

Question: What do rocks tell us about the way the Earth was formed?

Is earth just made from rock?

National Curriculum Link

KS2 Science: Y3 Rocks

KS2 Science Working Scientifically

IB Learner Profile Links

Inquirers – Nurture skills for research and curiosity

Knowledgeable – Develop conceptual understanding and engage with issues and ideas

Communicators – Express yourself confidently and work cooperatively to solve problems

Thinkers – Use critical and creative thinking skills

Reflective – Consider the wider world and our own ideas and experience

Prior Skills – Y2 (Materials)

- Know the difference between an object and the material from which it is made
- Identify and name a range of everyday materials (wood, plastic, metal, water, rock, brick, paper, glass)
- Describe the simple physical properties of a variety of everyday materials
- Compare and classify a variety of materials based on their simple physical properties
- Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, rock, brick, paper and cardboard for particular uses
- Explore and know how the shapes of solid objects made from some materials can be changed (e.g. by squashing, bending, twisting and stretching.)
- Ask questions and decide how they might find answers to them.
- Explore, using the senses and make and record observations and measurements.

New Skills – Y3

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
- Describe and explain how different rocks can be useful to us.
- Describe and explain the differences between sedimentary and igneous rocks, considering the way they are formed.
- 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.
- Observe rocks, including those used in buildings and gravestones.
- Explore how and why they might have changed over time;
- Use a hand lens or microscope to help identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.
- Make systematic and careful observations
- Gather, record, classify and present findings in

Future Skills – Y4 (Focus on Working Scientifically / No Further Rocks Topics)

- ask a variety of types of scientific questions
- choose the most appropriate scientific enquiry method to answer a question and outline the method
- use simple models to describe scientific ideas make predictions based on scientific knowledge
- Can they use a graph to answer scientific questions
- Plan and carry out a scientific enquiry to answer questions, including recognising and controlling variables.
- Make predictions based on scientific knowledge
- Take measurements, use a range of scientific equipment, read scales accurately with increasing accuracy, repeat readings and find averages for more accurate results.
- Record data and results using scientific diagrams, present data in tables, including repeated readings
- Draw conclusions and relate conclusions to scientific knowledge

<ul style="list-style-type: none"> • Use first-hand experience and simple information sources to answer questions. • Communicate findings in a variety of ways including diagrams, pictures, charts, tables and ICT to record their observations • Use scientific words to describe what they have observed and measured • Recognise when a test is unfair • Describe their observations and use them to draw conclusions and answer questions 	a variety of ways to answer questions.	
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Knowledge, Skills and Understanding for topic area

- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.
- Describe and explain how different rocks can be useful to us.
- Describe and explain the differences between sedimentary and igneous rocks, considering the way they are formed.
- 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.

Knowledge, Skills and Understanding for Working Scientifically

- Observe rocks, including those used in buildings and gravestones.
- Explore how and why they might have changed over time;
- Use a hand lens or microscope to help identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.
- Make systematic and careful observations
- Gather, record, classify and present findings in a variety of ways to answer questions.

Challenge

- Can they classify igneous and sedimentary rocks?
- Can they begin to relate the properties of rocks with their uses?

Resources

- rocks including at least one permeable rock *eg chalk, sandstone* and one non-permeable rock *eg granite, marble*, plaster of Paris is made is a rock called gypsum(calcium sulphate)
- hand lenses
- sieves, beakers, timers and measuring jugs or cylinders
- containers for soil tests, *eg transparent plastic tubes with gauze covering the bottom*
- pictures/video showing landscapes with and without visible rocks and different soils
- samples of different soils

Suggested Quality Texts

Non-fiction: selection of books in school library.

Fiction: Stone girl Bone girl by Laurence Anholt
Pebble in my pocket by Meredith Hooper & Chris Cody

Website/Apps

<http://www.rocksforkids.com/>

http://www.kidsloverocks.com/html/types_of_rocks.html

www.bgs.ac.uk/education/ - website of the British Geological Society

<http://www.bbc.co.uk/learningzone/clips/> Search for clip e.g. rocks formation

http://www.bbc.co.uk/schools/scienceclips/ages/7_8/rocks_soils.shtml

Extended Writing Opportunities

Non chronological report about different rocks that exist on our planet Earth.

Numeracy Skills

Standard units; ml, l, kg, g minutes, seconds, Measured to nearest whole or half unit or mixed units. Read time on a timer. Read scales to nearest division labelled and unlabelled. Draw and interpret bar charts 1:1, 1:2, 1:5 & 1:10 scale. Frequency tables.

Wow starter/experience

Watch video clip showing different rocks

<http://www.bbc.co.uk/learningzone/clips/rocks-and-soil-no-narration/2208.html>

Bring in a collection of rocks in a treasure box with photographs and let the children touch and talk about them.

Everything Dinosaur from the World Museum – they will bring fossils into school.

Cross Curricular Links/ enquiry time activities:

ICT: Work as a team to create a reflective power-point presentation about rocks.

ICT: Children could use a database or spreadsheet to categorise rocks and soils. Choose a criterion for grouping, children are developing their thinking around the idea of fields for a database.

Art: Take rubbings of different rocks.

Plan, design and make a rock sculpture using large, medium and small rocks. These should be photographed and used as part of their reflective presentation based on rocks.

Literacy: Reading focus to carry out individual research based on rock types, including fossils.