



KS2 Activities at Ecton Resources & Risk Assessments

Resources	Risk
A. Introduction	
Check the following are to hand: <ul style="list-style-type: none"> • Copper & Lead items • Mineral samples 	Nil
B. Tutor Demonstrations	
1. How was limestone made? <ul style="list-style-type: none"> • measuring cylinder • tap water • several different coloured (washed) sands 	NIL
2. Mountain building Make up two examples in advance, as on the photos – one for “push” the other (half the box) for “pull”. <ul style="list-style-type: none"> • 2 empty Ferrero-Rocher boxes • a piece of board to fit snugly into the box • dry sand • flour • spoon 	NIL
3. Brick quake (with pupil help) 4 house bricks (or replace lowest brick with a flagstone, to show scratching) <ul style="list-style-type: none"> • length of string • elastic cord • Newton meter (up to about 50N) 	Bricks might fall to floor – keep away from edge. Elastic cord may snap – eye protection.
C. Pupil Practical Activities	
1. WS1 Shell Smash One set as below per 5 pupils: <ul style="list-style-type: none"> • plastic pots • empty tray • selection of sea shells (expendable); two per type • 1 small pebble • eye protection per (pupil) 	Warn pupils to open slowly and point away from faces. Asthmatics should avoid breathing in dust. Slight risk of pot breaking – wear eye protection.



<p>2. WS2 Home-made rocks</p> <ul style="list-style-type: none"> • plastic syringes with ends cut off • Plaster of Paris powder in film pot • shelly sand, already ground down (in film pot) • stirring stick and tap water • expendable plastic cup for mixing • paper towel 	<p>NIL</p> <p>Plaster of Paris in large quantities is not recommended for schools, but there is no risk with tiny amounts.</p>
Mineral Separation	
<p>3. WS3 Jigging</p> <ul style="list-style-type: none"> • jigging mixture of four minerals (crushed galena, barite, fluorite, calcite) • plastic jigging tube • bucket nearly full of water • plastic tray 	<p>NIL</p>
<p>4. WS4 Buddling</p> <ul style="list-style-type: none"> • crushed galena and sand (a film pot full, roughly 1:4 of galena and coarse washed sand). The four minerals need to be more finely crushed than for the jig. • buddle (gutter with baffles); raise on wood-block • two buckets, half full of water • plastic beaker 	<p>NIL</p>
<p>5. WS5 Panning</p> <ul style="list-style-type: none"> • gold pan • large tub of water • crushed pyrite mixed in with washed sand 	<p>NIL</p>
<p>6. WS6 The Mineral Dressing Floor</p>	<p>Briefing for groups before starting work:</p> <ul style="list-style-type: none"> • Wandering off – keep to limits as shown by the edges of the map. Staff to point these out on the ground. • Falling stonework from hillside or old walls – Stay on dressing floor and keep well clear. • Slipping over the edge of the dressing floor – keep clear of edge. • Brambles – avoid, especially when pulling up birch saplings. • Pulling up wrong plants – staff to identify birch saplings first. • Back strain – only pull up tiny birch saplings and leave the bigger ones to the adults with mattocks! • Minor abrasions – report to staff for treatment.



D. Salts' Level visit	
<p>Make sure the following are available:</p> <ul style="list-style-type: none"> • candle • matches, • length of rope (about 10m), • hydrochloric acid bottle, • whistle, • helmets • cap lamps • torches • check list for minerals (Pupil sheet) 	<p>Full list on website.</p> <p>Mine checked by tutor immediately before visit for safety barriers; ventilation; water underfoot.</p> <p>Briefing for group before visit:</p> <p>Head banging – wear helmet at all times.</p> <p>Getting lost – impossible, but keep together.</p> <p>Holes – all well protected but be sensible.</p> <p>Acid demo on flowstone – tutor only, with pupils at a safe distance.</p> <p>Claustrophobia. (Unusual, but affected person escorted out by responsible adult.)</p>
E. Ecton Hill Walk	
<ul style="list-style-type: none"> • Ecton Centre safety rucksack • Laminated maps, diagrams, photos • Flash cards for unfamiliar terms • Water bottle 	<p>See website for full list.</p> <p>Risk of hypothermia or sunstroke – check pupils' clothing.</p> <p>Slipping – check footwear and loan boots if needed.</p> <p>Straying off paths – keep group together; shafts – all well fenced, but keep group in good order.</p> <p>Nothing to be thrown down shafts.</p> <p>Medical conditions – ensure that school staff have notified any known problems in advance and can take remedial action.</p> <p>Adult: pupil ratio – ensure that school's policy is upheld.</p>
F. Finale – Demonstration by Tutor only	
<p>1. Copper in Malachite</p> <ul style="list-style-type: none"> • malachite • two weights for crushing it • dilute sulphuric acid • film pots • iron nail 	<p>Corrosive acid – eye protection.</p> <p>Wash after any spill.</p> <p>Pupils at safe distance.</p>
<p>2. Black Powder N.B. CLEAPSS approved</p> <ul style="list-style-type: none"> • 7.5g potassium nitrate (saltpetre) • 1.5g carbon • 1.0g sulphur • string fuse • open ended cardboard tube • matches 	<p>Potentially explosive – eye protection; grind components separately; mix by pouring from one piece of paper to another.</p> <p>Ignite outdoors at arm's length.</p> <p>Pupils to be at least 5m away when igniting and upwind of fumes when it burns.</p>