

PUPIL ACTIVITY SHEET 1

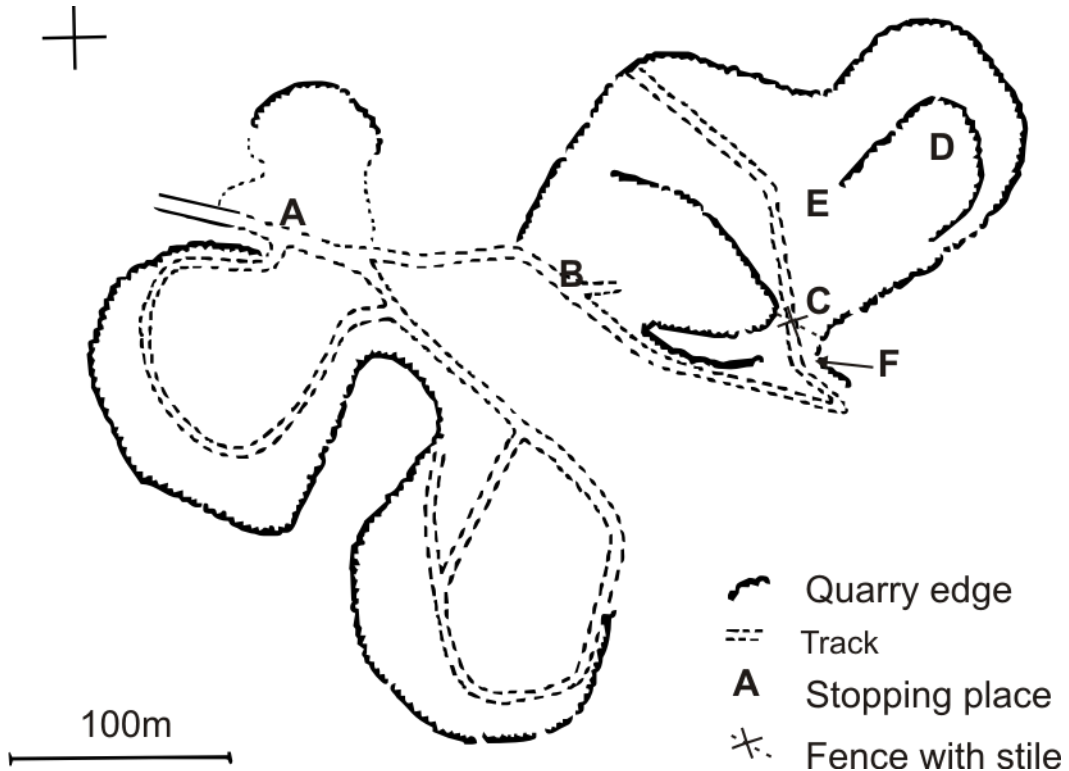
Pupil Name

Ercall quarries KS2 pupil map

Use a compass to find North.

Mark North (or N) on the cross on the map in the top left hand corner.

You will need to check your map at each stop, one for each letter.



PUPIL ACTIVITY SHEET 2

Pupil Name

1 On the map of Ercall Quarries mark North on the compass and because you are here at Site A, circle the "A"

2. Why are the rocks on the ground around you in small pieces?

Answer:.....

3. Look around your feet. Can you find four different rock types? Don't worry if you can't find all four.

Look at the table for clues in the colours. Use a magnifier to add details of what else you can see in each rock.

Use a water dropper to test for porosity [does water soak in?]

Colour of rock	What else can you see?	Porous? yes or no	Name of rock
Pinkish			
Pale grey			
Black			
Mixed			

Your teacher will help you with the rock names.

To help with the spelling they are listed below

- Conglomerate** [like concrete],
- Dolerite,**
- Granophyre** [like granite],
- Quartzite** [hard sandstone].

