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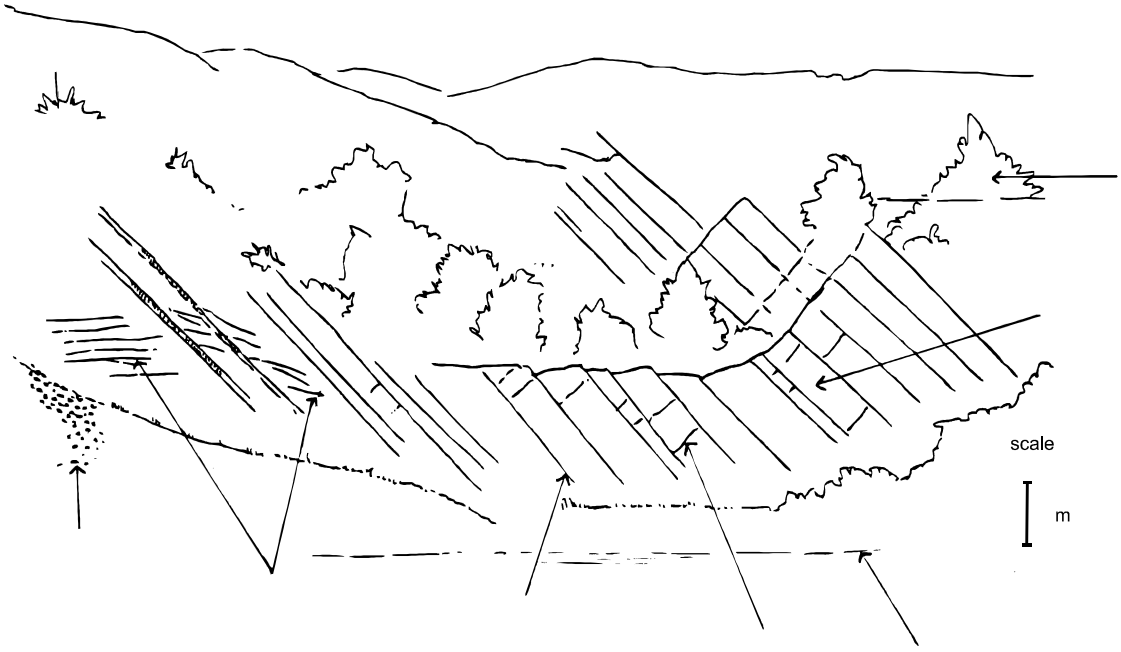
Pupil Worksheet for Locality "B"

This field sketch shows the view looking towards the north east in quarry 2

1. Complete the scale on this field sketch
2. Label the following on the field sketch:
   Scree
   Ripple marks
   Bedding plane
   Floor of quarry
   Vegetation
   Bed dipping 45º to the SE
   Joint



Pupil Work sheet for Localities "C" & "E"

Reading the clues in the sedimentary rocks

1. Carry out all of the tasks at locality C and then complete the information for the sandstone by ticking the correct boxes in the table.

2. Carry out all of the tasks for Activity 1 at locality E and then complete the information for the conglomerate by **ticking the correct boxes** in the table.

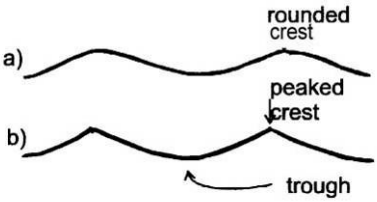
The completed table will give you a summary of some of the things you have found out about the sandstone and conglomerate and how they may have formed.

