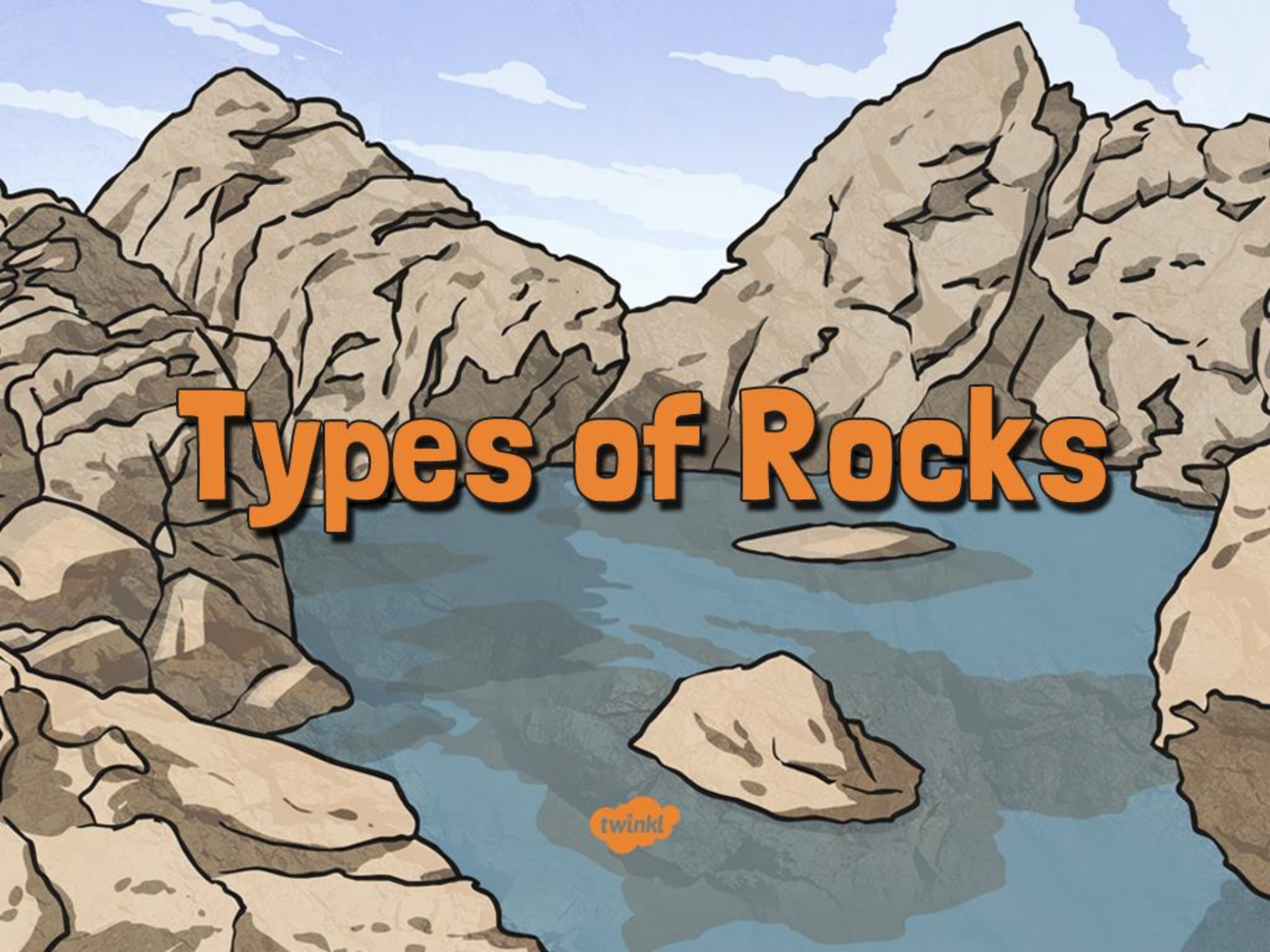
Science

Rocks


Types of Rocks
twinkl

Aim

- I can compare different types of rocks.

Success Criteria

- I can name the three different types of rocks.
- I can explain the difference between natural and human-made rocks.
- I can use the appearance of rocks to group and compare them.

Rocks

Whole Class

What are rocks?

What do you already know about rocks?

Are rocks alive? How do you know?

Why are there rocks everywhere?

How do rocks form?