PUPIL ACTIVITY SHEET 3

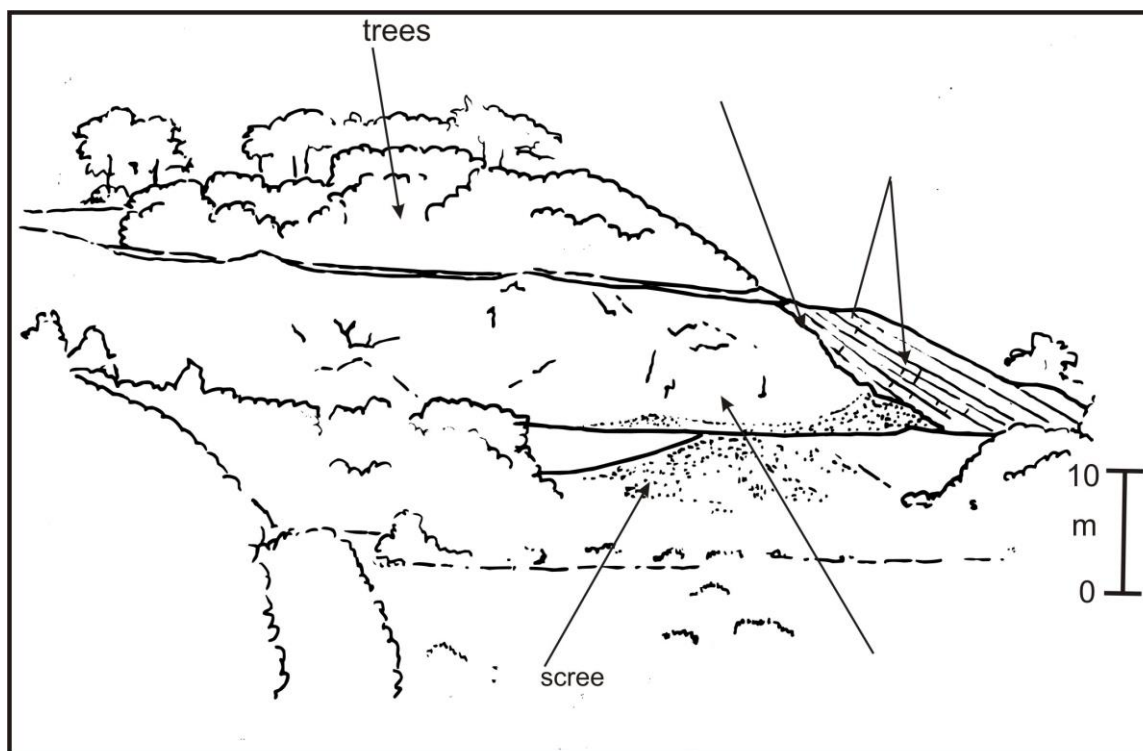
Pupil Name

Pupil worksheet for Site B, "Viewpoint to North East".

Circle your position on your map: [Site B].

Look at the view and label your sketch at the end of the arrows when you find these:

1. Pinkish rock
2. Layers of pale grey rock.
3. Boundary (between them).



Now move on to take a closer look.