	Sandstone: locality "C"	**Conglomerate: locality "E"**
The rock shows layers so it was probably deposited in water		
The rock is made up of medium sized grains (0.5 to 2mm across) so it was laid down in low to medium energy conditions		
The rock is made up of coarse grains (more than 2mm in size) so it was laid down in higher energy conditions		
The particles are rounded so they were transported over a long period of time.		
Most of the particles are made of quartz and /or quartzite		
The particles are made of a mixture of different rock types		

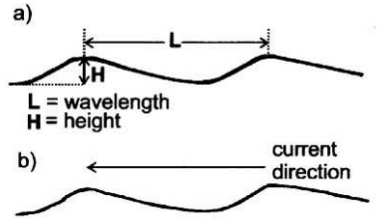
Pupil Worksheet for locality "D"

1. Use diagrams 1 and 2 to help you choose the words that describe the shape of the ripple marks. Record your descriptions in the table.
2. Measure the **wavelength** (**L**) and **height** (**H**) of the ripple marks. (Clue: If you are not sure what these terms mean look at drawing 2). Record your measurements in the table.
3. Use your measurements to calculate the **ripple index** (**R.I**.). Show your working in the table.
4. Measure the horizontal distance from crest to trough. Then measure the horizontal distance from trough to the next crest. Divide the short distance into the long distance to calculate the **Ripple Shape Index (RSI)** See diagram below.

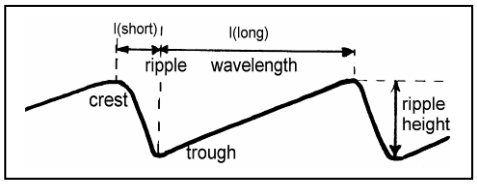
1. Symmetrical ripples



2. Asymmetrical ripples

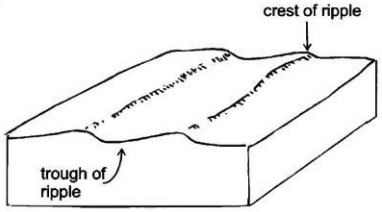


Descriptions	**Put a tick against the word(s) that describe the ripples**
Shape of ripples in cross section: symmetrical? asymmetrical?	
Shape of ripples over the crest: peaked? rounded?	
Shape along the crest: roughly straight/ parallel? roughly straight/ parallel but splitting? curved/ sinuous?	
Ripple measurements: **Wavelength (L):** **Height (H):**	Write your measurements here (in mm) **L =** **H =**
Calculation of the ripple index (R.I.) **R.I. = wavelength (L)** divided by **height (H)**	Write your working here **RI =**
Calculation of the Ripple Symmetry Index (RSI). **RSI = l(long)** divided **by l(short)** (see the diagram below to get the right measurements)	Write your working here. l(short) _____mm l(long) _____mm **RSI =**



5. On diagram 3 draw in an arrow to show the current direction that may have produced these ripple marks.

3.



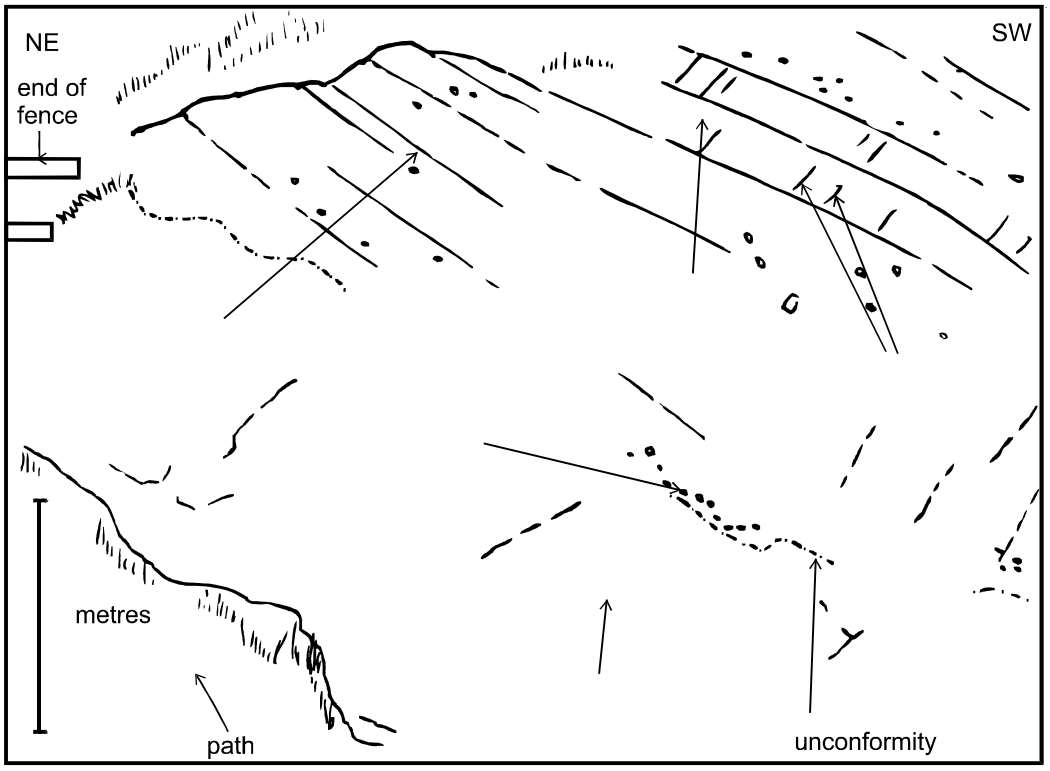
Pupil Worksheet for Locality "E", Activity 2

