THE METEORITE HUNTERS BOXES

WHAT'S IN THE BOX?

The loan box contains 5 Meteorite Hunters boxes containing Earth, space, and fossil related rocks. These are designed to be handed out to students as kits for some of the activities (although a few activities in these resources require the selection of a limited number of these rocks).

Please ensure that all samples are counted back in by each group at the end of each activity.



GUIDE TO THE METEORITE HUNTERS BOXES

ROCK INFORMATION



Type of rock: Iron meteorite

This is a small fragment of the Campo de Cielo iron meteorite.

These were discovered in Argentina and are thought to have crashed down to Earth around 5000 years ago.

The meteorite is magnetic, melted metal (mainly iron) that has cooled into a droplet. You can see patterns caused by it streaming through the atmosphere while in a melted state.

NOTE: Please note that to avoid loss, the small iron meteorites have been glued to a piece of card.

CHONDRITE METEORITE



Type of rock: **Chondrite meteorite**

This ordinary looking rock is a chondrite meteorite.

This is a meteorite that contains chondrules, spherical shapes inside caused because of the meteorite slowly forming in space. In some of the samples, if you look carefully, you can make out some of these chondrules.

Many of the samples also have evidence of a fusion crust.

However, the biggest giveaway that these are meteorites is the fact that they are magnetic, and a little rusty due to oxidation of some of the iron content. They are also fairly dense.

AMMONITE



Type of rock: **Fossil**

This is a fossil of a now extinct marine mollusc, the Ammonoidea. These creatures died out at the same time as the dinosaurs, so this fossil is of a creature that was living at least 65 million years ago.

THE METEORITE HUNTERS BOXES



Type of rock: **Igneous (Intrusive)**

Features: Course, interlocked grains visible to the naked eye. Feldspar crystals give it a pink/ red colouring.

Formation: Forms from slow crystallisation of magma below the Earth's surface.



Type of rock: Sedimentary

Features: A calcium carbonate rich (it will fizz if you expose it to dilute hydrochloric acid) rock, often with evidence of shell fragments and marine life fossils within.

Formation: Limestone forms in shallow, warm marine waters. It is formed largely from fragments of the calcium carbonate rich shells of marine animals that have died.



Type of rock: Metamorphic

Features: Small, interlocked crystals. Incredibly strong.

Formation: Formed when heat and pressure alter quartz-rich sandstone. The sand grains get recrystallised and silica cement binds them together.

NOTE: This is one of the more difficult rocks to classify in the box as it could be mistaken for igneous rock.



Type of rock: Mineral crystal

Features: Gold coloured mineral crystals growing on a base layer of rock. The colour comes from iron disulphide.

Formation: It can form in high and low temperatures and can be found across the planet in igneous, sedimentary, and metamorphic rocks.

It is also known as fool's gold.



GUIDE TO THE METEORITE HUNTERS BOXES



Type of rock: Metamorphic

Features: Uniform colour, very hard. If you look closely with the hand lens or under a USB microscope, you can see the fine layers.

Formation: Made from clay/shale minerals heated and squashed under pressure inside the Earth.



Type of rock: Sedimentary

Features: Composed of sand sized grains of material cemented together.

Formation: Weathering of rocks produces small grains of material which are transported to their depositional site by water. Over time, these grains settle in basins and becoming cemented together as the water evaporates and leaves behind solid crystals to hold the grains in place.



Type of rock: Metamorphic

Features: This rock has obvious layers, and plate shaped grains that are visible to the naked eye. Mica crystals give it a shiny appearance. It is also very soft.

Formation: This rock usually forms on continental convergent plate boundaries, where sedimentary rocks like shale and mudstone get subjected to intense heat and pressure. A schist will first be formed as a slate, and then a phyllite before taking its final form.



Type of rock: Impactite

Features: This rock is a low density, glassy black rock with bubbles of air trapped throughout. It has a smooth, bubbly, glassy appearance.

GUIDE TO THE

Formation: Tektites are formed when a meteorite impacts, melting the rock and throwing it a long way from the impact site.

BOXES