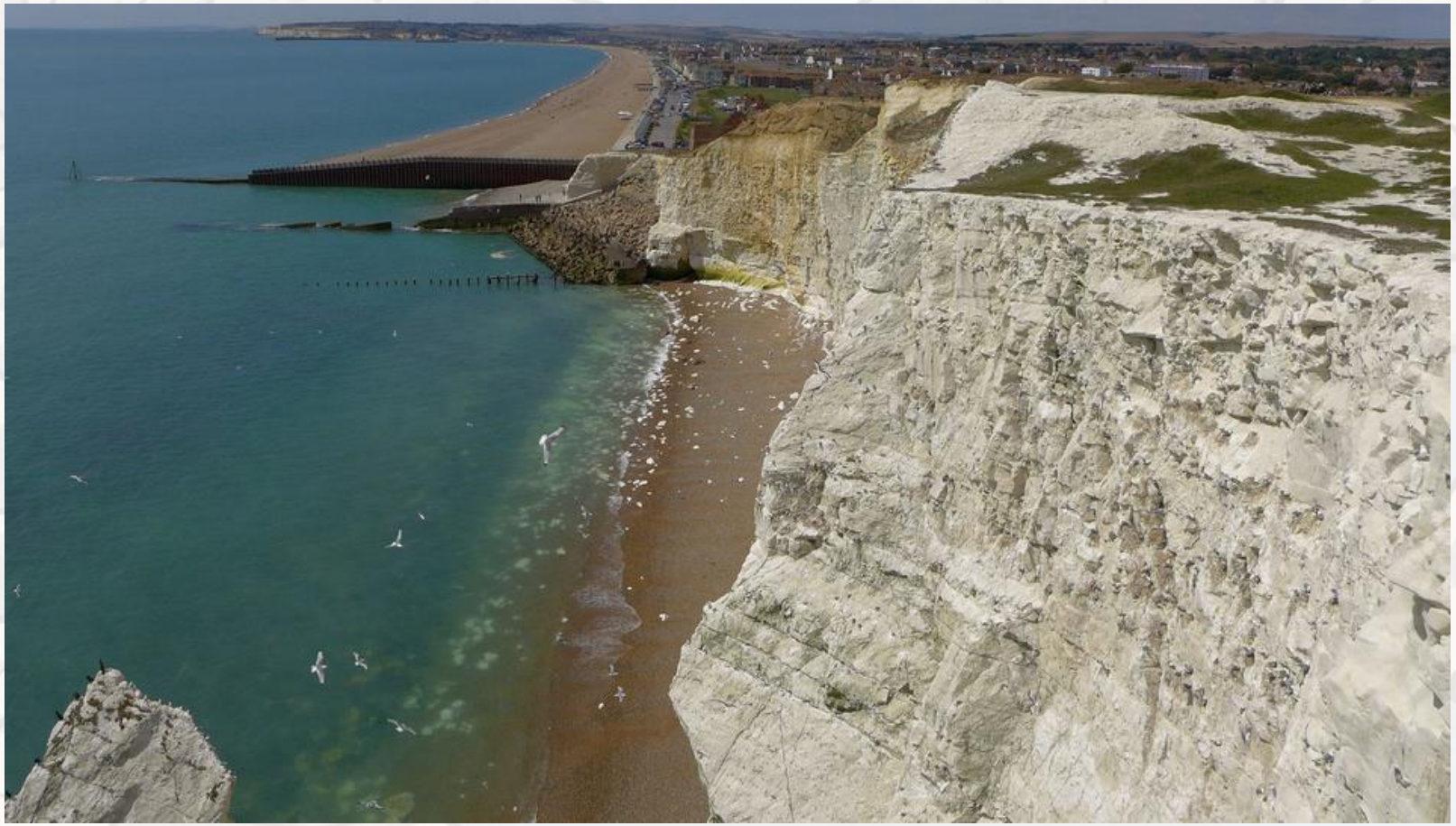
Look carefully at the photographs on following slides and spot the rocks.

