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## Geological glossary

**Alluvium** Loose deposits of clay, silt sand and gravel laid down on **floodplains** by the action of rivers in the recent past.

**Andesite** A fine-grained volcanic or intrusive rock, intermediate between basalt and **dacite** in composition (53 to 63 per cent silica).

**Angular** A descriptive term for rock fragments or sand grains with sharp corners.

**Bed** An individual layer of sediment or a stratum of **sedimentary rock**.

**Bioclastic limestone** A limestone with common fragments of calcareous organisms.

**Breccia** A rock made up of large, **angular** fragments in a finer matrix that may be of a similar or a different material (see also, **Volcanic breccia**).

**Crinoid** Fossilised remains of shelly marine creatures, related to sea urchins, usually attached by a stem composed of discs (ossicles).

**Cross-bedding** A feature of **sedimentary rocks** formed by the movement of sand grains in currents to produce layering oblique to the margins of the **beds**.

**Dacite** A fine grained volcanic or intrusive rock containing 63 to 70 per cent silica; it commonly has **quartz phenocrysts**.

**Deformation** Any natural process that bends, twists or fractures rocks.

**Diorite** A medium- to coarse-grained intrusive **igneous rock** composed principally of the minerals **plagioclase feldspar**, hornblende, and/or pyroxene; the equivalent of **andesite**.

**Dolomitic, dolomitised** Descriptive terms for a limestone that has had some of its calcium carbonate replaced by magnesium carbonate.

**Erosional unconformity** (see 'unconformity')

**Feldspar** A commonly occurring aluminium silicate mineral of potassium, sodium and calcium (see **plagioclase feldspar**).

**Floodplain** The flattish floor of a valley composed of **alluvium** and prone to flooding.

**Fragmental** Descriptive term, usually reserved for rocks made up of volcanic fragments ranging from ash-size to blocks (see volcanic breccia).

**Granodiorite** A coarse-grained intrusive **igneous rock** similar to granite, but with more **plagioclase feldspar** than potassium **feldspar**.

**Igneous rock** Rock formed when molten **magma** cools and solidifies. It includes extrusive rocks erupted from volcanoes (e.g. **andesite**) and intrusive rocks that cool beneath the Earth's surface (e.g. **diorite**).

**Intrusion** A body of **igneous rock** formed from molten **magma** that has been introduced into pre-existing rock.

**Laminae, Lamination** The narrowest type of layering in **sedimentary rocks**, less than 1cm in thickness.

**Magma** Molten rock from the Earth's interior, which cools and solidifies to form **igneous rocks**.

**Mudstone** A fine-grained **sedimentary rock** originally composed of clay or mud.

**Plagioclase feldspar** A very common rock-forming aluminium silicate mineral with varying contents of calcium and sodium; usually grey in colour.

**Phenocryst** A relatively large and usually conspicuous crystal, surrounded by smaller crystals and formed in the mass of a **porphyritic igneous rock**.

**Proximal** In Charnwood Forest, a term describing rock types with particular features showing that they formed close to a volcano.

**Pyroclastic flow** A rapid avalanching of ash and rock fragments down the flanks of an erupting volcano.

**Quartz** The crystalline form of silica (silicon dioxide,  $\text{SiO}_2$ ).

**Quartz diorite** An intrusive **igneous rock** with the same minerals as **diorite** but with between 5 and 20 per cent **quartz**.

**Sandstone** A **sedimentary rock** composed of sand-sized grains (i.e. generally visible to the eye, but less than 2mm in size). **Volcaniclastic sandstone** is where all of the grains are of volcanic origin.

**Sedimentary rock** A rock that is commonly formed by the binding together (lithification) of sediment particles (e.g. **sandstone, siltstone, mudstone**).

**Scree** An accumulation of broken rocks around the slopes and bases of crags.

**Siltstone** A **sedimentary rock** composed of silt-sized grains (i.e. only just visible to the eye).

**Subrounded** A term referring to the appearance of rock fragments or grains, the corners of which are not quite **angular** and which therefore have been somewhat worn by abrasion. Rounded or well-rounded fragments are called **pebbles**.

**Superficial deposits** Material laid down in geologically very young times as a loose (unconsolidated) mantle across the bedrock.

**Tectonic** Rock-deforming processes and resulting structures that affect large sections of the Earth's crust

**Tuff** A collective term for consolidated pyroclastic rocks (i.e. rocks formed directly from volcanic eruptions) with fragments less than 64mm in mean diameter. **Lapilli tuff** is a rock composed of pyroclastic fragments of any shape with a mean diameter of 2 to 64 mm.

**Turbidite** A rock formed from sediment that settled out of turbid water carrying particles of widely varying grain size. Characteristically displays **graded bedding**.

**Turbidity current** A current on the sea floor caused by the movement of a body of dense, turbid or sediment-laden water.

**Unconformity** A surface of contact between two rock units, which represents a hiatus in the geological record, usually due to a combination of erosion (**erosional unconformity**), **tectonic** activity and a cessation of sedimentation.

**Volcanic block** An **angular** volcanic fragment, in excess of about 6.5cm size, formed by the disintegration of a congealed lava flow or **volcanic dome**.

**Volcanic breccia** A pyroclastic rock composed of **volcanic blocks**.

**Volcanic dome** A mass of viscous lava that cools and hardens within the crater. When a **volcanic dome** forms, pressure from the volcano's gases can build up and eventually the dome disintegrates into avalanches of hot volcanic rock

**Volcaniclastic** A general term for rocks composed wholly or in part of volcanic fragments i.e. fragments originating from volcanic eruptions (pyroclastic material) or from the erosion of volcanoes (epiclastic material).