PUPIL ACTIVITY SHEET 4

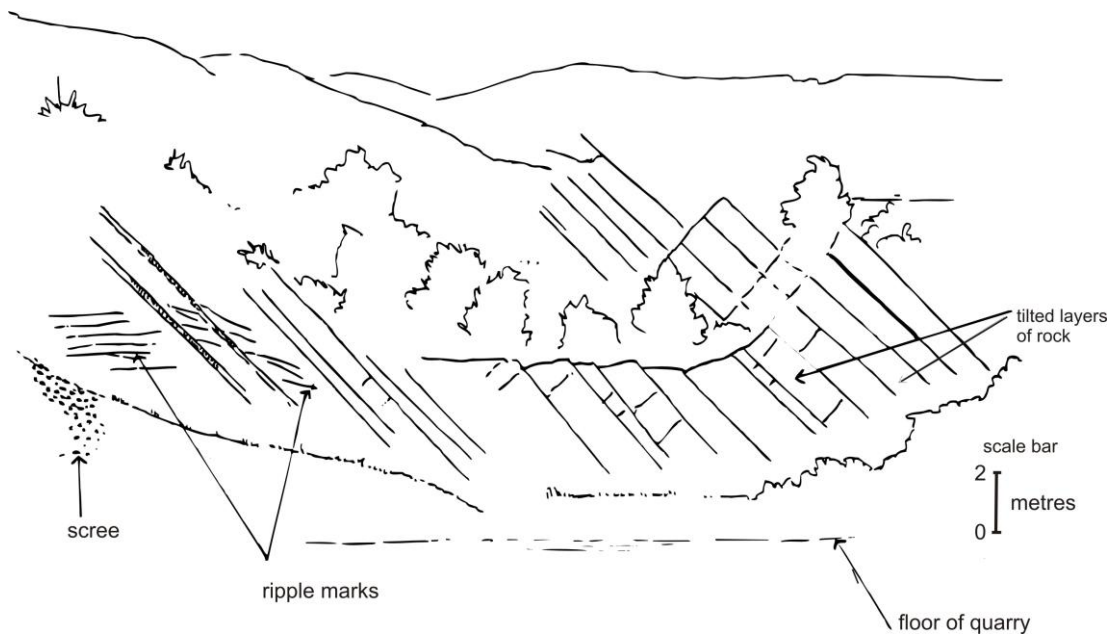
Pupil Name

Pupil worksheet for Site C, "View from the stile".

Circle your position on your map: [C].

Look at the rocks. On this sketch label with arrows:

1. Oldest bed
2. Youngest bed
3. A joint
4. Top of quarry
5. Trees



Now move on to take a closer look.

PUPIL ACTIVITY SHEET 5

Pupil Name

Pupil worksheet for sites D and E – “Two different rocks”.

Circle site D on your map. When you move to Site E, circle E.

Which of the statements in the table below fit the two rock types?

Answer “**yes**” or “**no**” in each box

Do the quartzite at site D first.

	Quartzite/sandstone [site D]	Granophyre [site E]
I have layers, so I was probably deposited in water.		
I am made of medium sized grains [0.5-2mm].		
I am made of interlocking crystals [up to 2mm].		
I am made of rounded particles, indicating long distance transport.		
Most of my particles are made of quartz.		
I am made of at least two different minerals [including white quartz & pink feldspar].		
I have ripple marks, indicating that I was formed in the sea.		

