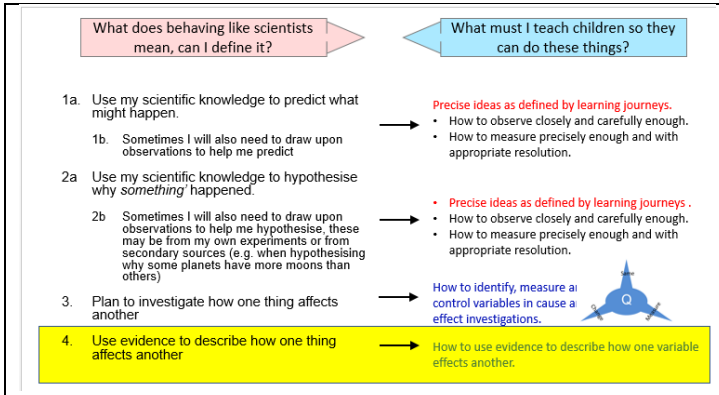
Learning journey	Science	Rocks	Year 3 Summer 1	

Building on prior learning	Theme overview	Preparing for future learning	Vocabulary
In KS1 the children will have learned that: • There are many different **materials** that have different observable **properties**. • Materials that have similar properties are grouped into **metals, rocks, fabrics, wood, plastic and ceramics** (including glass). • The properties of a material determine whether they are suitable for a purpose	Chapter 1 The properties of Rocks •A rock is a solid material made up of minerals forming part of the surface of the Earth Chapter 2. The properties of rocks •These three types of rocks all have different properties to each other, including porosity, hardness, reaction to chemicals Chapter 3: The structure of soils.	In Y4 children will learn how soils are made by decomposition of dead plant matter and that nutrients are present in the soil to aid plant growth In Y5 children will learn: That gravitational forces pulled rocks together to create planets and asteroids.	Sedimentary and igneous/metamorphic Limestone Mudstone Sandstone Granite Slate Porosity, Hardness Humus Silt Clay

NC coverage and HWJS skills development	Knowledge organisers
National curriculum coverage for Science • Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • Describe in simple terms how fossils are formed when things that have lived are trapped within rock • Recognise that soils are made from rocks and organic matter **HWJS skills development**	Knowledge Block 1: The properties of rocks Substantive Knowledge (key ideas) • A rock is a solid material made up of minerals forming part of the surface of the Earth • Rocks are exposed on the surface at cliffs, hills and mountains but are also under the surface. • Some rocks, called ores contain metals • Some rocks are made of grains squashed together and can contain the remains of long-dead organisms, called fossils. This type of rock is called • sedimentary rock, an example would be limestone, sandstone or mudstone



A Model of Progression.

1. Pose problems that require the application of knowledge being taught.
2. Deconstruct the problem to define what a child must understand and be able to do to tackle the problem (including what they need to observe and measure), teach these skills and knowledge ***at that point.***
3. As children progress through the curriculum they will tackle problems using new ideas, and when the problem requires with closer observation and more precise measurement.

Good enough progression is being able to tackle these problems.

Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions

Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables

Setting up simple practical enquiries, comparative and fair tests – use the Planning Mindmap.

Children gather evidence to describe the relationship between variables (cause and effect) by identifying what must be changed, what measured and what must be kept the same.

- Some rocks are made of crystals that are locked tightly together. These are called igneous and metamorphic rocks; an example of igneous rock is granite, and an example of metamorphic rock is slate

Knowledge Block 2: The properties of rocks

Substantive Knowledge (key ideas)

- These three types of rocks all have different properties to each other, including porosity, hardness, reaction to chemicals
- The properties of the rock depend on how the rock was formed, e.g. Some igneous rocks form from lava from volcanoes and cool very quickly leading to very small crystals

Knowledge Block 3: The structure of soils

Substantive Knowledge (key ideas)

- Soil is made up of small broken-down pieces of rock.
- Soil contains a range of different size rock pieces, e.g., sand grains or stones.
- Soil also contains humus (rotted plant material)
- Soil made of very fine rock is called silt or clay.

Connections / deepening understanding How is the understanding of this area deepened in other areas of the curriculum? What inks are there in the other subjets in the curriculum?	**RADE** Are the rights of the child relevant in this area of study - do they get referred to in the work?	**Assessment** By the end of the unit the children will be able to … Details of the objectives that they will have covered within this unit of work		
English — Note making and report writing.	**None**	Classify rocks into groups Gathering, recording and presenting data in a variety of ways.	Measure porosity of rocks	Make careful observations to identify soil types present in the school grounds.

Assessment recording for the unit - checking the level of pitch of the work

Key skill(s)/ knowledge to be assessed by the end of the unit	**Lower attaining**	**Middle attaining**	**Higher attaining**
Classify rocks into groups Gathering, recording and presenting data in a variety of ways. Measure porosity of rocks Make careful observations to identify soil types present in the school grounds.	Children can describe a rock as a solid. Some are grainy and some are crystal like. They know that they are formed in different ways. They know that different rocks have different properties . They know what porosity is and realise that some rocks are harder than others. They know that soil is made up of small broken down pieces of rock.	Children can describe a rock as a solid. Some are grainy and some are crystal like. They know that they are formed in different ways and that some contain ores. They are able to describe types as sedimentary, igneous and metamorphic They know that different rocks have different properties . They know what porosity is and realise that some rocks are harder than others. They recognise that properties of rock depend on how it was formed They know that soil is made up of small broken down pieces of rock and that soil contains a range of different size rock pieces and humus.	Children can describe a rock as a solid. Some are grainy and some are crystal like. They know that they are formed in different ways and that some contain ores. They are able to describe types as sedimentary, igneous and metamorphic They are able to name examples of sedimentary rock and explain why it may also contain fossil material. They can name some examples of each rock type. They know that different rocks have different properties . They know what porosity is and realise that some rocks are harder than others. They recognise that properties of rock depend on how it was formed. They can explain how some rock types are formed (e.g igneous rock from volcanic lava.) They know that soil is made up of small broken down pieces of rock and that soil contains a range of different size rock pieces and humus. Soil made of very fine rock is called silt or clay.

NB: The assessments are completed for two reasons – to enable the class teacher and in turn the subject leader to evaluate the pitch of the learning within the unit in order to consider any necessary updates and for the class teacher to report to parents on the attainment of pupils in the end of year reports