PARK HALL COUNTRY PARK: KS2 SUGGESTED FOLLOW-UP WORK

Suggested Follow-up work

Much material could go into a folder on Park Hall Country Park, being the first part of a wider study, adding later sections on soils, vegetation, wildlife, conservation and recreation.

1. Completion of all worksheets: Setting the Scene, Triassic sandstones & field sketch, Park Hall Pebble Hunt exercise.

2. Classroom display of all aspects of the field visit, including digital photographs, and a collection of pebbles. These may be cut [by an adult with a DIY tile cutter] and varnished to bring out the detail, ready for the children to sketch on their worksheet [or best copy]. Return any unused pebbles to the site please.

3. The display could include links to the UK Geology Wall Map to show possible places of origin of different pebble types. Use the colouring by age on the map. Note that in Triassic times there were no younger rocks [Jurassic, Cretaceous, Tertiary], so what might lie beneath these later rocks in SE England?

4. Investigate a sandstone sample – crush a sample to its constituent grains. Put into plastic container half full of water. Shake vigorously for a minute. Allow to stand undisturbed. Sand settles quickly, followed by finer silt, leaving red clay in suspension - to settle over a day. Draw sketch & measure the thickness of sand, silt & clay. A similar activity is done with soil samples in Working with Soil.

5. Homework: Write the story of a pebble [quartzite or other], joined by its pebble-mates from other mountains, rolling and bumping along in a river. Illustration might include panorama sketch of mountains & river; possibly as a cartoon strip to record the series of events as the pebbles become reduced in size. Original large blocks of rock becomes smaller, more rounded, as broken bits add to sand/clay particles.

6. Children could be given information on percentage of pebble types to construct **a block graph/histogram to illustrate survival of hardest.**

7. Make a model of the quarry - use plaster to cement pea-gravel & sand into beds, one layer at a time. Half of model could show a working quarry with machinery[with boys' toys], other half as landscaped today[with "vegetation" from toyshops].

8. Research into uses of sand & gravel in the local area. Incorporate into classroom display: where did all the sand and gravel go to? Too much clay prevents cement from sticking to the sand grains in concrete & mortar. Clay needs to be washed out – an expensive task. Discuss whether the Triassic sands from Park Hall were ideal for concrete & mortar. They were less important than the hard pebbles in the gravels! These were used as aggregates in roadmaking and in concrete. Larger pebbles needed to be crushed to smaller fragments. The Hopper Fort area had crushers and graders. Tilcon were still working in this area into the 1980s.

9 For teacher information and KS3/KS4: **Working ceased for geological reasons.** Looking at the cross section it can be seen that the rocks dip down to the east, which eventually made the gravels too deep below the sandstone to be extracted economically. To the west, faulting dropped the gravel beds too deep below the sandstone. It is expensive to remove all the overlying sandstone which has little value.

10. Investigate local water supply:
a) - from boreholes and wells in porous Triassic rocks,
b) - from surface reservoirs on non-porous rocks. **"Working with Rocks"** has an activity on making wells.

11. Websearch for information on flash floods (these kinds of river flows are thought ot have brought these sands and pebbles to the Park Hall site)

12. View the KS3 animation of rivers forming cross-bedding and, if required, the KS4 animation of the faulting (PH4_KS3_clip.exe and PH4_KS4_clip.exe).

13. Sequencing exercise on the story of Park Hall – KS3/4 activity

Working with Soil

If not done prior to the visit, it would be appropriate for the Soil topic to follow the visit even if the school isn't following the QCA guidance, Unit 3D –Rocks and Soils. The notes on preparation for the visit give details of ESTA's **" Working with Soil"** pack.

It is anticipated that soil samples will be collected during the visit from the sand & gravel areas, but don't forget to take samples fron the contrasting grey clay-rich soils of the lower slopes on the western side of the Park, around the pools.

Please remember not to take any material from the actual rock faces in this protected site.