Spot the Rocks

Countryside

Spot the Rocks

Chalk Cliffs



Spot the Rocks

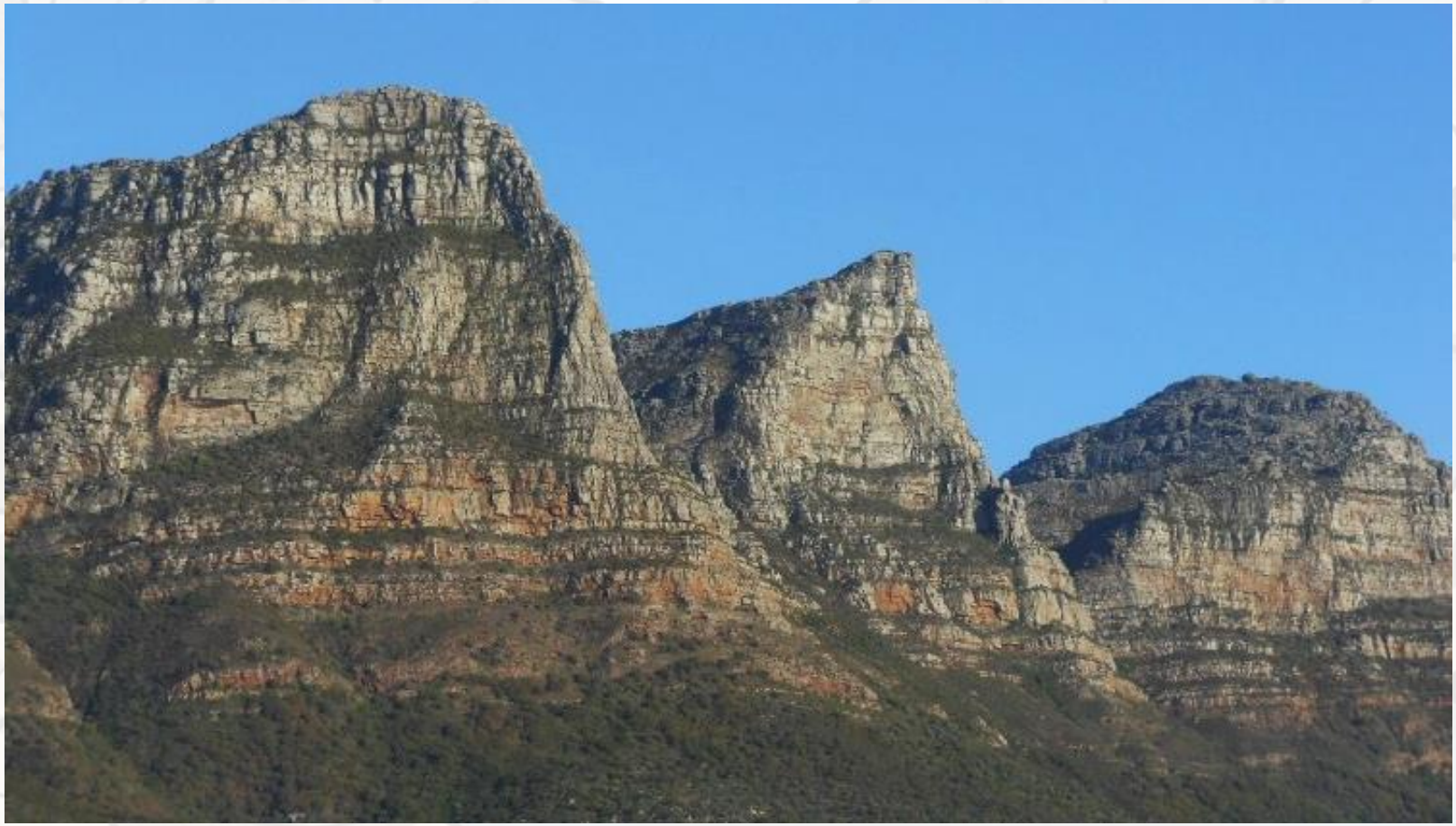
Muddy Fields

Spot the Rocks

Town Centre

Spot the Rocks

Granite Peak



Spot the Rocks

Volcano

Spot the Rocks

Mountain

Spot the Rocks

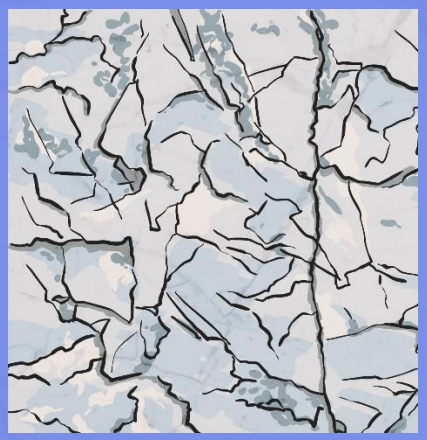
Pebble Beach

Natural Rocks

There are **three types** of naturally occurring rocks.