This field sketch shows the view looking towards the north east at M.R. SJ 644096

3. Complete the scale on this field sketch.

4. Label the following on the field sketch:
   Granophyre
   Joints
   Bedding plane
   Sandstone layer (in Wrekin Quartzite)
   Pebbles in conglomerate layer (in Wrekin Quartzite)

5. Part of the unconformity between the granophyre and the Wrekin Quartzite is shown. Complete the sketch to shown the rest of the unconformity.



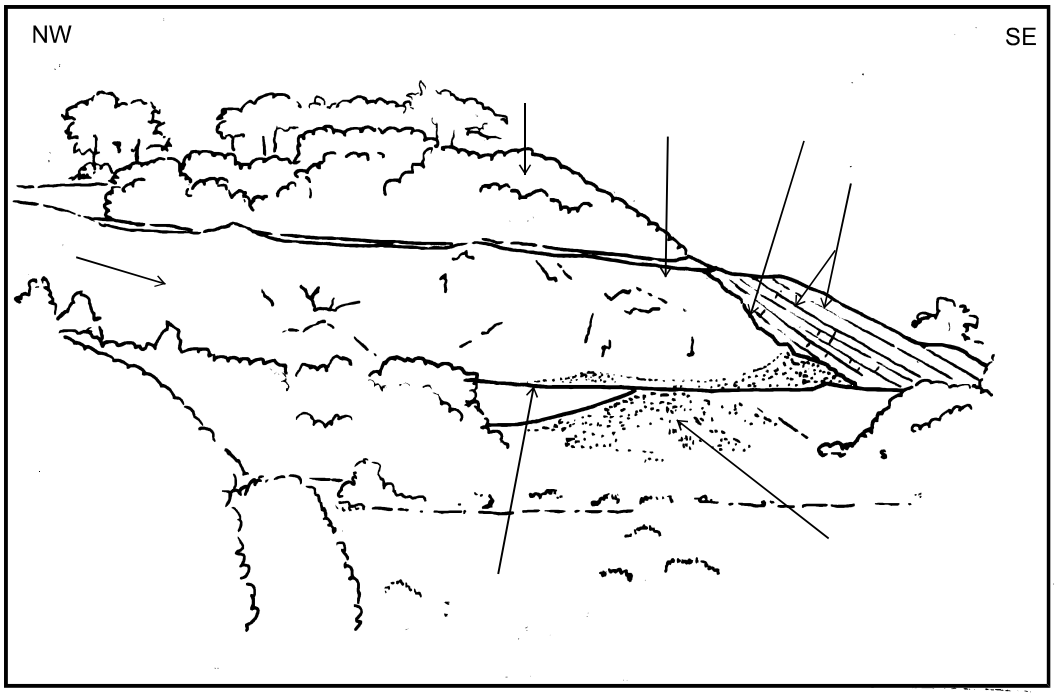
Describe the contact between these two rocks. Briefly explain how the contact was formed, mentioning the evidence and observations you have made at this site.