PUPIL ACTIVITY SHEET 6

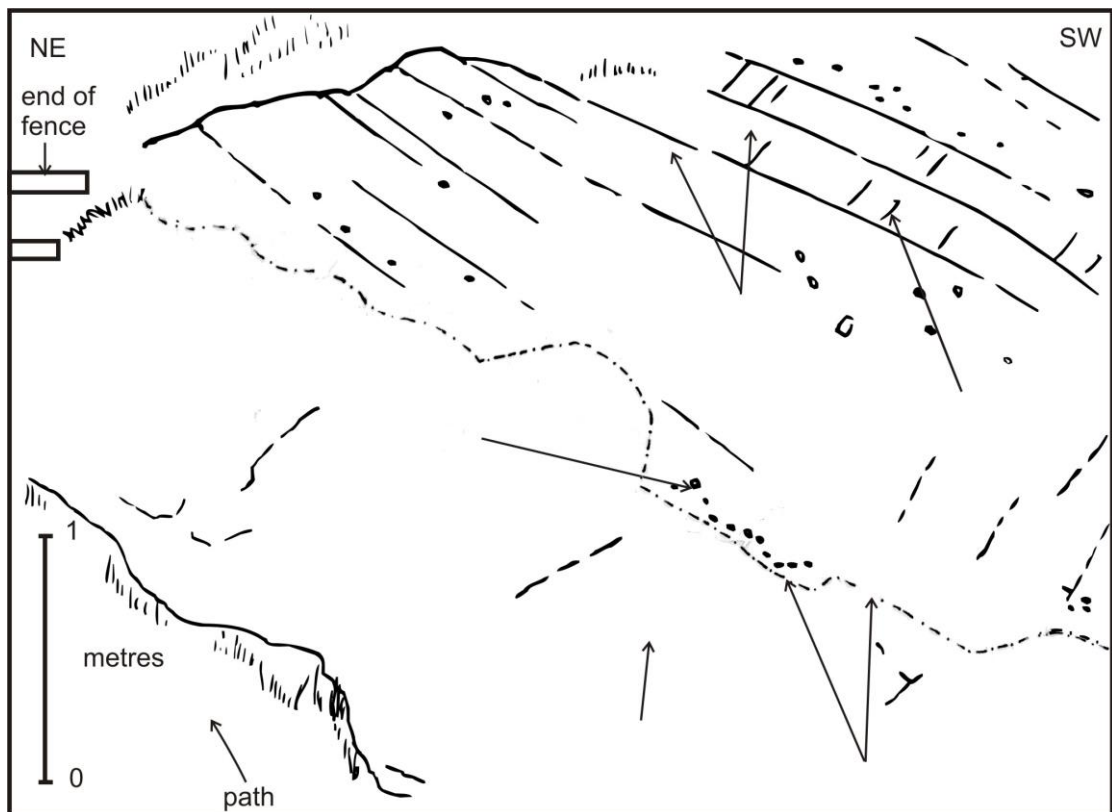
Pupil Name

Pupil worksheet for Site E, "Sketch of boundary" (unconformity)

Circle your position on your map: (E)

Look at the rocks. On this sketch label at the end of the arrows:

1. Granophyre (the pinky rock)
2. Layers of quartzite (hard sandstone)
3. Conglomerate (layer with pebbles in it)
4. A joint
5. The unconformity (boundary). This line can be coloured in later.



Which of the three rocks is the oldest rock? (Circle your answer)

Granophyre (the pinky rock)

Quartzite (hard sandstone)

Conglomerate

PUPIL ACTIVITY SHEET 7

Pupil Name

Site F Pupil activity sheet – “From Rock to Soil”.

Circle site F on your map.

At site F we can see that something is happening to the rocks.
Take a closer look and write your answer in the spaces below.

Look at the sandstone. Is it, the same as in the other quarries, or harder or softer?	
Is it older or younger than the other sandstone? [Is it on top or below?].	
Check with a water dropper to see if it is porous or not porous.	
Is this sandstone any use for making roads? Explain your answer.	
Between the rock face and the track there is a slope, with plants growing on it. What is this slope made from?	
What has this broken rock material turning into?	
Try to identify some plants growing in it.	
Look out for clues to show that animals live in this soil.	

PUPIL ACTIVITY SHEET 8

Pupil Name

Summary Pupil activity sheet.

On our visit to Ercall Quarries we have found out a lot about the rocks beneath us.

1. How many different types of rock have you found?

Answer: _____

2. You already know their names. Describe those you have seen, using this table:

	Granophyre	Quartzite	Conglomerate	Dolerite
What colour is it?				
Does it have crystals or grains?				
What is it made of?				
Is it hard or soft?				
Is it layered or not layered?				

3. The remains of ancient sea creatures have been found in some of these layered rocks. What are ancient remains of animals and plants called?

Answer: _____

4. Your answers will help you to decide where the layered rocks were formed. Were they formed on land or in the sea?

Answer: _____

5. Pebbles, sand and mud are types of sediment. This word gives a clue to the name given to a large group of rocks, including sandstones, quartzites, limestones and conglomerates. What is this group name

Answer: _____

PUPIL ACTIVITY SHEET 9

Pupil Name

6. The pinkish rock made of interlocking crystals, rather than grains of sediment and is not layered. This is therefore not a sedimentary rock. The crystals formed from the cooling of magma [molten rock]. What is the group name for such rocks?

Answer: _____

7. The quite large size of the crystals in the granophyre [a type of granite] indicate that it did not cool rapidly as lava from a volcano, but cooled slowly at depth under mountains. This was about 560 million years ago. What happened to the mountains and granophyre before the conglomerate and quartzite [hard sandstone] were formed in the sea?

Answer: _____

8. What happened to the rocks after the last ones seen were formed on the sea bed 540 million years ago. ?

Answer: _____

9. Most of the rocks in the Ercall Quarries are hard and have been quarried for hundreds of years. What are two important uses of these rocks?

Answer: _____ and _____

10. What are the quarries used for today?

Answer: _____