Igneous

Sedimentary



Metamorphic

Natural Rocks

Igneous Rock

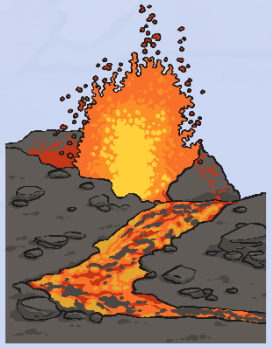
Far under the ground, the temperature is hot enough to melt the rock into a liquid. This is called molten rock. Igneous rocks are formed from this molten rock in two ways.

Intrusive Igneous Rocks:

Molten rock that remains underground is called magma. When magma cools and hardens it becomes a type of intrusive igneous rock.

(Intrusive = internal = inside)

Extrusive Igneous Rocks:



Molten rock that comes out of the ground is called lava. When lava cools and hardens it becomes a type of extrusive igneous rock.

(Extrusive = external = outside)

Natural Rocks

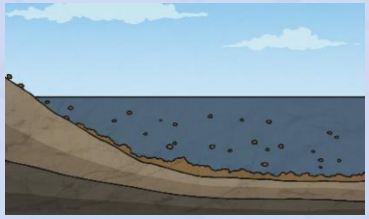
Sedimentary Rock

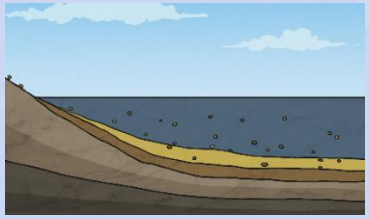
Sedimentary rock forms under the sea.
The following illustrates the process:

1) As a result of weathering and erosion, bits of rock end up in lakes and rivers. Rivers transport bits of rock and deposit them on the bottom of the sea. This process is called **sedimentation.**

2) With time, more layers (strata) pile up and press down on the lower layers of rock. This process is called **compaction.**

3) Over time, water is pushed out from these layers and the process of **cementation** occurs. This is when salt compounds glue or cement the bits of rock together so they form a solid layer.



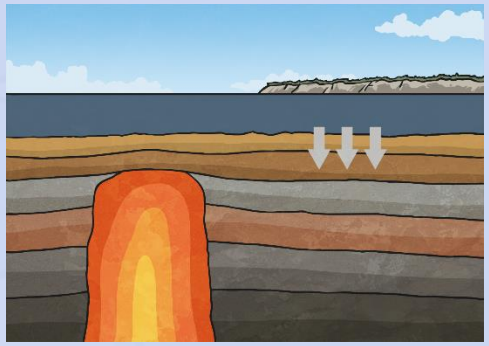


Natural Rocks

Metamorphic Rock

Metamorphic rocks don't just form from being near magma they can also be formed from Earth movements which can cause rocks to be deeply buried or squeezed. This means the rocks are heated and put under immense pressure which causes the minerals they contain to be changed chemically. Collision of tectonic plates can also result in the formation of metamorphic rock too.

This illustration shows how the igneous rock near magma is being heated and changed.



This illustration shows how the sedimentary rock near magma is being heated and changed.

Human-Made Rocks

The scientific name for human-made rocks is **anthropic** rocks. Anthropic rocks are made, modified or moved by humans.

Concrete

The Romans first invented **concrete,** although the type of concrete we use today dates from 1756.

Concrete is a mixture of water, aggregate (either sand, rock or gravel) and cement
(a mixture of chalk and clay).

