soft and loose?	
2. Which is the oldest layer? What is it made of?	
3. What is the middle layer made of?	
4. What is special about the top layer? What is it made of?	
5. What is the name of the wooded area growing on top of these rocks?	
6. Describe the shape of most of the pebbles:	
7. What does the shape tell us about how they were transported here?	
8. Describe the two most common types of pebble. Use the table to help you.	
9. Name these two pebbles. (Use the table to identify them.)	
10. What has happened to the old quarry after quarrying stopped?	

Finally: In the space below draw one pebble you have found.
Show as much detail as you can. Give a centimetre scale bar. Try to identify the pebble from the table.

Well done