Pupil Worksheet for Locality "F"

This field sketch shows the view looking towards the north east at M.R. SJ 643 095

6. Label the following on the field sketch:
   - Ercall summit
   - Wrekin Quartzite
   - Bedding planes
   - Granophyre
   - Scree
   - Soil layer
   - Unconformity
   - Bench (quarry level)
   - Oldest rock

7. Look at the Ercall Local Nature Reserve poster (no 2) on the information board. Complete the table below the field sketch.

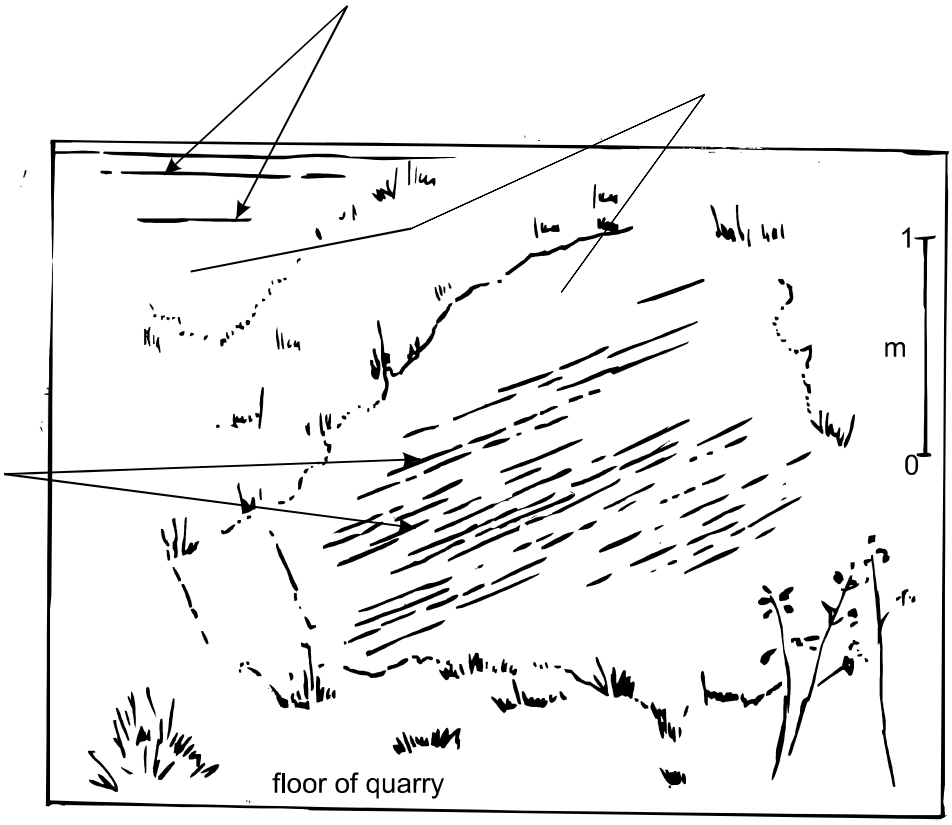


Rock	When it was formed	How it was formed
Wrekin Quartzite		
Granophyre		

Pupil Worksheet for Locality "G"

This field sketch shows the view looking towards the south at M.R. SJ 643 095

8. Label the following on the field sketch:
   - Sandstone (Wrekin Quartzite)
   - Bedding planes
   - Polished & grooved surface (slickensides)
9. Measure the size and direction of the slickensides. Complete the table.



Describe the shape & size of slickensides. (Length, spacing and depth/height)	
What is the direction of the slickensides?	
How were the slickensides formed?	
When did the slickensides form?	
What else may have happened when these slickensides formed?	
Describe one other piece of evidence you've seen today for ancient earth movements in the Ercall quarries.	

Pupil Worksheet for Locality H

Describe the rhyolite**:**

Explain how the rhyolite may have formed:

Use the evidence from your observations around the quarries to work out the relative age of these rhyolites to the other events and fill in the table below.
(Relative age means "Is it older, or is it younger than the rhyolites?")

Is the rhyolite older or younger than these events?	Answer: older or younger	The evidence to support this is.
Quarrying		
The deposition of the conglomerates		
The deposition of the sandstones		
The tear faulting		
The episode of tilting of the rocks.		
Present day weathering		
The formation of the granophyre		