Human-Made Rocks

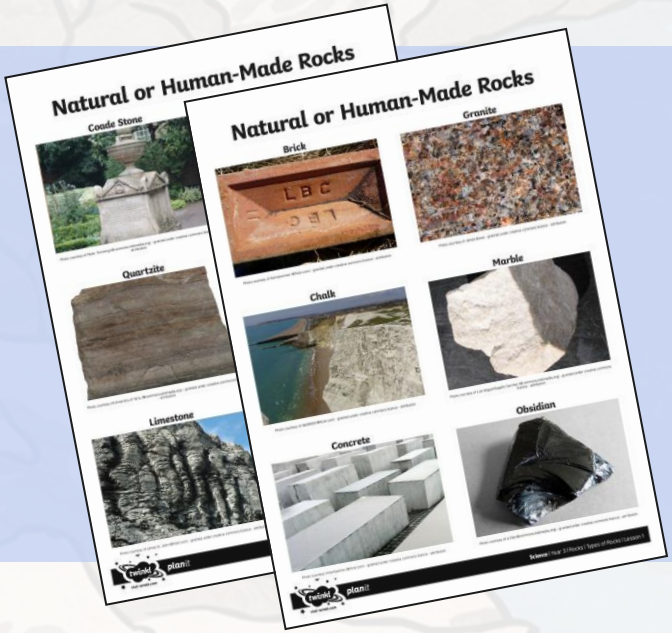
Mock Rock
Victorians created rock gardens and surfaces that looked like rock from **mock rock.** Types of mock rock include **pulhamite,** which looked like gritty sandstone.
James Pulham, who invented it, took the exact recipe for it to the grave! **Coade stone** (made from grog, flint, quartz, soda lime glass and clay) is another type of mock rock.

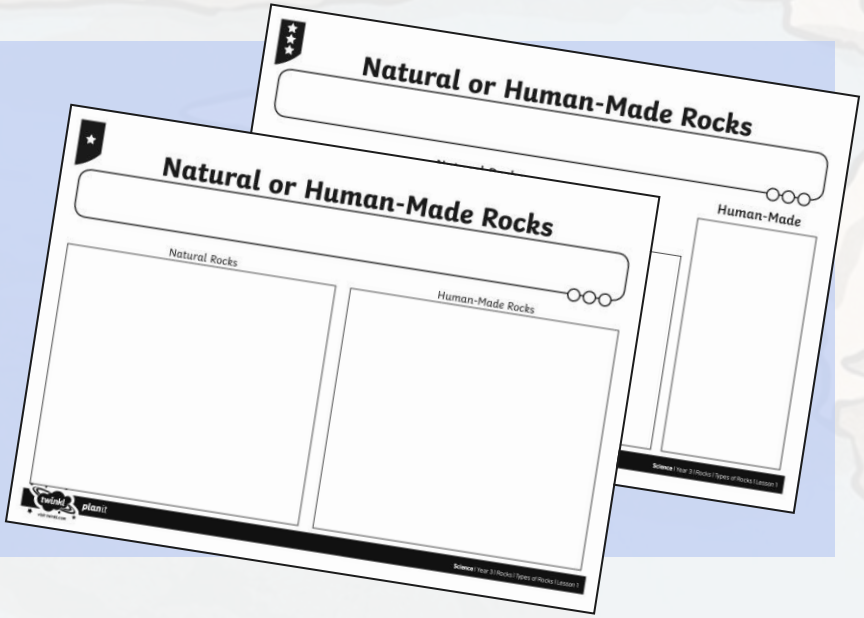
Bricks
Bricks have been around for a long time. The first bricks come from a place called Tell Aswad in modern day Syria. That was in 7500 BC! However, bricks were used to build in most of the ancient civilisations and are still used today. Bricks are usually made of clay soil, sand and lime or concrete materials. They can be air dried or fire-hardened.

Natural or Human-Made?

You will be looking at a selection of rocks in groups and will need to decide if these rocks are natural or human-made.

Some of you will also have to further group the rocks that you think are natural into the three rock types.

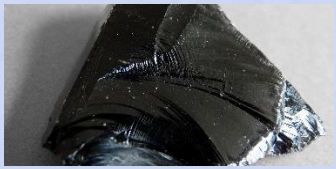




Natural or Human-Made

Natural Rocks

Igneous



Obsidian

Granite

Basalt

Sedimentary

Chalk

Sandstone

Limestone

Metamorphic

Marble

Quartzite

Slate

Human-Made Rocks

Brick

Concrete

Coade Stone

Fact or Fiction?

Igneous rock is formed by magma and lava.	**Fact**	**Fiction**
Metamorphic rock turns into liquid.	**Fact**	**Fiction**
Sedimentary rock forms on land.	**Fact**	**Fiction**
There are two types of igneous rock.	**Fact**	**Fiction**
Chalk is a type of human-made rock.	**Fact**	**Fiction**
Human-made rocks do contain natural rocks as well.	**Fact**	**Fiction**
The man who invented pulhamite took the recipe to the grave.	**Fact**	**Fiction**

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